Construction Quality Assurance Report
for CCSWDC, Phase II
Sarasota County, Florida

VOLUME VII

FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION
APR 13 2010
SOUTHWEST DISTRICT
TAMPA

Ardaman & Associates, Inc.

Jerry H. Kuehn, P.E.

OFFICES

Orlando, 8008 S. Orange Avenue, Orlando, Florida 32809, Phone (407) 855-3860
Bartow, 1525 Centennial Drive, Bartow, Florida 33830, Phone (863) 533-0858
Cocoa, 1300 N. Cocoa Boulevard, Cocoa, Florida 32922, Phone (321) 632-2503
Fort Myers, 9970 Bavaria Road, Fort Myers, Florida 33913, Phone (239) 768-6600
Miami, 2608 W. 84th Street, Hialeah, Florida, 33016, Phone (305) 825-2683
Port Charlotte, 740 Tamiami Trail, Unit 3, Port Charlotte, Florida 33954, Phone (941) 624-3393
Port St. Lucie, 460 NW Concourse Place, Unit #1, Port St. Lucie, Florida 34986-2248, Phone (772) 878-0072
Sarasota, 78 Sarasota Center Boulevard, Sarasota, Florida 34240, Phone (941) 922-3526
Tallahassee, 3175 West Tharpe Street, Tallahassee, Florida 32303, Phone (850) 576-6131
Tampa, 3925 Coconut Palm Drive, Suite 115, Tampa, Florida 33619, Phone (813) 620-3389
West Palm Beach, 2511 Westgate Avenue, Suite 10, West Palm Beach, Florida 33409, Phone (561) 687-8200

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American Society for Testing and Materials
Florida Institute of Consulting Engineers

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(revised April 2, 2010)

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Lab Reports for Geomembrane Seam Destructive Tests

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 04/29/09

DATE REPORTED: 04/30/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 04/29/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 5.1 HOURS 73 °F 39 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-1	087709DT1	F	T ✓	Load (ppi)	143	141	137	127	130	136	6.9	193	191	191	191	190	191	0.9
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1823	787	1406	1453	1553	1404	381
			B ✓	Load (ppi)	151	147	142	145	145	146	3.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-2	087709DT2	F	T ✓	Load (ppi)	135	155	153	152	153	149	8.3	195	193	193	192	191	193	1.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1605	786	999	779	732	980	364
			B ✓	Load (ppi)	133	135	137	133	133	134	1.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments:

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Checked By: JM Date: 04/30/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 04/29/09

DATE REPORTED: 04/30/08

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 04/29/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 5.3 HOURS 73 °F 39 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-3	087709DT3	F	T	Load (ppi)	137	137	135	137	138	137	1.1	194	195	196	195	194	195	0.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								850	662	792	762	814	776	71
			B	Load (ppi)	164	166	166	154	168	163	5.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														
DT-4	087709DT4	F	T	Load (ppi)	131	148	132	134	138	137	7.0	190	192	190	189	186	189	2.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								1996	1805	1913	1066	913	1539	509
			B	Load (ppi)	138	146	137	136	136	139	4.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/01/09

DATE REPORTED: 05/01/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 04/30/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 23.1 HOURS 73 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-5	087709DT5	F	T	Load (ppi)	123	123	129	127	130	126	3.2	176	175	174	174	171	174	1.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								918	839	880	829	907	834	95
			B	Load (ppi)	126	131	133	140	131	132	5.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														
DT-6	087709DT6	F	T	Load (ppi)	151	149	148	148	148	149	1.5	192	193	192	193	191	192	0.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								1285	766	1272	555	538	883	372
			B	Load (ppi)	157	157	161	158	151	157	3.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/01/09

DATE REPORTED: 05/01/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 04/30/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 73 °F 39 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test 1	2	3	4	5	Avg.	Std. Dev.	Shear Test 1	2	3	4	5	Avg.	Std. Dev.
DT-7	087709DT7	F	T	Load (ppi)	153	152	156	144	142	149	6.3	192	189	188	189	190	190	1.3
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								1408	1448	1403	715	632	1121	410
			B	Load (ppi)	142	142	135	139	146	141	4.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														
DT-8	087709DT8	F	T	Load (ppi)	149	142	158	154	146	150	6.4	191	191	190	191	191	191	0.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								586	898	871	797	718	774	126
			B	Load (ppi)	139	136	138	139	145	139	3.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/01/09

DATE REPORTED: 05/01/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 04/30/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 73 °F 39 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-9	087709DT9	F	T ✓	Load (ppl)	142	144	143	141	141	142	1.3	193	190	191	192	191	191	1.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								973	1007	983	966	977	981	16
			B ✓	Load (ppi)	138	142	141	138	140	140	1.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-10	087709DT10	F	T ✓	Load (ppi)	152	149	149	151	149	150	1.4	190	193	193	195	193	193	2.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								826	880	1461	1731	1331	1246	387
			B ✓	Load (ppi)	138	137	134	142	139	138	3.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

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GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/01/09

DATE REPORTED: 05/01/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 04/30/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 73 °F 39 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-11	087709DT11	F	T ✓	Load (ppi)	138	137	132	131	135	135	2.9	193	193	192	193	193	193	0.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								829	774	768	783	739	779	33
			B ✓	Load (ppi)	143	142	139	150	149	144	4.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

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GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/01/09

DATE REPORTED: 05/01/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/01/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.1 HOURS 74 °F 37 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-12	087709DT12	F	T ✓	Load (ppi)	147	135	141	144	135	141	5.4	198	196	196	197	199	197	1.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								720	903	837	711	630	760	109
			B ✓	Load (ppi)	140	136	136	123	125	132	7.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-13	087709DT13	F	T ✓	Load (ppi)	141	141	142	138	138	140	2.2	198	197	197	198	198	198	0.3
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								927	755	927	998	905	902	89
			B ✓	Load (ppi)	157	133	155	159	157	152	10.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

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GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/01/09

DATE REPORTED: 05/01/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/01/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.4 HOURS 74 °F 37 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-14	087709DT14	F	T	Load (ppi)	142	144	139	149	166	148	10.6	198	198	198	198	198	198	0.3
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								1598	1636	1692	1637	1601	1633	38
			B	Load (ppi)	138	142	138	147	142	142	3.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/01/09

DATE REPORTED: 05/04/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/01/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.5 HOURS 74 °F 37 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test 1	2	3	4	5	Avg.	Std. Dev.	Shear Test 1	2	3	4	5	Avg.	Std. Dev.
DT-15	087709DT15	F	T	Load (ppi)	152	165	149	148	150	153	7.1	195	194	194	193	190	193	1.9
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								1036	939	926	1012	978	978	47
			B	Load (ppi)	148	148	148	152	154	150	2.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														
DT-16	087709DT16	F	T	Load (ppi)	145	145	147	138	148	145	4.1	194	195	196	191	194	194	1.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								889	956	898	915	1512	1040	267
			B	Load (ppi)	154	156	160	151	145	153	5.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														

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Checked By: JM Date: 05/04/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/01/09

DATE REPORTED: 05/04/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/01/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 5.2 HOURS 74 °F 37 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test 1	2	3	4	5	Avg.	Std. Dev.	Shear Test 1	2	3	4	5	Avg.	Std. Dev.
DT-17	087709DT17	F	T	Load (ppi)	154	153	146	148	144	149	4.5	194	194	195	193	193	194	0.8
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								996	960	903	734	741	867	123
			B	Load (ppi)	140	140	139	143	138	140	2.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														
DT-18	087709DT18	F	T	Load (ppi)	149	130	142	147	146	143	7.6	192	193	193	190	188	191	2.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								866	663	745	1733	1922	1186	594
			B	Load (ppi)	143	150	141	112	125	134	15.3							
				Mode	SE1	SE1	SE1	AD-BRK	SE1									
				Peel (%)	0	0	0	50	0									
			✓	Shear (%)														

Comments:

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Checked By: RM Date: 05/04/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/01/09

DATE REPORTED: 05/04/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/01/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 5.4 HOURS 74 °F 37 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-19	087709DT19	F	T ✓	Load (ppi)	151	163	157	151	155	155	4.8	194	192	194	192	191	193	1.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1135	1442	1729	853	801	1192	394
			B ✓	Load (ppi)	150	151	149	151	152	150	1.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

Comments:

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Checked By: TM Date: 05/04/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/04/09

DATE REPORTED: 05/04/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/04/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.2 HOURS 74 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-20	087709DT20	F	T	Load (ppi)	155	147	150	152	134	148	8.2	193	194	193	193	193	193	0.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								563	966	680	547	918	735	197
			B	Load (ppi)	142	139	130	135	138	137	4.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														
DT-21	087709DT21	F	T	Load (ppi)	132	136	159	127	133	137	12.5	195	194	190	193	192	193	2.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								1412	910	855	703	657	907	301
			B	Load (ppi)	134	141	138	135	134	136	2.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														

Comments:

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Checked By: TM Date: 05/04/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/04/09

DATE REPORTED: 05/04/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/04/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.5 HOURS 74 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-23	087709DT23	F	T ✓	Load (ppi)	126	138	136	130	134	133	4.7	173	174	174	173	172	173	0.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								587	592	644	596	632	610	26
			B ✓	Load (ppi)	138	137	131	126	119	130	7.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-24	087709DT24	F	T ✓	Load (ppi)	148	150	148	143	147	147	2.7	190	191	188	185	181	187	4.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								459	350	949	1417	613	757	432
			B ✓	Load (ppi)	148	153	155	153	150	152	2.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

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Checked By: TM Date: 05/04/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/04/09

DATE REPORTED: 05/04/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/04/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.2 HOURS 74 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test 1	2	3	4	5	Avg.	Std. Dev.	Shear Test 1	2	3	4	5	Avg.	Std. Dev.
DT-25	087709DT25	F	T	Load (ppi)	141	142	143	146	146	144	2.4	196	196	195	195	195	196	0.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								705	693	957	702	810	773	113
			B	Load (ppi)	146	143	145	142	142	143	1.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														
DT-26	087709DT26	F	T	Load (ppi)	160	172	131	133	149	149	17.3	194	194	195	194	193	194	0.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								579	635	552	493	455	543	71
			B	Load (ppi)	152	145	147	147	147	148	2.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														

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Checked By: JM Date: 05/04/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/04/09

DATE REPORTED: 05/04/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/04/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.5 HOURS 74 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-27	087709DT27	F	T	Load (ppi)	150	153	148	140	120	142	13.1	192	192	193	191	190	192	1.2
				Mode	SE1	SE1	SE1	SE1	AD-BRK			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	25									
			✓	Shear (%)								1059	883	921	943	964	954	66
			B	Load (ppi)	148	141	104	130	163	137	22.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

Comments:

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Checked By: [signature] Date: 05/04/09

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/04/09

DATE REPORTED: 05/04/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/04/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 5.1 HOURS 74 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test 1	2	3	4	5	Avg.	Std. Dev.	Shear Test 1	2	3	4	5	Avg.	Std. Dev.
DT-28A	087709DT28A	F	T ✓	Load (ppi)	142	139	143	143	141	141	1.6	190	189	190	188	188	189	0.8
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1576	1160	1551	1518	1505	1462	171
			B ✓	Load (ppi)	141	141	140	141	134	140	3.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-28B	087709DT28B	F	T ✓	Load (ppi)	128	136	128	139	138	134	5.2	189	191	189	190	189	189	1.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								811	1623	1216	1053	1085	1158	299
			B ✓	Load (ppi)	154	150	149	153	147	151	2.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

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Checked By: TM Date: 05/04/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

GEOMEMBRANE TYPE: 60-mil HDPE

PROJECT: CCSWDC

DATE SAMPLES RECEIVED: 05/04/09

FILE NO.: 08-7709

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

DATE TESTED: 05/04/09

CONDITIONING: 3.5 HOURS 74 °F 41 %RH

DATE REPORTED: 05/04/09

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-22	087709DT22	E	T /	Load (ppi)	151	138	133	117	142	136	12.5	173	168	170	168	169	170	1.9
				Mode	SE3	SE3	SE3	SE1	SE3			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								264	312	301	346	354	315	36.3
			/	Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														
DT-29	087709DT29	F	T /	Load (ppi)	163	161	162	162	160	162	1.0	188	187	187	189	187	188	1.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								961	1015	1176	1160	1096	1082	92.8
			B /	Load (ppi)	153	152	152	150	150	151	1.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

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Checked By: TM Date: 05/04/09

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/04/09

DATE REPORTED: 05/05/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/04/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 5.5 HOURS 75 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test 1	2	3	4	5	Avg.	Std. Dev.	Shear Test 1	2	3	4	5	Avg.	Std. Dev.
DT-30	087709DT30	F	T ✓	Load (ppi)	139	141	139	141	142	141	1.2	191	193	193	192	193	193	1.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1347	1205	1388	979	497	1083	364
			B ✓	Load (ppi)	150	146	153	150	150	150	2.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-31	087709DT31	F	T ✓	Load (ppi)	130	131	129	126	129	129	2.1	186	187	191	188	188	188	1.8
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								911	861	739	872	892	855	68
			B ✓	Load (ppi)	141	138	139	142	132	138	4.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments:

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Checked By: JM Date: 05/05/09

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/04/09

DATE REPORTED: 05/05/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/04/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 7.1 HOURS 75 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-32	087709DT32	F	T	Load (ppi)	169	164	165	159	169	165	4.2	194	193	192	193	192	193	0.9
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								970	1045	986	931	917	970	51
			B	Load (ppi)	140	136	134	135	133	136	2.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														
DT-33	087709DT33	F	T	Load (ppi)	144	143	145	146	145	145	1.0	189	188	185	187	189	187	1.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								780	659	754	1064	959	843	165
			B	Load (ppi)	145	147	145	142	138	144	3.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														

Comments:

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Checked By: JM Date: 05/05/09

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/04/09

DATE REPORTED: 05/05/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/04/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 7.6 HOURS 75 °F 38 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-34	087709DT34	F	T ✓	Load (ppi)	146	150	148	149	140	147	4.0	187	193	193	193	191	192	2.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								928	1126	1537	467	1241	1060	398
			B ✓	Load (ppi)	157	161	159	149	121	150	16.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-35	087709DT35	F	T ✓	Load (ppi)	159	150	156	141	158	153	7.5	197	197	197	198	196	197	0.9
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								821	536	832	816	743	750	125
			B ✓	Load (ppi)	147	149	146	154	137	147	6.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments:

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Checked By: TM Date: 05/05/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/04/09

DATE REPORTED: 05/05/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/04/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 8.3 HOURS 75 °F 39 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test 1	2	3	4	5	Avg.	Std. Dev.	Shear Test 1	2	3	4	5	Avg.	Std. Dev.
DT-36	087709DT36	F	T ✓	Load (ppi)	149	149	148	143	149	148	2.4	195	195	193	194	196	195	1.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								976	698	628	778	871	790	138
			B ✓	Load (ppi)	150	155	155	147	153	152	3.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-37	087709DT37	F	T ✓	Load (ppi)	139	138	136	137	157	141	8.9	190	190	191	190	190	190	0.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								800	844	1026	855	1179	941	158
			B ✓	Load (ppi)	153	156	153	154	134	150	8.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments:

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Checked By: JM Date: 05/05/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/04/09

DATE REPORTED: 05/05/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/04/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 9.1 HOURS 75 °F 38 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-38	087709DT38	F	T	Load (ppi)	146	143	139	137	133	140	5.0	191	192	192	191	186	190	2.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			↓	Shear (%)								1117	809	926	1076	777	941	153
			B	Load (ppi)	140	155	134	136	141	141	8.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			↓	Shear (%)														
DT-39	087709DT39	F	T	Load (ppi)	136	136	134	144	137	137	4.0	192	193	192	192	189	192	1.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			↓	Shear (%)								1053	1102	839	693	1029	943	172
			B	Load (ppi)	139	161	159	157	160	155	9.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			↓	Shear (%)														

Comments:

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Checked By: JM Date: 05/05/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/05/09

DATE REPORTED: 05/05/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/05/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 2.1 HOURS 74 °F 39 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-40	087709DT40	F	T	Load (ppi)	136	147	148	142	144	143	4.9	194	194	193	193	194	194	0.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								1014	741	957	655	696	812	162
			B	Load (ppi)	150	145	152	150	147	149	2.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														
DT-41	087709DT41	F	T	Load (ppi)	135	132	133	131	142	135	4.4	195	195	196	195	195	195	0.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								733	757	715	685	1058	790	152
			B	Load (ppi)	142	139	138	140	157	143	7.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														

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Checked By: JM Date: 05/05/09

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/05/09

DATE REPORTED: 05/05/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/05/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 1.5 HOURS 73 °F 39 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-42	087709DT42	F	T	Load (ppi)	145	146	147	142	149	146	2.7	198	197	197	198	196	197	0.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								820	1635	884	1402	1450	1238	364
			B	Load (ppi)	136	144	145	142	140	141	3.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														
DT-43	087709DT43	F	T	Load (ppi)	145	144	144	144	145	144	0.5	196	197	197	196	194	196	1.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								848	662	734	922	649	763	119
			B	Load (ppi)	147	149	147	151	156	150	3.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														

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Checked By: PM Date: 05/05/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/05/09

DATE REPORTED: 05/05/09 **[Revised 05/06/09]**

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/05/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 2.5 HOURS 74 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-44	087709DT44	F	T	Load (ppi)	144	134	147	147	145	143	5.6	191	191	192	191	191	191	0.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	BRK	BRK		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								617	729	717	711	511	657	93
			B	Load (ppi)	144	152	145	146	146	147	3.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														
DT-45	087709DT45	F	T	Load (ppi)	145	145	146	145	147	145	0.8	192	193	193	190	191	192	1.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								809	1009	1075	849	809	910	124
			B	Load (ppi)	145	146	143	141	139	143	3.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														

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Checked By: TM Date: 05/06/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/05/09

DATE REPORTED: 05/05/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/05/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.1 HOURS 75 °F 39 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test 1	2	3	4	5	Avg.	Std. Dev.	Shear Test 1	2	3	4	5	Avg.	Std. Dev.
DT-46	087709DT46	F	T	Load (ppi)	145	158	144	150	156	151	6.6	194	193	194	194	195	194	0.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								688	884	690	831	918	802	108
			B	Load (ppi)	139	152	147	139	144	144	5.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														
DT-47	087709DT47	F	T	Load (ppi)	145	144	143	141	143	143	1.2	191	193	192	193	192	192	0.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								637	1536	777	613	1407	994	443
			B	Load (ppi)	160	151	145	151	146	150	5.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														

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Checked By: TM Date: 05/05/09

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/05/09

DATE REPORTED: 05/06/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/05/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.4 HOURS 74 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-48	087709DT48	F	T	Load (ppi)	138	140	142	144	145	142	2.7	194	194	191	193	191	193	1.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								971	1629	1042	694	994	1066	343
			B	Load (ppi)	147	143	142	146	146	145	2.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														
DT-49	087709DT49	F	T	Load (ppi)	136	140	136	136	144	138	3.4	189	190	190	186	188	189	1.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								1053	802	1103	826	1019	961	137
			B	Load (ppi)	141	148	158	141	147	147	6.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														

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Checked By: TM Date: 05/06/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/05/09

DATE REPORTED: 05/06/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/05/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.0 HOURS 75 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-50	087709DT50	F	T	Load (ppi)	149	146	147	147	148	147	1.0	188	190	193	188	191	190	2.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								661	736	1563	960	976	979	354
			B	Load (ppi)	151	153	161	143	150	152	6.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														
DT-51	087709DT51	F	T	Load (ppi)	141	138	137	134	137	137	2.3	182	182	182	183	184	182	1.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								1101	1099	1119	1074	999	1079	47
			B	Load (ppi)	133	161	157	151	158	152	11.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														

Comments:

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Checked By: TM Date: 05/06/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/05/09

DATE REPORTED: 05/06/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/05/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.3 HOURS 75 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-52	087709DT52	F	T	Load (ppi)	145	144	144	145	144	144	0.7	189	191	191	190	189	190	0.9
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								1018	1109	1026	1089	1057	1060	39
			B	Load (ppi)	142	141	138	142	139	140	1.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														
DT-53	087709DT53	F	T	Load (ppi)	146	143	139	145	142	143	2.9	192	193	194	195	194	194	1.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								1079	970	1220	978	1049	1059	101
			B	Load (ppi)	143	143	137	138	139	140	2.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														

Comments:

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Checked By: TM Date: 05/06/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/06/09

DATE REPORTED: 05/07/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/06/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 6.5 HOURS 75 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test 1	2	3	4	5	Avg.	Std. Dev.	Shear Test 1	2	3	4	5	Avg.	Std. Dev.
DT-54	087709DT54	F	T	Load (ppi)	143	143	141	142	143	142	0.7	191	191	190	191	189	190	0.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								740	780	1015	1004	1062	920	148
			B	Load (ppi)	145	143	147	141	141	144	2.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														
DT-55	087709DT55	F	T	Load (ppi)	135	136	139	139	133	136	2.8	192	192	192	191	189	191	1.3
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								682	701	834	855	909	796	100
			B	Load (ppi)	170	144	140	139	144	147	12.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														

Comments:

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Checked By: TM Date: 05/07/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/06/09

DATE REPORTED: 05/07/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/06/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 7.2 HOURS 75 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-56	087709DT56	F	T /	Load (ppi)	141	140	140	139	139	140	0.6	188	187	187	189	190	188	1.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1299	747	1326	1114	1042	1106	234
			B /	Load (ppi)	158	155	152	154	152	154	2.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-57	087709DT57	F	T √	Load (ppi)	145	146	141	135	136	141	5.2	197	197	198	198	198	197	0.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1184	1015	962	1348	1683	1239	291
			B √	Load (ppi)	140	153	152	150	136	146	7.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments:

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Checked By: JM Date: 05/09/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/06/09

DATE REPORTED: 05/07/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/06/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 8.1 HOURS 75 °F 38 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-58	087709DT58	F	T ✓	Load (ppi)	149	145	159	137	152	148	8.3	192	192	191	191	190	191	0.8
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								812	857	794	758	1859	1016	473
			B ✓	Load (ppi)	132	145	133	146	150	141	8.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-59	087709DT59	F	T ✓	Load (ppi)	136	130	139	139	141	137	4.3	193	194	193	191	193	193	1.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1030	1034	1014	1003	1007	1018	14
			B ✓	Load (ppi)	140	152	143	139	165	148	10.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments:

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Checked By: TM Date: 05/07/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/06/09

DATE REPORTED: 05/07/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/06/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 8.3 HOURS 75 °F 37 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-60	087709DT60	F	T ↓	Load (ppi)	133	136	127	129	136	132	4.1	199	197	198	198	198	198	0.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1260	1258	1248	920	606	1059	292
			B ↓	Load (ppi)	142	141	139	138	140	140	1.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-61	087709DT61	F	T ↓	Load (ppi)	138	138	137	142	141	139	2.2	194	193	193	194	191	193	1.3
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1054	1125	1169	1527	1079	1191	193
			B ↓	Load (ppi)	140	137	141	142	140	140	1.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments:

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Checked By: JM Date: 05/07/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/06/09

DATE REPORTED: 05/07/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/06/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 9.1 HOURS 75 °F 37 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-62	087709DT62	F	T ✓	Load (ppi)	147	144	144	141	141	144	2.5	194	195	196	196	196	195	1.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								731	510	733	384	1025	677	245
			B ✓	Load (ppi)	146	144	144	144	143	144	1.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

Comments:

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Checked By: RM Date: 05/09/09

Form R-4:Rev.0

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/08/09

DATE REPORTED: 05/08/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/08/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 1.2 HOURS 73 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-63	087709DT63	F	T	Load (ppi)	122	125	126	121	113	122	5.2	169	166	166	166	166	167	1.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								1083	1150	1058	900	925	1023	107
			B	Load (ppi)	141	143	145	149	146	145	3.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														
DT-64	087709DT64	F	T	Load (ppi)	143	144	141	145	144	143	1.5	197	197	197	198	197	197	0.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								850	893	922	809	900	875	45
			B	Load (ppi)	143	143	146	141	139	142	2.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JW Date: 05/08/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/08/09

DATE REPORTED: 05/08/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/08/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 2.5 HOURS 73 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-65	087709DT65	F	T	Load (ppi)	145	143	141	138	141	142	2.6	188	184	193	190	190	189	3.2
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	SE1	BRK		
				Peel (%)	0	0	0	0	0									
			/	Shear (%)								292	365	320	244	250	294	51
			B	Load (ppi)	156	141	146	142	139	145	6.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			/	Shear (%)														
DT-66	087709DT66	F	T	Load (ppi)	136	136	129	134	132	133	3.0	191	191	194	190	186	190	3.0
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
			/	Shear (%)								248	315	328	262	250	281	38
			B	Load (ppi)	149	138	133	129	138	137	7.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			/	Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 05/08/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/08/09

DATE REPORTED: 05/08/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/08/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.4 HOURS 74 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-67	087709DT67	F	T	Load (ppi)	135	135	154	155	143	144	9.7	195	194	195	194	194	194	0.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			↓	Shear (%)								1028	992	1244	972	942	1035	121
			B	Load (ppi)	138	138	141	141	143	140	2.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			↓	Shear (%)														
DT-68	087709DT68	F	T	Load (ppi)	141	146	140	139	139	141	2.8	196	195	195	195	196	196	0.8
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			↓	Shear (%)								538	615	717	583	638	618	67
			B	Load (ppi)	154	157	151	150	143	151	5.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			↓	Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 05/08/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/08/09

DATE REPORTED: 05/08/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/08/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.6 HOURS 74 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test 1	2	3	4	5	Avg.	Std. Dev.	Shear Test 1	2	3	4	5	Avg.	Std. Dev.
DT-69	087709DT69	F	T	Load (ppi)	133	133	134	132	129	132	1.9	196	198	195	196	196	196	1.3
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			√	Shear (%)								539	747	667	628	692	655	77
			B	Load (ppi)	145	145	151	146	145	146	2.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			√	Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 05/08/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/11/09

DATE REPORTED: 05/11/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/11/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 1.4 HOURS 73 °F 39 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-70	087709DT70	F	T	Load (ppi)	142	144	144	144	148	144	2.0	201	201	199	200	200	200	1.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								1020	1075	947	775	1003	946	115
			B	Load (ppi)	140	140	142	139	137	140	2.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														
DT-71	087709DT71	F	T	Load (ppi)	135	140	144	145	144	142	4.2	199	200	199	198	197	199	1.3
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								617	549	603	655	617	608	38
			B	Load (ppi)	139	148	148	147	139	144	4.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 05/11/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

GEOMEMBRANE TYPE: 60-mil HDPE

PROJECT: CCSWDC

DATE SAMPLES RECEIVED: 05/11/09

FILE NO.: 08-7709

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

DATE TESTED: 05/11/09

CONDITIONING: 2.2 HOURS 73 °F 40 %RH

DATE REPORTED: 05/11/09

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-72	087709DT72	F	T	Load (ppi)	144	135	136	144	133	138	5.1	196	196	198	195	192	195	2.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								237	237	242	282	227	245	21
			B	Load (ppi)	149	139	143	121	130	137	10.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														
DT-73	087709DT73	F	T	Load (ppi)	110	131	139	134	138	131	12.0	184	187	190	186	182	186	3.1
				Mode	AD-BRK	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	BRK		
				Peel (%)	35	0	0	0	0									
			✓	Shear (%)								168	230	217	257	263	227	38
			B	Load (ppi)	122	107	118	112	158	123	20.3							
				Mode	AD	AD	AD	AD-BRK	SE1									
				Peel (%)	100	100	100	20	0									
			✓	Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 05/11/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/11/09

DATE REPORTED: 05/11/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/11/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.3 HOURS 74 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-74	087709DT74	F	T	Load (ppi)	139	142	150	140	147	144	4.9	191	184	187	186	183	186	3.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	BRK	BRK		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								234	242	233	267	295	254	27
			B	Load (ppi)	139	145	136	160	137	143	9.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														
DT-75	087709DT75	F	T	Load (ppi)	133	138	134	137	140	136	3.0	183	188	181	185	187	185	3.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								184	243	300	323	247	260	54
			B	Load (ppi)	159	164	153	154	153	156	4.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 05/11/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/14/09

DATE REPORTED: 05/14/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/14/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.1 HOURS 73 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P1	087709DTP1	F	T	Load (ppi)	143	145	142	139	140	142	2.2	191	190	191	192	192	191	0.9
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			√	Shear (%)								840	1115	1105	855	1013	986	132
			B	Load (ppi)	134	141	134	133	135	135	3.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			√	Shear (%)														
DT-P2	087709DTP2	F	T	Load (ppi)	144	142	138	142	141	142	2.2	189	188	189	188	188	187	0.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			√	Shear (%)								943	900	887	1109	1050	978	97
			B	Load (ppi)	141	140	142	145	144	143	2.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			√	Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 05/14/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/14/09

DATE REPORTED: 05/14/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/14/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.6 HOURS 74 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P3	087709DTP3	F	T	Load (ppi)	144	147	148	149	147	147	1.6	187	189	188	191	189	189	1.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			↓	Shear (%)								600	703	730	649	825	701	85
			B	Load (ppi)	151	143	147	157	138	147	7.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			↓	Shear (%)														
DT-P4	087709DTP4	F	T	Load (ppi)	145	142	148	158	138	146	7.6	195	195	196	196	195	195	0.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
			↓	Shear (%)								700	783	709	728	760	736	35
			B	Load (ppi)	152	151	161	154	152	154	4.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			↓	Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 05/14/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/14/09

DATE REPORTED: 05/14/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/14/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.3 HOURS 74 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test 1	2	3	4	5	Avg.	Std. Dev.	Shear Test 1	2	3	4	5	Avg.	Std. Dev.
DT-P5	087709DTP5	F	T	Load (ppi)	154	156	154	153	151	153	2.0	189	188	188	189	189	189	0.3
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			√	Shear (%)								1030	1243	1177	1170	1290	1182	98
			B	Load (ppi)	136	139	137	132	135	136	2.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			√	Shear (%)														
DT-P6	087709DTP6	F	T	Load (ppi)	131	127	130	129	130	129	1.6	192	194	195	194	194	194	1.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	BRK		
				Peel (%)	0	0	0	0	0									
			√	Shear (%)								1290	1009	878	1040	893	1022	166
			B	Load (ppi)	136	143	146	142	141	142	3.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			√	Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 05/14/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/14/09

DATE REPORTED: 05/14/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/14/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 5.1 HOURS 74 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P7	087709DTP7	F	T	Load (ppi)	147	139	134	129	133	136	7.1	187	188	188	189	187	188	0.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								992	693	939	683	667	795	157
			B	Load (ppi)	136	142	149	150	146	145	5.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														
DT-P8	087709DTP8	F	T	Load (ppi)	148	154	145	146	159	150	6.2	186	188	190	189	189	188	1.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								762	805	788	907	697	792	76
			B	Load (ppi)	148	161	157	154	159	156	5.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 05/14/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/14/09

DATE REPORTED: 05/14/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/14/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 5.5 HOURS 74 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test 1	2	3	4	5	Avg.	Std. Dev.	Shear Test 1	2	3	4	5	Avg.	Std. Dev.
DT-P9	087709DTP9	F	T	Load (ppi)	153	133	163	136	130	143	14.3	192	193	192	190	191	191	0.9
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								513	1178	1005	959	1339	999	310
			B	Load (ppi)	143	143	139	143	145	143	2.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 05/14/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

GEOMEMBRANE TYPE: 60-mil HDPE

PROJECT: CCSWDC

DATE SAMPLES RECEIVED: 05/14/09

FILE NO.: 08-7709

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

DATE TESTED: 05/14/09

CONDITIONING: 6.1 HOURS 74 °F 39 %RH

DATE REPORTED: 05/15/09

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P10	087709 DTP10	F	T	Load (ppi)	141	139	145	145	136	141	3.9	190	191	191	190	188	190	1.3
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								703	947	822	793	845	822	88
			B	Load (ppi)	144	143	142	145	138	143	2.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														
DT-P11	087709 DTP11	F	T	Load (ppi)	141	143	141	142	138	141	1.7	188	188	190	188	188	188	0.8
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								772	782	862	765	722	780	51
			B	Load (ppi)	136	136	135	136	137	136	0.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/14-15/09

DATE REPORTED: 05/15/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/14/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 6.5 HOURS 73 °F 39 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P12	087709 DTP12	F	T ✓	Load (ppi)	141	135	141	141	141	140	2.5	189	189	188	188	188	188	0.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								806	845	927	858	984	884	71
			B ✓	Load (ppi)	135	132	133	132	132	133	1.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P13	087709 DTP13	F	T ✓	Load (ppi)	139	134	135	138	127	135	4.8	191	191	190	191	191	191	0.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								648	700	667	639	623	655	30
			B ✓	Load (ppi)	143	141	148	145	140	143	3.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 05/15/09

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/15/09

DATE REPORTED: 05/15/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/14/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 23.1 HOURS 72 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P14	087709 DTP14	F	T √	Load (ppi)	146	148	150	148	142	147	2.9	196	195	195	195	194	195	0.8
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								499	550	643	562	617	574	57
			B √	Load (ppi)	145	145	137	157	152	147	7.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P15	087709 DTP15	F	T √	Load (ppi)	139	120	145	143	143	138	10.1	193	197	197	196	195	195	1.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								792	690	467	738	700	678	124
			B √	Load (ppi)	142	159	143	150	149	149	6.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 05/19/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/15/09

DATE REPORTED: 05/15/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/14/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 23.4 HOURS 72 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test 1	2	3	4	5	Avg.	Std. Dev.	Shear Test 1	2	3	4	5	Avg.	Std. Dev.
DT-P16	087709 DTP16	F	T	Load (ppi)	146	135	136	146	137	140	5.7	193	193	193	193	193	193	0.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								694	759	667	575	790	697	84
			B	Load (ppi)	136	130	133	165	134	140	14.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														
DT-P17	087709 DTP17	F	T	Load (ppi)	149	150	143	148	149	148	2.5	195	194	195	191	194	194	1.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								1143	1133	888	1067	1245	1096	132
			B	Load (ppi)	155	152	150	145	151	151	3.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 05/15/09

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/15/09

DATE REPORTED: 05/15/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/14/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 72 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P18	087709 DTP18	F	T √	Load (ppi)	145	144	143	142	138	142	2.5	194	196	195	194	193	194	1.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								822	767	783	655	651	735	78
			B √	Load (ppi)	137	144	161	160	161	153	11.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 05/15/09

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/15/09

DATE REPORTED: 05/15/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/15/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.0 HOURS 73 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P19	087709 DTP19	F	T	Load (ppi)	150	150	150	147	150	149	1.2	189	189	189	189	189	189	0.3
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								783	1023	972	930	987	939	93
			B	Load (ppi)	142	140	141	139	139	140	1.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														
DT-P20	087709 DTP20	F	T	Load (ppi)	148	148	149	149	150	149	0.9	191	192	194	193	191	192	1.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								712	588	790	843	687	724	98
			B	Load (ppi)	150	150	148	151	151	150	1.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: [signature] Date: 05/15/09

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/15/09

DATE REPORTED: 05/15/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/15/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.4 HOURS 74 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test 1	2	3	4	5	Avg.	Std. Dev.	Shear Test 1	2	3	4	5	Avg.	Std. Dev.
DT-P21	087709 DTP21	F	T	Load (ppi)	159	152	142	147	147	149	6.6	178	179	177	177	177	178	0.9
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								333	282	344	308	309	315	24
			B	Load (ppi)	149	153	158	156	159	155	4.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														
DT-S76	087709 DTS76	F	T	Load (ppi)	148	149	147	148	145	148	1.4	192	192	192	192	191	192	0.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)								1237	1190	1212	1176	955	1154	113
			B	Load (ppi)	134	135	134	135	133	134	0.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
			✓	Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 05/15/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/18/09

DATE REPORTED: 05/18/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/18/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 1.1 HOURS 73 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S73A	087709 DTS73A	F	T	Load (ppi)	146	149	150	149	147	148	1.5	191	189	188	190	188	189	1.2
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								260	283	238	275	263	264	17
			B	Load (ppi)	152	159	148	145	143	149	6.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S73B	087709 DTS73B	F	T	Load (ppi)	142	142	152	146	149	146	4.7	190	190	190	184	188	188	2.5
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								287	284	258	300	307	287	19
			B	Load (ppi)	147	155	136	144	136	144	7.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 05/18/09

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GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/18/09

DATE REPORTED: 05/19/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/18/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.4 HOURS 73 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S77	087709 DTS77	F	T	Load (ppi)	145	140	141	145	140	142	2.6	191	191	192	192	191	191	0.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1097	893	1100	1647	512	1050	411
			B	Load (ppi)	138	141	138	142	140	140	1.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S78	087709 DTS78	F	T	Load (ppi)	136	134	134	129	138	134	3.3	190	190	190	190	189	190	0.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1003	1364	894	1663	924	1170	334
			B	Load (ppi)	140	144	137	136	136	139	3.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 05/19/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/18/09

DATE REPORTED: 05/19/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/18/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 5.1 HOURS 72 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S79	087709 DTS79	F	T	Load (ppi)	130	137	132	139	143	136	5.3	191	191	192	189	191	191	1.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1098	1143	903	820	960	985	135
			B	Load (ppi)	138	138	140	141	134	138	2.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S80	087709 DTS80	F	T	Load (ppi)	143	145	147	150	147	147	2.7	189	191	191	190	191	190	0.9
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								667	707	484	674	709	648	94
			B	Load (ppi)	138	130	133	135	139	135	3.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 05/19/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/18/09

DATE REPORTED: 05/19/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/18/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 5.5 HOURS 72 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S81	087709 DTS81	F	T	Load (ppi)	140	138	143	137	144	141	3.1	192	194	193	193	193	193	0.8
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								662	1307	765	688	617	808	284
			B	Load (ppi)	137	133	134	137	135	135	1.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S82	087709 DTS82	F	T	Load (ppi)	147	140	140	146	147	144	3.7	194	196	195	196	197	195	0.9
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								367	720	700	687	709	636	151
			B	Load (ppi)	144	149	143	143	141	144	2.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 05/19/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/18/09

DATE REPORTED: 05/18/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/18/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 6.4 HOURS 72 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S83	087709 DTS83	F	T	Load (ppi)	146	144	145	142	142	144	1.5	199	200	201	200	201	200	0.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	BRK	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								800	1022	947	1092	1157	1004	138
			B	Load (ppi)	152	144	149	149	148	148	2.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S84	087709 DTS84	F	T	Load (ppi)	135	137	140	141	135	138	2.8	197	197	198	197	197	197	0.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1183	947	1147	765	890	986	176
			B	Load (ppi)	144	141	140	142	145	142	2.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
					0	0	0	0	0									

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: [signature] Date: 05/19/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/18/09

DATE REPORTED: 05/18/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/18/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 1.4 HOURS 73 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P22	087709 DTP22	F	T	Load (ppi)	152	156	149	166	156	156	6.6	186	186	191	194	189	189	3.2
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								275	350	338	290	313	313	32
			B	Load (ppi)	151	149	154	149	152	151	2.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P23	087709 DTP23	F	T	Load (ppi)	147	150	149	152	144	148	3.1	174	177	178	187	183	180	5.2
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								388	267	267	310	358	318	55
			B	Load (ppi)	157	146	149	150	144	149	4.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 05/19/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/26/09

DATE REPORTED: 05/26/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/26/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 5.0 HOURS 74 °F 43 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P24	087709 DTP24	F	T	Load (ppi)	137	142	144	143	141	141	2.5	187	187	187	187	187	187	0.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								555	637	572	545	550	572	38
			B	Load (ppi)	127	138	138	132	129	133	5.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P25	087709 DTP25	F	T	Load (ppi)	140	140	159	150	137	145	9.0	187	191	188	188	188	188	1.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1267	600	975	875	725	888	255
			B	Load (ppi)	146	145	144	143	145	145	1.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 05/26/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/26/09

DATE REPORTED: 05/26/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/26/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.6 HOURS 75 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P26	087709 DTP26	F	T	Load (ppi)	142	140	137	132	153	141	7.7	191	192	192	193	193	192	0.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1170	1162	998	1153	1053	1107	77
			B	Load (ppi)	146	143	144	142	141	143	2.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P27	087709 DTP27	F	T	Load (ppi)	135	135	138	136	131	135	2.5	187	189	190	191	191	190	1.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								755	750	800	720	840	773	47
			B	Load (ppi)	141	136	142	141	141	140	2.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 05/26/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/26/09

DATE REPORTED: 05/26/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/26/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 5.3 HOURS 75 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P28	087709 DTP28	F	T	Load (ppi)	128	137	145	135	135	136	6.4	188	189	189	190	190	189	0.7
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1284	1394	960	875	707	1044	287
			B	Load (ppi)	148	146	152	140	147	146	4.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 05/26/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/26/09

DATE REPORTED: 05/27/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/26/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 6.5 HOURS 74 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P29	087709 DTP29	F	T	Load (ppi)	141	144	143	143	144	143	1.1	195	196	195	195	195	195	0.3
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1096	1275	1400	1350	765	1177	258
			B	Load (ppi)	150	152	151	148	149	150	1.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P30	087709 DTP30	F	T	Load (ppi)	135	113	102	134	136	124	15.5	195	197	196	195	195	196	0.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								579	645	677	667	590	632	45
			B	Load (ppi)	152	153	153	155	156	153	1.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 05/27/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

GEOMEMBRANE TYPE: 60-mil HDPE

PROJECT: CCSWDC

DATE SAMPLES RECEIVED: 05/26/09

FILE NO.: 08-7709

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

DATE TESTED: 05/26/09

CONDITIONING: 8.0 HOURS 73 °F 39 %RH

DATE REPORTED: 05/27/09

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P31	087709 DTP31	F	T	Load (ppi)	148	141	148	148	140	145	4.2	192	193	193	192	190	192	1.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								912	1153	877	937	617	899	191
			B	Load (ppi)	136	135	137	137	135	136	0.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P32	087709 DTP32	F	T	Load (ppi)	158	154	146	151	142	150	6.3	191	191	192	189	189	191	1.3
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								891	673	617	617	800	720	122
			B	Load (ppi)	132	132	132	130	130	131	1.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 05/27/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/26/09

DATE REPORTED: 05/27/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/26/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 6.4 HOURS 75 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P33	087709 DTP33	F	T	Load (ppi)	147	147	142	144	143	145	2.1	187	188	188	188	188	188	0.3
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								350	762	782	633	903	686	211
			B	Load (ppi)	136	136	132	135	140	136	2.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P34	087709 DTP34	F	T	Load (ppi)	140	140	138	141	140	140	1.4	186	187	187	187	187	187	0.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	DNF*	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								715	>2067	850	661	730	>1005	>598
			B	Load (ppi)	139	141	143	137	136	139	3.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.
* Specimen 2 elongated to the range of the equipment and did not fail (DNF).

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Checked By: TM Date: 05/27/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/26/09

DATE REPORTED: 05/27/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/26/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 7.2 HOURS 74 °F 39 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P35	087709 DTP35	F	T	Load (ppi)	141	138	141	140	147	141	3.5	187	185	188	187	187	187	1.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								575	647	617	640	529	601	49
			B	Load (ppi)	136	133	135	136	133	135	1.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P36	087709 DTP36	F	T	Load (ppi)	142	141	145	144	146	144	2.0	189	189	189	188	188	188	0.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								572	650	747	805	777	710	97
			B	Load (ppi)	137	128	129	132	130	131	3.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 05/27/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/26/09

DATE REPORTED: 05/27/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/26/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 7.6 HOURS 74 °F 39 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P37	087709 DTP37	F	T	Load (ppi)	133	132	133	131	131	132	1.1	188	189	189	189	189	189	0.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								776	807	722	1267	1087	932	235
			B	Load (ppi)	135	143	141	144	146	142	4.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P38	087709 DTP38	F	T	Load (ppi)	139	141	134	135	132	136	3.6	194	194	193	192	193	193	0.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								611	615	589	737	667	644	59
			B	Load (ppi)	131	134	148	133	136	136	6.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 05/27/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/26/09

DATE REPORTED: 05/27/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/26/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 8.3 HOURS 74 °F 38 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P39	087709 DTP39	F	T	Load (ppi)	134	129	131	150	133	136	8.2	198	197	196	197	197	197	0.8
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								814	642	510	750	562	656	127
			B	Load (ppi)	147	147	145	136	134	142	6.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P40	087709 DTP40	F	T	Load (ppi)	137	152	133	159	155	147	11.7	190	191	190	190	191	191	0.3
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								934	700	764	790	848	807	89
			B	Load (ppi)	128	129	130	131	133	130	2.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 05/27/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/26/09

DATE REPORTED: 05/27/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/26/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 9.1 HOURS 74 °F 38 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P41	087709 DTP41	F	T	Load (ppi)	134	136	132	134	131	133	2.0	193	193	193	191	192	192	0.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								518	750	820	733	870	738	135
			B	Load (ppi)	137	150	139	137	144	141	5.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P42	087709 DTP42	F	T	Load (ppi)	130	130	129	133	132	131	1.6	193	195	194	194	193	194	0.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								884	790	910	927	782	859	68
			B	Load (ppi)	143	139	137	141	136	139	2.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 05/27/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/26/09

DATE REPORTED: 05/27/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/26/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 9.4 HOURS 74 °F 39 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P43	087709 DTP43	F	T	Load (ppi)	134	140	137	133	130	135	3.7	192	195	196	194	193	194	1.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								646	793	867	725	670	740	91
			B	Load (ppi)	143	142	144	146	148	145	2.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P44	087709 DTP44	F	T	Load (ppi)	130	133	135	149	129	135	8.0	192	192	192	191	190	191	0.8
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								843	613	673	674	645	690	89
			B	Load (ppi)	134	136	138	137	133	136	2.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 05/27/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/26/09

DATE REPORTED: 05/27/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/26/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 10.1 HOURS 74 °F 39 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P45	087709 DTP46	F	T	Load (ppi)	128	131	132	134	131	131	1.9	189	188	188	188	188	188	0.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								779	857	693	848	607	757	106
			B	Load (ppi)	131	130	131	129	128	130	1.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P46	087709 DTP46	F	T	Load (ppi)	133	128	129	133	132	131	2.2	190	191	191	192	191	191	0.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								693	738	650	590	583	651	66
			B	Load (ppi)	136	139	137	139	141	138	2.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 05/27/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/26/09

DATE REPORTED: 05/27/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/26/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 10.5 HOURS 74 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P47	087709 DTP47	F	T	Load (ppi)	137	135	137	136	136	136	0.8	188	189	190	189	189	189	0.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	SE1	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								849	700	765	674	842	766	80
			B	Load (ppi)	131	130	134	135	136	133	2.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P48	087709 DTP48	F	T	Load (ppi)	141	148	139	145	142	143	3.7	189	193	193	193	192	192	1.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								983	783	830	628	983	842	149
			B	Load (ppi)	139	135	132	136	132	135	3.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 05/27/09

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/26/09

DATE REPORTED: 05/27/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/26/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 11.2 HOURS 74 °F 39 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P49	087709 DTP49	F	T	Load (ppi)	147	148	150	145	143	147	2.8	194	196	195	194	194	195	1.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								877	765	805	877	798	825	50
			B	Load (ppi)	135	137	134	135	135	135	1.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P50	087709 DTP50	F	T	Load (ppi)	148	141	143	139	134	141	5.0	194	195	196	196	194	195	1.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								911	728	1060	914	983	919	123
			B	Load (ppi)	152	148	163	161	153	156	6.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 05/27/09

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/26/09

DATE REPORTED: 05/27/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/26/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 11.5 HOURS 73 °F 39 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P51	087709 DTP51	F	T	Load (ppi)	140	142	140	147	146	143	3.4	191	191	191	189	190	190	1.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								714	757	673	687	720	710	32
			B	Load (ppi)	135	137	137	154	146	142	8.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P52	087709 DTP52	F	T	Load (ppi)	138	140	141	141	140	140	1.4	193	192	192	192	194	193	0.8
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								506	877	763	555	875	715	176
			B	Load (ppi)	134	142	141	140	138	139	3.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: RM Date: 05/27/09

Form R-4:Rev.0

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY
ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/26/09

DATE REPORTED: 05/27/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/26/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 12.3 HOURS 73 °F 39 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P53	087709 DTP53	F	T	Load (ppi)	137	139	133	137	133	136	2.7	199	199	200	201	201	200	1.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1189	1163	1364	550	524	958	392
			B	Load (ppi)	136	142	148	138	142	141	4.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P54	087709 DTP54	F	T	Load (ppi)	137	133	133	135	131	134	2.3	203	201	201	200	199	201	1.2
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	SE1	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								551	1050	983	942	928	891	196
			B	Load (ppi)	147	148	138	141	139	143	4.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 05/27/09

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/26-27/09

DATE REPORTED: 05/27/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/26/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 13.5 HOURS 73 °F 39 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P55	087709 DTP55	F	T	Load (ppi)	155	153	152	149	167	155	7.1	198	199	200	199	197	199	1.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1033	1330	713	767	850	939	250
			B	Load (ppi)	150	147	146	157	147	149	4.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P56	087709 DTP56	F	T	Load (ppi)	139	137	135	136	135	137	1.9	193	194	190	195	193	193	1.8
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								813	797	945	1049	815	884	110
			B	Load (ppi)	130	138	138	139	-*	136	4.4							
				Mode	SE1	SE1	SE1	SE1	-									
				Peel (%)	0	0	0	0	-									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.
* The overlap on the bottom seam was cut too short to grip for testing.
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Checked By: DM Date: 05/27/09

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/27/09

DATE REPORTED: 05/27/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/26/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 15.1 HOURS 73 °F 39 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P57	087709 DTP57	F	T	Load (ppi)	141	141	130	132	122	133	8.2	190	187	190	189	189	189	1.3
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								789	398	1308	1237	1220	991	389
			B	Load (ppi)	143	143	140	141	135	140	3.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P58	087709 DTP58	F	T	Load (ppi)	145	140	142	136	134	140	4.4	184	189	184	187	185	186	2.5
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								284	250	270	250	393	290	60
			B	Load (ppi)	144	145	147	142	144	144	1.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 05/27/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/27/09

DATE REPORTED: 05/27/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/26/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 15.5 HOURS 73 °F 39 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P59	087709 DTP59	F	T	Load (ppi)	161	158	149	144	150	153	6.6	183	187	185	182	181	184	2.4
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								399	277	327	228	267	300	66
			B	Load (ppi)	149	145	143	145	152	147	3.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P60	087709 DTP60	F	T	Load (ppi)	154	150	154	149	145	150	3.8	186	183	187	185	183	185	1.7
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								301	260	240	243	267	262	24
			B	Load (ppi)	148	154	155	154	155	153	2.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 05/27/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/27/09

DATE REPORTED: 05/27/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/26/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 73 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P61	087709 DTP61	F	T	Load (ppi)	141	140	146	138	146	142	3.6	196	196	197	197	198	197	1.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								566	662	1047	1090	1057	884	250
			B	Load (ppi)	143	143	140	138	140	141	2.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P62	087709 DTP62	F	T	Load (ppi)	145	147	149	150	147	148	2.1	192	193	194	194	193	193	0.8
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								872	1217	1222	1258	1233	1160	162
			B	Load (ppi)	135	145	147	147	144	144	5.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 05/27/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/27/09

DATE REPORTED: 05/27/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/26/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 73 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P63	087709 DTP63	F	T	Load (ppi)	157	156	153	154	154	155	1.6	195	196	196	196	198	196	0.8
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1192	1327	665	680	1243	1021	322
			B	Load (ppi)	148	154	149	146	142	148	4.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P64	087709 DTP64	F	T	Load (ppi)	155	152	156	156	158	156	2.2	196	196	197	197	197	196	0.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								726	655	732	587	610	662	66
			B	Load (ppi)	150	146	151	150	147	149	2.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 05/27/09

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/27/09

DATE REPORTED: 05/27/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/26/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 73 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P65	087709 DTP65	F	T	Load (ppi)	152	155	159	147	140	150	7.0	180	181	179	180	177	179	1.8
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								333	497	292	303	338	353	83
			B	Load (ppi)	153	153	156	151	155	154	2.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P66	087709 DTP66	F	T	Load (ppi)	146	150	157	153	152	152	4.1	179	182	182	181	176	180	2.5
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								272	283	267	250	249	264	15
			B	Load (ppi)	146	138	143	154	153	147	6.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 05/27/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/28/09

DATE REPORTED: 05/28/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/28/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 1.1 HOURS 73 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S85	087709 DS85	F	T	Load (ppi)	142	141	133	132	131	136	5.3	194	193	191	192	190	192	1.5
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								811	880	1148	1370	660	974	283
			B	Load (ppi)	138	134	133	130	141	135	4.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S86	087709 DTS86	F	T	Load (ppi)	152	155	156	154	155	154	1.8	193	193	193	191	192	192	0.8
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								601	720	725	812	655	703	80
			B	Load (ppi)	138	151	142	134	150	143	7.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 05/29/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

GEOMEMBRANE TYPE: 60-mil HDPE

PROJECT: CCSWDC

DATE SAMPLES RECEIVED: 05/28/09

FILE NO.: 08-7709

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

DATE TESTED: 05/28/09

CONDITIONING: 3.1 HOURS 74 °F 42 %RH

DATE REPORTED: 05/28/09

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S87	087709 DTS87	F	T	Load (ppi)	149	151	143	138	141	144	5.6	192	193	192	192	191	192	0.8
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								901	880	907	900	843	886	26
			B	Load (ppi)	158	148	142	134	139	144	9.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S88	087709 DTS88	F	T	Load (ppi)	145	145	141	138	135	141	4.5	196	196	196	196	197	196	0.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								758	808	682	765	642	731	68
			B	Load (ppi)	141	142	140	141	146	142	2.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 05/29/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/28/09

DATE REPORTED: 05/28/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/28/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.3 HOURS 74 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S89	087709 DTS89	F	T	Load (ppi)	157	160	156	142	156	154	6.7	193	192	190	191	190	191	1.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								624	697	572	809	860	712	121
			B	Load (ppi)	140	141	145	158	142	145	7.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S90	087709 DTS90	F	T	Load (ppi)	151	149	145	143	145	147	3.3	193	191	191	190	191	191	0.8
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								507	560	664	670	717	624	87
			B	Load (ppi)	137	132	130	136	142	135	4.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/28/09

DATE REPORTED: 05/28/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/28/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.0 HOURS 74 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S91	087709 DTS91	F	T	Load (ppi)	137	139	150	150	139	143	6.4	195	195	194	195	195	195	0.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								896	837	930	707	767	827	92
			B	Load (ppi)	144	143	141	134	142	141	3.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S92	087709 DTS92	F	T	Load (ppi)	143	147	145	142	143	144	1.8	192	193	192	192	191	192	0.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								598	615	550	582	612	591	27
			B	Load (ppi)	141	140	140	141	139	140	0.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: RM Date: 05/29/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/28/09

DATE REPORTED: 05/28/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/28/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.3 HOURS 74 °F 39 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S93	087709 DTS93	F	T	Load (ppi)	150	147	149	150	151	149	1.3	192	192	194	193	193	193	0.9
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								610	577	523	615	687	602	60
			B	Load (ppi)	141	143	135	136	138	139	3.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S94	087709 DTS94	F	T	Load (ppi)	144	141	150	140	153	146	5.8	189	189	189	190	188	189	0.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								739	684	750	667	778	724	47
			B	Load (ppi)	136	143	140	149	143	142	4.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 05/28/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/28/09

DATE REPORTED: 05/28/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/28/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.5 HOURS 74 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S95	087709 DTS95	F	T	Load (ppi)	149	153	150	145	152	150	3.1	188	193	188	187	193	190	2.7
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								366	443	277	387	275	350	73
			B	Load (ppi)	132	134	139	136	138	136	2.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S96	087709 DTS96	F	T	Load (ppi)	164	152	154	150	154	155	5.3	193	193	193	193	193	193	0.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								634	630	640	665	660	646	16
			B	Load (ppi)	139	134	136	141	172	144	15.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JW Date: 05/28/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/28/09

DATE REPORTED: 05/28/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/28/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 5.1 HOURS 74 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S97	087709 DTS97	F	T	Load (ppi)	150	148	150	150	146	149	1.7	195	193	194	195	194	194	0.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								822	915	890	864	928	884	42
			B	Load (ppi)	141	148	138	150	153	146	6.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 05/28/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/29/09

DATE REPORTED: 05/29/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/29/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 2.3 HOURS 74 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S98	087709 DS98	F	T	Load (ppi)	144	141	152	143	154	147	5.9	186	186	185	186	186	186	0.6
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								267	472	497	350	309	379	101
			B	Load (ppi)	142	140	137	142	139	140	2.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S99	087709 DTS99	F	T	Load (ppi)	151	148	148	150	146	149	1.8	192	193	185	192	193	191	3.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1265	1382	1528	1174	1188	1308	148
			B	Load (ppi)	149	153	151	157	156	153	3.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 05/29/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/29/09

DATE REPORTED: 05/29/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/29/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.3 HOURS 74 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S100	087709 DTS100	F	T	Load (ppi)	146	136	136	139	141	140	4.2	189	190	190	191	190	190	0.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								733	610	873	728	637	716	103
			B	Load (ppi)	138	141	134	134	143	138	4.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S101	087709 DTS101	F	T	Load (ppi)	141	142	140	140	139	140	1.3	185	186	188	187	187	186	1.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1105	1198	933	1122	822	1036	154
			B	Load (ppi)	153	150	147	147	146	148	2.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 05/29/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/29/09

DATE REPORTED: 05/29/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/29/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.0 HOURS 74 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S102	087709 DTS102	F	T	Load (ppi)	140	138	142	144	140	141	2.3	190	192	193	192	192	192	1.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								653	515	867	825	717	715	140
			B	Load (ppi)	142	135	134	139	135	137	3.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S103	087709 DTS103	F	T	Load (ppi)	155	152	148	147	149	150	3.5	182	182	182	176	180	180	2.7
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								328	384	457	345	287	360	64
			B	Load (ppi)	161	160	154	161	160	159	3.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 05/29/09

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/29-30/09

DATE REPORTED: 06/01/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/29/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 1.0 HOURS 75 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S104	087709 DS104	F	T	Load (ppi)	141	142	142	142	139	141	1.2	184	188	188	188	188	187	1.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								895	858	879	917	828	875	34
			B	Load (ppi)	134	136	135	136	132	135	1.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S105	087709 DTS105	E	T	Load (ppi)	123	103	159	156	133	135	23.4	167	168	168	166	174	168	3.0
				Mode	SE3	SE3	SE3	SE3	SE3			BRK1	BRK1	BRK1	BRK1	BRK1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								388	693	397	249	398	425	162
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 06/01/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/29-30/09

DATE REPORTED: 06/01/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/29/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 1.2 HOURS 74 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S106	087709 DTS106	E	T	Load (ppi)	122	123	130	128	133	127	4.6	176	173	175	171	169	173	2.7
				Mode	SE3	SE3	SE3	SE3	SE3			BRK2	BRK1	BRK1	SE2	SE2		
				Peel (%)	0	0	0	0	0									
				Shear (%)								282	247	189	122	148	198	67
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														
DT-S107	087709 DTS107	F	T	Load (ppi)	151	149	157	154	153	153	2.8	186	186	185	187	186	186	0.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								847	745	858	567	805	764	119
			B	Load (ppi)	143	143	142	144	144	143	0.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JAM Date: 06/01/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/29/09

DATE REPORTED: 06/01/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/29/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 1.3 HOURS 74 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S108	087709 DTS108	F	T	Load (ppi)	138	139	144	141	144	141	2.7	184	184	184	185	185	184	0.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								570	517	605	630	703	605	70
			B	Load (ppi)	138	141	140	140	140	140	1.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S109	087709 DTS109	F	T	Load (ppi)	142	131	134	142	129	135	6.3	184	185	184	184	184	184	0.3
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								743	870	664	807	767	770	77
			B	Load (ppi)	133	135	135	133	134	134	1.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TW Date: 06/01/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/29/09

DATE REPORTED: 06/01/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/29/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 1.6 HOURS 75 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S110	087709 DTS110	F	T	Load (ppi)	150	146	143	144	143	145	2.8	184	185	185	184	183	184	0.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								660	627	1025	517	860	738	203
			B	Load (ppi)	151	150	150	149	132	147	8.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S111	087709 DTS111	F	T	Load (ppi)	145	142	144	143	145	144	1.3	182	184	184	185	183	184	1.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								889	623	472	417	384	557	207
			B	Load (ppi)	132	132	134	130	135	133	2.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 06/01/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/29/09

DATE REPORTED: 06/01/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/29/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 2.2 HOURS 75 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S112	087709 DTS112	F	T	Load (ppi)	148	162	154	144	141	150	8.5	183	183	184	184	184	184	0.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								821	705	667	823	864	776	85
			B	Load (ppi)	142	142	144	144	144	143	0.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S113	087709 DTS113	F	T	Load (ppi)	139	140	143	144	138	141	2.3	189	190	189	189	189	189	0.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								818	374	460	322	430	481	196
			B	Load (ppi)	136	130	129	132	145	134	6.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TW Date: 06/01/09

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/29/09

DATE REPORTED: 06/01/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/29/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.1 HOURS 74 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S114	087709 DTS114	F	T	Load (ppi)	146	143	146	154	151	148	4.4	187	187	182	187	187	186	2.3
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								568	432	447	688	570	541	105
			B	Load (ppi)	124	125	133	127	128	127	3.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S115	087709 DTS115	F	T	Load (ppi)	139	141	142	142	140	141	1.3	186	187	187	182	186	186	2.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								546	540	607	367	557	523	91
			B	Load (ppi)	134	127	125	125	123	127	4.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/01/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/29/09

DATE REPORTED: 06/01/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/29/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.3 HOURS 74 °F 38 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S116	087709 DTS116	F	T	Load (ppi)	135	137	139	138	138	137	1.3	190	190	190	188	188	189	0.9
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								684	563	403	489	508	530	104
			B	Load (ppi)	142	132	129	128	129	132	5.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S117	087709 DTS117	F	T	Load (ppi)	134	133	130	133	134	133	1.5	186	185	186	186	187	186	0.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								478	622	740	700	655	639	101
			B	Load (ppi)	135	135	135	139	140	137	2.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/01/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/29/09

DATE REPORTED: 06/01/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/29/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 6.2 HOURS 74 °F 38 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S118	087709 DTS118	F	T	Load (ppi)	140	132	132	129	136	134	4.2	190	191	190	190	189	190	0.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1006	1060	1157	1324	1400	1189	169
			B	Load (ppi)	135	153	131	131	131	136	9.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S119	087709 DTS119	F	T	Load (ppi)	141	158	139	144	138	144	8.1	191	193	193	193	192	192	1.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								693	532	843	640	713	684	113
			B	Load (ppi)	138	142	142	145	145	142	2.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/29/09

DATE REPORTED: 06/01/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/29/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 7.1 HOURS 74 °F 37 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S120	087709 DTS120	F	T	Load (ppi)	137	137	135	141	139	138	2.4	186	187	187	187	187	187	0.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								710	567	660	580	693	642	66
			B	Load (ppi)	142	133	133	146	130	137	7.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S121	087709 DTS121	F	T	Load (ppi)	137	139	142	138	135	138	2.6	190	190	191	190	190	190	0.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								651	605	605	727	340	586	146
			B	Load (ppi)	138	137	138	133	133	135	2.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 05/29/09

DATE REPORTED: 06/01/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 05/29/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 7.4 HOURS 74 °F 37 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S122	087709 DTS122	F	T	Load (ppi)	139	137	139	137	135	137	1.5	192	192	191	190	189	191	1.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								691	683	558	632	567	626	62
			B	Load (ppi)	144	145	146	144	146	145	0.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S123	087709 DTS123	F	T	Load (ppi)	135	134	135	132	134	134	1.1	191	191	193	193	194	192	1.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								582	510	543	463	675	555	80
			B	Load (ppi)	131	131	129	130	130	130	1.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 06/01/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/01/09

DATE REPORTED: 06/01/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/01/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.5 HOURS 75 °F 38 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S124	087709 DS124	F	T	Load (ppi)	138	140	140	140	138	139	1.3	184	181	182	180	182	182	1.6
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								321	317	358	328	353	336	19
			B	Load (ppi)	140	136	140	137	140	139	1.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S125	087709 DTS125	F	T	Load (ppi)	143	143	145	146	146	145	1.3	184	182	186	186	184	184	1.7
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								896	629	599	744	1042	782	187
			B	Load (ppi)	137	137	138	134	136	137	1.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 06/01/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/01/09

DATE REPORTED: 06/01/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/01/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 5.2 HOURS 76 °F 39 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S126	087709 DTS126	F	T	Load (ppi)	140	140	144	154	163	148	10.2	190	189	190	190	189	190	0.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								623	625	644	690	683	653	32
			B	Load (ppi)	141	141	141	142	139	141	1.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S127	087709 DTS127	F	T	Load (ppi)	146	139	138	146	148	144	4.4	186	185	186	185	185	186	0.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								654	842	667	684	710	711	76
			B	Load (ppi)	142	138	137	143	143	141	2.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/01/09

DATE REPORTED: 06/01/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/01/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 5.6 HOURS 75 °F 39 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S128	087709 DTS128	F	T	Load (ppi)	141	142	143	143	144	143	1.3	188	184	186	186	186	186	1.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								783	877	863	632	660	763	113
			B	Load (ppi)	144	138	138	140	135	139	3.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S129	087709 DTS129	F	T	Load (ppi)	146	144	139	146	144	144	2.7	187	188	188	187	188	188	0.3
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	SE1	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								768	524	808	862	467	686	178
			B	Load (ppi)	140	151	144	150	136	144	6.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/01/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/01/09

DATE REPORTED: 06/01/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/01/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 6.2 HOURS 75 °F 39 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S130	087709 DTS130	F	T	Load (ppi)	142	139	139	132	132	137	4.4	189	188	188	188	188	188	0.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								774	753	670	737	670	721	48
			B	Load (ppi)	147	150	139	140	140	143	4.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 06/01/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/01/09

DATE REPORTED: 06/02/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/01/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 12.5 HOURS 74 °F 37 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S131	087709 DTS131	F	T	Load (ppi)	133	141	143	153	149	144	7.8	190	191	191	191	189	190	0.9
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								799	793	715	722	838	774	53
			B	Load (ppi)	164	147	145	146	144	149	8.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S132	087709 DTS132	F	T	Load (ppi)	136	139	138	143	146	140	4.0	191	191	191	191	186	190	2.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1050	1025	1022	1024	484	921	245
			B	Load (ppi)	157	143	143	139	137	144	7.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 06/02/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/01/09

DATE REPORTED: 06/02/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/01/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 13.3 HOURS 74 °F 37 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S133	087709 DTS133	F	T	Load (ppi)	136	139	135	137	138	137	1.4	189	190	190	190	190	190	0.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								693	847	625	482	467	623	158
			B	Load (ppi)	139	133	138	134	136	136	2.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S134	087709 DTS134	F	T	Load (ppi)	144	143	147	147	147	146	2.0	194	194	192	193	192	193	1.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								698	729	513	742	795	695	108
			B	Load (ppi)	142	136	144	141	153	143	6.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 06/02/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/03/09

DATE REPORTED: 06/03/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/03/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 1.0 HOURS 74 °F 38 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S135	087709 DTS135	F	T	Load (ppi)	145	146	146	145	148	146	1.2	186	186	187	186	186	186	0.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								600	749	762	599	667	675	78
			B	Load (ppi)	132	130	129	132	132	131	1.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S136	087709 DTS136	F	T	Load (ppi)	157	153	151	154	148	153	3.3	190	189	190	188	189	189	0.7
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	SE1	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								444	550	764	292	600	530	176
			B	Load (ppi)	140	137	135	140	133	137	3.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/03/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/03/09

DATE REPORTED: 06/03/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/03/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 2.6 HOURS 74 °F 37 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S137	087709 DTS137	F	T	Load (ppi)	133	135	134	135	133	134	1.3	188	187	188	187	187	187	0.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1123	1238	1230	1067	1170	1166	72
			B	Load (ppi)	130	148	136	133	131	136	7.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S138	087709 DTS138	F	T	Load (ppi)	124	126	137	134	136	131	5.9	186	188	189	189	188	188	1.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								477	503	482	422	475	472	30
			B	Load (ppi)	136	135	132	134	133	134	1.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 06/03/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/03/09

DATE REPORTED: 06/03/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/03/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.3 HOURS 74 °F 37 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S139	087709 DTS139	F	T	Load (ppi)	121	128	132	139	120	128	8.0	186	188	187	187	187	187	0.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								445	465	809	884	1092	739	279
			B	Load (ppi)	127	136	144	139	142	138	6.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S140	087709 DTS140	F	T	Load (ppi)	141	142	142	139	145	142	2.1	187	187	186	186	186	186	0.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								860	827	904	849	950	878	49
			B	Load (ppi)	136	134	133	132	133	133	1.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 06/03/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/03/09

DATE REPORTED: 06/03/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/03/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.6 HOURS 74 °F 37 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S141	087709 DTS141	F	T	Load (ppi)	140	143	139	137	137	139	2.5	188	188	187	188	188	188	0.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1045	1092	689	855	913	919	160
			B	Load (ppi)	140	143	143	143	141	142	1.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S142	087709 DTS142	F	T	Load (ppi)	146	139	147	145	148	145	3.9	190	190	191	191	190	190	0.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								600	830	870	894	687	776	127
			B	Load (ppi)	145	145	146	144	142	144	1.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 06/02/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/03/09

DATE REPORTED: 06/03/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/03/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.2 HOURS 74 °F 37 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S143	087709 DTS143	F	T	Load (ppi)	127	124	125	124	162	133	16.5	189	191	192	191	191	191	1.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								683	755	765	867	825	779	70
			B	Load (ppi)	133	133	128	132	136	132	2.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S144	087709 DTS144	F	T	Load (ppi)	129	131	132	133	128	130	2.1	187	187	186	187	187	187	0.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1323	1267	1033	937	1083	1129	162
			B	Load (ppi)	147	151	152	148	152	150	2.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/02/09

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/03/09

DATE REPORTED: 06/03/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/03/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.6 HOURS 75 °F 37 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S145	087709 DTS145	F	T	Load (ppi)	132	130	122	89	140	122	19.6	186	187	186	186	185	186	0.8
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								817	684	850	863	662	775	95
			B	Load (ppi)	149	146	148	140	138	144	5.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S146	087709 DTS146	F	T	Load (ppi)	140	140	137	140	143	140	1.9	186	187	186	186	187	187	0.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								960	922	1022	788	1107	960	119
			B	Load (ppi)	132	137	137	141	133	136	3.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/02/09

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

GEOMEMBRANE TYPE: 60-mil HDPE

PROJECT: CCSWDC

DATE SAMPLES RECEIVED: 06/03/09

FILE NO.: 08-7709

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

DATE TESTED: 06/03/09

CONDITIONING: 5.3 HOURS 75 °F 37 %RH

DATE REPORTED: 06/03/09

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S147	087709 DTS147	F	T	Load (ppi)	140	133	141	140	139	139	3.3	186	186	189	187	187	187	1.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								728	787	698	683	822	744	59
			B	Load (ppi)	134	132	136	134	134	134	1.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S148	087709 DTS148	F	T	Load (ppi)	148	151	145	141	148	147	4.0	185	185	188	188	187	186	1.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1295	559	643	560	570	725	320
			B	Load (ppi)	137	139	134	134	134	136	2.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/03/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/03/09

DATE REPORTED: 06/03/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/03/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 5.5 HOURS 75 °F 36 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S149	087709 DTS149	F	T	Load (ppi)	142	143	142	143	141	142	1.0	184	185	185	185	184	185	0.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								683	472	554	617	489	563	89
			B	Load (ppi)	143	134	131	132	127	133	5.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: _____ Date: _____

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/04/09

DATE REPORTED: 06/05/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/04/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.0 HOURS 74 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P67	087709 DTP67	F	T	Load (ppi)	141	142	141	142	139	141	1.4	191	189	190	189	189	190	0.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								962	817	845	899	865	877	56
			B	Load (ppi)	142	142	148	148	135	143	5.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P68	087709 DTP68	F	T	Load (ppi)	152	154	153	152	151	152	1.5	194	195	195	195	195	195	0.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								613	756	630	583	613	639	67
			B	Load (ppi)	154	156	156	136	157	152	8.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/05/09

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/04/09

DATE REPORTED: 06/05/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/04/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.3 HOURS 75 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P69	087709 DTP69	F	T	Load (ppi)	157	143	138	144	139	144	7.7	196	196	196	196	196	196	0.3
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								488	991	559	1193	1259	898	356
			B	Load (ppi)	129	133	133	130	136	132	2.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P70	087709 DTP70	F	T	Load (ppi)	142	142	135	136	140	139	3.6	193	194	192	192	194	193	1.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								700	771	1056	817	875	844	135
			B	Load (ppi)	134	133	138	137	136	136	2.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute. P70 had a score mark on the sample, but specimens were cut to avoid score marking.

The test data and all associated project information presented hereon shall be held in confidence and disclosed to other parties only with the authorization of the Client or Ardaman & Associates, Inc. Physical and electronic records of each project are kept for a minimum of 7 years. Test samples are kept in storage for at least 10 working days after mailing of the test report, prior to being discarded, unless a longer storage period is requested in writing and accepted by Ardaman & Associates, Inc.

Checked By: JM Date: 06/05/09

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/04/09

DATE REPORTED: 06/05/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/04/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.1 HOURS 75 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P71	087709 DTP71	F	T	Load (ppi)	141	145	148	142	141	143	2.8	187	186	184	188	186	186	1.4
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	SE1	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								260	283	288	305	333	294	27
			B	Load (ppi)	133	136	140	139	141	138	3.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P72	087709 DTP72	F	T	Load (ppi)	138	139	141	137	141	139	1.8	192	191	192	193	192	192	0.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								827	979	1106	965	1023	980	102
			B	Load (ppi)	157	146	160	158	158	156	5.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 06/05/09

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/04/09

DATE REPORTED: 06/05/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/04/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.4 HOURS 75 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P73	087709 DTP73	F	T	Load (ppi)	140	136	133	141	139	138	3.2	191	191	191	190	191	191	0.3
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	SE1	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1323	758	1067	1917	838	1181	467
			B	Load (ppi)	140	141	147	145	146	144	3.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P74	087709 DTP74	F	T	Load (ppi)	149	140	138	139	151	143	6.2	188	190	190	190	189	189	0.9
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								600	671	657	620	676	645	33
			B	Load (ppi)	130	150	137	131	133	136	8.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 06/05/09

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/04/09

DATE REPORTED: 06/05/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/04/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 5.2 HOURS 75 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P75	087709 DTP75	F	T	Load (ppi)	140	139	134	138	136	137	2.3	189	188	189	186	185	187	1.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								667	861	997	738	711	795	134
			B	Load (ppi)	140	142	138	143	142	141	1.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P76	087709 DTP76	F	T	Load (ppi)	129	146	140	138	134	137	6.3	188	187	187	188	188	188	0.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								747	616	727	667	510	653	95
			B	Load (ppi)	140	141	139	141	141	140	1.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 06/05/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/04/09

DATE REPORTED: 06/05/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/04/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 5.6 HOURS 75 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P77	087709 DTP77	F	T	Load (ppi)	144	145	142	144	141	143	1.5	189	188	190	188	189	189	0.9
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								700	400	660	883	750	679	177
			B	Load (ppi)	141	152	152	159	151	151	6.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/05/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/05/09

DATE REPORTED: 06/08/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/05/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 5.6 HOURS 75 °F 38 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P88	087709 DTP88	F	T	Load (ppi)	154	152	153	160	154	154	3.3	185	175	178	177	175	178	4.4
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								351	308	540	283	330	363	102
			B	Load (ppi)	150	143	162	152	141	149	8.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P89	087709 DTP89	F	T	Load (ppi)	141	148	142	135	143	142	4.8	192	190	191	192	191	191	1.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								921	940	820	828	815	865	60
			B	Load (ppi)	146	147	144	141	140	144	3.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/08/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/05/09

DATE REPORTED: 06/08/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/05/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 6.4 HOURS 74 °F 38 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P90	087709 DTP90	F	T	Load (ppi)	161	135	143	136	133	141	11.8	195	194	194	194	194	194	0.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								534	433	425	459	450	460	43
			B	Load (ppi)	144	144	136	142	138	141	3.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P91	087709 DTP91	F	T	Load (ppi)	135	131	132	129	132	132	2.1	184	184	186	186	185	185	0.9
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								709	697	799	709	770	737	45
			B	Load (ppi)	138	135	136	130	133	134	3.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 06/08/09

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/05/09

DATE REPORTED: 06/08/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/05/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 7.1 HOURS 75 °F 38 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P92	087709 DTP92	F	T	Load (ppi)	129	127	127	131	123	127	2.8	186	186	185	186	184	185	1.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								743	833	767	839	787	794	42
			B	Load (ppi)	145	144	142	132	134	140	6.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P93	087709 DTP93	F	T	Load (ppi)	131	131	129	127	131	130	1.6	185	185	183	182	189	185	2.8
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								572	883	730	1008	984	836	183
			B	Load (ppi)	140	139	141	140	140	140	0.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 06/09/09

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/05/09

DATE REPORTED: 06/08/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/05/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 7.5 HOURS 75 °F 36 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P94	087709 DTP94	F	T	Load (ppi)	124	125	126	133	127	127	3.4	188	189	189	189	195	190	2.5
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								298	780	253	250	693	455	260
			B	Load (ppi)	161	130	130	131	131	137	13.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P95	087709 DTP95	F	T	Load (ppi)	121	123	125	122	129	124	3.1	180	175	184	184	187	182	4.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								748	258	472	683	395	511	203
			B	Load (ppi)	126	127	130	126	128	128	1.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: RM Date: 06/08/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/05/09

DATE REPORTED: 06/08/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/05/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 8.4 HOURS 75 °F 36 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P96	087709 DTP96	F	T	Load (ppi)	132	134	131	132	131	132	1.2	183	185	185	185	188	185	1.8
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								924	1000	912	1497	583	983	329
			B	Load (ppi)	140	137	136	130	134	135	3.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P97	087709 DTP97	F	T	Load (ppi)	155	141	156	147	146	149	6.4	183	175	170	178	172	176	5.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								284	308	324	284	275	295	20
			B	Load (ppi)	155	146	147	149	144	148	4.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/08/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/05/09

DATE REPORTED: 06/05/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/05/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 2.6 HOURS 74 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S151	087709 DTS151	F	T	Load (ppi)	147	147	141	142	145	145	2.6	191	190	192	192	191	191	0.8
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1501	717	593	640	698	830	378
			B	Load (ppi)	137	135	133	137	135	135	1.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S152	087709 DTS152	F	T	Load (ppi)	138	139	134	134	136	136	2.1	188	190	190	189	189	189	0.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								651	760	458	797	759	685	138
			B	Load (ppi)	141	136	135	143	140	139	3.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 06/05/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/05/09

DATE REPORTED: 06/05/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/05/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 2.2 HOURS 74 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S153	087709 DTS153	F	T	Load (ppi)	146	145	146	146	146	146	0.4	192	191	190	191	192	191	0.9
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								407	617	554	583	575	547	81
			B	Load (ppi)	138	141	142	141	143	141	1.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P79	087709 DTP79	F	T	Load (ppi)	141	141	142	142	144	142	1.5	189	187	193	193	189	190	2.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1176	1292	1104	850	777	1040	219
			B	Load (ppi)	154	158	144	148	152	151	5.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute. P70 had a score mark on the sample, but specimens were cut to avoid score marking.

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Checked By: JM Date: 06/05/09

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/05/09

DATE REPORTED: 06/05/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/05/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.2 HOURS 74 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P80	087709 DTP80	F	T	Load (ppi)	136	135	133	132	133	134	2.0	187	188	192	193	189	190	2.5
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								314	587	634	657	700	578	153
			B	Load (ppi)	142	145	143	137	142	142	3.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P81	087709 DTP81	F	T	Load (ppi)	139	141	141	144	143	142	1.8	193	192	196	198	198	195	2.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								744	734	783	589	717	713	74
			B	Load (ppi)	141	133	149	133	139	139	6.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 06/05/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/05/09

DATE REPORTED: 06/05/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/05/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.6 HOURS 75 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P82	087709 DTP82	F	T	Load (ppi)	138	142	132	139	142	139	4.0	196	193	195	197	193	195	1.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								954	1003	1050	932	1393	1067	188
			B	Load (ppi)	141	141	142	143	146	143	1.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P83	087709 DTP83	F	T	Load (ppi)	135	144	135	135	144	139	4.6	191	190	188	187	190	189	1.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								623	707	833	725	697	717	76
			B	Load (ppi)	138	159	137	133	132	140	11.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/09/09

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/05/09

DATE REPORTED: 06/05/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/05/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.3 HOURS 75 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P84	087709 DTP84	F	T	Load (ppi)	130	144	150	136	150	142	8.8	188	186	185	186	187	186	1.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								677	683	633	610	650	651	30
			B	Load (ppi)	135	133	135	125	127	131	4.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P85	087709 DTP85	F	T	Load (ppi)	138	142	140	146	130	139	5.9	186	186	185	188	190	187	1.9
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	SE1	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								274	797	798	978	907	751	277
			B	Load (ppi)	156	143	147	139	141	145	6.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/05/09

DATE REPORTED: 06/05/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/05/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 5.1 HOURS 75 °F 39 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P86	087709 DTP86	F	T	Load (ppi)	137	136	138	135	135	136	1.3	190	190	190	191	191	190	0.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								797	917	848	632	665	772	121
			B	Load (ppi)	144	143	144	143	140	143	1.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P87	087709 DTP87	F	T	Load (ppi)	139	140	132	134	148	139	6.3	189	190	188	189	189	189	0.8
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								766	1022	834	947	860	886	100
			B	Load (ppi)	138	144	133	127	133	135	6.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 06/05/09

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/10/09

DATE REPORTED: 06/11/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/09/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 76 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S154	087709 DTS154	F	T	Load (ppi)	139	138	139	138	134	137	2.2	182	183	180	189	189	184	4.2
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								783	765	639	593	447	656	139
			B	Load (ppi)	134	131	130	134	123	130	4.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S155	087709 DTS155	F	T	Load (ppi)	138	147	142	136	135	139	4.9	176	180	178	184	184	181	3.4
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								256	432	257	273	270	298	75
			B	Load (ppi)	141	138	137	140	128	137	5.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/11/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/10/09

DATE REPORTED: 06/11/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/09/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 76 °F 38 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S156	087709 DTS156	F	T	Load (ppi)	131	137	136	130	121	131	6.2	186	183	184	186	189	185	2.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								624	465	605	523	470	538	74
			B	Load (ppi)	130	137	137	135	138	135	3.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S157	087709 DTS157	F	T	Load (ppi)	139	140	140	139	137	139	1.4	184	184	185	184	187	185	1.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								707	550	590	587	880	663	135
			B	Load (ppi)	154	152	147	130	141	145	9.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: DM Date: 06/11/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/10/09

DATE REPORTED: 06/11/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/09/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 75 °F 37 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S158	087709 DTS158	F	T	Load (ppi)	133	134	135	133	130	133	2.0	184	187	187	192	192	188	3.4
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								999	887	677	520	397	696	250
			B	Load (ppi)	135	140	145	133	130	136	6.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S159	087709 DTS159	F	T	Load (ppi)	133	136	134	133	133	134	1.4	178	182	182	187	187	183	3.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								588	662	628	560	710	630	59
			B	Load (ppi)	124	129	130	127	127	127	2.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: RM Date: 06/11/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/10/09

DATE REPORTED: 06/11/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/09/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 75 °F 36 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S160	087709 DTS160	F	T	Load (ppi)	146	143	146	133	134	140	6.3	177	180	182	183	183	181	2.6
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								321	282	345	282	312	308	27
			B	Load (ppi)	131	131	129	130	130	130	0.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S161	087709 DTS161	F	T	Load (ppi)	135	134	137	135	130	134	2.5	180	181	182	187	186	183	3.1
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								851	265	278	405	450	450	238
			B	Load (ppi)	141	140	129	143	130	137	6.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/11/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/10/09

DATE REPORTED: 06/11/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/09/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 75 °F 36 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S162	087709 DTS162	E	T	Load (ppi)	90	134	124	124	125	119	17	174	171	171	177	173	173	2.6
				Mode	SE3	SE3	SE3	SE3	SE3			BRK2	BRK2	SE2	BRK2	BRK2		
				Peel (%)	0	0	0	0	0									
				Shear (%)								371	323	182	248	283	282	72
				Load (ppi)														
				Shear (%)														
DT-S150A	087709 DTS150A	F	T	Load (ppi)	138	138	135	134	132	135	2.7	192	187	188	195	197	192	4.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1218	442	672	472	497	660	324
			B	Load (ppi)	136	132	132	130	132	132	2.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: DM Date: 06/11/09

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/10/09

DATE REPORTED: 06/11/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/09/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 75 °F 35 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S150B	087709 DTS150B	F	T	Load (ppi)	130	127	129	136	130	130	3.4	196	192	188	192	195	193	3.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								457	672	655	678	337	560	155
			B	Load (ppi)	129	129	127	131	126	129	1.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 06/11/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/11/09

DATE REPORTED: 06/12/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/11/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 10.0 HOURS 75 °F 37 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P98	087709 DTP98	F	T	Load (ppi)	129	131	134	136	135	133	3.1	193	186	191	185	186	188	3.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								583	695	700	709	565	650	70
			B	Load (ppi)	138	130	134	134	128	133	3.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P99	087709 DTP99	F	T	Load (ppi)	134	128	129	138	126	131	4.9	183	186	183	185	187	185	1.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								601	748	794	792	629	713	92
			B	Load (ppi)	132	131	129	129	131	130	1.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/12/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/11/09

DATE REPORTED: 06/12/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/11/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 10.5 HOURS 75 °F 37 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P100	087709 DTP100	F	T	Load (ppi)	142	130	130	136	131	134	5.1	188	187	183	181	185	185	2.9
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								828	749	617	758	658	722	84
			B	Load (ppi)	154	126	142	136	137	139	10.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P101	087709 DTP101	F	T	Load (ppi)	135	136	128	121	130	130	6.3	184	183	186	176	187	183	4.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								681	457	648	672	543	600	97
			B	Load (ppi)	147	134	133	118	127	132	10.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/12/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/11/09

DATE REPORTED: 06/12/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/11/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 11.4 HOURS 75 °F 37 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P102	087709 DTP102	F	T	Load (ppi)	141	135	127	142	143	138	6.7	182	181	183	181	179	181	1.3
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								474	587	638	528	522	550	64
			B	Load (ppi)	127	134	139	139	135	135	4.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P103	087709 DTP103	F	T	Load (ppi)	140	134	150	132	137	139	6.9	183	185	186	186	189	186	2.0
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								834	1025	850	767	657	827	135
			B	Load (ppi)	142	137	142	138	141	140	2.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 06/12/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/11/09

DATE REPORTED: 06/12/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/11/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 12.2 HOURS 75 °F 36 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P104	087709 DTP014	F	T	Load (ppi)	145	137	135	142	141	140	4.0	183	188	184	186	184	185	2.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								622	893	822	510	550	680	169
			B	Load (ppi)	129	129	132	133	130	131	1.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P105	087709 DTP105	F	T	Load (ppi)	137	145	132	141	143	140	5.1	184	191	189	189	185	188	3.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								884	582	1100	629	805	800	209
			B	Load (ppi)	130	127	131	128	127	129	1.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/12/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/11/09

DATE REPORTED: 06/12/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/11/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 13.0 HOURS 74 °F 36 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P106	087709 DTP106	F	T	Load (ppi)	130	127	129	134	139	132	5.0	185	191	188	184	186	187	2.7
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								687	883	415	765	472	644	197
			B	Load (ppi)	141	130	148	143	141	141	6.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P107	087709 DTP107	F	T	Load (ppi)	136	150	133	155	128	141	11.5	181	185	182	184	185	184	1.7
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								244	283	250	245	237	252	18
			B	Load (ppi)	129	131	139	134	133	133	3.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: RM Date: 06/12/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/11/09

DATE REPORTED: 06/12/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/11/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 13.4 HOURS 74 °F 35 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P108	087709 DTP108	F	T	Load (ppi)	136	126	131	126	128	129	3.9	184	189	191	185	188	187	2.8
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	SE1	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								657	664	567	933	745	713	138
			B	Load (ppi)	145	137	145	134	137	140	5.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P109	087709 DTP109	F	T	Load (ppi)	135	140	144	155	141	143	7.4	189	193	191	186	187	189	3.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								541	543	453	573	812	585	135
			B	Load (ppi)	136	135	131	140	140	136	3.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/11/09

DATE REPORTED: 06/12/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/11/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 14.1 HOURS 74 °F 36 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P110	087709 DTP110	F	T	Load (ppi)	150	130	130	133	128	134	9.0	187	184	187	189	181	186	3.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								543	607	667	433	397	529	114
			B	Load (ppi)	143	132	145	142	135	139	5.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P111	087709 DTP111	F	T	Load (ppi)	137	134	136	137	132	135	2.3	188	189	189	189	182	187	3.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								643	725	667	700	627	672	40
			B	Load (ppi)	128	136	134	133	133	133	2.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/12/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/11/09

DATE REPORTED: 06/12/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/11/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 14.3 HOURS 74 °F 36 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test 1	2	3	4	5	Avg.	Std. Dev.	Shear Test 1	2	3	4	5	Avg.	Std. Dev.
DT-P112	087709 DTP112	F	T	Load (ppi)	128	123	131	132	127	128	3.7	185	186	187	181	186	185	2.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								664	408	617	758	467	583	144
			B	Load (ppi)	142	138	146	140	136	140	4.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P113	087709 DTP113	F	T	Load (ppi)	144	132	135	127	132	134	6.5	179	184	183	182	184	182	2.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								624	505	417	722	280	510	173
			B	Load (ppi)	136	142	143	141	147	142	3.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/12/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/11-12/09

DATE REPORTED: 06/12/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/11/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 15.0 HOURS 74 °F 36 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P114	087709 DTP114	F	T	Load (ppi)	154	146	141	140	136	143	6.9	185	190	192	184	189	188	3.4
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								939	909	967	910	799	905	64
			B	Load (ppi)	141	144	151	143	142	144	3.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P115	087709 DTP115	F	T	Load (ppi)	144	139	160	139	141	145	8.6	185	187	188	186	189	187	1.8
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								638	572	555	630	554	590	41
			B	Load (ppi)	136	133	134	128	131	132	3.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 06/12/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/12/09

DATE REPORTED: 06/12/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/11/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 15.3 HOURS 75 °F 35 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test 1	2	3	4	5	Avg.	Std. Dev.	Shear Test 1	2	3	4	5	Avg.	Std. Dev.
DT-P116	087709 DTP116	F	T	Load (ppi)	121	126	135	136	130	129	6.4	187	190	191	187	190	189	2.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								566	487	603	598	362	523	102
			B	Load (ppi)	138	129	137	148	134	137	6.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/12/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/15/09

DATE REPORTED: 06/15/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/15/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.4 HOURS 74.6 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P78A	087709/ DTP78A	F	T	Load (ppi)	131	136	135	130	137	134	3.0	195	193	196	197	198	196	2.1
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	SE1	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								314	272	245	598	262		
			B	Load (ppi)	140	139	149	139	139	141	4.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P78B	087709/ DTP78B	F	T	Load (ppi)	139	141	140	138	141	140	1.5	190	196	192	192	193	193	2.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								361	623	327	340	383		
			B	Load (ppi)	145	149	148	146	149	147	2.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 06/15/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/15/09

DATE REPORTED: 06/15/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/15/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 1.3 HOURS 74.1 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P125	087709/ DTP125	F	T	Load (ppi)	134	127	127	131	134	130	3.6	188	177	191	187	180	184	5.8
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								899	490	530	367	563		
			B	Load (ppi)	124	127	128	128	128	127	1.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P126	087709/ DTP126	F	T	Load (ppi)	145	142	136	132	127	137	7.0	188	185	183	187	193	187	3.8
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								711	313	233	838	660		
			B	Load (ppi)	128	134	130	131	136	132	3.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: [signature] Date: 06/15/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/15/09

DATE REPORTED: 06/15/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/15/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 2.1 HOURS 73.9 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P127	087709/ DTP127	F	T	Load (ppi)	133	139	138	142	136	138	3.2	184	183	189	185	191	186	3.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								729	812	925	1067	632		
			B	Load (ppi)	129	131	131	132	128	130	1.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P129	087709/ DTP129	F	T	Load (ppi)	134	137	132	139	137	136	2.8	187	195	195	195	192	193	3.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								533	475	460	500	408		
			B	Load (ppi)	135	137	135	134	140	136	2.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: [signature] Date: 06/15/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/15/09

DATE REPORTED: 06/15/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/15/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 2.4 HOURS 74.1 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P130	087709/ DTP130	F	T	Load (ppi)	141	143	139	139	151	142	4.8	184	198	201	200	189	194	7.3
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								521	770	727	1172	450		
			B	Load (ppi)	136	130	144	143	128	136	7.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P131	087709/ DTP131	F	T	Load (ppi)	133	132	131	129	128	130	2.0	193	201	203	203	199	200	4.5
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								781	625	583	612	417		
			B	Load (ppi)	128	130	126	131	126	128	2.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 06/16/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/15/09

DATE REPORTED: 06/15/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/15/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.2 HOURS 74.2 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P132	087709/ DTP132	F	T	Load (ppi)	129	129	130	133	131	130	1.4	194	196	201	196	195	196	2.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1071	1088	942	942	1692		
			B	Load (ppi)	130	129	130	132	132	131	1.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P133	087709/ DTP133	F	T	Load (ppi)	145	140	137	142	138	140	2.9	194	196	196	197	197	196	1.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	SE1	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1347	550	1015	773	1165		
			B	Load (ppi)	133	139	142	131	131	135	5.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 06/15/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/15/09

DATE REPORTED: 06/16/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/15/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 23.4 HOURS 73.2 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S163	087709/ DTS163	F	T	Load (ppi)	138	141	143	138	135	139	3.1	188	193	193	193	194	192	2.2
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								889	522	683	653	512		
			B	Load (ppi)	137	137	132	143	135	137	4.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S164	087709/ DTS164	F	T	Load (ppi)	136	139	137	139	140	138	1.4	190	195	195	195	195	194	2.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								472	625	667	730	765		
			B	Load (ppi)	151	148	147	145	145	147	2.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: [signature] Date: 06/16/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/15/09

DATE REPORTED: 06/16/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/15/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24.0 HOURS 73.1 °F 39 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S165	087709/ DTS165	F	T	Load (ppi)	136	136	146	139	145	141	4.7	187	194	193	188	185	189	3.9
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								833	663	590	820	712		
			B	Load (ppi)	135	131	134	136	134	134	2.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S166	087709/ DTS166	F	T	Load (ppi)	147	140	143	127	139	139	7.6	189	190	188	187	190	189	1.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								733	975	962	1497	1022		
			B	Load (ppi)	132	129	138	144	148	136	9.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/16/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/15/09

DATE REPORTED: 06/16/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/15/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24.0 HOURS 73.4 °F 39 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S167	087709/ DTS167	F	T	Load (ppi)	141	141	143	143	138	141	2.0	189	188	192	192	194	191	2.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								340	578	470	637	507		
			B	Load (ppi)	143	143	145	146	144	144	1.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S168	087709/ DTS168	F	T	Load (ppi)	142	137	134	137	142	139	3.6	183	182	184	185	186	184	1.4
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	SE1	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								655	620	943	1097	1060		
			B	Load (ppi)	134	129	127	134	138	132	4.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/16/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/15/09

DATE REPORTED: 06/16/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/15/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24.0 HOURS 73.6 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S169	087709/ DTS169	F	T	Load (ppi)	150	150	145	145	145	147	3.0	180	182	182	181	186	182	2.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								798	767	720	653	550		
			B	Load (ppi)	140	136	134	135	141	137	3.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S170	087709/ DTS170	F	T	Load (ppi)	148	147	144	145	140	145	3.1	184	185	187	185	187	186	1.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								712	905	833	792	617		
			B	Load (ppi)	142	139	134	132	133	136	4.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: [signature] Date: 06/16/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/15/09

DATE REPORTED: 06/16/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/15/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24.0 HOURS 73.9 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S172	087709/ DTS172	F	T	Load (ppi)	136	138	137	138	138	137	0.8	183	183	180	182	184	182	1.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								517	623	553	653	440		
			B	Load (ppi)	135	133	138	137	144	137	4.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S173	087709/ DTS173	F	T	Load (ppi)	141	139	137	152	135	141	6.7	180	186	187	186	183	184	2.8
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								727	642	680	653	603		
			B	Load (ppi)	139	139	134	138	138	138	2.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/15/09

DATE REPORTED: 06/16/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/15/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24.0 HOURS 74.4 °F 43 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S174	087709/ DTS174	F	T	Load (ppi)	144	140	139	138	138	140	2.4	185	189	189	188	187	188	1.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								622	662	627	762	678		
			B	Load (ppi)	152	137	150	142	150	146	6.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S175	087709/ DTS175	F	T	Load (ppi)	152	141	148	148	142	146	4.8	184	182	183	182	183	183	0.7
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								751	1083	910	960	827		
			B	Load (ppi)	141	146	139	144	137	141	3.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/15/09

DATE REPORTED: 06/16/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/15/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24.0 HOURS 74.9 °F 44 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S171	087709/ DTS171	E	T	Load (ppi)	101	127	88	117	137	114	19.7	178	178	179	181	176	178	1.7
				Mode	SE3	SE3	AD1	SE3	SE3			BRK2	BRK2	BRK2	SE1	BRK2		
				Peel (%)	0	0	100	0	0									
				Shear (%)								314	250	425	247	367		
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/15/09

DATE REPORTED: 06/15/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/15/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 6.0 HOURS 74.9 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S176A	087709/ DTS176A	F	T	Load (ppi)	157	154	148	153	154	153	3.2	177	190	187	188	186	186	5.1
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								248	250	249	520	362		
			B	Load (ppi)	168	153	157	153	156	157	6.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S176B	087709/ DTS176B	F	T	Load (ppi)	152	150	151	149	134	147	7.6	181	185	192	193	180	186	5.8
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								271	258	328	393	623		
			B	Load (ppi)	140	151	143	154	143	146	6.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/15/09

DATE REPORTED: 06/15/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/15/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 6.3 HOURS 75.2 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S177	087709/ DTS177	F	T	Load (ppi)	144	142	146	140	141	143	2.4	185	188	188	184	186	187	1.1
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								604	578	498	512	547		
			B	Load (ppi)	135	133	133	131	134	133	1.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S178	087709/ DTS178	F	T	Load (ppi)	148	152	147	154	151	150	3.1	189	194	190	192	187	190	2.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1074	363	567	715	447		
			B	Load (ppi)	141	159	144	156	161	152	9.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: [signature] Date: 06/15/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/15/09

DATE REPORTED: 06/15/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/15/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 7.1 HOURS 75.3 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S179	087709/ DTS179	F	T	Load (ppi)	144	145	147	150	148	147	2.5	190	197	196	195	190	193	3.2
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	SE1	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								816	775	827	717	655		
			B	Load (ppi)	140	137	143	139	143	140	2.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S181	087709/ DTS181	F	T	Load (ppi)	153	156	146	161	141	152	7.8	187	182	187	185	192	187	3.5
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								246	215	182	320	367		
			B	Load (ppi)	142	148	154	147	145	147	4.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 06/15/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/15/09

DATE REPORTED: 06/16/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/15/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 7.4 HOURS 75.5 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S183	087709/ DTS183	F	T	Load (ppi)	143	138	140	146	144	142	3.1	190	192	196	193	193	193	2.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1491	755	515	608	405		
			B	Load (ppi)	136	136	130	132	140	135	4.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S184	087709/ DTS184	F	T	Load (ppi)	153	152	153	146	144	150	4.3	191	196	196	195	192	194	2.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								624	603	625	482	562		
			B	Load (ppi)	146	142	144	150	140	144	3.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TH Date: 06/16/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/15/09

DATE REPORTED: 06/16/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/15/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 8.1 HOURS 75.4 °F 39 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S186	087709/ DTS186	F	T	Load (ppi)	147	149	140	146	146	145	3.4	188	196	194	194	191	192	3.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								909	617	450	537	370		
			B	Load (ppi)	163	150	149	150	151	152	5.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S187	087709/ DTS187	F	T	Load (ppi)	146	142	154	153	142	147	5.7	190	194	193	191	189	191	2.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								827	553	582	422	538		
			B	Load (ppi)	141	148	146	144	141	144	3.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

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GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/15/09

DATE REPORTED: 06/16/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/15/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 8.4 HOURS 75.1 °F 38 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S189	087709/ DTS189	F	T	Load (ppi)	146	151	145	150	149	148	2.4	182	187	188	185	184	185	2.6
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								294	377	297	267	273		
			B	Load (ppi)	154	148	155	145	143	149	5.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P117	087709/ DTP117	F	T	Load (ppi)	143	145	137	134	133	139	5.3	186	187	187	183	186	186	1.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1424	672	1723	897	470		
			B	Load (ppi)	143	146	147	142	144	145	2.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: [signature] Date: 06/16/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/15/09

DATE REPORTED: 06/15/09 Rev. 06/17/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/15/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 5.2 HOURS 74.8 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P124A	087709/ DTP124A	E	T	Load (ppi)	138	143	130	130	128	134	6.5	185	191	188	186	177	185	5.3
				Mode	SE3	SE3	ADBRK	SE3	SE3			BRK1	BRK1	SE1	BRK2	SE1		
				Peel (%)	0	0	10	0	0									
				Shear (%)								234	272	282	210	310		
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														
DT-P124B	087709/ DTP124B	E	T	Load (ppi)	159	148	149	128	129	142	13.8	188	189	191	190	185	189	2.1
				Mode	SE3	SE3	SE3	SE3	SE3			BRK2	BRK1	BRK2	BRK1	BRK2		
				Peel (%)	0	0	0	0	0									
				Shear (%)								382	337	250	270	310		
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: [signature] Date: 06/17/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/17/09

DATE REPORTED: 06/18/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/16/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 74.9 °F 44 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P142	087709/ DTP142P	F	T	Load (ppi)	133	131	139	133	134	134	2.8	182	185	182	167	179	179	7.0
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	SE1	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								372	762	922	249	926		
			B	Load (ppi)	129	130	132	128	129	130	1.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S180	087709/ DTS180P	F	T	Load (ppi)	131	147	127	126	136	133	8.4	177	187	188	188	183	185	4.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								977	942	689	956	1017		
			B	Load (ppi)	135	132	144	128	139	135	6.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/18/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/17/09

DATE REPORTED: 06/18/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/16/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 73.9 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S182	087709/ DTS182P	F	T	Load (ppi)	145	142	144	147	145	145	2.0	186	192	193	194	195	192	3.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								527	672	616	731	829		
			B	Load (ppi)	151	149	147	142	140	146	4.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S185	087709/ DTS185P	F	T	Load (ppi)	132	129	140	136	109	129	12.0	185	181	182	183	185	183	1.9
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								812	1172	1017	1072	1088		
			B	Load (ppi)	141	145	142	141	140	142	2.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/17/09

DATE REPORTED: 06/18/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/16/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 73.8 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S188	087709/ DTS188P	F	T	Load (ppi)	139	140	138	139	143	140	2.1	184	184	184	181	186	184	1.9
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								612	844	630	550	472		
			B	Load (ppi)	140	140	142	138	136	139	2.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S190	087709/ DTS190P	F	T	Load (ppi)	139	127	130	95	127	124	16.6	180	178	176	184	175	178	3.6
				Mode	SE1	SE1	SE1	AD-BRK	SE1			BRK	BRK	BRK	BRK	SE1		
				Peel (%)	0	0	0	50	0									
				Shear (%)								330	299	323	328	605		
			B	Load (ppi)	141	138	136	141	150	141	5.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/18/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/17/09

DATE REPORTED: 06/17/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/16/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 73.8 °F 43 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P134	087709/ DTP134	F	T	Load (ppi)	126	135	126	124	124	127	4.6	185	186	186	185	187	186	0.9
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								770	591	748	693	466		
			B	Load (ppi)	144	147	134	145	143	142	5.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P135	087709/ DTP135	F	T	Load (ppi)	135	131	136	134	132	134	2.0	181	182	182	181	182	182	0.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1297	499	567	622	392		
			B	Load (ppi)	131	128	131	126	131	129	2.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/17/09

DATE REPORTED: 06/17/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/16/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 73.8 °F 44 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P136	087709/ DTP136	F	T	Load (ppi)	131	132	134	134	127	132	2.9	181	183	182	184	185	183	1.4
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								933	858	889	961	863		
			B	Load (ppi)	137	134	129	129	137	133	4.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P137	087709/ DTP137	F	T	Load (ppi)	141	135	141	142	138	139	2.9	175	175	181	182	183	179	3.8
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								487	273	470	717	789		
			B	Load (ppi)	145	155	151	143	133	145	8.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

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Checked By: TM Date: 06/17/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/17/09

DATE REPORTED: 06/17/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/16/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 74.2 °F 44 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P138	087709/ DTP138	F	T	Load (ppi)	142	139	135	136	139	138	2.9	179	190	188	183	186	185	4.3
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								624	956	696	644	831		
			B	Load (ppi)	140	132	136	136	135	136	2.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P139B	087709/ DTP139B	F	T	Load (ppi)	131	131	133	134	130	132	1.6	184	186	185	184	185	185	0.8
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								476	645	557	480	500		
			B	Load (ppi)	140	148	142	144	140	143	3.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: _____ Date: 06/19/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/17/09

DATE REPORTED: 06/17/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/16/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 74.6 °F 44 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P140	087709/ DTP140	F	T	Load (ppi)	144	142	145	143	144	143	1.3	183	183	183	185	185	184	1.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1005	975	1141	1017	767		
			B	Load (ppi)	137	135	140	139	135	137	2.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P141	087709/ DTP141	F	T	Load (ppi)	142	143	139	139	141	141	1.9	180	186	186	186	179	184	3.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	SE1	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								991	664	745	763	961		
			B	Load (ppi)	132	139	137	137	132	135	3.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: [signature] Date: 06/17/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/17/09

DATE REPORTED: 06/17/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/16/09 & 06/17/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: DT-P143: 2.2 HOURS 73.8 °F 44 %RH
DT-P144: >24 HOURS 73.7 °F 44 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P143	087709/ DTP143	F	T	Load (ppi)	142	148	147	148	146	146	2.5	179	182	171	183	176	178	4.8
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								244	233	216	205	280		
			B	Load (ppi)	146	145	141	141	141	143	2.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P144	087709/ DTP144	F	T	Load (ppi)	130	133	90	138	146	127	21.9	180	185	179	176	175	179	4.1
				Mode	SE1	SE1	AD-BRK	SE1	SE1			BRK	BRK	BRK	BRK	SE1		
				Peel (%)	0	0	50	0	0									
				Shear (%)								238	794	266	400	223		
			B	Load (ppi)	143	137	130	144	140	139	5.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TWT Date: 06/17/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/17/09

DATE REPORTED: 06/18/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/17/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 5.4 HOURS 75.1 °F 44 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P118	087709/ DTP118	F	T	Load (ppi)	142	134	142	137	133	138	4.4	188	184	184	185	185	185	1.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								649	663	1427	765	757		
			B	Load (ppi)	151	134	137	153	154	146	9.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P119	087709/ DTP119	F	T	Load (ppi)	133	136	135	134	129	133	2.9	185	191	190	191	190	189	2.4
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								465	720	765	570	700		
			B	Load (ppi)	132	143	132	142	132	136	5.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: [signature] Date: 06/18/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/17/09

DATE REPORTED: 06/18/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/17/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 6.2 HOURS 75.4 °F 44 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P120	087709/ DTP120	F	T	Load (ppi)	139	138	135	141	137	138	2.2	183	186	185	187	190	186	2.3
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								892	1107	772	650	458		
			B	Load (ppi)	140	137	140	137	137	138	1.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P121	087709/ DTP121	F	T	Load (ppi)	152	146	155	139	155	149	6.8	183	183	182	182	181	182	0.7
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								712	742	1650	957	763		
			B	Load (ppi)	127	128	131	130	125	128	2.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/18/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/17/09

DATE REPORTED: 06/18/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/17/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 6.4 HOURS 75.4 °F 44 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P122	087709/ DTP122	F	T	Load (ppi)	138	147	138	131	131	137	6.7	188	188	188	187	191	188	1.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1201	767	733	607	572		
			B	Load (ppi)	130	136	136	137	137	135	3.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P128	087709/ DTP128	F	T	Load (ppi)	136	137	136	139	134	136	1.7	185	184	184	184	186	185	0.9
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								922	878	270	867	767		
			B	Load (ppi)	135	135	137	138	141	137	2.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/17/09

DATE REPORTED: 06/18/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/17/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 7.3 HOURS 75.6 °F 44 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P139A	087709/ DT139A	F	T	Load (ppi)	136	140	135	134	138	137	2.5	184	185	185	183	186	185	1.1
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								654	788	888	872	857		
			B	Load (ppi)	148	148	146	147	145	147	1.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P145	087709/ DTP145	F	T	Load (ppi)	150	141	150	147	142	146	4.5	186	183	184	183	186	184	1.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								562	847	565	558	600		
			B	Load (ppi)	141	146	151	141	146	145	4.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/18/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/17/09

DATE REPORTED: 06/18/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/17/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 8.0 HOURS 75.6 °F 44 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P146	087709/ DTP146	F	T	Load (ppi)	142	136	137	137	142	139	3.0	185	185	182	180	184	184	2.3
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								776	900	972	977	800		
			B	Load (ppi)	144	139	146	138	141	142	3.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P147	087709/ DTP147	F	T	Load (ppi)	135	138	136	135	136	136	1.1	185	193	187	188	185	188	3.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								713	665	800	765	630		
			B	Load (ppi)	145	136	149	141	142	143	4.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/19/09

DATE REPORTED: 06/19/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/18/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 73.6 °F 43 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P148	087709/ DTP148	F	T	Load (ppi)	143	135	132	132	130	134	5.0	178	186	186	186	186	184	3.8
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								775	583	648	523	647		
			B	Load (ppi)	137	138	138	133	138	137	2.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P149	087709/ DTP149	F	T	Load (ppi)	147	145	145	148	142	145	2.3	186	184	186	186	190	186	2.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1033	917	788	733	598		
			B	Load (ppi)	142	142	147	149	140	144	3.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/19/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/19/09

DATE REPORTED: 06/19/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/18/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 73.8 °F 43 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P150	087709/ DTP150	F	T	Load (ppi)	163	159	161	165	162	162	2.3	179	180	169	176	178	177	4.6
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								417	330	245	250	410		
			B	Load (ppi)	150	146	146	150	146	148	2.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JW Date: 06/19/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/22/09

DATE REPORTED: 06/23/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/22/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 5.0 HOURS 75.8 °F 46 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P151	087709/ DTP151	F	T	Load (ppi)	139	142	139	139	138	139	1.3	184	182	186	181	181	183	2.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	SE1	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1021	853	577	1010	988		
			B	Load (ppi)	132	145	128	135	129	134	6.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P152	087709/ DTP152	F	T	Load (ppi)	142	145	143	141	143	143	1.4	188	189	188	185	185	187	1.9
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								859	627	407	680	780		
			B	Load (ppi)	133	136	128	131	148	135	7.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/22/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/22/09

DATE REPORTED: 06/23/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/22/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 5.4 HOURS 76.0 °F 46 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P153	087709/ DTP153	F	T	Load (ppi)	134	140	141	142	142	140	3.1	183	183	186	184	187	185	1.5
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								694	1075	892	1033	955		
			B	Load (ppi)	142	126	132	134	134	134	5.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P154	087709/ DTP154	F	T	Load (ppi)	138	139	142	143	139	140	2.1	190	185	190	184	185	187	2.9
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								542	1253	1007	632	1630		
			B	Load (ppi)	144	143	148	144	141	144	2.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 06/23/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/22/09

DATE REPORTED: 06/23/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/22/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 6.1 HOURS 74.0 °F 46 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P155	087709/ DTP155	F	T	Load (ppi)	143	133	148	118	144	137	12.0	188	184	183	188	182	185	2.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								934	972	1058	908	945		
			B	Load (ppi)	148	145	147	134	144	144	5.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P156	087709/ DTP156	F	T	Load (ppi)	131	140	135	136	134	135	3.3	191	186	190	184	184	187	3.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								651	753	650	713	983		
			B	Load (ppi)	131	138	135	130	139	134	3.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/23/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/22/09

DATE REPORTED: 06/23/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/22/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 6.5 HOURS 74.0 °F 47 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test 1	2	3	4	5	Avg.	Std. Dev.	Shear Test 1	2	3	4	5	Avg.	Std. Dev.
DT-P157	087709/ DTP157	F	T	Load (ppi)	138	142	134	133	139	137	3.5	192	190	191	184	185	188	3.8
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								846	873	840	860	695		
			B	Load (ppi)	129	131	129	133	130	131	1.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P158	087709/ DTP158	F	T	Load (ppi)	136	141	139	133	133	137	3.7	186	185	186	181	185	185	1.9
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								512	592	523	1053	503		
			B	Load (ppi)	125	142	137	135	133	135	6.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 06/23/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/22/09

DATE REPORTED: 06/23/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/22/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 7.2 HOURS 75.0 °F 46 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P159	087709/ DTP159	F	T	Load (ppi)	144	140	140	140	138	141	2.3	189	188	188	184	181	186	3.3
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								916	663	860	1178	790		
			B	Load (ppi)	138	154	148	150	134	145	8.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P160	087709/ DTP160	F	T	Load (ppi)	140	127	142	131	132	135	6.4	191	185	188	186	189	188	2.6
				Mode	SE1	AD-BRK	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	10	0	0	0									
				Shear (%)								464	695	453	403	497		
			B	Load (ppi)	136	136	141	135	133	136	2.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/23/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/22/09

DATE REPORTED: 06/23/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/22/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 7.6 HOURS 75.0 °F 45 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P161	087709/ DTP161	F	T	Load (ppi)	150	150	133	140	136	142	7.7	185	181	188	181	181	183	3.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								774	648	492	645	767		
			B	Load (ppi)	154	138	137	155	143	145	8.7							
				Mode	SE1	SE1	AD-BRK	SE1	SE1									
				Peel (%)	0	0	40	0	0									
				Shear (%)														
DT-P162	087709/ DTP162	F	T	Load (ppi)	148	147	150	155	142	149	4.9	186	185	187	182	185	185	1.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								746	688	748	529	772		
			B	Load (ppi)	144	133	136	129	141	137	6.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/23/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/22/09

DATE REPORTED: 06/23/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/22/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 8.2 HOURS 75.0 °F 45 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P163	087709/ DTP163	F	T	Load (ppi)	144	143	142	143	141	143	1.3	191	190	186	190	184	188	3.1
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								934	837	463	932	877		
			B	Load (ppi)	134	138	133	133	136	135	2.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
			T	Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														
			B	Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/23/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/23/09

DATE REPORTED: 06/23/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/22/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 23.1 HOURS 74.3 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P164	087709/ DTP164	F	T	Load (ppi)	138	148	140	140	136	140	4.6	196	196	190	190	193	193	2.9
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								806	705	762	697	662		
			B	Load (ppi)	139	140	140	140	138	140	1.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P165	087709/ DTP165	F	T	Load (ppi)	136	141	136	131	137	136	3.6	192	189	189	193	187	190	2.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								658	742	772	628	612		
			B	Load (ppi)	144	142	145	144	146	144	1.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/23/09

DATE REPORTED: 06/23/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/22/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 23.4 HOURS 74.2 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P166	087709/ DTP166	F	T	Load (ppi)	146	145	147	143	142	145	2.1	190	185	185	189	191	188	2.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								709	897	730	673	653		
			B	Load (ppi)	139	137	139	129	137	136	4.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P167	087709/ DTP167	F	T	Load (ppi)	151	154	153	153	150	152	1.6	190	189	188	192	193	190	2.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								794	1428	810	747	857		
			B	Load (ppi)	143	148	136	155	137	144	8.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 06/23/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/23/09

DATE REPORTED: 06/23/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/22/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 74.5 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P168	087709/ DTP168	F	T	Load (ppi)	144	151	153	146	148	149	3.8	190	186	182	193	189	188	4.4
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								291	265	263	240	270		
			B	Load (ppi)	149	151	151	157	138	149	7.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P169	087709/ DTP169	F	T	Load (ppi)	149	154	149	154	145	150	4.1	186	188	181	182	188	185	3.4
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								317	250	305	339	288		
			B	Load (ppi)	148	145	137	152	143	145	5.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: [signature] Date: 06/23/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/23/09

DATE REPORTED: 06/23/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/22/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 74.2 °F 44 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P170	087709/ DTP170	F	T	Load (ppi)	162	149	146	153	145	151	7.0	193	183	190	196	191	190	5.0
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								282	303	278	358	267		
			B	Load (ppi)	153	159	147	152	156	154	4.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P171	087709/ DTP171	F	T	Load (ppi)	134	147	133	133	129	135	6.9	192	193	192	193	189	192	1.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1049	973	805	805	1087		
			B	Load (ppi)	145	136	148	143	132	141	6.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/23/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/23/09

DATE REPORTED: 06/23/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/22/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 74.3 °F 45 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P172	087709/ DTP172	F	T	Load (ppi)	140	143	141	149	147	144	3.8	185	185	185	185	186	185	0.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								764	750	740	762	795		
			B	Load (ppi)	127	131	126	136	137	131	5.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P173	087709/ DTP173	F	T	Load (ppi)	143	141	138	141	138	140	2.3	190	191	191	194	195	192	2.1
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								811	807	953	650	607		
			B	Load (ppi)	156	148	141	135	140	144	8.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/23/09

DATE REPORTED: 06/23/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/22/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 74.7 °F 46 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P174	087709/ DTP174	F	T	Load (ppi)	137	139	137	137	149	140	5.0	195	197	196	188	194	194	3.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								879	545	613	715	530		
			B	Load (ppi)	141	132	121	117	132	129	9.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P175	087709/ DTP175	F	T	Load (ppi)	127	124	125	130	129	127	2.5	187	186	185	190	191	188	2.3
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								764	848	748	448	345		
			B	Load (ppi)	134	145	148	143	144	143	5.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: [signature] Date: 06/23/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/23/09

DATE REPORTED: 06/23/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/22/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 75.0 °F 46 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P176	087709/ DTP176	F	T	Load (ppi)	144	141	143	139	142	142	1.9	190	191	190	190	191	190	0.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								799	800	850	748	955		
			B	Load (ppi)	149	152	149	152	146	150	2.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
			T	Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														
			B	Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/23/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/23/09

DATE REPORTED: 06/24/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/22/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 75.2 °F 46 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P177	087709/ DTP177	F	T	Load (ppi)	142	143	140	135	134	139	4.0	189	188	188	189	187	188	1.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								341	340	309	396	444		
			B	Load (ppi)	130	133	133	134	133	132	1.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P178	087709/ DTP178	F	T	Load (ppi)	150	171	149	157	159	157	8.8	179	178	181	180	175	179	2.3
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								338	223	263	270	300		
			B	Load (ppi)	162	141	143	146	143	147	8.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/23/09

DATE REPORTED: 06/24/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/22/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 76.0 °F 48 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P179	087709/ DTP179	F	T	Load (ppi)	126	122	122	155	147	134	15.4	177	176	178	173	173	176	2.5
				Mode	AD-BRK	AD-BRK	AD-BRK	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	20	70	15	0	0									
				Shear (%)								254	407	255	247	360		
			B	Load (ppi)	134	108	142	129	141	130	13.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P180	087709/ DTP180	F	T	Load (ppi)	140	149	151	149	146	147	4.3	191	186	188	188	187	188	2.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								788	787	793	757	763		
			B	Load (ppi)	135	135	157	156	134	143	12.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/24/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/23/09

DATE REPORTED: 06/24/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/22/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 77.1 °F 47 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P181	087709/ DTP181	F	T	Load (ppi)	135	137	137	149	137	139	5.7	187	186	186	186	186	186	0.8
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1084	975	997	1017	925		
			B	Load (ppi)	137	135	137	136	133	136	1.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P182	087709/ DTP182	F	T	Load (ppi)	146	144	148	145	131	142	6.8	192	192	192	190	190	191	0.7
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								391	913	603	533	643		
			B	Load (ppi)	141	141	141	160	154	147	9.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 06/24/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/23/09

DATE REPORTED: 06/24/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/22/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 76.9 °F 45 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P183	087709/ DTP183	F	T	Load (ppi)	138	138	141	138	136	138	1.9	187	186	187	186	187	187	0.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1459	988	877	973	970		
			B	Load (ppi)	138	139	139	148	148	142	5.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P184	087709/ DTP184	F	T	Load (ppi)	140	141	142	142	148	142	3.0	187	188	188	188	189	188	0.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								834	782	743	878	695		
			B	Load (ppi)	148	151	134	136	135	141	7.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/23/09

DATE REPORTED: 06/24/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/22/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 76.7 °F 45 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P185	087709/ DTP185	F	T	Load (ppi)	140	142	135	137	135	138	3.3	188	187	188	187	187	187	0.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								891	625	833	963	1182		
			B	Load (ppi)	135	132	126	130	124	129	4.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
			T	Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														
			B	Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/24/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/23/09

DATE REPORTED: 06/24/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/23/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 8.2 HOURS 76.6 °F 44 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P123B	087709/ DTP123B	E	T	Load (ppi)	114	116	128	148	123	126	13.5	184	180	175	172	183	179	5.0
				Mode	SE3	SE3	SE3	SE3	SE3			SE1	SE1	BRK1	BRK1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								311	267	264	283	229		
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														
DT-P186B	087709/ DTP186B	E	T	Load (ppi)	142	144	147	127	148	142	8.4	168	174	173	172	169	171	2.6
				Mode	SE3	SE3	SE3	SE3	SE3			BRK2	BRK2	BRK1	BRK2	BRK2		
				Peel (%)	0	0	0	0	0									
				Shear (%)								314	258	215	317	415		
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/24/09

DATE REPORTED: 06/24/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/24/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.5 HOURS 74.0 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P186A	087709/ DTP186A	E	T	Load (ppi)	156	150	146	162	158	154	6.4	180	180	180	177	172	178	3.6
				Mode	BRK2	SE3	SE3	BRK1	BRK1			BRK2	SE1	BRK1	BRK1	BRK2		
				Peel (%)	0	0	0	0	0									
				Shear (%)								259	238	280	247	267		
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														
DT-P187	087709/ DTP187	E	T	Load (ppi)	147	113	131	143	136	134	13.3	191	185	193	193	190	190	3.2
				Mode	SE3	SE3	SE3	SE3	SE3			BRK1	BRK2	BRK1	BRK2	SE2		
				Peel (%)	0	0	0	0	0									
				Shear (%)								234	300	217	240	228		
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 06/24/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/24/09

DATE REPORTED: 06/24/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/24/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 5.2 HOURS 74.0 °F 39 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test 1	2	3	4	5	Avg.	Std. Dev.	Shear Test 1	2	3	4	5	Avg.	Std. Dev.
DT-P188	087709/ DTP188	E	T	Load (ppi)	163	158	154	156	150	156	4.8	180	172	174	173	181	176	3.9
				Mode	SE3	SE3	SE3	SE3	SE3			BRK1	BRK2	SE2	BRK2	BRK2		
				Peel (%)	0	0	0	0	0									
				Shear (%)								246	332	263	313	287		
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														
DT-P189	087709/ DTP189	E	T	Load (ppi)	159	152	144	142	144	148	7.2	187	192	190	189	185	189	2.9
				Mode	SE3	SE3	SE3	SE3	SE3			BRK2	BRK2	SE1	BRK1	BRK2		
				Peel (%)	0	0	0	0	0									
				Shear (%)								497	294	300	300	450		
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: [signature] Date: 06/24/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/25/09

DATE REPORTED: 06/26/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/25/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 1.0 HOURS 73.4 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P190	087709/ DTP190	F	T	Load (ppi)	154	150	143	139	149	147	6.0	184	184	182	183	181	183	1.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1375	1047	1062	967	925		
			B	Load (ppi)	144	135	148	144	147	144	5.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P191	087709/ DTP191	F	T	Load (ppi)	141	139	130	140	137	137	4.3	182	182	182	180	187	183	2.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	SE1	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								845	833	1067	996	765		
			B	Load (ppi)	152	138	140	138	146	143	6.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 06/26/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/25/09

DATE REPORTED: 06/26/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/25/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.2 HOURS 74.2 °F 43 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P192	087709/ DTP192	F	T	Load (ppi)	138	140	136	137	138	138	1.3	183	184	182	181	187	183	2.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								733	733	631	700	593		
			B	Load (ppi)	130	134	130	129	139	132	4.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P193	087709/ DTP193	F	T	Load (ppi)	146	149	141	145	146	145	3.0	183	183	183	184	187	184	1.8
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1038	861	643	767	1087		
			B	Load (ppi)	148	146	141	144	154	147	4.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/25/09

DATE REPORTED: 06/26/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/25/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.5 HOURS 74.4 °F 43 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P194	087709/ DTP194	F	T	Load (ppi)	141	136	139	137	142	139	2.7	186	186	185	185	188	186	1.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								647	1058	824	621	698		
			B	Load (ppi)	150	157	145	138	144	147	7.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P195	087709/ DTP195	F	T	Load (ppi)	139	145	137	145	135	140	4.4	182	184	182	182	183	183	1.0
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								929	817	799	1000	794		
			B	Load (ppi)	120	134	124	142	106	125	13.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Form R-4:Rev.0

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/25/09

DATE REPORTED: 06/26/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/25/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.3 HOURS 74.5 °F 43 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P196	087709/ DTP196	F	T	Load (ppi)	139	141	137	137	139	139	1.6	183	183	182	180	186	183	2.3
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	SE1	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1257	860	695	810	841		
			B	Load (ppi)	140	143	146	138	144	142	3.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
			T	Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														
			B	Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/26/09

DATE REPORTED: 06/26/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/26/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 2.2 HOURS 74.0 °F 43 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P197	087709/ DTP197	F	T	Load (ppi)	135	132	133	134	134	134	1.3	187	188	189	187	185	187	1.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								551	607	513	490	492		
			B	Load (ppi)	142	137	137	139	134	138	2.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P198	087709/ DTP198	F	T	Load (ppi)	142	139	142	142	145	142	2.2	186	184	183	185	184	184	1.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								751	778	688	683	813		
			B	Load (ppi)	136	138	138	140	137	138	1.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/26/09

DATE REPORTED: 06/26/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/26/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.3 HOURS 73.7 °F 44 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P199	087709/ DTP199	F	T	Load (ppi)	153	150	150	151	152	151	1.3	190	190	190	191	190	190	0.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								667	672	883	566	863		
			B	Load (ppi)	150	146	143	145	147	146	2.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P200	087709/ DTP200	F	T	Load (ppi)	151	150	150	143	150	149	3.1	184	183	184	184	184	184	0.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								771	747	765	762	617		
			B	Load (ppi)	143	143	143	151	145	145	3.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

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CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/26/09

DATE REPORTED: 06/26/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/26/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.3 HOURS 73.9 °F 44 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P201	087709/ DTP201	F	T	Load (ppi)	142	144	148	145	147	145	2.3	190	182	184	186	185	186	2.8
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								339	258	243	233	294		
			B	Load (ppi)	136	133	139	145	130	136	5.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P202	087709/ DTP202	F	T	Load (ppi)	156	144	154	150	152	151	4.6	188	188	188	188	188	188	0.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								808	767	828	795	837		
			B	Load (ppi)	135	134	137	140	152	140	7.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

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FILE NO.: 08-7709

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DATE REPORTED: 06/26/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/26/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 5.0 HOURS 74.3 °F 45 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P203	087709/ DTP203	F	T	Load (ppi)	136	138	133	135	138	136	2.2	184	186	187	187	189	187	1.8
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								567	600	710	750	595		
			B	Load (ppi)	141	138	138	138	130	137	4.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P204	087709/ DTP204	F	T	Load (ppi)	144	147	143	146	148	146	1.9	187	188	188	187	187	187	0.6
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								275	243	792	243	238		
			B	Load (ppi)	140	141	145	145	135	141	4.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

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CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/26/09

DATE REPORTED: 06/26/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/26/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 5.4 HOURS 74.4 °F 44 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P205	087709/ DTP205	F	T	Load (ppi)	144	145	148	143	138	144	3.4	177	177	171	175	172	174	2.9
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	SE1	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								291	292	278	270	267		
			B	Load (ppi)	141	139	132	136	137	137	3.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P206	087709/ DTP206	E	T	Load (ppi)	135	134	149	153	142	142	8.3	176	181	173	180	176	177	3.4
				Mode	SE3	SE3	SE3	SE3	SE3			SE1	BRK1	BRK1	BRK1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								231	367	323	257	244		
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/26/09

DATE REPORTED: 06/26/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/26/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 2.5 HOURS 73.9 °F 44 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P207	087709/ DTP207	E	T	Load (ppi)	123	120	138	119	135	127	8.7	172	177	171	175	178	174	3.0
				Mode	SE3	SE3	SE3	SE3	SE3			BRK1	SE1	BRK2	BRK2	BRK2		
				Peel (%)	0	0	0	0	0									
				Shear (%)								278	243	280	300	243		
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														
DT-S191	087709/ DTS191	F	T	Load (ppi)	139	137	138	140	142	139	1.8	184	183	185	188	185	185	2.1
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								582	372	378	353	287		
			B	Load (ppi)	131	136	131	130	130	132	2.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

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CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/26/09

DATE REPORTED: 06/26/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/26/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.0 HOURS 73.8 °F 43 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S192	087709/ DTS192	F	T	Load (ppi)	132	140	138	138	138	138	3.0	186	189	194	192	192	191	3.1
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								200	247	242	243	317		
			B	Load (ppi)	134	130	134	134	135	133	2.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
			T	Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														
			B	Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/29/09

DATE REPORTED: 06/29/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/29/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 1.1 HOURS 73.9 °F 43 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P208	087709/ DTP208	F	T	Load (ppi)	134	134	149	147	136	140	7.1	190	195	195	192	195	193	2.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								589	667	637	817	850		
			B	Load (ppi)	143	133	136	141	139	138	3.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P209	087709/ DTP209	F	T	Load (ppi)	150	152	143	151	141	148	5.1	195	195	189	193	196	194	2.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	BRK	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								384	563	380	787	820		
			B	Load (ppi)	138	145	140	140	132	139	4.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 06/29/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 06/29/09

DATE REPORTED: 06/29/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 06/29/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 1.5 HOURS 74.0 °F 44 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P210	087709/ DTP210	F	T	Load (ppi)	147	150	148	152	147	149	2.2	196	191	190	195	194	193	2.8
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								747	742	783	640	624		
			B	Load (ppi)	152	137	141	135	144	142	6.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P211	087709/ DTP211	F	T	Load (ppi)	132	139	144	134	131	136	5.3	187	193	193	189	192	191	2.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								913	617	592	807	700		
			B	Load (ppi)	134	133	131	135	138	134	2.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: [signature] Date: 06/29/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/07/09

DATE REPORTED: 07/07/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/07/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 1.3 HOURS 73.4 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S193A	087709/ DTS193A	F	T	Load (ppi)	139	145	151	135	140	142	6.2	192	197	192	188	196	193	3.7
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								153	239	450	225	242		
			B	Load (ppi)	137	131	138	140	134	136	3.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S193B	087709/ DTS193B	F	T	Load (ppi)	133	139	136	138	130	135	3.8	193	194	194	197	196	195	1.5
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								879	232	240	192	225		
			B	Load (ppi)	134	137	143	133	139	137	4.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: DM Date: 07/07/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/07/09

DATE REPORTED: 07/07/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/07/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 2.1 HOURS 73.6 °F 43 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S194	087709/ DTS194	F	T	Load (ppi)	149	149	151	147	140	147	4.2	194	195	191	193	195	194	1.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1533	715	1890	733	640		
			B	Load (ppi)	158	165	162	133	159	155	13.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S195	087709/ DTS195	F	T	Load (ppi)	141	143	141	147	141	143	2.7	190	187	183	183	189	186	3.2
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								248	275	340	317	254		
			B	Load (ppi)	144	141	144	150	145	145	3.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 07/07/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/07/09

DATE REPORTED: 07/07/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/07/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.3 HOURS 73.5 °F 44 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S196	087709/ DTS196	F	T	Load (ppi)	144	139	140	137	131	138	4.5	189	193	193	193	189	191	2.2
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								681	847	834	779	800		
			B	Load (ppi)	137	136	139	137	136	137	1.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S197	087709/ DTS197	F	T	Load (ppi)	156	143	143	153	150	149	5.8	193	194	189	192	193	192	2.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								679	633	550	708	675		
			B	Load (ppi)	144	151	139	134	138	141	6.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 07/07/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/07/09

DATE REPORTED: 07/07/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/07/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.0 HOURS 73.7 °F 44 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S198	087709/ DTS198	F	T	Load (ppi)	145	140	143	142	138	142	2.6	191	195	195	194	191	193	2.0
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	SE1	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1709	755	753	817	850		
			B	Load (ppi)	133	143	141	136	134	137	4.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S199	087709/ DTS199	F	T	Load (ppi)	141	153	153	150	136	147	7.7	191	191	186	190	191	190	2.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								646	610	700	750	644		
			B	Load (ppi)	134	141	136	134	139	137	3.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 07/07/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/07/09

DATE REPORTED: 07/07/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/07/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.3 HOURS 73.7 °F 44 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P212	087709/ DTP212	F	T	Load (ppi)	143	142	145	143	139	142	2.0	194	195	191	194	195	194	1.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								546	725	895	482	1017		
			B	Load (ppi)	139	140	139	137	135	138	1.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TW Date: 07/07/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

GEOMEMBRANE TYPE: 60-mil HDPE

PROJECT: CCSWDC

DATE SAMPLES RECEIVED: 07/08/09

FILE NO.: 08-7709

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

DATE TESTED: 07/08/09

CONDITIONING: 1.0 HOURS 73 °F 45 %RH

DATE REPORTED: 07/08/09

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S200	087709 DTS200	F	T	Load (ppi)	151	148	145	144	145	147	2.8	191	191	185	185	191	188	3.2
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	SE1	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								906	1087	1188	707	908	959	186
			B	Load (ppi)	156	147	150	153	148	151	3.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S201	087709 DTS201	F	T	Load (ppi)	152	153	126	138	141	142	11.0	186	189	181	190	189	187	3.5
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	SE1	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								251	250	237	277	247	252	15
			B	Load (ppi)	134	132	137	130	152	137	8.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JCW Date: 07/08/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/08/09

DATE REPORTED: 07/08/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/08/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 1.4 HOURS 73 °F 43 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S202	087709 DTS202	F	T	Load (ppi)	137	145	148	151	139	144	5.8	191	191	184	186	190	188	3.3
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								366	925	239	250	350	426	285
			B	Load (ppi)	146	150	142	149	137	145	5.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S203	087709 DTS203	F	T	Load (ppi)	142	141	131	138	137	138	4.2	190	190	186	189	190	189	1.8
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								561	434	634	599	550	555	76
			B	Load (ppi)	139	135	148	137	139	140	4.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JCW Date: 07/08/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/08/09

DATE REPORTED: 07/08/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/08/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 2.1 HOURS 73 °F 43 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S204	087709 DTS204	F	T	Load (ppi)	146	148	146	145	143	146	1.6	190	186	190	190	192	190	2.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								695	617	1207	1283	1217	1004	320
			B	Load (ppi)	157	150	146	144	139	147	6.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S205	087709 DTS205	F	T	Load (ppi)	146	142	141	138	143	142	2.8	193	195	188	191	194	192	2.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1447	873	870	700	672	913	313
			B	Load (ppi)	145	128	139	135	151	140	9.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JCW Date: 07/08/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/09/09

DATE REPORTED: 07/09/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/09/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 1.1 HOURS 73 °F 44 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S206	087709/ DTS206	F	T	Load (ppi)	151	147	149	148	149	149	1.4	188	193	194	189	192	191	2.8
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								887	773	592	600	670		
			B	Load (ppi)	144	141	140	141	143	142	1.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S207	087709/ DTS207	F	T	Load (ppi)	143	143	144	141	137	141	2.8	183	189	191	186	189	188	3.3
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1041	675	825	800	695		
			B	Load (ppi)	136	141	137	137	138	138	2.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/09/09

DATE REPORTED: 07/09/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/09/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 1.5 HOURS 73 °F 45 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S208	087709/ DTS208	F	T	Load (ppi)	145	141	143	144	144	143	1.5	186	191	192	187	190	189	2.3
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								906	795	722	878	515		
			B	Load (ppi)	148	144	143	147	162	149	7.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S209	087709/ DTS209	F	T	Load (ppi)	141	146	147	145	140	144	3.0	185	185	185	186	186	185	0.4
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	SE1	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								734	978	1587	888	900		
			B	Load (ppi)	132	133	133	135	134	133	1.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/09/09

DATE REPORTED: 07/09/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/09/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 2.6 HOURS 73 °F 43 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S210	087709/ DTS210	F	T	Load (ppi)	141	147	143	136	149	143	5.3	183	183	182	181	181	182	1.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								739	912	755	880	815		
			B	Load (ppi)	133	135	152	129	138	137	8.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/10/09

DATE REPORTED: 07/10/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/10/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.2 HOURS 73 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S211	087709/ DTS211	F	T	Load (ppi)	147	156	149	153	150	151	3.7	190	192	196	194	190	192	2.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								584	604	713	665	633		
			B	Load (ppi)	139	135	139	136	139	138	1.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S212	087709/ DTS212	F	T	Load (ppi)	136	141	147	148	145	144	5.0	183	185	188	189	190	187	3.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								914	858	793	705	825		
			B	Load (ppi)	145	136	136	140	142	140	4.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/10/09

DATE REPORTED: 07/10/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/10/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.5 HOURS 73 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S213	087709/ DTS213	F	T	Load (ppi)	143	144	147	153	139	145	4.9	188	194	191	194	193	192	2.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								432	414	478	310	1045		
			B	Load (ppi)	139	136	135	135	144	138	3.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S214	087709/ DTS214	F	T	Load (ppi)	143	141	146	138	143	142	3.0	187	186	189	193	189	189	2.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1014	1125	955	1020	1215		
			B	Load (ppi)	135	134	134	140	139	136	2.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JW Date: 07/10/09

Form R-4:Rev.0

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GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/10/09

DATE REPORTED: 07/10/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/10/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.1 HOURS 73.4 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S215	087709/ DTS215	F	T	Load (ppi)	143	148	147	146	142	145	2.7	183	190	185	189	185	186	3.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								689	707	1225	915	1023		
			B	Load (ppi)	147	140	141	144	140	142	3.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S216	087709/ DTS216	F	T	Load (ppi)	142	141	141	152	138	143	5.6	185	185	190	190	185	187	2.3
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								817	582	633	484	1182		
			B	Load (ppi)	144	132	144	146	142	142	5.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/10/09

DATE REPORTED: 07/10/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/10/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 5.1 HOURS 74 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S217	087709/ DTS217	E	T	Load (ppi)	157	142	160	138	161	151	10.8	182	188	184	179	183	183	3.6
				Mode	BRK2	SE3	SE3	SE3	SE3			BRK2	BRK2	BRK2	BRK2	BRK2		
				Peel (%)	0	0	0	0	0									
				Shear (%)								298	249	262	249	253		
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														
DT-S218	087709/ DTS218	F	T	Load (ppi)	148	164	154	155	144	153	7.7	181	181	187	186	188	184	3.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								239	272	242	357	332		
			B	Load (ppi)	143	161	157	145	144	150	8.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/13/09

DATE REPORTED: 07/13/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/13/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 1.1 HOURS 74.2 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S219	087709/ DTS219	F	T	Load (ppi)	141	143	148	140	142	143	3.3	187	189	183	190	185	187	2.7
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								297	580	263	647	310		
			B	Load (ppi)	137	138	137	137	135	137	1.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S220	087709/ DTS220	E	T	Load (ppi)	145	109	123	147	132	131	16.0	190	177	189	191	183	186	5.9
				Mode	SE3	SE3	SE3	SE3	SE3			BRK1	BRK1	BRK2	BRK2	SE2		
				Peel (%)	0	0	0	0	0									
				Shear (%)								276	707	233	262	348		
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/13/09

DATE REPORTED: 07/13/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/13/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 1.5 HOURS 74.4 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S221	087709/ DTS221	F	T	Load (ppi)	140	136	135	137	141	138	2.6	190	187	191	184	185	187	3.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								661	717	563	687	549		
			B	Load (ppi)	136	139	133	145	138	138	4.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S222	087709/ DTS222	F	T	Load (ppi)	141	141	140	140	138	140	1.3	176	178	175	180	179	178	2.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								282	278	307	320	270		
			B	Load (ppi)	146	140	145	139	147	144	3.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JCW Date: 07/13/09

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GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/14/09

DATE REPORTED: 07/14/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/14/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 1.1 HOURS 73 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P213	087709/ DTP213	F	T	Load (ppi)	152	147	140	145	146	146	4.2	185	188	194	186	186	188	3.5
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								284	305	270	275	295		
			B	Load (ppi)	133	135	135	136	138	136	2.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P214	087709/ DTP214	F	T	Load (ppi)	146	152	152	154	146	150	3.6	187	189	188	191	184	188	2.7
				Mode	SE1	SE1	AD-BRK	SE1	SE1			SE1	BRK	BRK	SE1	SE1		
				Peel (%)	0	0	10	0	0									
				Shear (%)								297	227	223	227	307		
			B	Load (ppi)	138	135	143	144	148	141	5.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TH Date: 07/14/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/14/09

DATE REPORTED: 07/14/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/14/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 1.5 HOURS 73 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P215A	087709/ DTP215A	F	T	Load (ppi)	149	150	150	144	146	148	2.6	187	191	192	194	194	192	2.9
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								242	317	267	228	217		
			B	Load (ppi)	149	153	155	146	148	150	3.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P215B	087709/ DTP215B	F	T	Load (ppi)	140	147	142	146	139	143	3.5	193	193	196	192	193	193	1.4
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								234	310	227	223	232		
			B	Load (ppi)	145	150	143	142	136	143	5.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/14/09

DATE REPORTED: 07/14/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/14/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 2.4 HOURS 73 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P216	087709/ DTP216	F	T	Load (ppi)	145	140	143	134	139	140	4.3	188	190	190	187	183	187	2.8
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								239	297	229	230	233		
			B	Load (ppi)	126	146	133	138	128	134	8.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P217	087709/ DTP217	F	T	Load (ppi)	145	147	144	145	142	145	1.8	187	189	194	191	193	191	2.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1074	1067	1697	1200	1117		
			B	Load (ppi)	141	136	133	144	136	138	4.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/14/09

DATE REPORTED: 07/14/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/14/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.3 HOURS 73 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P218	087709/ DTP218	F	T	Load (ppi)	139	144	141	139	140	141	2.1	185	190	187	192	187	188	3.0
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								791	810	790	622	1150		
			B	Load (ppi)	139	145	139	147	135	141	5.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P219	087709/ DTP219	F	T	Load (ppi)	139	137	134	133	138	136	2.5	188	185	186	186	185	186	1.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								791	998	493	570	895		
			B	Load (ppi)	129	148	144	130	127	136	9.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/14/09

DATE REPORTED: 07/14/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/14/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.1 HOURS 74 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P220	087709/ DTP220	F	T	Load (ppi)	149	143	146	149	145	147	2.7	187	188	195	194	190	190	3.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								781	872	653	620	910		
			B	Load (ppi)	146	144	150	154	146	148	3.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P221	087709/ DTP221	F	T	Load (ppi)	124	145	120	122	156	133	16.3	186	192	187	191	186	189	2.8
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								859	727	755	850	875		
			B	Load (ppi)	154	144	153	146	154	150	4.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/14/09

DATE REPORTED: 07/14/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/14/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.4 HOURS 73 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P222	087709/ DTP222	F	T	Load (ppi)	157	157	156	156	161	157	2.2	186	187	192	191	187	189	2.9
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	SE1	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								707	673	783	834	900		
			B	Load (ppi)	151	146	146	148	151	148	2.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P223	087709/ DTP223	F	T	Load (ppi)	139	139	138	140	135	138	1.6	187	187	192	193	188	189	3.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1133	1078	637	795	762		
			B	Load (ppi)	134	135	135	138	134	135	1.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/14/09

DATE REPORTED: 07/14/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/14/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 5.1 HOURS 74 °F 44 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P224	087709/ DTP224	F	T	Load (ppi)	150	147	145	147	148	148	1.6	188	190	196	194	190	192	3.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								611	458	399	588	510		
			B	Load (ppi)	141	151	139	138	157	145	8.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P225	087709/ DTP225	F	T	Load (ppi)	143	142	142	143	141	142	1.1	187	188	193	191	188	189	2.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								984	1033	540	600	710		
			B	Load (ppi)	138	134	140	138	138	138	2.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/14/09

DATE REPORTED: 07/14/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/14/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 5.3 HOURS 74 °F 44 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P226	087709/ DTP226	F	T	Load (ppi)	143	144	150	137	148	144	4.8	189	190	196	195	191	192	3.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								581	550	395	737	512		
			B	Load (ppi)	135	134	144	143	132	138	5.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P227	087709/ DTP227	F	T	Load (ppi)	157	162	160	161	150	158	4.7	186	189	192	195	190	190	3.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1088	1027	832	632	500		
			B	Load (ppi)	147	143	137	155	145	146	6.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/14/09

DATE REPORTED: 07/14/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/14/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 5.5 HOURS 74 °F 45 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P228	087709/ DTP228	F	T	Load (ppi)	147	148	147	143	149	147	2.2	187	189	193	194	189	190	3.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								776	937	820	605	749		
			B	Load (ppi)	158	158	158	153	159	157	2.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S223	087709/ DTS223	F	T	Load (ppi)	137	141	136	137	137	138	1.9	183	189	190	183	189	187	3.6
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	SE1	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								856	1717	945	1860	883		
			B	Load (ppi)	132	133	134	141	131	134	3.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/15/09

DATE REPORTED: 07/15/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/15/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 1.0 HOURS 73.1 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P229	087709/ DTP229	F	T	Load (ppi)	142	148	147	144	141	145	3.3	190	184	189	188	181	186	3.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								548	900	555	628	827		
			B	Load (ppi)	152	160	158	158	158	157	3.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P230	087709/ DTP230	F	T	Load (ppi)	134	129	135	135	126	132	4.3	189	190	186	191	190	189	2.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1079	1460	843	984	740		
			B	Load (ppi)	149	147	146	145	137	145	4.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 07/15/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/15/09

DATE REPORTED: 07/15/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/15/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 1.3 HOURS 73.0 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P231	087709/ DTP231	F	T	Load (ppi)	139	148	143	138	138	141	4.1	191	191	187	188	192	190	2.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								651	801	842	762	565		
			B	Load (ppi)	144	149	140	134	134	140	6.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P232	087709/ DTP232	F	T	Load (ppi)	150	152	150	147	148	150	1.9	188	188	187	188	187	188	0.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								521	393	848	522	632		
			B	Load (ppi)	138	134	147	133	144	139	6.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 07/15/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/15/09

DATE REPORTED: 07/15/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/15/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 1.5 HOURS 73.0 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P233	087709/ DTP233	F	T	Load (ppi)	131	139	142	132	133	135	4.7	193	192	187	191	193	191	2.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								654	500	987	699	505		
			B	Load (ppi)	145	142	136	148	139	142	4.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P234	087709/ DTP234	F	T	Load (ppi)	146	139	146	144	142	143	3.0	191	191	187	188	192	190	2.3
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1024	838	820	928	824		
			B	Load (ppi)	148	143	139	140	136	141	4.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 07/19/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/15/09

DATE REPORTED: 07/15/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/15/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 2.3 HOURS 73.1 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P235	087709/ DTP235	F	T	Load (ppi)	144	149	150	144	141	146	3.9	185	186	185	186	185	185	0.4
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	SE1	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								899	645	790	779	875		
			B	Load (ppi)	147	145	145	147	148	147	1.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P236	087709/ DTP236	F	T	Load (ppi)	141	147	137	153	146	145	6.2	192	192	187	191	192	191	2.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								672	803	1000	953	727		
			B	Load (ppi)	137	146	150	155	143	146	6.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 07/19/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/15/09

DATE REPORTED: 07/15/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/15/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 2.6 HOURS 73.1 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P237	087709/ DTP237	F	T	Load (ppi)	140	135	131	137	148	138	6.1	184	183	182	184	182	183	0.9
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								718	665	755	800	594		
			B	Load (ppi)	141	149	146	143	138	144	4.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P238	087709/ DTP238	F	T	Load (ppi)	140	138	135	133	136	137	3.0	188	188	187	186	187	187	0.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								834	823	842	810	682		
			B	Load (ppi)	147	145	151	147	144	147	2.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 07/15/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/15/09

DATE REPORTED: 07/15/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/15/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.2 HOURS 73.2 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P239	087709/ DTP239	F	T	Load (ppi)	146	141	140	139	138	141	3.0	185	185	184	184	183	184	0.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								870	827	870	833	855		
			B	Load (ppi)	144	143	151	141	140	144	4.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 07/15/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/17/09

DATE REPORTED: 07/17/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/17/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 1.2 HOURS 73.4 °F 45 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S224	087709/ DTS224	F	T	Load (ppi)	146	149	138	145	143	144	4.0	189	191	185	189	191	189	2.4
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								292	243	297	248	263		
			B	Load (ppi)	152	144	132	155	140	145	9.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S225	087709/ DTS225	F	T	Load (ppi)	151	156	145	152	145	150	4.8	190	190	186	190	190	189	1.9
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								948	837	815	783	750		
			B	Load (ppi)	134	134	142	141	145	139	5.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 07/17/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/17/09

DATE REPORTED: 07/17/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/17/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 1.5 HOURS 73.5 °F 45 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S226	087709/ DTS226	F	T	Load (ppi)	149	148	149	147	142	147	2.8	185	187	183	186	188	186	2.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								851	954	957	883	865		
			B	Load (ppi)	139	135	137	137	132	136	2.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S227	087709/ DTS227	F	T	Load (ppi)	137	142	141	139	135	139	2.6	188	190	185	188	190	188	2.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								646	600	777	1225	405		
			B	Load (ppi)	127	149	146	148	144	143	8.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/17/09

DATE REPORTED: 07/17/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/17/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 2.2 HOURS 73.7 °F 46 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S228	087709/ DTS228	F	T	Load (ppi)	141	142	147	143	137	142	3.5	191	192	187	192	192	190	2.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								994	863	1490	648	727		
			B	Load (ppi)	137	137	137	144	133	138	4.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S229	087709/ DTS229	E	T	Load (ppi)	145	160	145	149	144	148	6.7	170	178	175	179	182	177	4.4
				Mode	SE3	SE3	SE3	AD1	SE3			BRK1	BRK2	BRK2	BRK2	BRK2		
				Peel (%)	0	0	0	30	0									
				Shear (%)								54	370	292	384	367		
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/17/09

DATE REPORTED: 07/17/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/17/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 2.5 HOURS 73.9 °F 46 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S230	087709/ DTS230	F	T	Load (ppi)	137	140	139	135	135	137	2.1	189	189	185	189	188	188	1.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								664	984	962	1553	933		
			B	Load (ppi)	142	147	151	151	139	146	5.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S231	087709/ DTS231	F	T	Load (ppi)	144	143	146	143	144	144	1.3	192	193	187	192	192	191	2.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	BRK	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								826	687	505	860	725		
			B	Load (ppi)	138	142	141	139	134	139	3.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 07/17/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/17/09

DATE REPORTED: 07/17/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/17/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.2 HOURS 74.2 °F 46 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S232	087709/ DTS232	F	T	Load (ppi)	148	148	148	146	141	146	3.0	194	194	188	194	193	193	2.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								666	800	1134	713	830		
			B	Load (ppi)	147	145	148	141	143	145	2.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S233	087709/ DTS233	F	T	Load (ppi)	140	136	137	138	134	137	1.9	185	186	181	187	185	185	2.0
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								764	710	773	664	697		
			B	Load (ppi)	139	138	145	142	138	140	3.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: _____ Date: 07/17/09

Form R-4:Rev.0

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/17/09

DATE REPORTED: 07/17/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/17/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.5 HOURS 74.5 °F 46 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S234	087709/ DTS234	F	T	Load (ppi)	141	141	144	139	135	140	3.3	185	187	178	188	186	185	4.0
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								284	263	329	367	255		
			B	Load (ppi)	134	146	148	143	142	142	5.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S235	087709/ DTS235	F	T	Load (ppi)	140	145	146	141	140	142	2.9	189	190	185	190	190	189	2.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								367	408	823	410	467		
			B	Load (ppi)	136	134	138	142	131	136	4.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 07/17/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/17/09

DATE REPORTED: 07/17/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/17/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.1 HOURS 74.6 °F 45 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S236	087709/ DTS236	F	T	Load (ppi)	152	153	143	153	149	150	4.2	180	181	179	184	185	182	2.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	SE1	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								223	295	225	210	257		
			B	Load (ppi)	141	143	144	137	142	141	2.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S237	087709/ DTS237	F	T	Load (ppi)	166	149	141	146	166	154	11.6	201	202	198	202	202	201	1.8
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								674	610	767	665	575		
			B	Load (ppi)	149	143	158	151	144	149	6.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 07/17/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/17/09

DATE REPORTED: 07/17/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/17/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.4 HOURS 74.6 °F 45 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S238	087709/ DTS238	F	T	Load (ppi)	148	146	150	146	139	146	3.9	199	198	193	198	194	196	2.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								729	754	910	683	992		
			B	Load (ppi)	160	146	135	162	143	149	11.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-S239	087709/ DTS239	F	T	Load (ppi)	135	151	144	144	144	144	5.6	186	185	185	187	184	186	1.2
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								306	380	292	372	295		
			B	Load (ppi)	145	140	143	139	143	142	2.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 07/17/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/17/09

DATE REPORTED: 07/17/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/17/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 5.1 HOURS 74.7 °F 45 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-S240	087709/ DTS240	F	T	Load (ppi)	135	131	151	151	138	141	9.3	178	180	183	180	176	180	2.7
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								198	156	203	249	199		
			B	Load (ppi)	134	130	134	152	153	141	10.9							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TW Date: 07/17/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/24/09

DATE REPORTED: 07/24/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/24/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 1.2 HOURS 73.0 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P240A	087709/ DTP240A	F	T	Load (ppi)	150	145	116	138	135	137	13.2	187	185	189	188	187	187	1.4
				Mode	SE1	SE1	AD-BRK	SE1	SE1			BRK	BRK	BRK	BRK	BRK		
				Peel (%)	0	0	20	0	0									
				Shear (%)								294	247	232	287	315		
			B	Load (ppi)	147	141	146	143	136	143	4.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P240BR	087709/ DTP240BR	E	T	Load (ppi)	146	138	138	125	133	136	7.8	175	179	180	177	173	177	3.0
				Mode	SE3	SE3	SE3	SE3	SE3			BRK2	BRK2	BRK2	SE2	BRK2		
				Peel (%)	0	0	0	0	0									
				Shear (%)								387	307	312	264	231		
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: [signature] Date: 07/24/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/24/09

DATE REPORTED: 07/24/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/24/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 1.5 HOURS 72.7 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P241	087709/ DTP241	F	T	Load (ppi)	135	132	135	132	135	134	1.8	189	191	193	189	193	191	2.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								751	480	538	740	480		
			B	Load (ppi)	159	144	131	129	158	144	14.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P242	087709/ DTP242	F	T	Load (ppi)	137	144	142	143	143	142	2.6	196	200	200	196	199	198	1.8
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1042	777	897	857	932		
			B	Load (ppi)	151	154	145	142	147	148	4.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/24/09

DATE REPORTED: 07/24/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/24/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.0 HOURS 73.4 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P243	087709/ DTP243	F	T	Load (ppi)	147	140	152	145	137	144	5.9	188	186	189	189	189	188	1.3
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1267	1083	932	860	808		
			B	Load (ppi)	139	129	126	135	133	132	5.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P244	087709/ DTP244	F	T	Load (ppi)	130	134	140	143	137	137	5.0	188	186	185	186	185	186	1.1
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1072	955	797	877	867		
			B	Load (ppi)	137	140	143	141	142	141	2.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/24/09

DATE REPORTED: 07/24/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/24/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.4 HOURS 73.5 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P245	087709/ DTP245	F	T	Load (ppi)	141	146	152	150	145	147	4.3	190	191	189	187	187	189	1.9
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								249	845	197	245	248		
			B	Load (ppi)	143	142	143	157	141	145	6.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P246	087709/ DTP246	F	T	Load (ppi)	138	141	141	140	137	140	1.8	193	193	192	192	192	193	0.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	BRK	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								672	1650	873	1432	648		
			B	Load (ppi)	158	155	163	153	158	157	3.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/24/09

DATE REPORTED: 07/24/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/24/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.2 HOURS 73.6 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P247	087709/ DTP247	F	T	Load (ppi)	143	133	135	133	132	135	4.6	187	187	187	187	184	186	1.2
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1156	1153	1028	1027	1383		
			B	Load (ppi)	144	144	137	136	135	139	4.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P248	087709/ DTP248	F	T	Load (ppi)	148	148	146	148	147	147	0.6	186	185	185	184	182	184	1.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1421	1327	1370	1325	1250		
			B	Load (ppi)	134	132	136	142	137	136	3.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/24/09

DATE REPORTED: 07/24/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/24/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.5 HOURS 73.9 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P250	087709/ DTP250	F	T	Load (ppi)	133	131	130	125	131	130	2.9	197	195	195	194	192	194	1.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								701	1233	697	810	692		
			B	Load (ppi)	131	132	131	129	128	130	1.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P251	087709/ DTP251	E	T	Load (ppi)	124	120	137	125	120	125	6.9	173	173	174	165	168	170	3.8
				Mode	SE3	SE3	SE3	SE3	SE3			BRK1	BRK1	BRK1	BRK1	BRK1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								283	248	324	297	254		
				Load (ppi)														
				Mode														
				Peel (%)														
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 07/24/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/24/09

DATE REPORTED: 07/24/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/24/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 5.1 HOURS 73.9 °F 41 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P252	087709/ DTP252	F	T	Load (ppi)	138	147	150	142	151	146	5.4	192	193	192	192	192	192	0.4
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								662	640	660	665	622		
			B	Load (ppi)	133	131	137	135	135	134	2.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P253	087709/ DTP253	F	T	Load (ppi)	146	144	148	147	148	147	1.7	187	186	186	185	184	186	1.3
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								942	812	932	867	953		
			B	Load (ppi)	140	137	139	142	143	140	2.5							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 07/24/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/28/09

DATE REPORTED: 07/28/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/28/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 1.0 HOURS 73.0 °F 42 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P249	087709/ DTP249	F	T	Load (ppi)	137	148	145	148	145	145	4.3	195	199	200	196	198	198	2.1
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								799	730	584	575	738		
			B	Load (ppi)	139	134	144	131	127	135	6.7							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P254	087709/ DTP254	F	T	Load (ppi)	153	160	147	152	150	152	4.9	203	206	203	200	202	203	2.2
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1528	607	572	772	643		
			B	Load (ppi)	160	162	163	162	155	161	3.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: [signature] Date: 07/28/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/31/09

DATE REPORTED: 07/31/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/30/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.5 HOURS 73.3 °F 44 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P255	087709/ DTP255	F	T	Load (ppi)	144	148	144	141	143	144	2.6	189	191	190	189	186	189	1.9
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1294	1393	710	697	812		
			B	Load (ppi)	142	142	142	139	141	141	1.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P256	087709/ DTP256	F	T	Load (ppi)	144	143	140	131	130	138	6.6	182	176	186	182	177	181	4.4
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	SE1	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								281	131	245	255	303		
			B	Load (ppi)	155	143	138	145	141	144	6.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 07/31/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 07/31/09

DATE REPORTED: 07/31/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 07/30/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 4.3 HOURS 73.7 °F 44 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P257A	087709/ DTP257A	E	T	Load (ppi)	137	125	130	134	132	132	4.6	179	177	176	174	172	176	2.7
				Mode	SE3	SE3	SE3	SE3	SE3			SE1	BRK1	BRK1	BRK1	BRK1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								295	257	245	234	263		
DT-P257B	087709/ DTP257A	E	T	Load (ppi)	146	136	140	135	127	137	7.0	175	173	173	176	173	174	1.3
				Mode	SE3	SE3	SE3	SE3	SE3			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								184	79	173	250	267		
DT-P258	087709/ DTP258	F	T	Load (ppi)	126	118	131	134	124	127	6.2	181	179	182	186	180	182	2.6
				Mode	SE3	SE3	SE3	SE3	SE3			BRK2	BRK2	BRK2	BRK2	BRK2		
				Peel (%)	0	0	0	0	0									
				Shear (%)								373	300	339	330	305		

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: [signature] Date: 07/31/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 08/19/09

DATE REPORTED: 08/19/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 08/18/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 74.8 °F 43 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P259	087709/ DTP259	F	T	Load (ppi)	146	144	148	147	155	148	4.3	186	190	190	191	192	190	2.5
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								616	563	727	600	700		
			B	Load (ppi)	150	149	147	145	134	145	6.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P260	087709/ DTP260	F	T	Load (ppi)	145	154	146	146	147	148	3.8	190	192	194	195	197	194	2.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								844	743	690	773	772		
			B	Load (ppi)	132	134	134	138	135	135	2.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TH Date: 08/19/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 08/19/09

DATE REPORTED: 08/19/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 08/18/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 74.9 °F 44 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P261	087709/ DTP261	F	T	Load (ppi)	146	153	138	145	133	143	7.6	183	180	183	179	181	181	1.8
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								384	350	312	267	323		
			B	Load (ppi)	126	138	138	145	141	138	7.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P262	087709/ DTP262	F	T	Load (ppi)	149	147	144	148	146	147	2.0	175	182	190	187	183	183	5.8
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	BRK	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								304	240	240	248	298		
			B	Load (ppi)	150	145	155	141	140	146	6.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 08/19/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 08/19/09

DATE REPORTED: 08/19/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 08/18/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 74.3 °F 44 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P263	087709/ DTP263	F	T	Load (ppi)	148	157	106	141	131	137	19.6	185	181	182	186	182	183	2.1
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	BRK	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								254	337	382	270	332		
			B	Load (ppi)	144	147	135	143	156	145	7.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P264	087709/ DTP264	F	T	Load (ppi)	148	141	136	148	143	143	5.0	190	196	195	196	195	194	2.3
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1106	967	828	1693	975		
			B	Load (ppi)	135	135	153	133	135	138	8.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 08/19/09

DATE REPORTED: 08/19/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 08/18/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 74.8 °F 44 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P265	087709/ DTP265	F	T	Load (ppi)	154	147	143	147	133	145	7.7	189	196	195	195	196	194	3.0
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								1057	993	1042	848	883		
			B	Load (ppi)	135	135	132	133	132	133	1.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P266	087709/ DTP266	F	T	Load (ppi)	145	145	143	141	141	143	2.1	196	195	186	194	195	193	3.9
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								989	992	1093	875	813		
			B	Load (ppi)	142	140	139	140	140	140	1.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: JM Date: 08/19/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 08/19/09

DATE REPORTED: 08/19/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 08/18/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 74.4 °F 45 %RH

Incoming Sample No.	Laboratory Location Number	Weld Type	Weld	Item	Peel Test 1	2	3	4	5	Avg.	Std. Dev.	Shear Test 1	2	3	4	5	Avg.	Std. Dev.
DT-P267	087709/ DTP267	F	T	Load (ppi)	149	147	141	144	145	145	2.9	188	192	191	191	190	190	1.6
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								518	428	417	398	407		
			B	Load (ppi)	132	133	130	128	129	131	2.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P268	087709/ DTP268	F	T	Load (ppi)	131	137	148	152	122	138	11.9	177	182	177	174	173	177	3.4
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	SE1	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								306	243	400	232	243		
			B	Load (ppi)	153	147	141	147	148	147	4.1							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: TM Date: 08/19/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 08/19/09

DATE REPORTED: 08/19/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 08/18/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: >24 HOURS 75.3 °F 45 %RH

																Shear Test		
															5	Avg.	Dev.
DT-P269	087709/ DTP269	F	T	Load (ppi)	140	143	147	138	126	139	8.1	179	185	188	187	180	184	4.0
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								306	250	250	247	270		
			B	Load (ppi)	154	142	144	137	137	143	7.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P270A	087709/ DTP270A	E	T	Load (ppi)	126	115	108	123	112	117	7.4	173	172	172	179	175	175	2.8
				Mode	SE3	SE3	SE3	SE3	SE3			BRK2	SE1	SE1	BRK2	BRK2		
				Peel (%)	0	0	0	0	0									
				Shear (%)								272	284	325	248	327		
DT-P270B	087709/ DTP270B	E	T	Load (ppi)	124	114	100	108	113	112	8.9	176	179	172	178	176	176	2.6
				Mode	SE3	SE3	SE3	SE3	SE3			BRK2	BRK2	BRK2	SE2	SE2		
				Peel (%)	0	0	0	0	0									
				Shear (%)								251	308	232	360	310		

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: RM Date: 08/19/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 08/25/09

DATE REPORTED: 08/25/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 08/25/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 1.0 HOURS 74 °F 40 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P271	087709/ DTP271	F	T	Load (ppi)	154	152	156	146	149	151	3.8	194	194	194	193	192	193	1.1
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								246	341	737	606	800		
			B	Load (ppi)	141	140	141	136	138	139	2.0							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P272	087709/ DTP272	F	T	Load (ppi)	145	143	141	140	142	142	1.8	193	195	195	193	192	194	1.3
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								913	678	576	497	595		
			B	Load (ppi)	140	145	137	137	133	138	4.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: [signature] Date: 08/25/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 08/25/09

DATE REPORTED: 08/25/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 08/25/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 2.2 HOURS 74 °F 39 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P273	087709/ DTP273	F	T	Load (ppi)	149	147	150	152	140	148	4.9	197	200	196	194	190	196	3.9
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	BRK	BRK	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								233	791	320	296	333		
			B	Load (ppi)	140	139	137	143	139	140	2.4							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P274	087709/ DTP274	F	T	Load (ppi)	146	143	144	137	144	143	3.4	197	197	197	196	195	196	0.9
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								787	694	539	355	678		
			B	Load (ppi)	141	137	137	134	138	137	2.6							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: [signature] Date: 08/25/09

ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 08/25/09

DATE REPORTED: 08/25/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 08/25/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 2.6 HOURS 74 °F 39 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P275	087709/ DTP275	F	T	Load (ppi)	143	149	150	146	146	147	2.8	200	200	198	197	196	198	1.8
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	SE1	BRK	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								711	1329	1083	644	509		
			B	Load (ppi)	142	139	135	138	134	138	3.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P276	087709/ DTP276	F	T	Load (ppi)	129	127	146	143	131	135	8.6	195	194	194	192	191	193	1.7
				Mode	SE1	SE1	SE1	SE1	SE1			SE1	SE1	SE1	SE1	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								633	449	393	343	317		
			B	Load (ppi)	145	141	134	131	135	137	5.8							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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Checked By: [signature] Date: 08/25/09

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ARDAMAN & ASSOCIATES, INC. GEOSYNTHETICS LABORATORY

GEOMEMBRANE FIELD SEAM DESTRUCTIVE TEST REPORT
ASTM STANDARD D 6392

CLIENT: Sarasota County

PROJECT: CCSWDC

FILE NO.: 08-7709

DATE TESTED: 08/25/09

DATE REPORTED: 08/25/09

GEOMEMBRANE TYPE: 60-mil HDPE

DATE SAMPLES RECEIVED: 08/25/09

CROSS-HEAD SPEED: Peel: ☒ 2 in/min ☐ 20 in/min
Shear: ☒ 2 in/min ☐ 20 in/min

CONDITIONING: 3.3 HOURS 71 °F 39 %RH

Incoming Sample No.	Laboratory Identification Number	Weld Type	Weld	Item	Peel Test							Shear Test						
					1	2	3	4	5	Avg.	Std. Dev.	1	2	3	4	5	Avg.	Std. Dev.
DT-P277	087709/ DTP277	F	T	Load (ppi)	154	159	163	158	157	158	3.3	191	188	184	189	186	188	2.5
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	SE1	BRK	SE1		
				Peel (%)	0	0	0	0	0									
				Shear (%)								289	250	250	241	231		
			B	Load (ppi)	159	160	158	163	147	157	6.3							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														
DT-P278	087709/ DTP278	F	T	Load (ppi)	116	125	135	130	141	130	9.7	195	194	192	194	191	193	1.5
				Mode	SE1	SE1	SE1	SE1	SE1			BRK	BRK	SE1	SE1	BRK		
				Peel (%)	0	0	0	0	0									
				Shear (%)								238	217	246	244	259		
			B	Load (ppi)	157	154	154	147	134	149	9.2							
				Mode	SE1	SE1	SE1	SE1	SE1									
				Peel (%)	0	0	0	0	0									
				Shear (%)														

Comments: Shear test procedure modified from completion at 50% elongation at 2"/minute to 200% elongation at 2"/minute followed by elongating to rupture at 20"/minute.

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