



TRI/ENVIRONMENTAL, INC.

A Texas Research International Company

November 29, 2005

Dr. Peterle
TEMA Technologies and Materials
Via dell'Industria, 21
31029 VITTORIO VENETO (TV)
ITALY

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Dr. Peterle:

Thank you for consulting TRI/Environmental, Inc. (TRI) for your geosynthetics testing needs. TRI is pleased to submit this final report for laboratory testing.

TRI Job Reference Number: E2251-06-02

Material(s) Tested: 4 Xgrid Geogrid(s)

Test(s) Requested: Updating ==> Wide Width Tensile (ASTM D 6637)
Single Rib Tensile (ASTM D 6637)
Mass/Unit Area (ASTM D 5261)
Junction Strength (GRI GG2)
Torsional Stiffness (COE method)
Flexural Stiffness (ASTM D1388, mod)
Data Pending ==>> Carboxyl End Group (CEG) Count (GRI GG7)
Data Pending ==>> Molecular Weight (GRI GG8)

If you have any questions or require any additional information, please call us at 1-800-880-8378.

Sincerely,

Jarrett A. Nelson
Special Projects Manager
Geosynthetic Services Division



GEOGRID TEST RESULTS
TRI Client: TEMA

Material: Xgrid Geogrid
Sample Identification: XGRID PET PVC 40/20 IT
TRI Log #: E2251-06-02

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	
	1	2	3	4	5	6	7	8	9	10			
Wide Width Tensile Properties (ASTM D 6637)													
MD Number of Ribs per Specimen:	5												
MD Number of Ribs per foot:	9.54												
MD Ultimate Strength (lbs)	1629	1624	1587	1704	1591	1641					1629	39	
MD Ultimate Strength (lbs/ft)	3108	3098	3028	3251	3035	3131					3108	74	
MD Ultimate Strength (kN/m)	45.4	45.2	44.2	47.5	44.3	45.7					45.4	1.1	
MD Strength @ 2% Strain (lbs)	358	368	359	349	350	331					353	12	
MD Strength @ 2% Strain (lbs/ft)	683	702	685	666	668	631					672	22	
MD Strength @ 2% Strain (kN/m)	9.97	10.25	10.00	9.72	9.75	9.22					9.82	0.32	
MD Strength @ 5% Strain (lbs)	488	501	483	473	475	465					481	12	
MD Strength @ 5% Strain (lbs/ft)	931	956	921	902	906	887					917	22	
MD Strength @ 5% Strain (kN/m)	13.59	13.95	13.45	13.17	13.23	12.95					13.39	0.32	
MD Strength @ 10% Strain (lbs)	894	1036	895	821	859	907					902	66	
MD Strength @ 10% Strain (lbs/ft)	1705	1976	1707	1566	1639	1730					1721	127	
MD Strength @ 10% Strain (kN/m)	24.9	28.9	24.9	22.9	23.9	25.3					25.1	1.9	
MD Break Elongation (%)	13.5	12.6	13.3	14.6	13.8	13.7					13.6	0.6	
Mass/Unit Area (ASTM D 5261)													
Mass/unit area (grams)	25.21	25.71	26.48	25.51	26.28	24.97	24.61	24.26	24.85	24.34	25.22	0.73	
Mass/unit area (oz/sq.yd)	10.65	10.86	11.19	10.78	11.10	10.55	10.40	10.25	10.50	10.28	10.65	0.31	
Mass/unit area (g/m2)	361	368	379	365	376	358	352	347	356	349	361	10	
Single Rib Tensile Properties (ASTM D 6637)													
MD - Number of Ribs per foot:	9.54												
MD Maximum Strength (lbs)	375	365	370	375	373	369	370	372	378	393	374	7	
MD Maximum Strength (N)	1669	1624	1647	1669	1660	1642	1647	1655	1682	1749	1664	32	
MD Maximum Strength (lbs/ft)	3577	3482	3529	3577	3558	3520	3529	3548	3606	3749	3567	69	
MD Maximum Strength (kN/m)	52.2	50.8	51.5	52.2	51.9	51.4	51.5	51.8	52.6	54.7	52.1	1.0	
MD Break Elongation (%)	17.0	15.7	15.8	17.1	16.9	16.4	16.8	16.5	16.1	17.8	16.6	0.6	
Junction/Node Strength (GRI GG2)													
MD - Number of Junctions per foot:	9.54												
MD Junction Strength (lbs)	101.2	88.6	85.9	99.6	99.6	105.9	104.3	100.9	103.1	98.8	98.8	6.2	
MD Junction Strength (N)	450	394	382	443	443	471	464	449	459	440	440	27	
MD Junction Strength (lbs/ft)	965	845	819	950	950	1010	995	962	983	942	942	59	
MD Junction Strength (kN/m)	14.1	12.3	12.0	13.9	13.9	14.7	14.5	14.1	14.4	13.8	13.8	0.9	

MD - Machine Direction

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GEOGRID TEST RESULTS
TRI Client: TEMA

Material: Xgrid Geogrid
Sample Identification: XGRID PET PVC 60/20 IT
TRI Log #: E2251-06-02

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	
	1	2	3	4	5	6	7	8	9	10			
Wide Width Tensile Properties (ASTM D 6637)													
MD Number of Ribs per Specimen:	5												
MD Number of Ribs per foot:	9.37												
MD Ultimate Strength (lbs)	2174	2334	2412	2317	2383	2570						2365	119
MD Ultimate Strength (lbs/ft)	4074	4374	4520	4342	4466	4816						4432	222
MD Ultimate Strength (kN/m)	59.5	63.9	66.0	63.4	65.2	70.3						64.7	3.2
MD Strength @ 2% Strain (lbs)	401	422	441	446	417	416						424	15
MD Strength @ 2% Strain (lbs/ft)	751	791	826	836	781	780						794	29
MD Strength @ 2% Strain (kN/m)	10.97	11.55	12.07	12.20	11.41	11.38						11.60	0.42
MD Strength @ 5% Strain (lbs)	620	626	645	638	621	631						630	9
MD Strength @ 5% Strain (lbs/ft)	1162	1173	1209	1196	1164	1183						1181	17
MD Strength @ 5% Strain (kN/m)	17.0	17.1	17.6	17.5	17.0	17.3						17.24	0.25
MD Strength @ 10% Strain (lbs)	1185	1103	1262	1281	1037	1411						1213	123
MD Strength @ 10% Strain (lbs/ft)	2221	2067	2365	2401	1943	2644						2274	230
MD Strength @ 10% Strain (kN/m)	32.4	30.2	34.5	35.0	28.4	38.6						33.2	3.4
MD Break Elongation (%)	13.5	14.7	13.5	13.5	15.3	14.0						14.1	0.7
Wide Width Tensile Properties (ASTM D 6637) RETEST #1													
MD Number of Ribs per Specimen:	5												
MD Number of Ribs per foot:	9.37												
MD Ultimate Strength (lbs)	2266	2362	2298	2300	2244	2276						2291	37
MD Ultimate Strength (lbs/ft)	4247	4427	4307	4310	4205	4265						4293	69
MD Ultimate Strength (kN/m)	62.0	64.6	62.9	62.9	61.4	62.3						62.7	1.0
MD Strength @ 2% Strain (lbs)	420	416	422	372	366	407						401	23
MD Strength @ 2% Strain (lbs/ft)	787	780	791	697	686	763						751	43
MD Strength @ 2% Strain (kN/m)	11.5	11.4	11.5	10.2	10.0	11.1						11.0	0.6
MD Strength @ 5% Strain (lbs)	622	618	625	599	612	607						614	9
MD Strength @ 5% Strain (lbs/ft)	1166	1158	1171	1123	1147	1138						1150	17
MD Strength @ 5% Strain (kN/m)	17.0	16.9	17.1	16.4	16.7	16.6						16.80	0.24
MD Strength @ 10% Strain (lbs)	1071	1102	1101	953	1178	980						1064	77
MD Strength @ 10% Strain (lbs/ft)	2007	2065	2063	1786	2208	1837						1994	144
MD Strength @ 10% Strain (kN/m)	29.3	30.2	30.1	26.1	32.2	26.8						29.1	2.1
MD Break Elongation (%)	14.3	14.4	14.1	15.6	13.5	15.3						14.5	0.7

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Material: Xgrid Geogrid
Sample Identification: XGRID PET PVC 60/20 IT
TRI Log #: E2251-06-02

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.
	1	2	3	4	5	6	7	8	9	10		
Wide Width Tensile Properties (ASTM D 6637, modified*)												
RETEST #2												
MD Number of Ribs per Specimen:	5											
MD Number of Ribs per foot:	9.37											
MD Ultimate Strength (lbs)	3080	3119	2807	2773	3075						2971	149
MD Ultimate Strength (lbs/ft)	5772	5845	5260	5197	5763						5567	279
MD Ultimate Strength (kN/m)	84.3	85.3	76.8	75.9	84.1						81.3	4.1
MD Strength @ 2% Strain (lbs)	360	365	376	360	413						375	20
MD Strength @ 2% Strain (lbs/ft)	675	684	705	675	774						702	37
MD Strength @ 2% Strain (kN/m)	9.85	9.99	10.29	9.85	11.30						10.25	0.55
MD Strength @ 5% Strain (lbs)	589	599	609	600	629						605	13
MD Strength @ 5% Strain (lbs/ft)	1104	1123	1141	1124	1179						1134	25
MD Strength @ 5% Strain (kN/m)	16.1	16.4	16.7	16.4	17.2						16.56	0.37
MD Strength @ 10% Strain (lbs)	801	818	830	905	944						860	55
MD Strength @ 10% Strain (lbs/ft)	1501	1533	1555	1696	1769						1611	103
MD Strength @ 10% Strain (kN/m)	21.9	22.4	22.7	24.8	25.8						23.5	1.5
MD Break Elongation (%)	22.8	22.9	19.8	18.4	20.4						20.9	1.7

MD - Machine Direction

* The severed outer ribs as described in ASTM D 6637 appeared to bias the test results. Therefore the outer ribs were left intact.

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TRI Client: TEMA

Material: Xgrid Geogrid
Sample Identification: XGRID PET PVC 60/20 IT
TRI Log #: E2251-06-02

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.
	1	2	3	4	5	6	7	8	9	10		
Mass/Unit Area (ASTM D 5261)												
Mass/unit area (grams)	33.63	31.67	30.41	32.14	33.49	30.34	32.69	34.18	33.20	33.74	32.55	1.30
Mass/unit area (oz/sq.yd)	14.21	13.38	12.85	13.58	14.15	12.82	13.81	14.44	14.02	14.25	13.75	0.55
Mass/unit area (g/m ²)	1140	1074	1031	1090	1135	1029	1108	1159	1125	1144	1103	44
Single Rib Tensile Properties (ASTM D 6637)												
MD - Number of Ribs per foot:	9.37											
MD Maximum Strength (lbs)	505	492	500	503	513	502	504	500	498	498	502	5
MD Maximum Strength (N)	2247	2189	2225	2238	2283	2234	2243	2225	2216	2216	2232	23
MD Maximum Strength (lbs/ft)	4732	4610	4685	4713	4807	4704	4723	4685	4666	4666	4699	49
MD Maximum Strength (kN/m)	69.1	67.3	68.4	68.8	70.2	68.7	69.0	68.4	68.1	68.1	68.6	0.7
MD Break Elongation (%)	15.9	16.3	16.1	16.3	16.2	15.2	15.8	15.3	16.4	16.0	16.0	0.4
Single Rib Tensile Properties (ASTM D 6637, modified*) RETEST #1												
MD - Number of Ribs per foot:	9.37											
MD Maximum Strength (lbs)	617	617	621	613	616						617	3
MD Maximum Strength (N)	2746	2746	2763	2728	2741						2745	11
MD Maximum Strength (lbs/ft)	5781	5781	5819	5744	5772						5780	24
MD Maximum Strength (kN/m)	84.4	84.4	85.0	83.9	84.3						84.4	0.4
MD Break Elongation (%)	18.2	18.5	17.9	17.9	19.1						18.3	0.4
Junction/Node Strength (GRI GG2)												
MD - Number of Junctions per foot:	9.37											
MD Junction Strength (lbs)	96.5	103.2	98.3	95.7	98.3	98.4	88.9	91.3	114.5	95.5	98.1	6.6
MD Junction Strength (N)	429	459	437	426	437	438	396	406	510	425	436	30
MD Junction Strength (lbs/ft)	904	967	921	897	921	922	833	856	1073	895	919	62
MD Junction Strength (kN/m)	13.2	14.1	13.4	13.1	13.4	13.5	12.2	12.5	15.7	13.1	13.4	0.9

MD - Machine Direction

* The severed outer ribs as described in ASTM D 6637 appeared to bias the test results. Therefore the outer ribs were left intact.

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GEOGRID TEST RESULTS
TRI Client: TEMA

Material: Xgrid Geogrid
Sample Identification: XGRID PET PVC 80/30 IT
TRI Log #: E2251-06-02

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.		
	1	2	3	4	5	6	7	8	9	10				
Wide Width Tensile Properties (ASTM D 6637)														
MD Number of Ribs per Specimen:	5													
MD Number of Ribs per foot:	9.67													
MD Ultimate Strength (lbs)	3234	3170	3551	3595	3305	3102						3326	185	
MD Ultimate Strength (lbs/ft)	6255	6132	6869	6954	6393	6000						6434	359	
MD Ultimate Strength (kN/m)	91.3	89.5	100.3	101.5	93.3	87.6						93.9	5.2	
MD Strength @ 2% Strain (lbs)	362	377	375	408	384	387						382	14	
MD Strength @ 2% Strain (lbs/ft)	700	729	725	789	743	749						739	27	
MD Strength @ 2% Strain (kN/m)	10.22	10.65	10.59	11.52	10.84	10.93						10.79	0.40	
MD Strength @ 5% Strain (lbs)	765	777	780	807	789	801						787	14	
MD Strength @ 5% Strain (lbs/ft)	1480	1503	1509	1561	1526	1549						1521	28	
MD Strength @ 5% Strain (kN/m)	21.6	21.9	22.0	22.8	22.3	22.6						22.21	0.40	
MD Strength @ 10% Strain (lbs)	1169	1214	1190	1389	1279	1300						1257	75	
MD Strength @ 10% Strain (lbs/ft)	2261	2348	2302	2687	2474	2515						2431	145	
MD Strength @ 10% Strain (kN/m)	33.0	34.3	33.6	39.2	36.1	36.7						35.5	2.1	
MD Break Elongation (%)	16.5	15.2	17.8	15.3	14.9	14.4						15.7	1.1	
Mass/Unit Area (ASTM D 5261)														
Mass/unit area (grams)	40.13	38.20	37.89	37.16	39.69	39.18	39.87	40.04	38.33	37.05		38.75	1.12	
Mass/unit area (oz/sq.yd)	16.95	16.14	16.01	15.70	16.77	16.55	16.84	16.91	16.19	15.65		16.37	0.47	
Mass/unit area (g/m2)	1360	1295	1284	1260	1345	1328	1352	1357	1299	1256		1314	38	
Single Rib Tensile Properties (ASTM D 6637)														
MD - Number of Ribs per foot:	9.67													
MD Maximum Strength (lbs)	734	723	721	723	717	717	732	732	727	700		723	9	
MD Maximum Strength (N)	3266	3217	3208	3217	3191	3191	3257	3257	3235	3115		3216	42	
MD Maximum Strength (lbs/ft)	7099	6992	6973	6992	6934	6934	7080	7080	7031	6770		6989	92	
MD Maximum Strength (kN/m)	103.6	102.1	101.8	102.1	101.2	101.2	103.4	103.4	102.7	98.8		102.0	1.3	
MD Break Elongation (%)	16.4	18.1	16.0	16.2	15.9	17.0	18.2	17.5	17.6	18.9		17.2	1.0	
Junction/Node Strength (GRI GG2)														
MD - Number of Junctions per foot:	9.67													
MD Junction Strength (lbs)	118	103	108	111	124	114	108	116	126	104		113.2	7.5	
MD Junction Strength (N)	525	458	481	494	552	507	481	516	561	463		504	33	
MD Junction Strength (lbs/ft)	1141	996	1045	1074	1199	1103	1045	1122	1219	1006		1095	72	
MD Junction Strength (kN/m)	16.7	14.5	15.2	15.7	17.5	16.1	15.2	16.4	17.8	14.7		16.0	1.1	

MD - Machine Direction

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GEOGRID TEST RESULTS
TRI Client: TEMA

Material: Xgrid Geogrid
Sample ID: PET Yarn
TRI Log #: E2251-06-02

PARAMETER	TEST REPLICATE NUMBER			MEAN	STD. DEV.
	1	2	3		
Carboxyl End Group (CEG) Count (GRI GG7)	DATA PENDING				
mmol/Kg	0.0	0.0	0.0	0.0	0.0
Molecular Weight (GRI GG8)	DATA PENDING				
Mn (Number average molecular weight)	0	0	0	0	0

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GEOGRID TEST RESULTS
TRI Client: TEMA

Material: Xgrid Geogrid
Sample Identification: XGRID PET PVC 30/30 IT
TRI Log #: E2251-06-02

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.		
	1	2	3	4	5	6	7	8	9	10				
Wide Width Tensile Properties (ASTM D 6637)														
MD Number of Ribs per Specimen:	5													
MD Number of Ribs per foot:	9.49													
MD Ultimate Strength (lbs)	1111	1176	1179	1156	1156	1146						1154	22	
MD Ultimate Strength (lbs/ft)	2109	2232	2238	2194	2194	2175						2191	43	
MD Ultimate Strength (kN/m)	30.8	32.6	32.7	32.0	32.0	31.8						32.0	0.6	
MD Strength @ 2% Strain (lbs)	275	278	278	294	281	287						282	6	
MD Strength @ 2% Strain (lbs/ft)	522	528	528	558	533	545						536	12	
MD Strength @ 2% Strain (kN/m)	7.62	7.70	7.70	8.15	7.79	7.95						7.82	0.18	
MD Strength @ 5% Strain (lbs)	370	372	374	383	374	379						375	4	
MD Strength @ 5% Strain (lbs/ft)	702	706	710	727	710	719						712	8	
MD Strength @ 5% Strain (kN/m)	10.3	10.3	10.4	10.6	10.4	10.5						10.40	0.12	
MD Strength @ 10% Strain (lbs)	599	598	606	761	666	644						646	57	
MD Strength @ 10% Strain (lbs/ft)	1137	1135	1150	1445	1264	1222						1226	109	
MD Strength @ 10% Strain (kN/m)	16.6	16.6	16.8	21.1	18.5	17.8						17.9	1.6	
MD Break Elongation (%)	13.8	14.1	13.3	12.6	12.8	13.4						13.3	0.5	
TD # Ribs/Wide Width Specimen: 5														
TD # Ribs/Foot Width: 8.99														
TD Ultimate Strength (lbs)	1252	1285	1308	1357	1294	1369						1311	41	
TD Ultimate Strength (lbs/ft)	2251	2310	2351	2439	2326	2461						2356	73	
TD Ultimate Strength (kN/m)	32.9	33.7	34.3	35.6	34.0	35.9						34.4	1.1	
TD Strength @ 2% Strain (lbs)	290	285	292	301	284	285						290	6	
TD Strength @ 2% Strain (lbs/ft)	521	512	525	541	511	512						520	11	
TD Strength @ 2% Strain (kN/m)	7.61	7.48	7.66	7.90	7.45	7.48						7.60	0.16	
TD Strength @ 5% Strain (lbs)	372	370	378	387	369	364						373	7	
TD Strength @ 5% Strain (lbs/ft)	669	665	679	696	663	654						671	13	
TD Strength @ 5% Strain (kN/m)	9.76	9.71	9.92	10.16	9.68	9.55						9.80	0.19	
TD Strength @ 10% Strain (lbs)	690	705	823	837	784	718						760	58	
TD Strength @ 10% Strain (lbs/ft)	1240	1267	1479	1505	1409	1291						1365	104	
TD Strength @ 10% Strain (kN/m)	18.1	18.5	21.6	22.0	20.6	18.8						19.9	1.5	
TD Break Elongation (%)	13.4	13.5	12.2	12.9	12.7	13.0						12.9	0.4	
Mass/Unit Area (ASTM D 5261)														
Mass/unit area (grams)	25.70	25.70	26.42	28.13	27.48	28.03	27.17	26.70	26.51	25.51		26.73	0.90	
Mass/unit area (oz/sq.yd)	10.86	10.86	11.17	11.89	11.61	11.85	11.48	11.28	11.20	10.78		11.30	0.38	
Mass/unit area (g/m2)	368	368	379	403	394	402	389	383	380	365		383	13	

MD - Machine Direction TD - Transverse/Cross Machine Direction

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GEOGRID TEST RESULTS
TRI Client: TEMA

Material: Xgrid Geogrid
Sample Identification: XGRID PET PVC 30/30 IT
TRI Log #: E2251-06-02

PARAMETER	TEST REPLICATE NUMBER										MEAN	STD. DEV.	
	1	2	3	4	5	6	7	8	9	10			
Single Rib Tensile Properties (ASTM D 6637)													
MD - Number of Ribs per foot:	9.49												
TD - Number of Ribs per foot:	8.99												
MD Maximum Strength (lbs)	290	278	279	288	292	283	283	290	289	275	285	6	
MD Maximum Strength (N)	1291	1237	1242	1282	1299	1259	1259	1291	1286	1224	1267	25	
MD Maximum Strength (lbs/ft)	2752	2639	2648	2733	2771	2686	2686	2752	2743	2610	2702	53	
MD Maximum Strength (kN/m)	40.2	38.5	38.7	39.9	40.5	39.2	39.2	40.2	40.0	38.1	39.5	0.8	
MD Break Elongation (%)	17.1	16.2	16.6	16.7	18.1	15.8	18.0	17.0	17.8	17.9	17.1	0.8	
TD Maximum Strength (lbs)	319	307	311	306	305	302	299	307	316	308	308	6	
TD Maximum Strength (N)	1420	1366	1384	1362	1357	1344	1331	1366	1406	1371	1371	25	
TD Maximum Strength (lbs/ft)	2867	2759	2795	2750	2741	2714	2687	2759	2840	2768	2768	51	
TD Maximum Strength (kN/m)	41.9	40.3	40.8	40.2	40.0	39.6	39.2	40.3	41.5	40.4	40.4	0.7	
TD Break Elongation (%)	14.5	14.1	15.0	14.2	16.0	13.3	13.8	14.8	14.0	14.4	14.4	0.7	
Junction/Node Strength (GRI GG2)													
MD - Number of Junctions per foot:	9.49												
TD - Number of Junctions per foot:	8.99												
MD Junction Strength (lbs)	88.9	86.4	89.4	99.9	92.4	102.0	86.6	87.1	98.7	95.5	92.7	5.6	
MD Junction Strength (N)	396	384	398	445	411	454	385	388	439	425	412	25	
MD Junction Strength (lbs/ft)	844	820	849	948	877	968	822	827	937	906	880	53	
MD Junction Strength (kN/m)	12.3	12.0	12.4	13.8	12.8	14.1	12.0	12.1	13.7	13.2	12.8	0.8	
TD Junction Strength (lbs)	79.7	69.4	67.3	65.3	67.6	66.1	75.4	70.8	68.3	66.5	69.6	4.3	
TD Junction Strength (N)	355	309	299	291	301	294	336	315	304	296	310	19	
TD Junction Strength (lbs/ft)	716	624	605	587	608	594	678	636	614	598	625.9	39.0	
TD Junction Strength (kN/m)	10.46	9.11	8.83	8.57	8.87	8.67	9.89	9.29	8.96	8.73	9.14	0.57	

MD - Machine Direction TD - Transverse/Cross Machine Direction

The testing herein is based upon accepted industry practice as well as the test method listed. Test results reported herein do not apply to samples other than those tested. TRI neither accepts responsibility for nor makes claim as to the final use and purpose of the material. TRI observes and maintains client confidentiality. TRI limits reproduction of this report, except in full, without prior approval of TRI.



GEOGRID TEST RESULTS
TRI Client: TEMA

Material: Xgrid Geogrid
Sample Identification: XGRID PET PVC 30/30 IT
TRI Log #: E2251-06-02

PARAMETER	TEST REPLICATE NUMBER				MEAN	STD. DEV.
	1	2	3	4		
Torsional Stiffness (COE Method)						
Aperture Stability Modulus (mm-N/degree)	219	234	226		226	6
Aperture Stability Modulus (mm-kg/degree)	22.3	23.9	23.0		23.1	0.6
Aperture Stability Modulus (m-kg/degree)	0.022	0.024	0.023		0.023	0.001
Stiffness (ASTM D 1388-75, Method A Cantilever Test, Modified)						
MD - Specimen Length (cm)	109.2					
MD - Specimen Width (cm)	9.7					
MD - Specimen Mass - (g)	39.49	40.42	40.54	39.26		
MD - Specimen Mass/Unit Area (mg/cm ²)	37.46	38.34	38.46	37.24		
MD (Side A up, Direction 1) Bending Length (cm)	11.94	12.45	11.43	13.34		
MD (Side A up, Direction 2) Bending Length (cm)	13.34	13.21	12.57	12.45		
MD (Side B up, Direction 1) Bending Length (cm)	9.78	9.27	9.14	9.27		
MD (Side B up, Direction 2) Bending Length (cm)	9.53	9.14	9.02	9.65		
Flexural Rigidity (Stiffness)						
MD (Side A up, Direction 1) Flexural Rigidity (mg - cm)	63733	73921	57425	88310		
MD (Side A up, Direction 2) Flexural Rigidity (mg - cm)	88827	88346	76433	71799		
MD (Side B up, Direction 1) Flexural Rigidity (mg - cm)	35031	30553	29402	29676		
MD (Side B up, Direction 2) Flexural Rigidity (mg - cm)	32371	29315	28194	33488	53552	23927
TD - Transverse/Cross Machine Direction						
TD - Specimen Length (cm)	106.7					
TD - Specimen Width (cm)	11.4					
TD - Specimen Mass - (g)	41.59	42.09	41.64	40.91		
TD - Specimen Mass/Unit Area (mg/cm ²)	34.11	34.52	34.15	33.55		
TD (Side A up, Direction 1) Bending Length (cm)	13.34	13.34	14.99	13.72		
TD (Side A up, Direction 2) Bending Length (cm)	14.99	13.84	13.59	14.73		
TD (Side B up, Direction 1) Bending Length (cm)	13.59	13.46	13.34	13.34		
TD (Side B up, Direction 2) Bending Length (cm)	12.32	13.34	13.46	13.46		
Flexural Rigidity (Stiffness)						
TD (Side A up, Direction 1) Flexural Rigidity (mg - cm)	80880	81852	114931	86573		
TD (Side A up, Direction 2) Flexural Rigidity (mg - cm)	114793	91567	85693	107272		
TD (Side B up, Direction 1) Flexural Rigidity (mg - cm)	85590	84213	80977	79557		
TD (Side B up, Direction 2) Flexural Rigidity (mg - cm)	63766	81852	83313	81852	87792	13106
OVERALL FLEXURAL RIGIDITY/STIFFNESS (MG - CM)					68,567	

MD - Machine Direction TD - Transverse/Cross Machine Direction

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