



Date: 5-Nov-13  
 Serial No.: 103963-1  
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## TEST REPORT

**Tested at:** TQP Laboratory, Bshamoun-Salim Center,  
 2<sup>nd</sup> Floor  
 P.O.Box: 30-24 Choueifat-Lebanon  
 Telfax: +961-5-814012/13

**Client:** Nova Marine SAL  
 Amchit, Mount Lebanon-Lebanon  
 Telfax: 09-622141 ; 70-157900

### BEARING CAPACITY OF PANELS USING UNIFORM LOAD (ASTM E2322)

**Project:** Evaluation of Material      **Testing Order No.:** 3963  
**Sample Type:** Plastic Panels      **Sample Received on:** 15.10.13

Tile No.		1	2	3	4	5
Applied Load	Bar	6.0	6.0	6.0	6.0	6.0
	KG	96.0	96.0	96.0	96.0	96.0
	KN	0.942	0.942	0.942	0.942	0.942
Dimensions (effective), m	Length	1.450	1.450	1.450	1.450	1.450
	Width	0.650	0.650	0.650	0.650	0.650
	Thickness	0.006	0.006	0.006	0.006	0.006
Moment of Inertia(I), m <sup>4</sup>		1.17E-08	1.17E-08	1.17E-08	1.17E-08	1.17E-08
Deflection (Δ), mm		11.92	11.80	13.71	11.92	12.76
Δ x E		4.61E+08	4.61E+08	4.61E+08	4.61E+08	4.61E+08
Young's Modulus (E), GPa		39	39	34	39	36
Applied Load	Bar	15.0	15.0	15.0	15.0	15.0
	KG	240.0	240.0	240.0	240.0	240.0
	KN	2.354	2.354	2.354	2.354	2.354
Section Modulus (Z), m <sup>3</sup>		3.90E-06	3.90E-06	3.90E-06	3.90E-06	3.90E-06
Greatest Negative Stress(@ center), MPa		-98	-98	-98	-98	-98

<b>Tested by</b>	Hussein El Beqai		<b>Received by (Name &amp; Sign)</b>
<b>Lab Engineer</b>	<i>[Signature]</i>		
<b>Reviewed by</b>	Mohammad Dokmak		
<b>General Manager</b>	<i>[Signature]</i>		

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6mm tile - Trial 1					6mm tile - Trial 2					6mm tile - Trial 3					6mm tile - Trial 4					6mm tile - Trial 5				
Load		Displacement			Load		Displacement			Load		Displacement			Load		Displacement			Load		Displacement		
Bar	Kg	N	Division	mm	Bar	Kg	N	Division	mm	Bar	Kg	N	Division	mm	Bar	Kg	N	Division	mm	Bar	Kg	N	Division	mm
0	0	0	36.60	0.00	0	0	0	33.85	0.00	0	0	0	51.50	0.00	0	0	0	50.35	0.00	0	0	0	50.45	0.00
1.0	16	157	34.66	2.32	1.0	16	157	32.00	2.22	1.0	16	157	50.30	1.44	1.0	16	157	46.50	4.61	1.0	16	157	48.12	2.79
2.0	32	314	33.01	4.30	2.0	32	314	30.59	3.91	2.0	32	314	46.90	5.51	2.0	32	314	43.40	8.33	2.0	32	314	46.90	4.25
3.0	48	471	30.38	7.45	3.0	48	471	29.00	5.81	3.0	48	471	45.27	7.46	3.0	48	471	43.00	8.81	3.0	48	471	45.60	5.81
4.0	64	628	28.04	10.25	4.0	64	628	28.08	6.91	4.0	64	628	43.80	9.22	4.0	64	628	42.10	9.88	4.0	64	628	44.40	7.25
5.0	80	785	27.47	10.94	5.0	80	785	25.83	9.61	5.0	80	785	42.70	10.54	5.0	80	785	41.80	10.24	5.0	80	785	43.10	8.81
6.0	96	942	26.65	11.92	6.0	96	942	24.00	11.80	6.0	96	942	40.06	13.71	6.0	96	942	40.40	11.92	6.0	96	942	39.80	12.76
7.0	112	1099	24.66	14.30	7.0	112	1099	23.05	12.94	7.0	112	1099	38.30	15.81	7.0	112	1099	39.10	13.48	7.0	112	1099	37.10	15.99
8.0	128	1256	23.10	16.17	8.0	128	1256	22.06	14.12	8.0	128	1256	37.12	17.23	8.0	128	1256	38.75	13.90	8.0	128	1256	35.50	17.91
9.0	144	1413	21.56	18.02	9.0	144	1413	21.07	15.31	9.0	144	1413	35.60	19.05	9.0	144	1413	36.65	16.41	9.0	144	1413	33.50	20.31
10.0	160	1570	20.50	19.29	10.0	160	1570	20.08	16.50	10.0	160	1570	34.70	20.13	10.0	160	1570	34.60	18.87	10.0	160	1570	30.40	24.02
11.0	176	1727	18.44	21.76	11.0	176	1727	19.09	17.68	11.0	176	1727	33.65	21.38	11.0	176	1727	33.04	20.74	11.0	176	1727	30.00	24.50
12.0	192	1884	17.11	23.35	12.0	192	1884	18.10	18.87	12.0	192	1884	31.85	23.54	12.0	192	1884	30.38	23.92	12.0	192	1884	29.80	24.74
13.0	208	2040	10.12	31.72	13.0	208	2040	16.00	21.38	13.0	208	2040	30.40	25.28	13.0	208	2040	29.00	25.58	13.0	208	2040	27.00	28.09
14.0	224	2197	9.76	32.15	14.0	224	2197	13.20	24.74	14.0	224	2197	28.02	28.13	14.0	224	2197	28.00	26.78	14.0	224	2197	25.60	29.77
15.0	240	2354	9.44	32.54	17.0	272	2668	12.29	25.83	15.0	240	2354	26.25	30.25	15.0	240	2354	27.55	27.31	15.0	240	2354	23.90	31.81
20.0	320	3139	7.99	34.27	18.0	288	2825	6.48	32.79	16.0	256	2511	25.50	31.15	16.0	256	2511	26.00	29.17	16.0	256	2511	22.40	33.60
22.0	352	3453	6.54	36.01	20.0	320	3139	5.99	33.38	17.0	272	2668	23.10	34.02	17.0	272	2668	24.55	30.91	17.0	272	2668	19.40	37.20
24.0	384	3767	4.93	37.94	30.0	480	4709	4.79	34.81	18.0	288	2825	20.40	37.26	18.0	288	2825	22.45	33.42	18.0	288	2825	17.80	39.11
25.0	400	3924	4.20	38.82	35.0	560	5494	3.85	35.94	19.0	304	2982	18.60	39.41	19.0	304	2982	21.52	34.54	19.0	304	2982	16.80	40.31
33.0	528	5180	3.46	39.70	40.0	640	6278	2.35	37.74	20.0	320	3139	15.90	42.65	20.0	320	3139	20.00	36.36	20.0	320	3139	16.80	40.31

<b>Tested by</b>	Hussein El Beqai		<b>Received by (Name &amp; Sign)</b>  
<b>Lab Engineer</b>	<i>[Signature]</i>		
<b>Reviewed by</b>	Mohammad Dokmak		
<b>General Manager</b>	<i>[Signature]</i>		

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### TEST REPORT

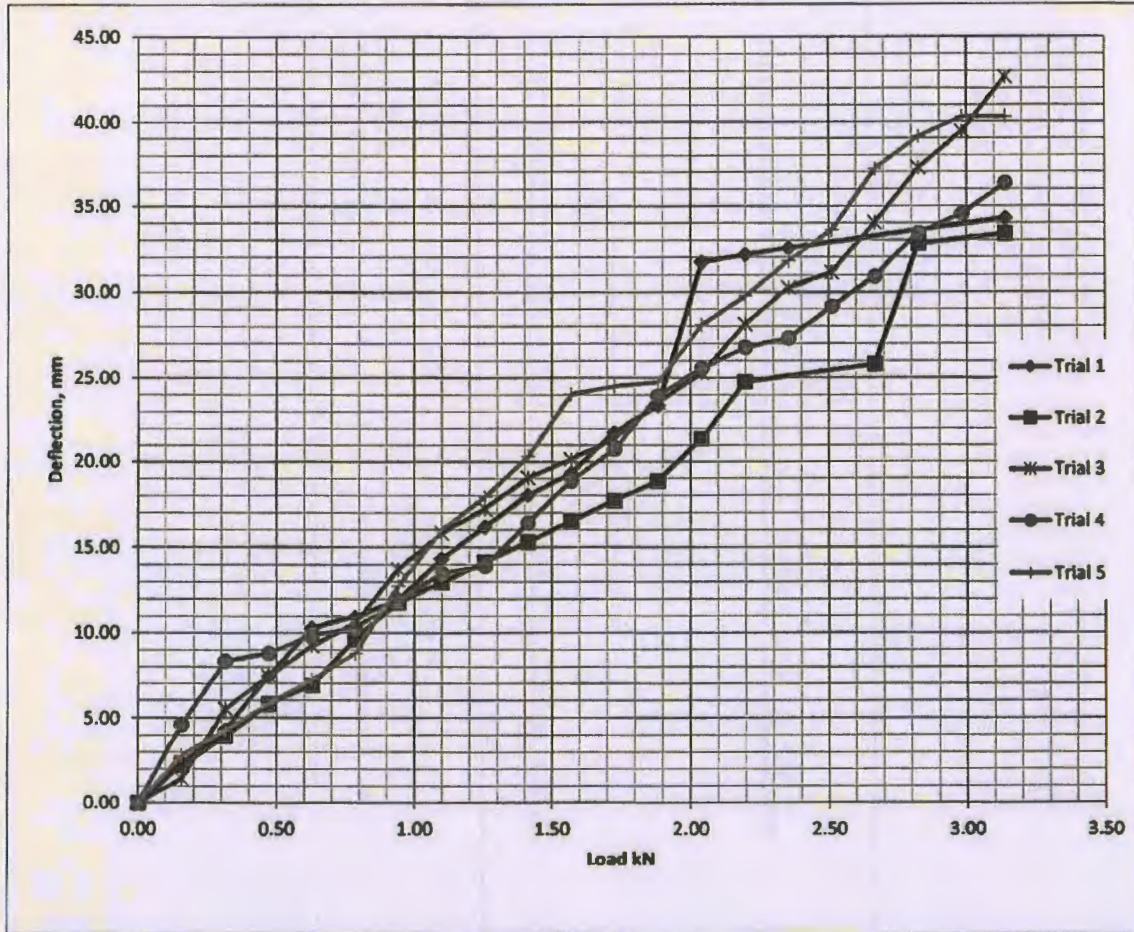
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### BEARING CAPACITY OF PANELS USING UNIFORM LOAD (ASTM E2322)

Project: Evaluation of Material  
 Sample Type: Plastic Panels

Testing Order No.: 3963  
 Sample Received on: 15.10.13



Tested by	Hussein El Beqai		Received by (Name & Sign)
Lab Engineer	<i>[Signature]</i>		
Reviewed by	Mohammad Dokmaei		
General Manager	<i>[Signature]</i>		

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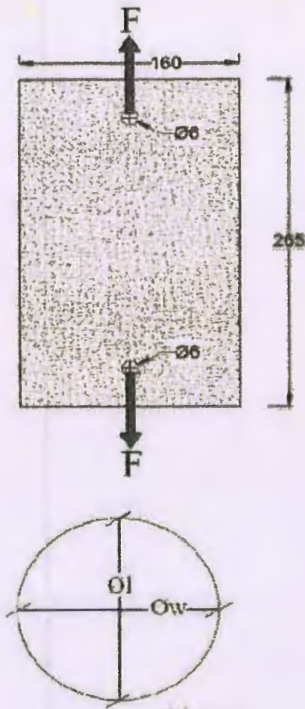
### BEARING STRENGTH OF SCREW HOLES

**Project:** Evaluation of Material  
**Sample Type:** Plastic Panels

**Testing Order No.:** 3963  
**Sample Received on:** 15.10.13

		6 mm plate	8 mm plate
length	l, mm	265.0	265.0
width	w, mm	160.0	160.0
Thickness	t, mm	6.0	8.0
clearance	Lc, mm	25.0	25.0
Applied Load	F, kN	2.1	2.4
Bearing strength	f, MPa	58.9	49.0
Screw Diameter	mm	6.0	6.0

Hole Dimensions			
Initial Diameter	Øli, mm	6.28	6.50
	Øwi, mm	6.28	6.50
Diameter-1	Øl, mm	7.80	6.60
	Øw, mm	6.28	6.50
Diameter-2	Øl, mm	6.54	6.66
	Øw, mm	6.32	6.50



Tested by	Hussein El Beqai		Received by (Name & Sign)
Lab Engineer	<i>Sheya</i>		
Reviewed by	Mohammad Dokmak		
General Manager	<i>Abdullah</i>		

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