

**Test Report No. 7191061185-MEC13/07-ED**  
dated 25 Jul 2013



PSB Singapore

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**SUBJECT:**

Testing of fibre cement board submitted by Visaka Industries Ltd

**TESTED FOR:**

Visaka Industries Limited  
Visaka Towers  
1-8-303/69/3, S.P. Road  
Secunderabad  
A.P. 500003  
India

Attn: Mr Jawahar Rawtani

**TEST METHOD:**

Adopted ASTM C1185 : 2008 (2012) Standard Test Methods For Sampling And Testing Non-Asbestos Fiber-Cement Flat Sheet, Roofing And Siding Shingles, And Clapboards

Section 5 - Flexural Strength (Modulus of Rupture)

Section 13 - Warm Water

**DESCRIPTION OF SAMPLE:**

Fibre Cement Board 'V-Premium'

**REMARKS:**

1. No cracks, delamination or warpage observed after warm water.
2. The average values of sample references in two directions and overall average value of two directions are reported as requested by the client.
3. The individual ratio and average ratio values were calculated based on flexural strength after warm water to control reference from test report 7191061185-MEC13/01-ED. (refer to pages 5 and 6 of 7)

Eddie Suwand  
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TEST RESULTS:

Size : 305 mm x 152 mm

Test condition : Immersion in warm water at 60°C for 56 days

Direction : Parallel

Crosshead speed : 30 mm/min

Sample Reference	1	2	3	4	5	6	7	8	9	10
Maximum Load (N)	163.42	161.48	164.77	154.47	172.11	161.90	160.04	159.96	161.22	186.96
Length of Span (mm)	254									
Width of Specimen (mm)	153.1	152.0	152.4	152.8	153.1	151.9	153.1	152.4	152.8	152.0
Thickness (mm)	7.76	7.66	7.61	7.60	7.70	7.64	7.65	7.71	7.72	8.70
Flexural Strength (MPa)	6.75	6.90	7.11	6.67	7.22	6.96	6.81	6.73	6.75	6.19
Average Flexural Strength (MPa)	6.81									
Ratio (R)	1.07									

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TEST RESULTS:

Direction : Perpendicular  
Crosshead speed : 35 mm/min

Sample Reference	1	2	3	4	5	6	7	8	9	10
Maximum Load (N)	217.67	237.32	265.33	219.94	290.22	231.16	292.92	242.47	235.97	234.71
Length of Span (mm)	254									
Width of Specimen (mm)	152.9	151.7	151.4	153.1	152.7	153.3	152.7	152.0	152.5	153.1
Thickness (mm)	7.72	7.73	7.75	7.61	7.80	7.65	7.85	7.64	7.67	7.40
Flexural Strength (MPa)	9.10	9.98	11.12	9.45	11.90	9.82	11.86	10.41	10.02	10.67
Average Flexural Strength (MPa)	10.43									
Ratio (R)	0.93									
Average Ratio, two directions (R)	1.00									

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TEST RESULTS:

Sample Reference, Parallel	1	2	3	4	5	6	7	8	9	10
Flexural Strength (MPa)	6.75	6.90	7.11	6.67	7.22	6.96	6.81	6.73	6.75	6.19
Sample Reference, Perpendicular	1	2	3	4	5	6	7	8	9	10
Flexural Strength (MPa)	9.10	9.98	11.12	9.45	11.90	9.82	11.86	10.41	10.02	10.67
Average Flexural Strength of Sample Reference, two directions (MPa)	7.93	8.44	9.12	8.06	9.56	8.39	9.34	8.57	8.39	8.43

Overall Average Flexural Strength, two directions (MPa)	8.62
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Sample Reference	1	2	3	4	5	6	7	8	9	10
Individual Ratio (R <sub>i</sub> ), each pair of samples	0.87	0.94	0.99	0.89	1.06	0.92	1.14	1.06	0.96	0.98
Average Ratio (R)	0.98									
Standard Deviation (s)	0.08									
Lower Estimation At 95% Confidence Level (R <sub>L</sub> )	0.93									

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TEST RESULTS:

Size : 305 mm x 152 mm

Direction : Parallel  
Crosshead speed : 50 mm/min

Sample Reference	1	2	3	4	5	6	7	8	9	10
Maximum Load (N)	248.98	232.95	235.15	238.27	237.76	239.20	224.25	204.59	211.26	228.13
Length of Span (mm)	254									
Width of Specimen (mm)	152	152	152	152	152	152	152	152	152	152
Thickness (mm)	9.54	9.72	9.65	9.70	9.64	9.60	9.62	9.22	9.12	9.29
Flexural Strength (MPa)	6.86	6.18	6.33	6.35	6.41	6.51	6.07	6.03	6.37	6.63
Average Flexural Strength (MPa)	6.37									

Direction : Perpendicular  
Crosshead speed : 50 mm/min

Sample Reference	1	2	3	4	5	6	7	8	9	10
Maximum Load (N)	434.94	444.98	444.89	435.61	443.71	439.49	313.43	302.88	301.45	327.35
Length of Span (mm)	254									
Width of Specimen (mm)	152	152	152	152	152	152	152	152	152	152
Thickness (mm)	9.84	9.72	9.63	9.60	9.75	9.71	8.72	8.66	8.22	8.80
Flexural Strength (MPa)	11.26	11.81	12.02	11.85	11.70	11.68	10.33	10.12	11.18	10.60
Average Flexural Strength (MPa)	11.26									

Average Flexural Strength, two directions (MPa)	8.81
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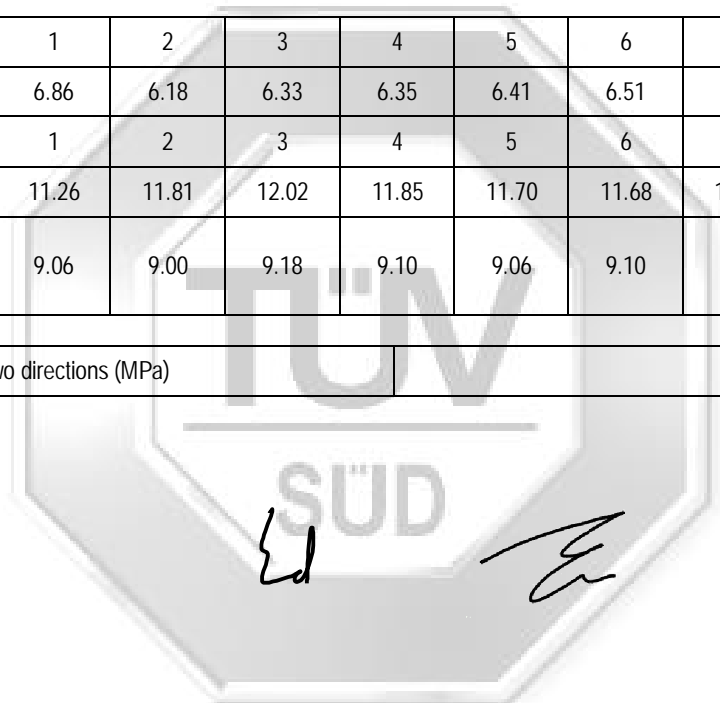
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TEST RESULTS:

Sample Reference, Parallel	1	2	3	4	5	6	7	8	9	10
Flexural Strength (MPa)	6.86	6.18	6.33	6.35	6.41	6.51	6.07	6.03	6.37	6.63
Sample Reference, Perpendicular	1	2	3	4	5	6	7	8	9	10
Flexural Strength (MPa)	11.26	11.81	12.02	11.85	11.70	11.68	10.33	10.12	11.18	10.60
Average Flexural Strength of Sample Reference, two directions (MPa)	9.06	9.00	9.18	9.10	9.06	9.10	8.20	8.08	8.78	8.62
Overall Average Flexural Strength, two directions (MPa)							8.81			



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July 2011

