



TEST REPORT AS/NZS 2908.2:2000 Cellulose-cement products part 2: Flat sheets	
Report Reference No.....:	130508076GZU-001
Tested by (name and signature).....:	Jacky Yao <i>Jacky Yao</i>
Approved by (name and signature) ..:	Jeff Deng <i>Jeff Deng</i>
Date of issue.....:	November 29, 2013
Contents	Total test report 8 pages including: Report text: 6 pages Appendix A for Product photos : 1 page Appendix B for Revision history: 1 page
Testing Laboratory name	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
Address.....:	Block E, No.7-2 Guang Dong Software Science Park, Caipin Road, Guangzhou Science City, GETDD, Guangzhou, China
Testing location.....:	Same as above
Applicant's name	NINGBO YIHE GREENBOARD CO., LTD.
Address.....:	#189, LONGZHEN ROAD, LONGSHAN TOWN, CIXI CITY, ZHEJIANG
Test specification:	
Standard	AS/NZS 2908.2:2000
Non-standard test method.....:	N/A
Test Report Form No.	—
TTRF Originator.....:	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
Master TTRF.....:	Dated 2011-12
Test item description	FIBER CEMENT BOARD
Trade Mark	—
Model and/or type reference.....:	8mm(tested), 9mm, 10mm, 12mm,15mm, 16mm, 18mm, 20mm(tested)
Manufacturer	NINGBO YIHE GREENBOARD CO., LTD.
Rating(s)	—

Test item particulars	
Installation and use	: External applications
Possible test case verdicts	
- test case does not apply to the test object.....	: N/A
- test object does meet the requirement.....	: P(Pass)
- test object does not meet the requirement	: F(Fail)
Testing	
Date of receipt of test item	: May 8, 2013
Date (s) of performance of tests	: May 8, 2013 to November 20 2013
General remarks:	
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General product information:
<p>Submitted samples are FIBER CEMENT BOARD, intended use as external construction material. The samples submitted included 8mm, 9mm, 10mm, 12mm, 15mm, 16mm, 18mm and 20mm thickness, only 8mm and 20mm thickness were selected to be tested.</p> <p>Detail information refers to appendix A Product photos.</p>

Performance test			
Clause	Requirement - Test	Result - Remark	Verdict
Standard 1: AS/NZS 2908.2:2000			
5.1	Dimensional and geometrical characteristics		
5.1.1	Nominal length and width The manufacture shall specify the nominal length and width of the sheets.	2440*1220mm	—
5.1.2	Thickness The manufacture shall specify the nominal thickness of the sheets.	8mm and 20mm	—
5.1.3	Tolerance on dimensions Tolerances on nominal dimensional are as follow: a) on length and width (indicated by d): d≤1000mm: ±5mm; 1000mm<d≤1600mm: ±0,5%; d>1600mm: ±8mm; These tolerances do not apply to oversize sheets. b) on thickness, e: e≤6mm: ±0,6mm; e>6mm: ±10%. For sheet without texture on the exposed face the maximum difference between extreme values of the thickness measurements within one sheet shall not exceed 15% of the maximum measured value.	8mm sample Measured: average 1219*2439mm Tolerance: -2mm 20mm sample Measured: average 1218*2439mm Tolerance: -2mm	P
5.1.4	Tolerance on shape		
5.1.4.1	Straightness of edges The tolerance on the straightness of edges is 3mm/m for the relevant dimension (length or width).	8mm sample average 0,6mm/m Maximum: 0,8mm/m 20mm sample average 0,7mm/m Maximum: 0,8mm/m	P
5.1.4.2	Squareness of edges The tolerance on squareness of sheets is 4mm/m.	8mm sample Maximum: 0,3mm/m 20mm sample Maximum: 0,4mm/m	P

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Performance test																							
Clause	Requirement - Test	Result - Remark	Verdict																				
5.2	Mechanical and physical characteristics																						
5.2.1	<p>Bending strength</p> <p>When tested as specified in 8.1.2.1, the minimum modulus of rupture of the sheets, expressed in megapascals, shall be as specified in Table 1. The MOR shall be the average of the values obtained from testing the sample in both directions: Type A sheet strengths shall only be specified in the wet condition and the specimens shall be tested in the wet condition.</p> <p style="text-align: center;">Table 1 — Minimum modulus of rupture</p> <p style="text-align: center;">Values in megapascals</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th rowspan="2">Category</th> <th colspan="2">Minimum MOR</th> </tr> <tr> <th>Type A sheets</th> <th>Type B sheets</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>—</td> <td>4</td> </tr> <tr> <td>2</td> <td>—</td> <td>7</td> </tr> <tr> <td>3</td> <td>7</td> <td>10</td> </tr> <tr> <td>4</td> <td>13</td> <td>16</td> </tr> <tr> <td>5</td> <td>18</td> <td>22</td> </tr> </tbody> </table>	Category	Minimum MOR		Type A sheets	Type B sheets	1	—	4	2	—	7	3	7	10	4	13	16	5	18	22	<p>8mm sample Wet condition: average 10,5Mpa,minimum 9,8Mpa(along length) average 14,3Mpa,minimum 13,2Mpa (along width)</p> <p>20mm sample Wet condition: average 12,4Mpa,minimum 11,5Mpa(along length) average 16,8Mpa,minimum 15,9Mpa (along width) Complied category 2</p>	P
Category	Minimum MOR																						
	Type A sheets	Type B sheets																					
1	—	4																					
2	—	7																					
3	7	10																					
4	13	16																					
5	18	22																					
5.2.2	<p>Apparent density</p> <p>The manufacture shall specify in his literature the minimum apparent density for each category of sheet. When tested in accordance with the method specified in 8.1.2.2 the density shall be not less than this value.</p>	<p>8mm sample Measured: average 1,52g/cm³ From 1,49g/cm³ to 1,55g/cm³</p> <p>20mm sample Measured: average 1,33g/cm³ From 1,21g/cm³ to 1,52g/cm³</p>	—																				
6	Type characteristics																						

Performance test			
Clause	Requirement - Test	Result - Remark	Verdict
6.1	<p>Bending strength</p> <p>When tested in specified in 8.2.1, In equilibrium and wet condition, the average modulus of rupture of each individual piece of the finished products shall not be less than the values for the appropriate category specified in table 1.</p> <p>In addition the mean modulus of rupture under wet conditions shall be less than 50% of the mean rupture under equilibrium conditions.</p>	<p>8mm sample Equilibrium condition: average 14,5Mpa (along length) average 18,3Mpa (along width) Wet condition: average 10,5Mpa (along length) average 14,3Mpa (along width) Ratio(wet condition/ equilibrium conditions) : 72% and 78%</p> <p>20mm sample Equilibrium condition: average 14,9Mpa (along length) average 21,4Mpa(along width) Wet condition: average 12,4Mpa (along length) average 16,8Mpa (along width) Ratio(wet condition/ equilibrium conditions): 83% and 79%</p>	P
6.2	<p>Water permeability</p> <p>When test as specified in 8.2.2, traces of moisture may appear on the underside of the sheet, but in no Instance shall there be formation of drops of water.</p>	No formation of drops of water was found after being test.	P
6.3	<p>Frost resistance</p> <p>When sheets are tested as specified in 8.2.3, after 50 freeze-thaw cycles, the limit L_1 of the average ratio r_1, as defined in 8.2.3.4, shall not be less than 0,75.</p>	<p>8mm sample Wet condition: average 12,0Mpa,minimum 11,3Mpa(along length) average 15,9Mpa,minimum 15,2Mpa (along width) RL=1,09</p> <p>20mm sample Wet condition: average 11,7Mpa,minimum 10,9Mpa(along length) average 17,6Mpa,minimum 16,7Mpa (along width) RL=0,94</p>	P

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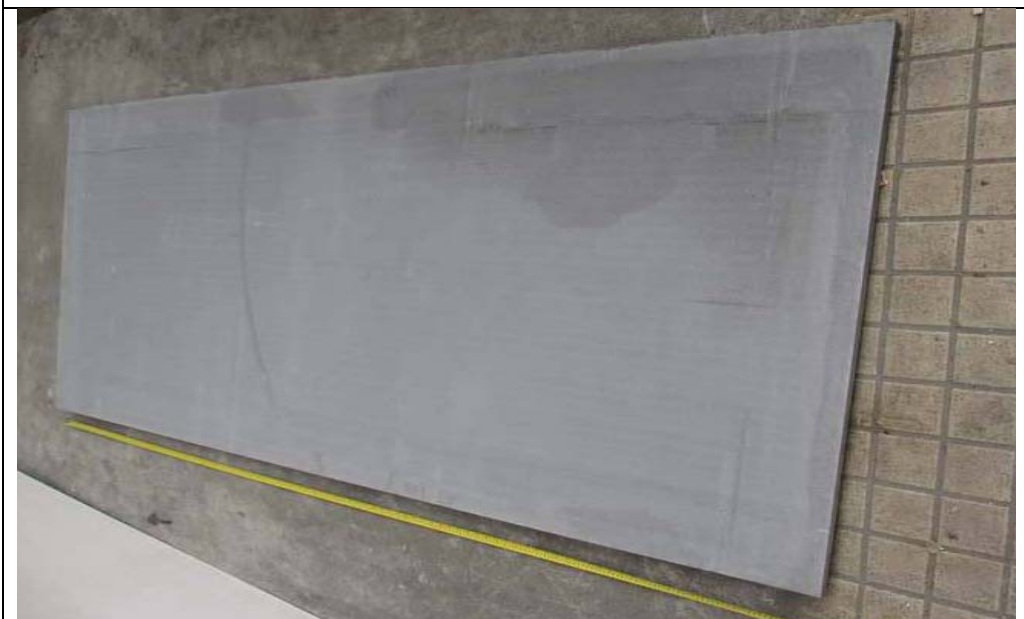
Performance test			
Clause	Requirement - Test	Result - Remark	Verdict
6.4	Warm water When sheets are tested as specified in 8.2.4, the limit L_1 of the average ratio r_1 , as defined in 8.2.5.4, shall be greater than 0,75.	8mm sample Wet condition: average 12,1Mpa,minimum 11,2Mpa(along length) average 16,1Mpa,minimum 15,6Mpa (along width) RL=1,09 20mm sample Wet condition: average 11,7Mpa,minimum 10,7Mpa(along length) average 16,4Mpa,minimum 14,7Mpa (along width) RL=0,90	p
6.5	Heat-rain When sheets are tested as specified in B5, any visible cracks, delamination, warping and bowing or other defects in the sheets shall not be of such a degree as to affect their performance in use.	Test samples thickness: 8mm and 20mm No visible cracks, delamination, warping and bowing or other defects in the sheets.	P
6.6	Soak-dry When sheets are tested as specified in 8.2.5, the limit L_1 of the average ratio r_1 , as defined in 8.2.5.4, shall be greater than 0,75.	8mm sample Wet condition: average 11,6Mpa,minimum 10,7Mpa(along length) average 16,9Mpa,minimum 15,9Mpa (along width) RL=1,10 20mm sample Wet condition: average 12,5Mpa,minimum 11,7Mpa(along length) average 17,4Mpa,minimum 14,0Mpa (along width) RL=0,97	P

*****End of page*****

Appendix A
Product photos



A.1 Overall view of 8mm sample



A.2 Overall view of 20mm sample

*****End of page*****

Appendix B

Revision page

Revision No.	Date	Changes	Author	Reviewer
0	November 29, 2013	First issue	<i>Jacky Yu</i>	<i>Jett Deng</i>

*****End of report*****