



Jesmonite BS EN 1170 Physical and Mechanical Test results

05 December 2011

Re-Summary Report on Jesmonite AC930 and AC730 ( Sample ref 12750)

Test	Result	Comment
BS EN ISO 4892 Weathering	Weathering for 1008 hrs Average of 6 Sheets <u>JES AC930</u> No significant change <u>JES AC 730</u> No significant change	The results of the resistance to weathering under the test conditions shows that the Ultra violet and humid condition has very little effect on the visual nature of the materials
Thermal and moisture movement	Thermal and moisture movement Results of one sample at three temperature <u>JES AC930</u> 10,25 and 40 Deg C % change +6.6% <u>JES AC 730</u> 10,25 and 40 Deg C % change +6.2-6.6%	The nature of the test results indicate the percentage change to be quite small. The temperature of the water did not seem to have any major effect on the two test materials

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Test	Result	Comment
BS EN 12390-3 Compressive strength	<p>Compression Strength Average of 5 cubes <u>JES AC930</u> 56.32N/mm2( 56.32MPa) <u>JES AC 730</u> 58.76N/mm2( 58.76MPa)</p>	<p>The results indicate a compressive strength 56 N/mm2 for AC930 and 58N/mm2 for the AC730.</p> <p>BS 1217 for cast stone specifies a minimum average of 25MPa</p> <p>EN771-5 for manufactured stone requires a minimum average of 20MPa</p> <p>On this basis the measured strength of both materials far exceed the minimum require.</p>
BS EN 1170-6 Water uptake/porosity	<p>Water absorption <u>JES AC930</u> 24 Hrs = 1.34% 7 Days = 1.61% 21 Days = 2.26% Dry density: 1.98g/cm3 <u>JES AC 730</u> 24 Hrs = 1.27% 7 Days = 1.63% 21 Days = 2.29% Dry density: 2.00g/cm3</p>	<p>In general water absorption values of less than 5% are considered very low The results are 2.26% and 2.29% respectively</p> <p>Similarly the dry density is towards the lower end of typical ranges.</p>
BS EN 1170-5 LOP and MOR	<p>LOP Characteristically <u>JES AC930</u> Water immersion Average 7.6MPa Minimum 7.2 MPa Humidity Average 8.9 MPa Minimum 8.36 MPa <u>JES AC730</u> Water immersion Average 9.1MPa Minimum 8.5 MPa Humidity Average 9.7 MPa Minimum 8.93 MPa</p> <p>MOR <u>JES AC930</u> Water immersion Average 22.7MPa Minimum 21.3 MPa Humidity Average 26.3 MPa Minimum 24.2MPa</p>	<p>The test shows that the results exceed the values expected for LOP Average= 6.50 N/mm2 Minimum 5.00 N/mm2 For both materials</p> <p>The test shows that the results exceed the values expected for MOR Average= 7.00 N/mm2 Minimum 5.00 N/mm2 For both materials</p>

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	<p><u>JES AC730</u>  Water immersion  Average 21.7MPa Minimum 19.34 MPa  Humidity  Average 23.6MPa Minimum 21.8 MPa</p>	
<p>DD CEN/TS 12390-9  Freeze-thaw resistance</p>	<p>Upper Temperature = 20 Deg C  Lower temperature= -20 Deg C  Number of cycles=300  Fluid=demineralised water  <b>Result</b>  AC930 mean 0.0014 kg/m2  AC730 mean 0.0010 kg/m2</p>	<p>The normal maximum number of cycles is 56. This test was for 300 cycles  Very little if any scaling was found for the two materials.</p>
<p>BS EN 1170-7  Dimensional stability due to moisture up-take</p>	<p>Dimensional stability  Shrinkage and expansion  <u>JES AC930</u>  Shrinkage = 0.83  Expansion = 1.28  <u>JES AC 730</u>  Shrinkage=0.80  Expansion = 1.14</p>	<p>The amount of both shrinkage and expansion are very low compared to similar types of material where 4-5 mm/m are not unusual</p>

Yours sincerely

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JCS Technology



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