Classification of Fire Performance of Wall and Ceiling Lining Materials

Using the Method of Kokkala, Thomas and Karlsson


Instructions: User input areas are those shaded in light-blue. Before entering or pasting new data into the two columns, it is best to clear any existing data by clicking on the 'Clear Data' button. If necessary, formatting of the cells can be restored by clicking on the 'Formatting' button. Copy the Time data from column U of the specimen file and paste it into the Time column of this spreadsheet. Copy the HRR data from column I of the specimen file and paste it into the Rate of Heat Release column of this spreadsheet.

Material Identification/Description:

<table>
<thead>
<tr>
<th>Time (sec)</th>
<th>Rate of Heat Release HRR (kW/m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.6</td>
<td>9.036</td>
</tr>
<tr>
<td>36.2</td>
<td></td>
</tr>
<tr>
<td>238.2</td>
<td>10 minute limit = 1920</td>
</tr>
<tr>
<td></td>
<td>2 minute limit = 984</td>
</tr>
<tr>
<td></td>
<td>12 minute limit = 159</td>
</tr>
</tbody>
</table>

THE BCA CLASSIFICATION GROUP IS:

* * *

Group 1

This method assumes that no materials lead to flashover after 12 and before 20 minutes. Materials that are predicted not to flashover within 12 minutes are put into Group 1.
TEST REPORT

CLIENT: ECOTILE AUSTRALIA TEST NUMBER: 7-579197-CN PO BOX 4215 ISSUE DATE: 17/06/2011 EAST GOSFORD NSW 2250 PRINT DATE: 17/06/2011

SAMPLE DESCRIPTION: Clients Ref: “Aqua” Coloured polymeric granular paving sections Colour: Blue, White, Green Approx thickness: 10mm End Use: Paving

THESE RESULTS MUST BE CONSIDERED IN CONJUNCTION WITH THE COMMENTS ON THE FOLLOWING PAGE(S)

Material Specification provided by client: Nominal composition: Pololefinic Nominal mass: 18kg/m²

AS/NZS 1530.3 - 1999 Simultaneous determination of Ignitability, Flame Propagation, Heat Release and Smoke Release

RESULTS:
Face tested: Face
Date tested: 16/06/2011 Mean Standard Error
Ignition time 6.64 min 0.20
Flame propagation time 36.7 s 3.9
Heat release integral 238.2 kJ/m² 11.2
Smoke release, log d -0.2147 0.0477
Optical density, d 0.6397 /m

Number of specimens ignited: 9
Number of specimens tested: 9

REGULATORY INDICES: Ignitability Index 13 Range 0-20 Spread of Flame Index 8 Range 0-10 Heat Evolved Index 9 Range 0-10 Smoke Developed Index 7 Range 0-10
TEST REPORT

CLIENT : ECOTILE AUSTRALIA TEST NUMBER : 7-579197-CN PO BOX 4215 ISSUE DATE : 17/06/2011 EAST GOSFORD NSW 2250 PRINT DATE : 17/06/2011

Comments:

These results only apply to the specimen mounted, as described in this report.

The results of this fire test may be used to directly assess fire hazard, but it should be recognized that a single test method will not provide a full assessment of fire hazard under all fire conditions.

Each test specimen had an unattached backing of 4.5mm thick fibre reinforced cement board.

Each test specimen was clamped in four places.

Specimens tended to flash before ignition. Ignition was based on the occurrence of a single flash of flame which lasted longer than 10 seconds.

The specimens melted away from the area of maximum heat and produced flaming droplets during the test. Due to this phenomena it should be recognised that this test result may not be a true indication of the product's fire hazard properties.

Comments:

These results only apply to the specimen mounted, as described in this report.

The results of this fire test may be used to directly assess fire hazard, but it should be recognized that a single test method will not provide a full assessment of fire hazard under all fire conditions.
**TEST REPORT**

**CLIENT:** BOOTILE AUSTRALIA  
**TEST NUMBER:** 7-079928-CN  
**PO BOX 4215**  
**ISSUE DATE:** 25/07/2011  
**EAST COGEM ROAD 2259**  
**PRINT DATE:** 26/07/2011

**SAMPLE DESCRIPTION**  
Red/Blue granules of polymer stuck using adhesive, stuck to 4mm cement sheeting  
Nominal total density: 993 kg/m³  
Colour: Red/Blue  
Nominal Thickness: 10.0mm  
End Use: Paving

**AS/NZS 3837:1996**  
Method of Test for Heat and Smoke Release Rates for Materials and Products Using an Oxygen Consumption Calorimeter

**Results:**

<table>
<thead>
<tr>
<th></th>
<th>Specimen 1</th>
<th>Specimen 2</th>
<th>Specimen 3</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Heat Release Rate</td>
<td>90.3</td>
<td>94.7</td>
<td>83.2</td>
<td>89.4</td>
</tr>
<tr>
<td>Average Specific Extinction Area</td>
<td>296.7</td>
<td>290.5</td>
<td>320.8</td>
<td>302.7 m²/kg</td>
</tr>
</tbody>
</table>

(according to Specification Cl.10 of the Building Code of Australia)

**Test orientation:** Horizontal

<table>
<thead>
<tr>
<th></th>
<th>Specimen 1</th>
<th>Specimen 2</th>
<th>Specimen 3</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irradiance</td>
<td>50</td>
<td>50</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Exhaust flow rate</td>
<td>24</td>
<td>24</td>
<td>24</td>
<td>24</td>
</tr>
<tr>
<td>Time to sustained flaming</td>
<td>19</td>
<td>19</td>
<td>20</td>
<td>19</td>
</tr>
<tr>
<td>Test duration</td>
<td>2404</td>
<td>2436</td>
<td>2449</td>
<td>2425</td>
</tr>
</tbody>
</table>

**Heat release rate curve on the 9 attached sheets which form part of this report**

**Peak heat release**

- after ignition: 199.2, 209.6, 193.8, 197.5 kW/m²
- average heat at 60s: 135.5, 148.0, 146.0, 143.2 kW/m²
- release rate at 180s: 131.3, 145.5, 135.8, 137.7 kW/m²
- total heat released: 215.3, 226.8, 202.1, 214.7 MJ/m²
- average effective heat of combustion: 30.6, 30.7, 29.1, 30.1 MJ/kg

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# TEST REPORT

**CLIENT :** BOOTILE AUSTRALIA  
**PO BOX 4215**  
**EAST GOSFORD NSW 2250**  

**TEST NUMBER :** 7-57928-CN  
**ISSUE DATE :** 25/07/2011  
**PRINT DATE :** 26/07/2011

<table>
<thead>
<tr>
<th>Initial thickness</th>
<th>14.0</th>
<th>14.0</th>
<th>14.0</th>
<th>14.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial mass</td>
<td>145.1</td>
<td>150.2</td>
<td>149.9</td>
<td>148.1</td>
</tr>
<tr>
<td>Mass remaining</td>
<td>83.0</td>
<td>84.4</td>
<td>87.5</td>
<td>85.1</td>
</tr>
<tr>
<td>Mass percentage</td>
<td>58.9</td>
<td>43.5</td>
<td>41.2</td>
<td>42.5</td>
</tr>
<tr>
<td>Pyrolysed mass</td>
<td>62.1</td>
<td>65.4</td>
<td>61.4</td>
<td>63.0</td>
</tr>
<tr>
<td>Average rate of mass loss</td>
<td>0.7</td>
<td>3.1</td>
<td>2.9</td>
<td>3.0</td>
</tr>
</tbody>
</table>

The formulae given in the Building Code of Australia have been shown to give inaccuracies in determination of Group Number for certain materials. Due to this AWTA Product Testing no longer reports Group Numbers. The formulae for calculation of Group Number is available from the website of the Australian Building Codes Board. Group Number calculation based on the results described in this report can be undertaken at the client’s discretion.

These test results relate only to the behaviour of the product under the conditions of the test, they are not intended to be the sole criterion for the assessment of performance under real fire conditions.
TEST REPORT

CLIENT: BOOTTLE AUSTRALIA
PO BOX 4215
EAST COGGEBN NSW 2250

TEST NUMBER: 7-87904-NN
ISSUE DATE: 28/07/2011
PRINT DATE: 28/07/2011

SAMPLE DESCRIPTION
Clients Ref: "Flexible seamless paving"
Polymer granules adhered to cement sheeting
Colour: Red / Blue
Approx total thickness: 14mm

Material Specification:
Nominal composition: Polymer / Cement Sheet
Nominal total density: 993kg/m³

AS ISO 9239.1-2001 Reaction to Fire Tests for Floorings
Part 1 Determination of the Burning Behaviour using a Radiant Heat Source

Date of sample arrival: 15/07/2011
Date tested: 25/07/2011
Results: CHF (Critical Heat Flux / Critical Radiant Flux)

| Non directional | 8.2 | 7.8 | 7.8 | 7.9 | kW/m² |
| Non directional | 17 | 12 | 14 | Smoke Value |

Note: Sample was conditioned in accordance with BS EN 13238-2001 at a temperature of 23±2degC and Relative Humidity of 50±5% for a minimum of 48 hours prior to testing.

No directional properties, three specimens tested only.
Each specimen was clamped as supplied by client prior to testing.

The test results relate to the behaviour of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use.