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Assessment of the fire performance of Laminex Metaline splashback panels in AS/ISO 9705 room corner test - retest 2011

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Report Details



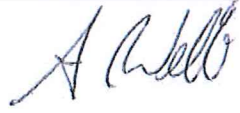
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1. INTRODUCTION

This report describes an ISO 9705 room corner test conducted on Laminex Metaline splashback panels 2011. The test was performed on behalf of the Laminex. This test was performed according to AS ISO 9705–2003^[2] and was conducted on 20th June 2011 at CSIRO IRS Highett Laboratory, by a team led by Alex Webb. It was observed by Alex Webb, Lyndon MacIndoe of CSIRO and three representatives from Laminex.

The test enables assessment of the group number classification of the material for use as a wall or ceiling lining in accordance with Building Code of Australia^[1]. Specification C1.10 Clause 4.

CSIRO Specimen ID 11/07

CSIRO has previously tested the same product in February 2010^[3]. This report documents a retest of the product to assess the impact of:

1. A paint additive include for non-fire properties
2. A change in manufacturing process that may change the delaminating behaviour under heating.

2. SPECIMEN DESCRIPTION.

Trade name or other identification: Laminex Metaline splashback panels 2011

Supplier/manufacturer: Laminex

Description of the product: 4mm FR aluminium composite manufactured for use as a splashback material. Consists of 0.5 mm painted Aluminium on each surface with a 3mm FR polymeric core. The FR Polymeric core is mineral filled polyethylene. The Metaline panels are installed over a Promatect-H Calcium Silicate board substrate. The metaline wall panels are adhered to this substrate using 2 mm double sided tape and silicone adhesive.

Fire retardants: Mineral filled polymer core with FR additive (FR not disclosed)

Thickness of the product: 4 mm

Nominal density or mass per unit area: 4275 g/m²

Colour: Grey.

Description of sampling procedure, where relevant: The client organised selection and supply of specimens. CSIRO was not involved in the sampling process.

The change to the metaline product between that tested in this report and testing in 2010 is:

An additive to the surface paint has been included for non-fire function.

A change in manufacturing that may change the delaminating behaviour under heating.

3. SPECIMEN INSTALLATION

Date of receipt of the specimens and commencement of conditioning:

The panels were received at CSIRO on the 7th June 2011 and were held in controlled condition environment prior to testing. The panels were conditioned at a temperature of 23+/- 2 deg C and 50%+/-5 Relative Humidity.

Date of installation:

Specimen panels were installed prior to testing by Laminex staff on 15th and 16th June 2011.

Installation technique:

The Laminex Metaline splashback panels with Promat backing board were mounted within the existing lined fire test room as required by ISO 9705. The installation method may have a significant effect on the fire performance of lining panels, therefore the specimens have been mounted, as far as possible, in the manner as recommended by the supplier as typical of end use installation.

The ceiling, rear wall and RHS walls of the fire test room were firstly lined with Promatect-H Calcium Silicate board, 9mm thick 900 x 600 mm. The LHS wall was not lined as previous testing had shown this wall (opposite the burner position) had little heat exposure through the cladding. Calcium Silicate board was fastened using 25 mm long screws (screwing through the plaster board into the plywood panelling). Five screws for each calcium silicate board were used with one screw located in each corner and one in the centre. All calcium silicate boards were butt jointed.



Figure 1. Calcium silicate board screwed to wall of fire test room



Figure 2. Calcium silicate board installed on the ceiling, rear wall and RHS walls. The LHS wall shows the fire rated plaster board substrate

In all, seven Metaline panels were installed on the walls and three Metaline panels were installed on the ceiling of the fire test room. The panels have been identified as shown in Figure 3 for consistent description throughout this report. Panels were installed with the ceiling panels first in the following order: 8,9,10 followed by the wall panels,1,4,5,3,2,6,7. The dimensions of the panels are provided in Table 1.

9. ACCEPTANCE CRITERIA

9.1 BCA Criteria

The Building Code of Australia Specification C1.10 for fire hazard properties of building materials and assemblies classifies wall and ceiling material into four different groupings based on ISO 9705 Room Corner Test performance.

The criteria for the 4 material groups are as follows.

- | | |
|---------|--|
| Group 1 | The material is not expected to result in flashover |
| Group 2 | The material is expected to result in flashover after 10 minutes but before 20 minutes |
| Group 3 | The material is expected to result in flashover after 2 minutes but before 10 minutes |
| Group 4 | The material is expected to result in flashover in less than 2 minutes |

The Smoke Growth Rate Index ($SMOGR_{RC}$) as identified in Specification C1.10, Clause 4c if not more than $100 (m^2/s^2 * 1000)$, the product may be used in buildings with or without a sprinkler system.

10. CONCLUSION

The Laminex Metaline splashback panels 2011 with promat board backing, constructed, fixed and installed as a complete system as described in Sections 2 and 3 of this report are considered to achieve a Group 2 classification based on the AS ISO 9705 room fire test and in accordance with Specification C1.10 of BCA 2011. Note that the ceiling is fixed differently from wall linings.

The $SMOGR_{RC}$ as identified in Specification C1.10 Clause 4(c) (calculated according to Specification A2.4 Clause 4) is less than $100 (m^2/s^2 * 1000)$, the product may be used in buildings without a sprinkler system complying with Specification E1.5 of BCA 2011.

This approval does not extend to any modification of the specified system. This approval cannot be applied to another product of similar nature by analogy.