
REACTION TO FIRE TEST REPORT No EU1-19-IST-000211A

Test Standard: ISO 13785-1:2002 — Reaction-to-fire tests for façades — Part 1:
Intermediate-scale test

Other reference documents: ISO 554:1976 — Standard atmospheres for conditioning and/or testing —
Specifications

Product: Insulation layer fixed on non-combustible sheathing board layer combined
with 'L'-shape aluminum flashings on bottom of specimen
Referenced: K15

Applicant: KINGSPAN INSULATION LTD
Pembroke, Leominster,
Herefordshire
HR6 9LA, UK

1. OBJECT

The results reported in this document may be used as part of a fire hazard assessment which takes into account all of the factors which are pertinent to an assessment of the fire hazard of a particular end use.

2. INFORMATION ABOUT THE TESTED PRODUCT

Date of arrival: 18 December 2019

The information below were provided by the applicant who attests their accuracy.

Manufacturer / supplier: KINGSPAN INSULATION LTD
Pembroke, Leominster,
Herefordshire
HR6 9LA, UK

Identification of the product: Batch Number: 8100350937

General description of the product:

Composition K15 boards
Aluminum 'L'- shape flashings on bottom edge running across the full width on each side

Thickness/Size K15 insulation board layer: 80 mm
Aluminum 'L'- shape flashings: 90 mm x 90 mm x 2 mm (thickness)

Density 35 kg/m³

Color Pink foam core with silver facings on both sides

Specimen:

Sampling procedure Random selection from production

Mounting:

Attachment system Insulation boards reference K15 were fixed on the non-combustible sheathing board layer using fixings reference Woodscrews Ø 5 mm x 120 mm combined with washers reference SFS Intec of dimensions 70 mm x 70 mm. Aluminum 'L'- shape flashings were fixed on the bottom of the specimen, across both faces, using screws reference TEK of 25 mm length.

3. TESTS

3.1. SPECIMENS PREPARATION

Specimens have been made by the applicant, according to the specification of the reference documents.

Pictures of specimen are given in appendix 1.

3.2. CONDITIONING

Prior to tests, specimens have been conditioned at a temperature of (23 ± 2) °C and relative humidity of (50 ± 5) %, at least 48 h according to ISO 554 standard.

3.3. TESTING

Test has been performed 16th January 2020.

The time between the removal of the specimens from conditioning and the start of the test has been kept to a minimum to ensure that the conditioning of the test specimen is not lost.

Tests have been performed in accordance with the procedure described in the test standard.

4. RESULTS

Curves of temperature measurements are given in appendix 2.

4.1. OBSERVATIONS

Time (min)	Observations
00:00	Ignition of burner
00:41	Crackling noise
01:00	Discolouration of foil facing up to 1200mm height on the corner
02:30	Bottom flashing bending on the mid-width of the main face
05:30	Burning of foam core in the corner of main face
10:00	Flames reaching 1000mm height in the corner
21:00	Aluminum flashing melting on the main face
28:00	Bottom part of the main face foam core burnt
30:00	Termination of the test

As the laboratory was not responsible for the sampling stage, thus the test results only apply to the tested specimen.

4.2. OTHER OBSERVATIONS

After the test, two 150 mm x 150 mm square parts of insulation were cut out of the specimen's main face centreline at 500 mm and 1000 mm height to examine the charring depth.

The results, measured by measuring tape, were:

Height where measurement was taken (mm)	Charring depth (mm)
500	35
1000	20

5. CONCLUSIONS

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.

The attention is drawn on the fact that the results obtained with the sample being the subject of the present test report can not be generalized without justification of the representativeness of the samples and tests.

Belfast, on 10th March 2020

SIGNED

Konstantinos CHOTZOGLOU
Project leader

APPROVED

Damien FLAMMIER
Technical supervisor

APPENDIX 1 – PICTURES

Label of the insulation product as shown on the delivery package



Specimen before
ignition of fire source



Specimen at 1 min
after ignition



Specimen at 5 min
after ignition



Specimen at 10 min
after ignition



Specimen at 15 min
after ignition



Specimen at 20 min
after ignition



Specimen at 25 min
after ignition



Specimen at 30 min
after ignition



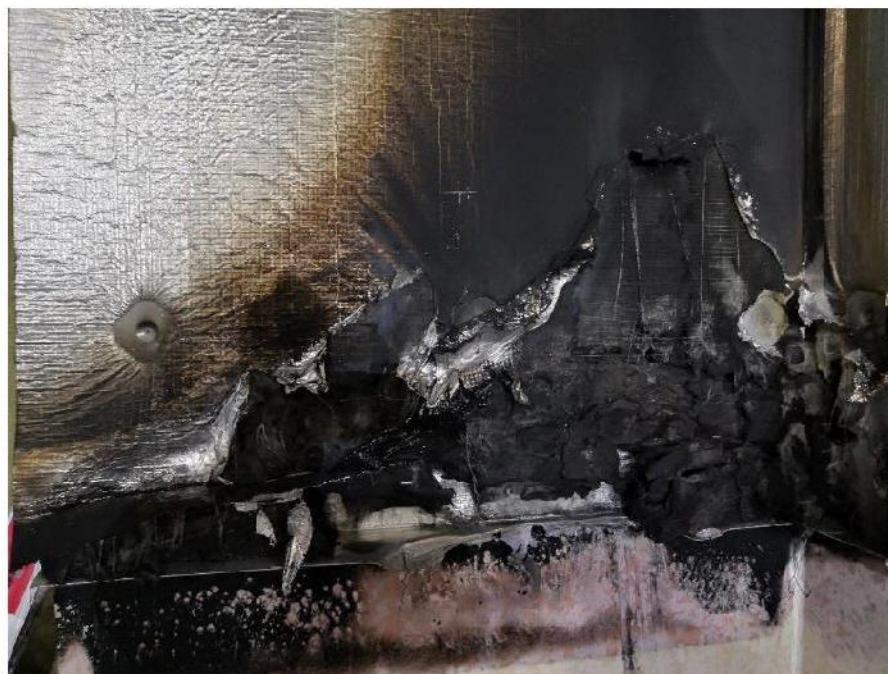
Specimen after
extinguishment of fire
source



Specimen after the
test



Damage on the
bottom part of the
specimen – Main face



Damage on the
bottom part of the
specimen – Wing face



APPENDIX 2 – CURVES

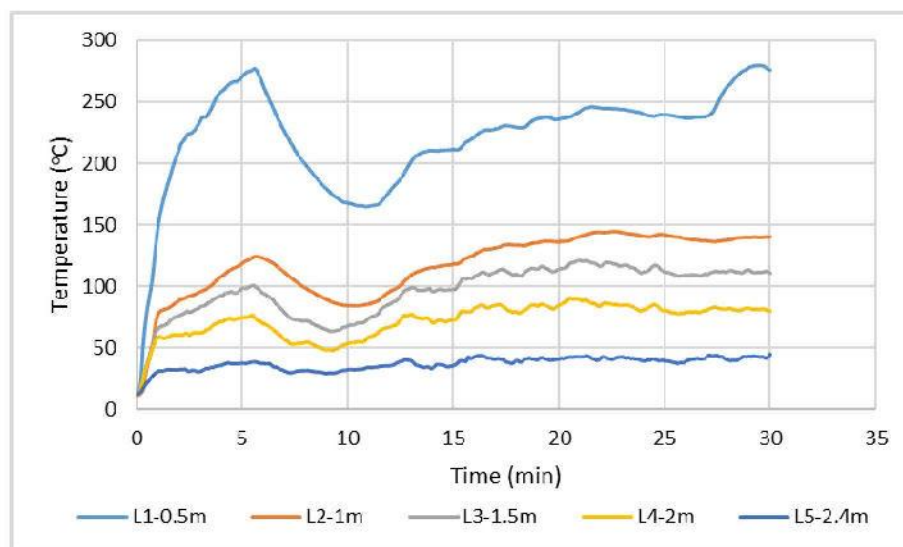


Figure 1. Temperature data history on the exposed side of the main face

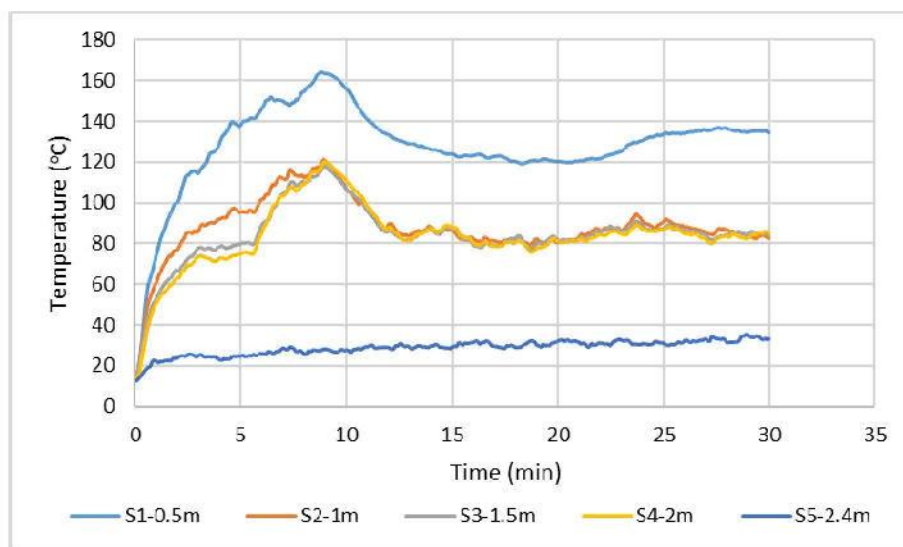


Figure 2. Temperature data history on the exposed side of the wing face

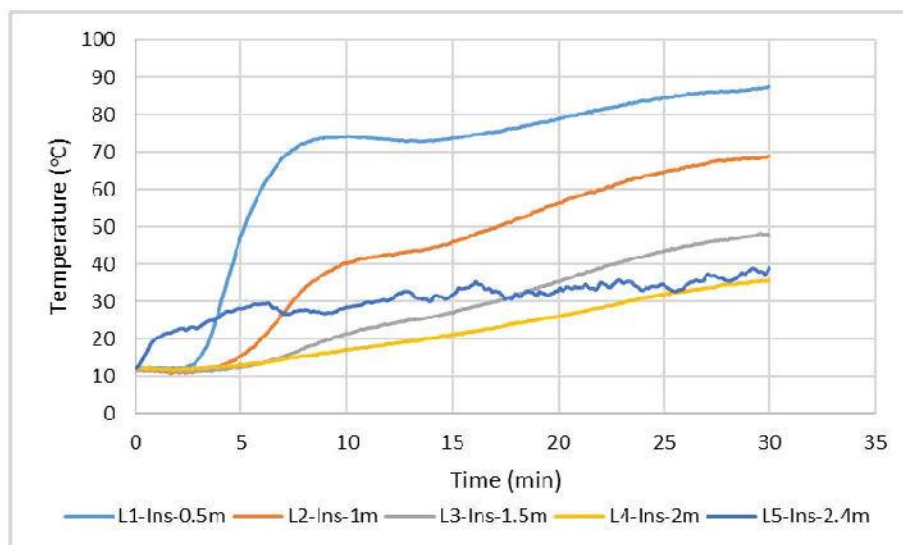


Figure 3. Temperature data history on the mid-thickness of the main face

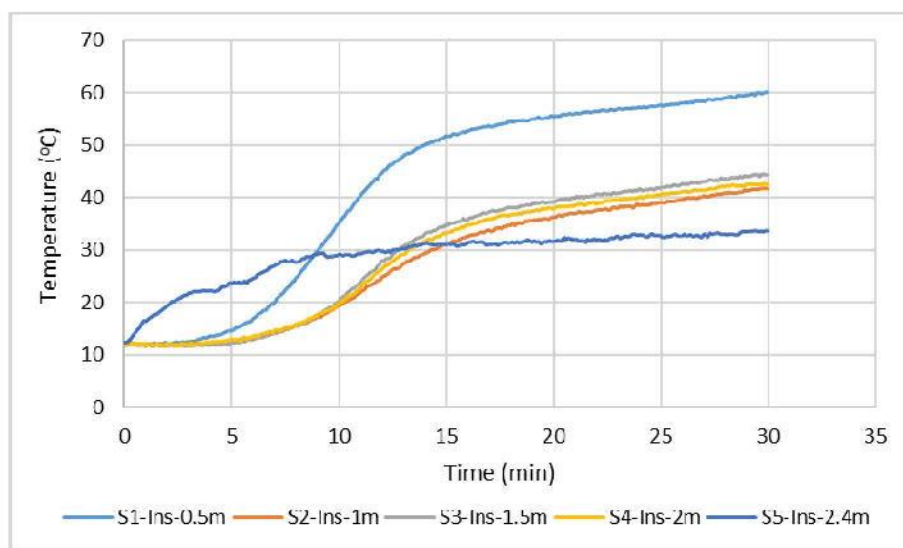


Figure 4. Temperature data history on the mid-thickness of the wing face

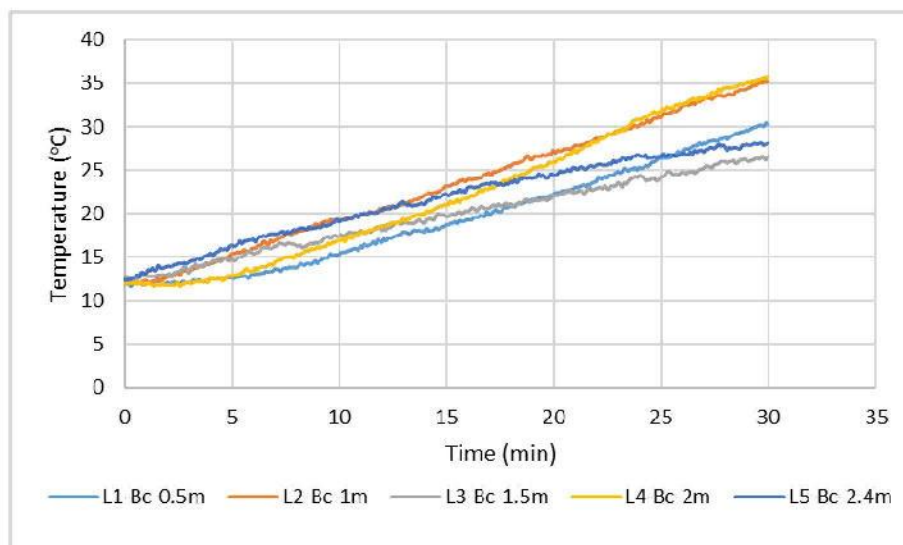


Figure 5. Temperature data history on the non-exposed side of the main face

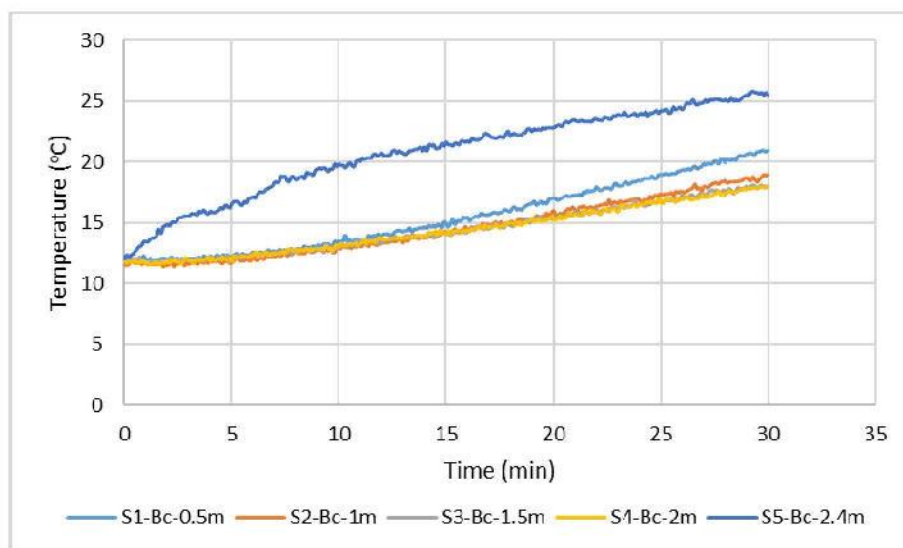


Figure 6. Temperature data history on the non-exposed side of the wing face

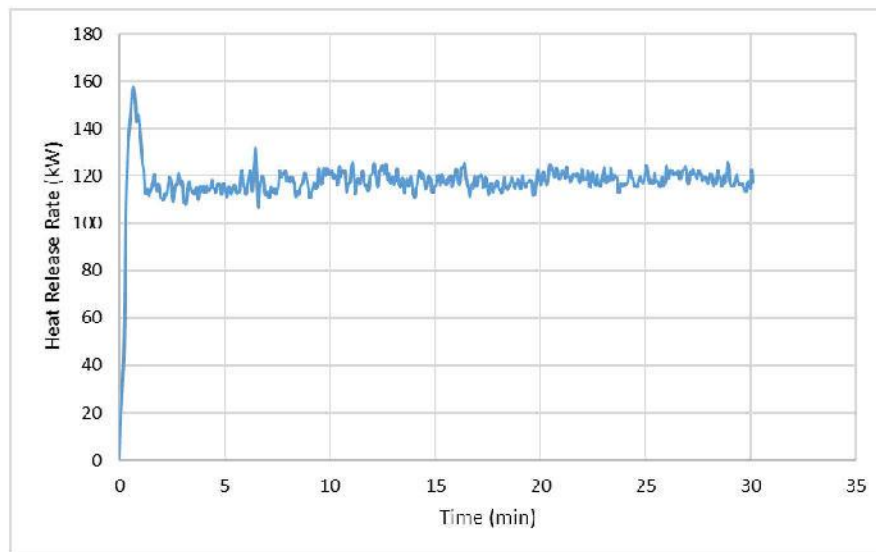


Figure 7. Heat Release Rate data history

END OF TEST REPORT