

BRE Global Test Report

BS 476-6: 1989 + A1: 2009 Fire propagation test on K-FLEX ST AL CLAD

Prepared for: L'Isolante K-Flex Spa

Date: 19 March 2015

Report Number: 303129 Issue: 1

BRE Global Ltd
Watford, Herts
WD25 9XX

Customer Services 0333 321 8811

From outside the UK:
T + 44 (0) 1923 664000
F + 44 (0) 1923 664010
E enquiries@bre.co.uk
www.bre.co.uk

Prepared for:

L'Isolante K-Flex Spa
Via Leonardo da Vinci, 36
20040 RONCELLO (mi)
Italy





Prepared by

Name S M Warbus

Position Senior Consultant

Signature

A handwritten signature in blue ink, appearing to read 'S M Warbus', is written over a light blue horizontal line.

Authorised by

Name S J Howard

Position Principal Consultant

Date 31/03/15

Signature

A handwritten signature in blue ink, appearing to read 'S J Howard', is written over a light blue horizontal line.

This report is made on behalf of BRE Global and may only be distributed in its entirety, without amendment, and with attribution to BRE Global Ltd to the extent permitted by the terms and conditions of the contract. Test results relate only to the specimens tested. BRE Global has no responsibility for the design, materials, workmanship or performance of the product or specimens tested. This report does not constitute an approval, certification or endorsement of the product tested and no such claims should be made on websites, marketing materials, etc. Any reference to the results contained in this report should be accompanied by a copy of the full report, or a link to a copy of the full report.

BRE Global's liability in respect of this report and reliance thereupon shall be as per the terms and conditions of contract with the client and BRE Global shall have no liability to third parties to the extent permitted in law.

Opinions and interpretations expressed herein are outside the scope of UKAS Accreditation.



Table of Contents

1	Objective	3
2	Sample	3
2.1	Traceability	3
2.2	Description of sample and test format.	3
3	Conditioning	4
4	Results	4
4.1	Temperature measurement	4
4.2	Observations	5
5	Conclusions	5
6	Validity	5
7	Reference	5
Appendix A	Sample description	6



1 Objective

To determine the fire propagation index of the sample specified in Section 2 using the test method specified in British Standard 476: Part 6: 1989 + A1: 2009¹.

2 Sample

2.1 Traceability

The test samples were supplied by the test sponsor. BRE Global were not involved in the sample selection process and therefore cannot comment upon the relationship between the samples supplied for test and the product supplied to market.

2.2 Description of sample and test format.

Unless otherwise stated all measurements are nominal.

Test Sponsor	L'Isolante K-Flex Spa Via Leonardo da Vinci, 36 20040 RONCELLO (mi) Italy
Manufacturer of sample	L'Isolante K-Flex Spa Via Leonardo da Vinci, 36 20877 RONCELLO (MB) Italy
Sample name/reference	K-FLEX ST AL CLAD
Sample description (as provided by test sponsor/manufacturer)	The sample description provided by the sponsor is given in Appendix A
Description of sample (as received)	Black sponge foam with a 0.28mm thick foil facing, adhered to 1mm thick aluminium substrate
Mean weight per unit area (kg/m ²)	9.41
Mean thickness (mm)	24
Sample receipt date	03 March 2015
Test face	Foil face
Date of test	12 March 2015



3 Conditioning

The specimens were conditioned as required by the standard.

4 Results

4.1 Temperature measurement

Table 1 shows the temperature rise for calibration sheet and specimens

Table 2 shows the Index of performance for each specimen

Table 1 – temperature rise

Time t min	Temperature rise - °C			
	Calibration sheet	Specimens		
		a	b	c
0.5	14.1	22.3	23.1	15.1
1	19.2	25.1	27.0	22.9
1.5	24.0	32.8	36.6	33.1
2	27.8	37.8	40.4	37.5
2.5	31.7	42.0	46.1	41.9
3	35.5	44.4	50.3	46.3
4	60.0	64.1	74.0	71.3
5	92.3	132.8	134.2	133.7
6	116.8	164.8	161.5	158.0
7	138.1	186.8	178.4	186.5
8	156.3	204.2	186.3	202.7
9	172.4	214.2	193.4	213.0
10	183.9	218.3	197.4	218.1
12	203.1	218.8	201.9	221.2
14	214.7	221.9	203.3	223.9
16	222.7	224.2	205.1	225.3
18	231.0	228.3	208.1	226.3
20	237.5	230.0	211.1	226.7

t - time in minutes from the time at which the gas jets were ignited.

a, b and c - represent individual specimens giving valid test results.

**Table 2 Index of performance**

Specimen	S	s ₁	s ₂	s ₃
a	8.0	4.0	3.8	0.2
b	8.4	5.1	3.3	0.0
c	6.5	2.4	3.9	0.2

4.2 Observations

No intumescence or deformation of any specimen occurred that affected the required gas input.

No melting or slumping occurred that prevented the material from being exposed to the heating conditions.

Air flow through the apparatus was not restricted by fallen material or by soot accumulation in the chimney.

5 Conclusions

A sample as described in this report, when tested in accordance with BS 476: Part 6: 1989 + A1: 2009, achieved:

fire propagation index	$I =$	7.6
sub-indices	$i_1 =$	3.8
	$i_2 =$	3.7
	$i_3 =$	0.1

BS 476: Part 6: 1989 + A1: 2009 does not contain acceptance criteria and therefore this test report does not indicate a pass or fail of the product.

6 Validity

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

The specification and interpretation of fire test methods are the subject of ongoing development and refinement. Changes in associated legislation may also occur. For these reasons it is recommended that the relevance of test reports over 5 years old should be considered by the user. The laboratory that issued the report will be able to offer, on behalf of the legal owner, a review of the procedures adopted for a particular test to ensure that they are consistent with current practices, and if required may endorse the test report.

7 Reference

- 1 British Standard 476: Part 6: 1989 + A1: 2009 Fire tests on building materials and structures. Part 6. Fire propagation test for products. British Standards Institution, London 2009.



Appendix A Sample description

COMPOSITE

General description	Laminated faced cellular foam insulation panel bonded to one face of 1mm thick mild steel sheet
Product reference of overall composite	K-FLEX ST AL CLAD
Name of manufacturer of overall composite	L'Isolante K-Flex Spa Via Leonardo da Vinci, 36 20877 RONCELLO (MB) Italy
Thickness of overall composite	25 +/-2mm
Weight per unit area of overall composite	1585 g/m ²

ALUMINIUM FOIL:

Generic type	Laminated PVC foil
Product reference	K-Flex Al Clad foil
Detailed description / composition details	PVC foil covered with Aluminium/PE protective layer
Name of manufacturer	Not disclosed
Thickness	0.280mm
Weight per unit area	400 g/m ²
Colour reference	Silver

ADHESIVE

Generic type	Synthetic Resin Adhesive
--------------	--------------------------

FOAM

Generic type	Elastomeric Foam Insulation (pr EN 14304-basis) Nitrile Rubber
Product reference	K-FLEX ST
Detailed description / composition details	A thermal insulation foam product adhered to a steel substrate
Name of manufacturer	L'Isolante K-Flex Spa Via Leonardo da Vinci, 36 20877 RONCELLO (MB) Italy



Thickness	25mm
Density	Between 45 and 75 kg/m ³
Colour reference	black