

## BRE Global Test Report

**BS 476: Part 3: 2004 + A1: 2006 + A2: 2007 External fire exposure to roofs test on Liquasil Metaseal 20 on a metal substrate.**

**Prepared for:** Liquasil Ltd  
**Date:** 30 April 2018  
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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](mailto:enquiries@bre.co.uk)  
[www.bre.co.uk](http://www.bre.co.uk)

Prepared for:  
Liquasil Ltd  
Unit 8 Radway Industrial Estate  
Radway Road  
Solihull  
West Midlands  
B90 4NR  
UK





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## Prepared by

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Name P Potter

Position Senior Technician

Signature

A handwritten signature in blue ink, appearing to read 'P Potter', written over a light blue horizontal line.

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## Authorised by

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Name J Hunter

Position Section Leader, Reaction to Fire

Date 30 April 2018

Signature

A handwritten signature in black ink, appearing to read 'J Hunter', written over a light blue horizontal line.

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## 1 Objective

To classify the sample described in Section 2 according to its capacity to resist penetration by fire and its spread of flame characteristics, using the external fire exposure to roofs test and criteria specified in BS 476: Part 3: 2004 Incorporating Amendment 1: 2006 and Amendment 2: 2007<sup>1</sup>.

## 2 Sample

### 2.1 Traceability

The test samples were supplied by the client. BRE Global were not involved in the sample selection process and therefore cannot comment upon the relationship between 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	Liquasil Ltd Unit 8 Radway Industrial Estate Radway Road Solihull West Midlands B90 4NR
Manufacturer of sample	Adshead Ratcliffe & Co Ltd
Sample name/reference	Liquasil Metalseal 20
Sample description (as provided by test sponsor/manufacturer)	1 part moisture curing silicone coating. A product definition as provided by the test sponsor has been included in this report as Appendix A.
Description of sample (as received)	Light grey coating on a steel-type metal base. Total measured thickness 1.1 mm, of which the metal substrate was 1.0 mm.
Sample receipt date	26 January 2018
Test face	Light grey coated face.
Test format	The test was carried out in the sloping position
Date of test	16 March 2018



### 3 Conditioning

The specimens were conditioned as required by the standard.

### 4 Results

#### 4.1 Preliminary ignition test

Specimen reference	Joint	Ambient	Flame spread mm	Flame duration min:s	Penetration min:s
E10642-1	None	20.8°C 47.6 % RH	0	None	None

#### 4.2 Spread of flame test

Specimen reference	Joint	Ambient	Flame spread mm	Flame duration min:s
E10642-2	None	20.7°C 48.3 % RH	410	16:14
E10642-3	None	20.5°C 48.9 % RH	255	6:45
E10642-4	None	20.6°C 49.3 % RH	530	9:52

The mean flame spread was **398.3mm**



### 4.3 Penetration test

Specimen reference	Joint	Ambient	Penetration min:s	Observations
E10642-5	None	21.8°C 42.7 % RH	None	Blistering and peeling was visible from 2-4 minutes.
E10642-6	None	22.2°C 39.6 % RH	None	Blistering and peeling was visible from 2-4 minutes.
E10642-7	None	22.5°C 39.3 % RH	None	Blistering and peeling was visible from 2-4 minutes.

Note- no specimen was provided by the test sponsor with a joint as they stated that there is no jointing in the product applied to metal roofs.

### 4.4 Observations

No dripping of material occurred from the underside of any specimen tested, nor was any mechanical failure, or development of holes, observed.

## 5 Designation of specimens

The designation of specimens subject to conditions of external fire shall be according to both the time of penetration and the distance of spread of flame along their external surface.

Each category designation shall consist of two letters, e.g. AA, AC, BB, these being determined as follows:

#### First letters:

- A. Those specimens which have not been penetrated within 1 hour.
- B. Those specimens which are penetrated in not less than ½ hour.
- C. Those specimens which are penetrated in less than ½ hour.
- D. Those specimens which are penetrated in the preliminary flame ignition test.

#### Second letters:

- A. Those specimens on which there is no spread of flame.
- B. Those specimens on which there is not more than 533mm spread of flame.
- C. Those specimens on which there is more than 533mm spread of flame.
- D. Those specimens which continue to burn for 5 minutes after the withdrawal of the test flame or spread more than 381mm across the region of burning in the preliminary test.



- 5.3 Attention shall be drawn to dripping from the underside of the specimen, any mechanical failures, and any development of holes, by adding a suffix 'X' to the designation to denote that one or more of these took place during the test.
- 5.4 When it is required to indicate test results obtained on the sample by designation, the following method shall be used:

The designation letter for penetration shall be given followed by that for spread of flame and preceded by the letters EXT.F. or EXT.S. according to whether the flat or inclined test has been made and when necessary the suffix 'X' shall be added. Thus, for example:

EXT.F.AA; EXT.F.ACX;

EXT.S.BA; EXT.S.CCX.

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## 6 Conclusion

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The sample described in section 2 of this report, when tested in accordance with British Standard 476: Part 3: 2004 Incorporating Amendment 1: 2006 and Amendment 2: 2007, achieved the designation of **EXT.S.AB**.

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## 7 Validity

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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.

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## 8 Reference

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- 1 British Standard 476-3: 2004 Incorporating Amendment 1: 2006 and Amendment 2: 2007. Fire tests on building materials and structures. Part 3. Classification and method of test for external fire exposure to roofs. British Standards Institution, London, 2007.



## Appendix A Test sponsor's product description

A product definition as provided by the test sponsor:-

### PRODUCT DEFINITION

Trade name	Liquasil Metalseal 20
Product reference/number	
Manufacturer	Adshead Ratcliffe & Co Ltd
General description	1 part moisture curing silicone coating
Thickness	200 -300 micron
Density or mass per unit area	0.93
Flame retardant treatment used in production of product	None
Test face (layer 1)- - Name/reference - Type - Thickness - Mass per unit area - Colour	Liquasil Metalseal 20     Goosewing Grey
Layer 2 - Name/reference - Type - Thickness - Mass per unit area - Colour	Arbo Primer 7750 1 part primer 10 microns  Clear (can dry to a milky white colour)
Layer 3 - Name/reference - Type - Thickness - Mass per unit area - Colour	
Layer 4 - Name/reference - Type - Thickness - Mass per unit area - Colour	
Layer 5 - Name/reference - Type - Thickness - Mass per unit area - Colour	

BRE note: the test material was supplied coated onto a steel-type metal substrate of thickness 1.0mm