Blue Diamond Fire Protection

7. PYROLASTIC FIRE RATED SILICONE

PRODUCT DATA SHEET

PYROLASTIC®
FIRE RATED SILICONE

Product name	Pyrolastic® Fire Rated Silicone
Product Code	BD-S16
Revision Date	30/01/2016
Revision number	03

INTRODUCTION

Pyrolastic® Fire Resistant Silicone is a one-part silicone sealant. It has excellent adhesion to porous and non-porous substrates used in the construction industry. High performance fire rated silicone sealant for fire sealing applications up to 50mm wide. Neutral curing fire resistant silicone sealant with excellent weatherability, flexibility and being odourless. Primerless silicone sealant offering EI240 fire resistance to EN1366-4.

Pyrolastic® Fire Resistant Silicone Sealant can be used for fire protection sealing of expansion joints, door frames and block work walls etc.

The advantages of Pyrolastic® Fire Resistant Silicone are as follows:

- Fire resistance testing to EN 1366-4:2009 EI240.
- Fire Classification to EN 13501-2.
- Fire Classification to En 13501-1 Class E
- Air Permeability testing to 600Pa.
- Fire resistant up to 4 hours in both horizontal and vertical joints.
- Can be used in joints up to 50mm wide.
- Non-slump, easy to apply and tool off.
- No priming required for most substrates.
- Contributes to Green Building.
- Joint movement capability of +/- 7.5%.
- Highly flexible and waterproof.

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SPECIFICATION

Packaging	310ml Cartridges / 600ml foils / 10kg pails
Colour	Grey
Slump	Nil at joints up to 30mm
Shrinkage	Approximately 5%
Cure Rate	3mm per day at 50% relative humidity 25°C
Specific Gravity	1.33 - 1.37 g/cm^3
Application temperature	+5°C to +40°C
Tack Free	20 mins at 25°C, 50% RH
Water Resistance	Waterproof when fully cured
U.V Resistance	Good
Joint Movement	25% of original joint size
Elastic Recovery	>90%
Fire Resistance	EN 1366-4 EI240
Air Permeability	600Pa EN 1026 - 100Pa 2.8/5.6 m3/h/m2
Classification	EN 13501-2, ISO 11600, 13501-1
Acoustic Isolation	EN 10140, EN 717 - 38dB (-2;-9)
Weathering	ISO 11431 - 250 cycles each 120 minutes / 102 mins of the cycle dry at 65°C lights at 550W/m2 over a wave length of 290 – 800nm / 18 minutes wet, immersion, light off. Water to be at 25°C

PERFORMANCE

All tests were carried out with the Sealant on fire side of furnace.

Joint Size Width x Depth	Backing	Joint Configuration	Integrity Rating (mins)	Insulation Rating (mins)	Linear Metres per Cartridge
6mm x 10mm	P.E. Foam	Single Seal	60	30	5.2
6mm x 10mm	C.B or P.E. Foam	Dual Seal	240	240	2.6
10mm x 10mm	P.E. Foam	Single Seal	60	30	2.6
10mm x 10mm	C.B or P.E. Foam	Dual Seal	240	240	1.55
15mm x 10mm	P.E. Foam	Single Seal	120	90	1.4
15mm x 10mm	C.B or P.E. Foam	Dual Seal	240	240	0.9
20mm x 10mm	P.E. Foam	Single Seal	120	90	0.92
20mm x 10mm	C.B or P.E. Foam	Dual Seal	240	240	0.5
25mm x 10mm	P.E. Foam	Single Seal	120	90	0.6
25mm x 10mm	C.B or P.E. Foam	Dual Seal	240	240	0.6
26 – 100mm x 10mm	C.B or P.E. Foam	Dual Seal	240	240	

PE Foam	Closed Cell polyethylene backer rod (nominal density 35kg/m^3)
CB	Ceramic Blanket Backing

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INSTALLATION

Installation Details and technical support are available from Blue diamond or on the internet at www.bluediamondfireprotection.com

- Clean all joints free from dust, oil and grease.
- Masking surrounding surfaces if necessary.
- Ensure gap is filled using one of the above backing materials.
- Fill gap to the required depth, tool off for a smooth finish.
- Minimum depth to be 6mm.

For further information see Installation Manual.

COMPLIANCE

Pyrolastic® Fire Resistant Sealant is manufactured in the EU, meeting the highest quality standard in compliance with BS EN ISO 9001:2008. For fire test information please contact Blue diamond technical department.

CERTIFIRE No. CF514

STORAGE AND DISPOSAL

Pyrolastic® Fire Resistant Silicone is not affected by an outdoor environment, it is recommended for ease of installation that the product is stored indoors, ideally in dry frost free conditions between +5°C and +30°C. For health and safety details refer to Blue diamond technical department.

ENVIRONMENT

Blue diamond contribute to Green Building by having a manufacturing policy of 100% recycle and 0% landfill for all products. Pyrolastic® Fire Resistant Silicone contributes to a Green Building :-

Low VOC (air quality).
No Power Tools required for installation (no energy source required).
Dust free.
Low Ozone Depletion Potential (ODP).
Low Global Warming Potential (GWP).
No water pollution.
Smoke and Air Tightness.
Noise Reduction.
Thermal Insulation.
Recycling of Packaging.
Avoidance of Air Filtration.
Does not emit halogenated by-products.
Contains no raw materials known to have an estrogenic effect.
The life cycle of Pyrolastic® Fire Rated Silicone is over 30 years.

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UL-EU CERTIFICATE

Certificate No.	UL-EU-01052-CPR
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Date of Issue	2017-11-24
Certificate Holder	BLUE DIAMOND FIRE PROTECTION P.O. Box 25468 Dubai UAE
Manufacturer	A/008
Certified Product Type	Fire Stop – Sealant
Product Trade Name	BD-S16 Silicone
Trademark	
Rating/Classification	See Appendix
Harmonised Technical Specifications	ETAG 026-3/ EN13501-2
Supporting Documentation	ETA 17/0723, EC - CERTIFICATE OF CONSTANCY OF PERFORMANCE – 1121-CPR-JA5111
Additional information	
Expiry date	2027-11-23

4705

Head of Notified Body
Chris Miles

This is to certify that representative samples of the Certified Product listed above have been investigated by Underwriters Laboratories to the Standard(s) indicated on this Certificate, in accordance with the UL Global Services Agreement and the UL-EU Mark Service Terms and Conditions ("Agreement"). The Certificate Holder is entitled to use the UL-EU Mark for the Certified Product listed on the certificate and manufactured at the production site(s) listed, in accordance with the terms of the Agreement. Only those products bearing the UL-EU Mark for Europe should be considered as being covered by UL's UL-EU Mark Service. This Certificate shall remain valid through the Expiration date, unless a Standard identified on this Certificate is amended or withdrawn prior to that date or there is a non-compliance with the Agreement.

Appendix UL-EU CERTIFICATE

This certificate relates to the use of BD-S16 Silicone Sealant for fire stopping where there are joints in or between walls & floors. The detailed scope is given in pages 3 to 5 of this Certificate. This shows the thickness and acceptable dimensions, substrates and orientations required to provide fire resistance periods of up to 240 minutes for differing seal configurations and wall/floor constructions

The product is certificated on the basis of:

i) ETA 17/0723
ii) EC - CERTIFICATE OF CONSTANCY OF PERFORMANCE 1121-CPR-JA5111
iii) Inspection and surveillance of factory production control by UL
iv) Fire resistance test data in accordance with EN 1366-4: 2006
v) Classification in accordance with EN 13501-2
vi) Durability and Servicability as defined in ETAG 026-3

The movement capability of BD-S16 Silicone joint seals is restricted to 7.5%.

The durability class of BD-S16 Silicone is X - intended for use in conditions exposed to weathering

Appendix UL-EU CERTIFICATE

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Product-type: Sealant	Intended use: Linear Joint & Gap Seal	
Basic requirement for construction work	Basic Requirement	Basic requirement for construction work
BWR 1 Mechanical resistance and stability		
	None	Not relevant
BWR 2 Safety in case of fire		
EN 13501-1	Reaction to fire	E
EN 13501-2	Resistance to fire	See page 5
BWR 3 Hygiene, health and environment		
EN 1026:2000	Air permeability (material property)	See page 4
ETAG 026-3, Annex C	Water permeability (material property)	No performance determined
Declaration of Manufacturer	Release of dangerous substances	Declaration of manufacturer
BWR 4 Safety in use		
EOTA TR 001:2003	Mechanical resistance and stability	No performance determined
EOTA TR 001:2003	Resistance to impact/movement	No performance determined
EOTA TR 001:2003 ISO 11600	Adhesion	No performance determined
BWR 5 Protection against noise		
EN 10140-2/ EN ISO 717-1	Airborne sound insulation	No performance determined
EN 10140-3/ EN ISO 717-2	Impact sound insulation	No performance determined
BWR 6 Energy economy and heat retention		
EN 12664, EN 12667 or EN 12939	Thermal properties	No performance determined
EN ISO 12572 EN 12086	Water vapour permeability	No performance determined
General aspects relating to fitness for use		
ISO 8339: 2005, ISO 9046: 2004 & ISO 7389: 2003	Durability and serviceability	X
BWR 7 Sustainable use of natural resources		
-	-	No performance determined

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BD-S16 Silicone: Air Permeability according to BS EN 1314-1				
Pressure (Pa)	**Results under positive chamber pressure**		**Results under negative chamber pressure**	
	Leakage (m^3/h)	**Leakage (m^3/m^2/ h)**	**Leakage (m^3/h)**	**Leakage (m^3/m^2/ h)**
50	0.1	2.8	0.1	2.8
100	0.1	2.8	0.2	5.6
150	0.1	2.8	0.2	5.6
200	0.1	2.8	0.2	5.6
250	0.1	2.8	0.1	2.8
300	0.1	2.8	0.2	5.6
450	0.1	2.8	0.1	2.8
600	0.2	5.6	0.1	2.8

BD-S16 Silicone: Analytical VOC Results		
Regulation or protocol	**Conclusion**	**Version of regulation or protocol**
French VOC Regulation		Regulation of March and April 2011 (DEVL1101903D and DEVL1104875A)
French CMR components	Pass	Regulation of March and April 2011 (DEVL1101903D and DEVL1104875A)
AgBB	Pass	AgBB of February 2015. DIBt of October 2010
Belgian Regulation	Pass	Royal decree of May 2015 (C-2014/24239)
EMICODE	EC 1 PLUS	November 2015
Indoor Air Comfort®	Pass	Indoor Air Comfort 5.3a of March 2015
Indoor Air Comfort GOLD®	Pass	Indoor Air Comfort GOLD 5.3a of March 2015
EN 717-1§	E1	2004
Blue Angel (RAL UZ 123)	Pass	Low-Emission Sealants for Interior Use, April 2009
BREEAM International	Compliant	GN22: BREEAM Recognised Schemes for VOC Emissions from Building Products

Full details of the results given above are included in the test report referenced 392-2017-00014902_A_EN.

Appendix UL-EU CERTIFICATE

BD-S16 Silicone – Fire Resistance Classification according to EN 13501-2								
Configuration			**Wall to Wall Joint (rigid wall)**					
Substrate	**Minimum wall Thickness (mm)**	**Maximum Gap Size (mm)**	**Seal Position**	**Minimum Seal Depth (mm)**	**Backing Material**	**Minimum Backing Depth (mm)**	**Fire Resistance (mins.)**	
							E	**EI**
Concrete/ concrete	150	60	Both Sides	5	Stone Mineral Fibre, min. (60kg/m^3)	50	240	240
Concrete/ steel							240	60
Concrete/ hardwood							180	180
Concrete/ softwood							240	180
Concrete/ concrete		50		25	PE backing rod	20	240	180
Configuration			**Floor to Floor/Wall Joint (rigid floor/wall)**					
Substrate	**Minimum floor Thickness (mm)**	**Maximum Gap Size (mm)**	**Seal Position**	**Minimum Seal Depth (mm)**	**Backing Material**	**Minimum Backing Depth (mm)**	**Fire Resistance (mins.)**	
							E	**EI**
Concrete/ steel	150	60	Unexposed face	5	Stone Mineral Fibre, min. (60kg/m^3)	50	90	45
Concrete/ steel			Exposed face				120	60
Concrete/ concrete			Unexposed face				240	180
Concrete/ concrete			Exposed face				90	60
Concrete/ concrete		12	Unexposed face	6	PE backing rod	20	240	120
Concrete/ concrete		60		30			240	60

Appendix UL-EU Certificate

Certification Mark	**UL-EU mark**
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The UL-EU Mark, as displayed below, shall appear on certified products only. Minimum size is not specified, as long as the Mark is legible. The following is suggested.

The minimum height of the registered trademark symbol ® shall be 1 mm. When the overall diameter of the UL-EU Mark is less than 9.5 mm, the trademark symbol may be omitted if it is not legible to the naked eye.

The UL-EU Mark may appear on a label, nameplate, or may be cast, stamped or molded into the product. When appearing on a label or nameplate, the Manufacturer's name or trademark along with a model number are also required on that same label or nameplate. If cast, stamped or molded, the Manufacturer's name or trademark and model number shall also appear elsewhere on the product.

All content shall be in accordance with the details provided on this UL-EU Certificate.

PROCUREMENT

The Production site may reproduce the Mark or obtain it from a UL authorized supplier. The list of UL authorized suppliers can be found on UL's online directory at www.ul.com.