UNISEAL® VT-629

MS FIRE RATED HYBRID SEALANT



Product Features

UNISEAL® VT-629 is a single-component, moisture-curing joint sealant based on advanced MS polymer technology, providing movement capability in fire-rated joints. Sealed on both faces, it achieves a fire rating of up to 4 hours to BS EN 1366-4.

It is isocyanate- and solvent-free, so it can be applied to damp surfaces without bubbling or shrinkage, bonds to most substrates and can be painted with common industrial paints. Low VOC and halogen-free. Manufactured by Vital Technical Sdn Bhd (V-TECH) and supplied by Unity Reliance (M) Sdn Bhd.

Advantages

Up to 4 Hours Fire Rating (BS EN 1366-4)
JBPM (Bomba) Firestop Certified
ASTM C920 Compliant – ±25% Movement Capability
Good UV Resistance
Low Static Charge – Less Dirt Streaking
Paintable with Common Industrial Paints
Isocyanate-Free – No Air Bubbling
Solvent-Free – No Shrinkage
Halogen-Free, Low VOC Formulation

Fields of Application

Fire-Rated Movement Joints	Precast & In-Situ Concrete
Expansion & Construction Joints	Tilt-Up Construction
Interior & Exterior Fire Compartments	Brick & Blockwork
Fibre Cement Board & Plasterboard	Underground Tunnels

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UNISEAL® VT-629

Technical Properties

Property	Value
Appearance	Non-sag thixotropic paste
Cure Method	Moisture curing
Specific Gravity	1.62
Tack-Free Time (25°C, 50% RH)	20 – 60 minutes
Cure Depth (24 hrs, 23°C, 50% RH)	Approx. 3 mm
Full Cure	7 days
Shore 'A' Hardness (ASTM C661)	≥ 25
Tensile Strength (ASTM D412)	≥ 1.0 N/mm²
Elongation at Break (ASTM D412)	≥ 200%
Movement Capability (ASTM C719)	±25%
Fire Resistance (BS EN 1366-4)	Up to 4 hours – both faces sealed*
Service Temperature	-20°C to +90°C
Application Temperature	+5°C to +40°C
VOC Content (USEPA Method 24)	< 50 g/L (SCAQMD Rule 1168)

Typical properties after curing at 23°C and 50% RH.
*Tested system: 20 – 50 mm joints, walls / floors ≥ 150 mm, both faces sealed with UNISEAL® PRIMER over UNIFLEX® PE FR.

Physical Properties

Material	MS polymer (hybrid)
Colour	Grey (supplied in black sausage foil)
Size & Packing	UNISEAL® VT-629 – 600 ml sausage, 20 per carton UNISEAL® PRIMER – 1 litre tin
Primer Coverage	Approximately 30 – 50 litres sealant per litre

Applicable Standards

- BS EN 1366-4:2021 – linear joint seals
- AS 1530.4:2014 – fire-resistance test
- ASTM C920 – elastomeric joint sealants
- USEPA Method 24 / SCAQMD Rule 1168 – low VOC
- RoHS I, RoHS II & SVHC

Limitations

- Not for joints below the waterline or under permanent water immersion.
- Not for trafficable joints.
- Limit exposure to solvents, oils and other chemicals.
- Not paintable with alkyd resin paints.

Storage & Shelf Life

Store in a dry, cool place at around 25°C, away from direct sunlight. Shelf life: 12 months in unopened condition.

Cleaning

Remove masking tape within the working time. Clean uncured sealant with solvent; cured sealant can only be removed mechanically.

This technical data sheet is given in good faith and does not guarantee the application work.
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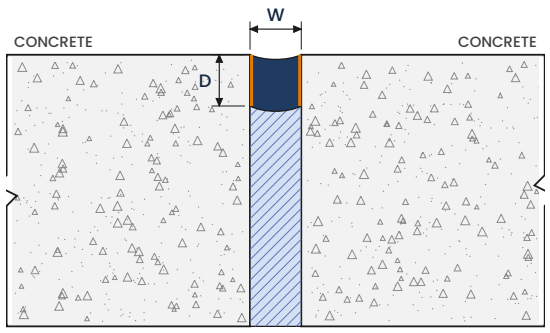
Joint Design Geometry

For the fire rating, fill the joint core with **UNIFLEX® PE FR** fire retardant board, set back from each face by the sealant depth. **No backer rod is used** – standard backer rods are not fire rated; the PE FR fillerboard forms the base of the sealant. Seal **both faces** of the joint – the 4-hour rating applies only to joints sealed on both faces.

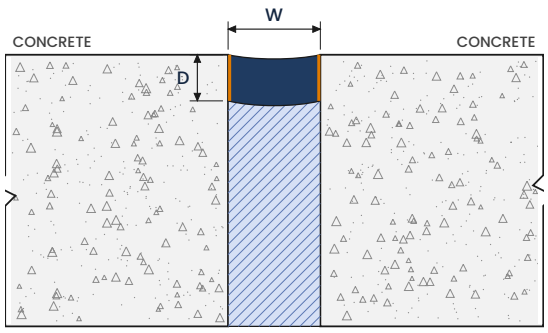
Fire-rated joint width 20 – 50 mm : wall / floor thickness ≥ 150 mm (as tested)

1 JOINTS UP TO 12MM WIDE Not to scale



Width : Depth = 1 : 1

2 JOINTS OVER 12MM WIDE Not to scale



Width : Depth = 2 : 1

Coverage

Theoretical calculation formula as below :-

Width (mm) x Depth (mm) x Length (m) / 1000 = Volume (litres)

Length of joint in metres filled per sausage of 600ml of **UNISEAL® VT-629**

Depth (mm)	Width (mm)					
	5	10	15	20	25	30
5	24	12	8	–	–	–
10	–	6	4	3	–	–
15	–	–	2.67	2	1.6	1.33
20	–	–	–	1.5	1.2	1
25	–	–	–	–	0.96	0.8

*Per sealed face. A both-faces fire-rated joint uses twice the quantity. Actual consumption on site will vary with wastage.

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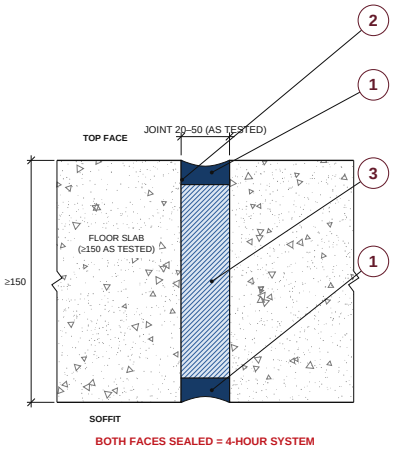
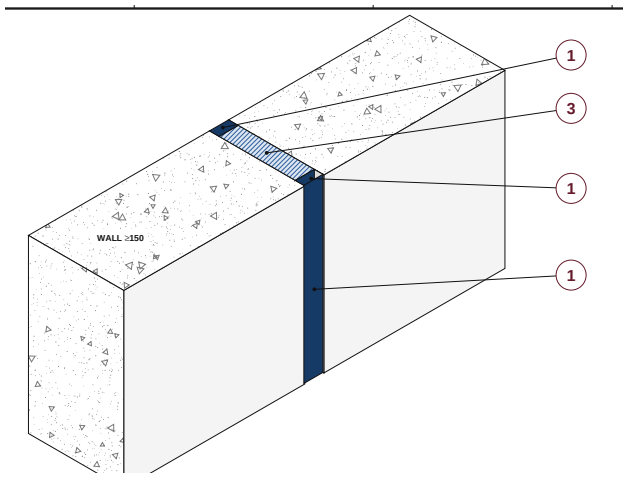
Typical Drawing & Application

1 FIRE RATED FLOOR JOINT — Both faces sealed

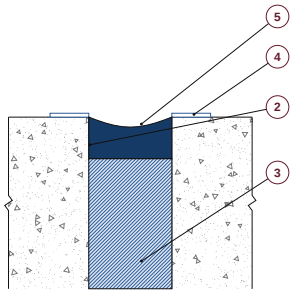


BOTH FACES SEALED = 4-HOUR SYSTEM

2 FIRE RATED WALL JOINT — 3D view



3 SEALANT FACE — Enlarged



NO BACKER ROD: SEALANT IS PLACED DIRECTLY ON THE UNIFLEX PE FR FIRE RETARDANT FILLERBOARD

LEGEND

- (1) UNISEAL® VT-629 sealant
- (2) UNISEAL® PRIMER
- (3) UNIFLEX® PE FR fillerboard
- (4) Masking tape
- (5) Concave tooled profile

Illustrations only – not for construction. 4-hour rating: joints 20 – 50 mm, both faces sealed, no backer rod. Refer to drawing UR-SL-03.

Accessories



UNISEAL® PRIMER



BARREL GUN



MASKING TAPE

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Installation Procedures

1 Surface Preparation | Primer | 3 Sealant Application | 4 Finishing & Cleaning

Step 1
SURFACE PREPARATION

Apply **UNISEAL® VT-629** when the ambient temperature is between **+5°C and +40°C**, using a hand-operated or air-powered barrel gun.

Joint faces must be **sound, clean and dry, free from dirt, grease, oil and standing water**. Wire brush or grind as needed and use the two-cloth method to clean dirty surfaces. Mask both edges of the joint for a neat finish.

Step 2
PRIMER

Brush **UNISEAL® PRIMER** onto both joint faces and allow it to become tack-free before sealing. Primer is required on porous substrates such as concrete, and the fire rating was achieved on primed joints. Re-prime if the joint is not sealed within 3 hours.

Step 3
SEALANT APPLICATION

Fill the joint core with **UNIFLEX® PE FR** fire retardant board, set back from each face by the required sealant depth. **Do not use backer rod** – it is not fire rated; the PE FR fillerboard forms the base of the sealant.

Cut the nozzle at 45° – 60° and extrude the sealant in a single, continuous bead with even pressure; on vertical joints work from the bottom up. Tool the bead to a slightly concave (hourglass) profile within the working time. **Seal both faces of the joint** for the 4-hour fire rating.

Step 4
FINISHING & CLEANING

Remove the masking tape within the working time, before the sealant skins. Clean uncured sealant with solvent; **cured sealant must be removed mechanically**. Protect the joint until fully cured (7 days).

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