



UNISEAL™ PUFC

(FAST CURE TRAFFICABLE POLYURETHANE JOINT SEALANT)



UNISEAL™ PU FC

(Fast Cure Trafficable Polyurethane Joint Sealant)

PRODUCT FEATURES

UNISEAL™ PU FC is a one component, fast cure, high performance polyurethane sealant and adhesive.

UNISEAL™ PU FC is a thixotropic moisture curing polyurethane sealant / adhesive with high mechanical strength and excellent resistance to weathering.

ADVANTAGES

- Class A Sealant – Total Joint movement 50% ($\pm 25\%$)
- Good adhesion on both porous and non-porous substrates.
- Excellent durability.
- Resistant to most hydrocarbons, skydrol, aviation fuels.
- Good weathering resistance.
- Non-sag on vertical and expansion joints up to 35mm width.
- Short skinning time.
- Does not support fungal growth.
- Low VOC.
- Non Hazardous – classification (NOHSC & ADG code / Aust Safety and compensation council)
- Paintable – Compatibility with paints
 - Water based : Yes
 - Solvent based: carry out compatibility test

FIELD OF APPLICATION

Construction Joints	Retaining Walls
Expansion Joints on Heavy and Light Precast Concrete Panels	Brick Work, Ceramics, Stone, Granite & Marble Sanitary applications
Expansion Joints in Buildings	Other substrates including – Anodised Aluminium, Steel, Glass, Dry Timbers, Some Tiles
Joints in Precast & tilt up Concrete Panels	
Perimeter Sealing around Window & Door Frames	Adhering Aluminium Composite Panel to Cement Sheet, Concrete or Masonry
Sealing of Penetrations in Walls or Floors	
Trafficable – Stairs, Roads, Runways & Pavements	

PAINTABILITY

UNISEAL™ PU FC can be painted after fully cured. Paints and coatings containing solvents may cause the sealant to react and become tacky. Some coatings may crack or craze as a direct result of the environmental cyclical movement. It is always recommended to conduct field tests to ensure compatibility with the desired coating.

TECHNICAL PROPERTIES

PROPERTY	VALUES
Colour	White, Grey, Black
Appearance	Thixotropic Paste
Cure Method	Moisture Curing
Specific Gravity	1.16 ± 0.03
Curing Rate	3 - 4mm / 24 hours
Skin formation	45 to 60 minutes
Sagging (ISO 7390)	None
Shore A hardness (ISO R868 - 3 seconds)	45 - 50
Tear Resistance (ISO 34)	≤ 6.5 N/mm
Modulus at 100%	0.7 MPa (102 psi)
Elongation (ISO 8339)	> 500 %
Elongation at Break (ASTM D 412)	+ 25 %
Movement Capability	50 %
Total Joint Movement	Good
Resistance to UV Radiation & Weatherability	-40°C to + 80°C
Service Temperature	+5°C to +35°C
Application Temperature	35
VOC Rating - g/L Test for Suitability of Non-Metallic Products for Use in Contact with Water Intended for Human Consumption with Regard to Their Effect on Quality of the Water (BS 6920-1-2014)	Pass

(TYPICAL PROPERTIES AFTER CURED AT 23°C AND 50% RELATIVE HUMIDITY CONDITIONS AND ENVIRONMENT)

PHYSICAL PROPERTIES

MATERIAL	Polyurethane (PU)
COLOR	White / Grey / Black
SIZE & PACKING	UNISEAL™ PU FC - 600ml per sausage / 20 sausage per carton UNISEAL™ PU PRIMER - 1 Liter tin
PRIMER COVERAGE	Approximately 25 - 30 Liters sealant per Liters

JOINT DESIGN GEOMETRY

To ensure that the correct joint width to depth ratio is achieved and also to prevent the sealant from adhering to the bottom of the joint, it is highly recommend to use a tight fitting, non-absorbent backing material such as an open cell polyurethane or closed cell polyethylene backer rod.

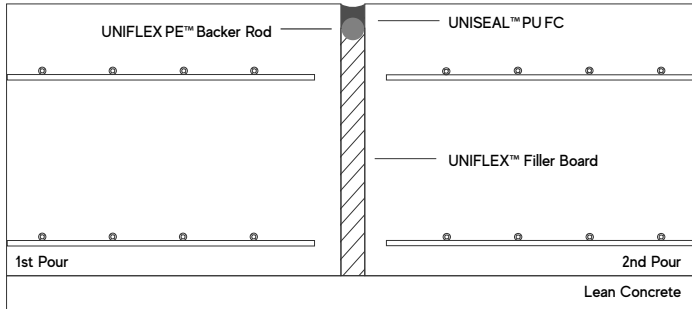
Open cell polyurethane backer rod has the advantage of allowing ambient moisture access to the front and back of the joint simultaneously allowing faster curing Caution - if using closed cell polyethylene backer rod, it can cause bubbling in uncured sealant as the temperature rises if it's outer skin is punctured.

Do not use oil or tar impregnated backing materials.

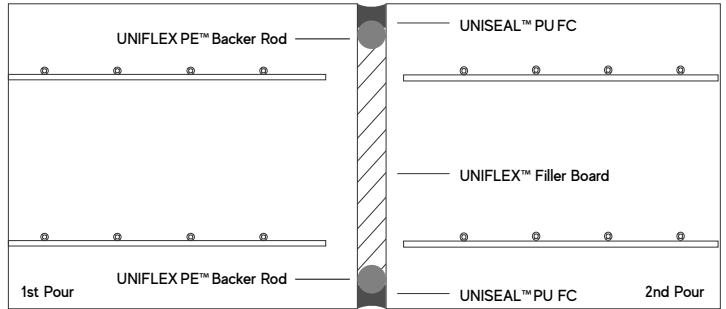
Minimum joint depth 6mm : maximum joint width 35mm for vertical installation

Joints up to 12mm wide, width to depth ratio = 1:1	Joints over 12mm wide, width to depth ratio = 2:1
--	---

TYPICAL APPLICATIONS



SLAB ON GROUND APPLICATION



SUSPENDED SLAB & WALL APPLICATION



COVERAGE

Theoretical calculation formula as below :-

▶ $\text{Width (mm)} \times \text{Depth (mm)} \times \text{Length (mm)} / 1000 = \text{Volume (Litre)}$

Length of joint in meters filled per sausage of 600ml of **UNISEAL™ PU FC**

DEPTH (mm)	WIDTH (mm)					
	5	10	15	20	25	30
5	24	12	8	6	4.8	4
10	12	6	4	3	2.4	2
15	8	4	2.67	2	1.6	1.34
20	6	3	2	1.5	1.2	1
25	4.8	2.4	1.6	1.2	0.96	0.8

CALCULATION BASED ON THEORETICAL COVERAGE. ACTUAL MATERIAL CONSUMPTION AT SITE WILL VARY DEPENDING ON THE WASTAGE

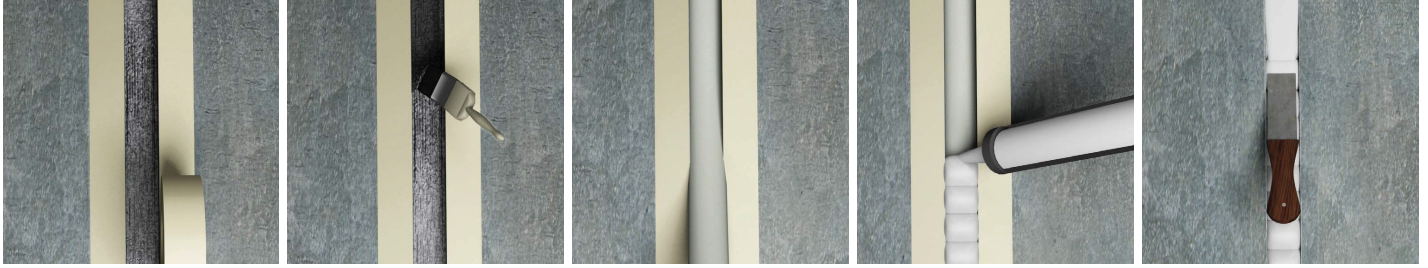
STORAGE & SHELF LIFE

Store sealant in original unopened sausage / cartridges in a dry location, temperature should not exceed 25°C for prolonged periods or lower than +5°C. Shelf life of product is 12 months from date of manufacturing. (For easier use we recommend the material is stored between +10°C and <+30°C prior to use.)

CLEANING

Clean up uncured sealant from tools after first scraping excess off with scraper then by rag or paper towel. Acetone can be used to remove thin film from tools (if need). Cured material can only be removed by mechanical clean up.

INSTALLATION PROCEDURES



▶ JOINT PREPARATION

Apply at a minimum temperature of +5°C to +35°C **UNISEAL™ PU FC** can be applied by means of a hand or air operated bulk gun.

When tooling the **UNISEAL™ PU FC** sausage 600ml - Place in bulk gun, then cut just behind the aluminium clip (removing clip) to open sealant in foil. Fit the bulk gun with a suitable nozzle that has been cut to deliver the right bead size.

The joint edges must be clean, dry, and free from oil, loose particles, cement laitance, and other contaminants, which may affect the adhesion. A thorough wire brushing, grinding, sandblasting or solvent cleaning, maybe required to expose a clean and sound substrate. When applied on glazed surfaces like ceramic or terrazzo tiles or porcelain enamel joint surfaces, the glaze should be removed by abrading with sandpaper or wire brush.

▶ APPLICATION

When squeezing the sealant joint into the gap, it should only be on both sides of the gap. If the sealant blocks the sides and bottom surface, the sealant joint, and bottom surface will not move freely. Therefore, when using a **UNISEAL™ PU FC**, the bottom of the gap must be embedded with **UNIFLEX PE™ BACKER ROD** at least 20% wider than the gap.

To prevent contamination of the left and right surfaces of the joint when applying **UNISEAL™ PU PRIMER** and squeezing the sealant joint, the tape must be pasted and removed after the construction is completed.

Use a brush to connect the **UNISEAL™ PU PRIMER** to the attached surface to increase the adhesion between the sealant and building materials.

Align the front end of the sealant joint cylinder with the seam, cut the tube head with a knife according to the size of the seam, and then squeeze the sealant joint with a squeeze gun to fill the seams and corners. Be careful not to mix in air bubbles, product usage / application recommended as soon as possible after opening.

After filling, use a pressure spoon and a spatula to press the sealant into the seam. When finished, remove the paper tape.

ACCESSORIES



UNISEAL PU PRIMER



BULK GUN



MASKING TAPE

This technical data sheet is given in good faith and does not guarantee the application work. All Unity Reliance technical data sheets & method statements are updated on a regular basis and can be subject to change without notice. It is the users responsibility to obtain the latest version of the information required.



UNITY RELIANCE (M) SDN BHD

6-2, Jalan Meranti SD13/5, Bandar Sri Damansara
52200 Petaling Jaya Selangor.

Website : <https://www.unityreliance.com>

Email : unityreliance88@gmail.com

Tel : 03 - 6263 0139 / 010 - 785 1159