UNISEAL® PU PRO

FAST CURE TRAFFICABLE POLYURETHANE JOINT SEALANT



Product Features

UNISEAL® PU PRO is a one-component, fast-curing, high-performance polyurethane sealant and adhesive. Its thixotropic, moisture-curing formulation gives high mechanical strength and excellent weathering resistance, making it suitable for trafficked joints in floors, roads, runways and pavements as well as general building joints.

Advantages

ASTM C920 Class 25 – ±25% Movement Capability
Superior Adhesion to Porous & Non-Porous Substrates
Exceptional Weathering & Long-Term Durability
High Hydrocarbon, Skydrol & Aviation Fuel Resistance
Non-Sag in Vertical Joints up to 35 mm Wide
Rapid Tack-Free & Short Skinning Time
Fungal & Biological Growth Resistance
Low VOC Formulation
Non-Hazardous Safety Classification

Fields of Application

Construction & Control Joints	Retaining Walls
Expansion Joints in Buildings	Brickwork, Stone & Ceramic Joints
Precast & Tilt-Up Panel Joints	Sanitary Applications
Window & Door Perimeter Joints	Bonding Aluminium Composite Panels
Wall & Floor Penetrations	Trafficable Joints – Stairs, Roads, Runways

© 2026 Unity Reliance (M) Sdn Bhd. All rights reserved. Unauthorised reproduction, or use for other brands, is prohibited.

Technical Properties

Property	Value
Classification (ASTM C920)	Type S, Grade NS, Class 25, Use T1, NT, M, G, A
Cure Method	Moisture curing
Specific Gravity	1.16 ± 0.03
Curing Rate	3 – 4 mm / 24 hours
Skin Formation	45 – 60 minutes
Extrusion Rate (ASTM C1183)	> 50 ml/min
Sag – Vertical (ASTM C639)	None
Shore 'A' Hardness (ASTM C661)	35 ± 5
Tear Resistance (ISO 34)	Minimum 6.5 N/mm
Elongation at Break (ASTM D412)	> 500%
Movement Capability (ASTM C719)	±25% – no loss of bond
Adhesion-in-Peel (ASTM C794)	> 40 N, cohesive failure
Adhesion-in-Peel after UV (ASTM C920)	> 100 N, no bond loss
Heat Ageing (ASTM C1246)	Weight loss < 1%, no cracking
Accelerated Weathering (ASTM C793)	No cracking after UV & bend
Staining (ASTM C510)	No staining / colour change
Service Temperature	-40°C to +80°C
Application Temperature	+5°C to +35°C
VOC Content	35 g/L

Typical properties after curing at 23°C and 50% RH. Adhesion tests on aluminium, glass and mortar (primed).

Physical Properties

Material	Polyurethane (PU)
Colour	White / Grey / Black
Size & Packing	UNISEAL® PU PRO – 600 ml sausage, 20 per carton UNISEAL® PRIMER – 1 litre tin
Primer Coverage	Approximately 30 – 50 litres sealant per litre

Paintability

UNISEAL® PU PRO can be painted once fully cured and is compatible with water-based paints. Solvent-based paints and coatings may cause the sealant to react and become tacky, and some coatings may crack or craze due to the cyclic movement of the joint. Always carry out a field test to confirm compatibility with the chosen coating.

Storage & Shelf Life

Store unopened sausages in a dry place between +5°C and +25°C (ideally +10°C to +25°C before use). Shelf life: 12 months from date of manufacture.

Cleaning

Scrape off excess sealant, then wipe tools with a rag; xylene or solvent removes any thin film. Cured material can only be removed mechanically.

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 user's responsibility to obtain the latest version of the information required.

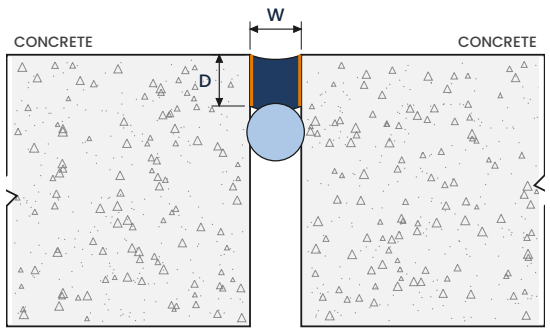
© 2026 Unity Reliance (M) Sdn Bhd. All rights reserved. Unauthorised reproduction, or use for other brands, is prohibited.

Joint Design Geometry

To ensure that the correct joint width to depth ratio is achieved and to prevent the sealant from adhering to the bottom of the joint, use a tight-fitting backing material such as **UNIFLEX® PE Backer Rod**. Do not puncture the skin of the backer rod during installation, as this can cause bubbling in the uncured sealant as the temperature rises. Do not use oil or tar impregnated backing materials.

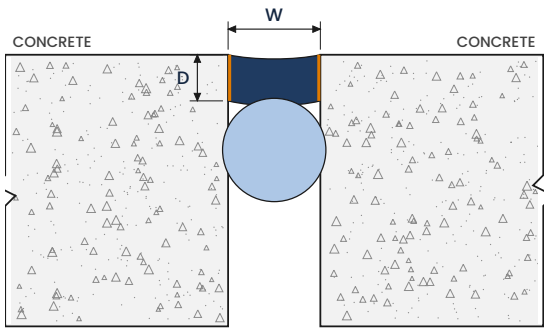
Minimum joint depth 6mm : maximum joint width 35mm for vertical installation

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® PU PRO**

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	1.33
20	6	3	2	1.5	1.2	1
25	4.8	2.4	1.6	1.2	0.96	0.8

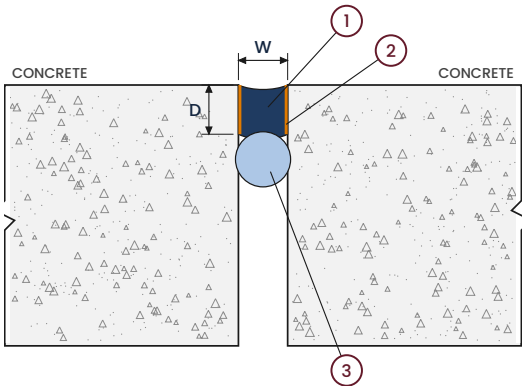
*Calculation based on theoretical coverage. Actual material consumption at site will vary depending on the wastage.

© 2026 Unity Reliance (M) Sdn Bhd. All rights reserved. Unauthorised reproduction, or use for other brands, is prohibited.

Typical Drawing & Application

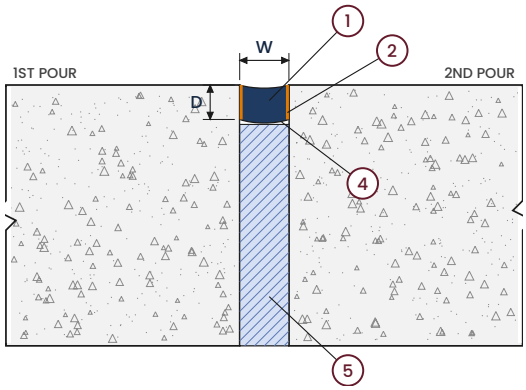
1 SEALANT ON BACKER ROD

Not to scale



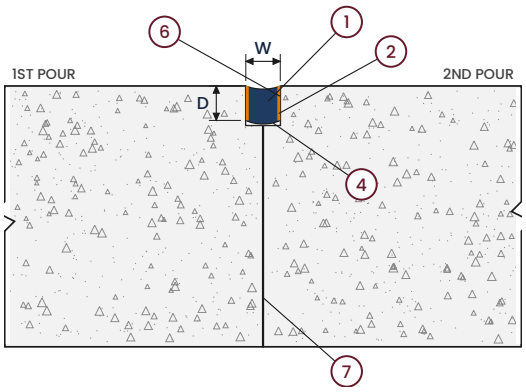
2 SEALANT OVER FILLERBOARD

Not to scale



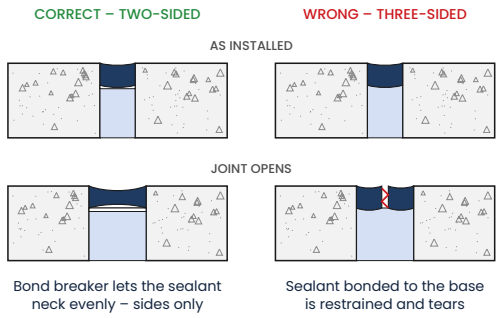
3 SEALED GROOVE

Not to scale



4 WHY A BOND BREAKER

Not to scale



LEGEND

1. UNISEAL® joint sealant
2. UNISEAL® PRIMER (porous surfaces)
3. UNIFLEX® PE backer rod
4. UNIFLEX® PE bond breaker tape
5. UNIFLEX® fillerboard
6. Formed or saw-cut groove
7. Construction joint

Illustrations only – not for construction. Refer to drawing UR-SL-01.

Accessories



UNISEAL® PRIMER



BARREL GUN



MASKING TAPE

© 2026 Unity Reliance (M) Sdn Bhd. All rights reserved. Unauthorised reproduction, or use for other brands, is prohibited.

Installation Procedures

1 Surface Preparation	Primer (If Required)	3 Sealant Application

Step 1
SURFACE PREPARATION

UNISEAL® PU PRO should be applied when the ambient temperature is between **+5°C and +35°C**, using a hand-operated or air-powered barrel gun.

Before application, all joint surfaces must be **clean, dry and free from dust, oil, laitance, loose particles or any contaminants** that may impair adhesion. Surface preparation may include **wire brushing, grinding, sandblasting or solvent wiping**. On glazed or non-porous substrates such as ceramic, terrazzo or porcelain enamel, **abrade the surface** with sandpaper or a wire brush to promote mechanical adhesion.

Step 2
PRIMER (IF REQUIRED)

UNISEAL® PRIMER is required on porous substrates (concrete, mortar, masonry) and in joints that will be immersed in water. On dry, sound, non-porous joints it is optional, as **UNISEAL® PU PRO** has good inherent adhesion to clean, prepared surfaces. Where used, apply the primer by brush and allow it to dry (1 – 2 hours) before applying the sealant.

Step 3
SEALANT APPLICATION

Position a suitable **backer rod (e.g. UNIFLEX® PE Backer Rod)** at the bottom of the joint to set the correct depth and prevent three-sided adhesion, which can inhibit movement.

Cut the nozzle of the sausage pack to the required size and insert it into the joint, ensuring an **even and continuous bead** and **avoiding air entrapment**. Tool the surface immediately with a spatula or jointing tool to ensure **full contact with the joint sides** and a neat finish. Remove any masking tape before the sealant skins over.

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 user's responsibility to obtain the latest version of the information required.

© 2026 Unity Reliance (M) Sdn Bhd. All rights reserved. Unauthorised reproduction, or use for other brands, is prohibited.



No.135B, Jalan Kip 8,
Kawasan Perindustrian Kepong
52200 Kuala Lumpur

(+60) 3-6734 7941
(+60) 10-785 1159

enquiry@unityreliance.com
https://www.unityreliance.com

© 2026 Unity Reliance (M) Sdn Bhd. All rights reserved. Unauthorised reproduction, or use for other brands, is prohibited.