UNISEAL® PU

POLYURETHANE JOINT SEALANT



Product Features

UNISEAL® PU is a one-component, moisture-curing polyurethane joint sealant with a high solids content. It cures at room temperature to a tough, elastic seal with good weather, abrasion and low-temperature resistance.

It bonds strongly to concrete, masonry, metals, timber and most construction materials and accommodates joint movement of ±25%. Once cured, it is non-corrosive and non-staining, and can be painted over.

UNISEAL® PU is widely used for sealing expansion, control and perimeter joints in buildings, precast panels, roads, bridges and airfields.

Advantages

Single-Component, Ready-to-Use Application
Superior Multi-Substrate Adhesion
Paintable with Most Coating Systems
Exceptional Weathering & Ageing Resistance
Low-Odour & Environmentally Friendly Formulation
Abrasion, Water & Cold Temperature Resistance
Non-Corrosive & Non-Staining Properties
High Elasticity, Tear & Cut Resistance

Fields of Application

Buildings & Balconies	Precast Concrete Joints
Parapet Walls	Sealing of Roads & Bridges
Bathrooms & Kitchen Installation	Airstrips
Wooden Frames Around Doors, Windows & Walls	Curtain Wall Perimeter Joints
Roof, Floor & Tile Movement Joints	Concrete Panels, Subways & Underground Tunnels

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

Technical Properties

Property	Value
Appearance	Thixotropic paste
Cure Method	Moisture curing
Specific Gravity (ASTM D792)	1.55 ± 0.05
Curing Rate	> 2 mm / 24 hours
Skin Formation	60 – 180 minutes
Shore 'A' Hardness (ASTM D2240)	35 – 45
Tensile Strength at Break (ASTM D412)	> 1.5 MPa
Elongation at Break (ASTM D412)	> 500%
Tear Resistance (ISO 34)	Minimum 6.5 N/mm
Modulus at 100% Elongation (ISO 8339)	≤ 0.4 MPa
Movement Capability	±25%
Total Joint Movement	50%
Resistance to UV Radiation & Weathering	Good
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% relative humidity.

Physical Properties

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

Paintability

UNISEAL® PU can be painted after it has fully cured. Paints and coatings containing solvents 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 in a cool, dry place away from heat and direct sunlight (air-conditioned storage in hot climates). Shelf life: 12 months in unopened condition.

Cleaning

Remove masking tape before the sealant skins over. Clean uncured sealant from tools with solvent or xylene; cured sealant 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.

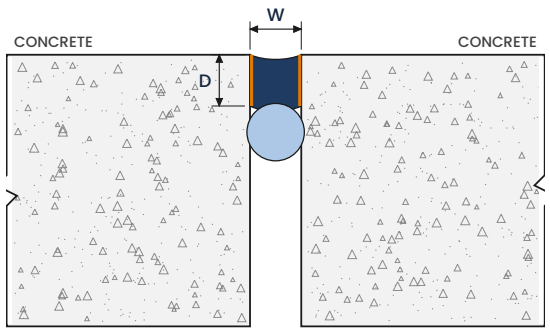
© 2026 Unity Reliance (M) Sdn Bhd. All rights reserved. Unauthorised reproduction, or use for other brands, is prohibited.

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.

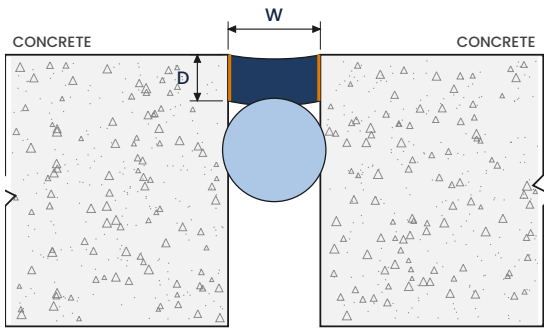
Minimum joint depth 6mm : maximum joint width 35mm for vertical installation

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**

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

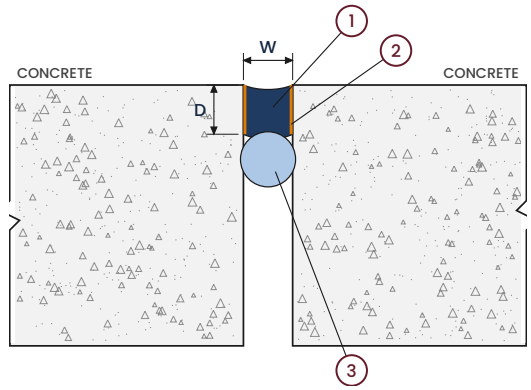
*Calculation based on theoretical coverage. Actual material consumption at site will vary depending on the wastage.

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

Typical Drawing & Application

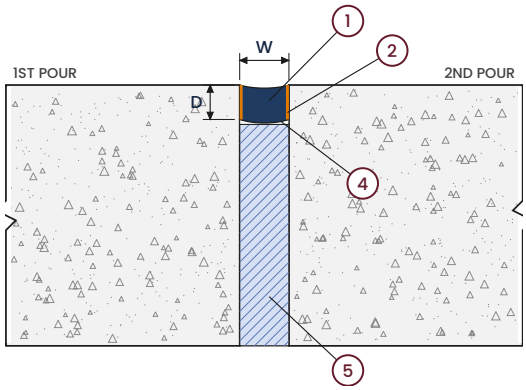
1 SEALANT ON BACKER ROD

Not to scale



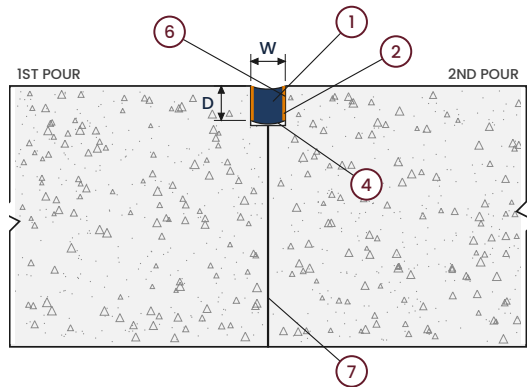
2 SEALANT OVER FILLERBOARD

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 | 4 Finishing & Cleaning

Step 1
SURFACE PREPARATION

UNISEAL® PU 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** 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.

Step 4
FINISHING & CLEANING

Remove any masking tape before the sealant skins over. Clean excess uncured sealant with solvent or xylene. **Cured sealant must 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.



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.