UNISEAL® MS POLYETHER

ADVANCED MS POLYMER WATER INDUSTRY SEALANT



Product Features

UNISEAL® MS POLYETHER is a single-component, moisture-curing MS polymer sealant specially formulated for drinking water and waterworks projects – potable water tanks, reservoirs, water treatment plants (WTP), sewage treatment plants (STP), dams and other water-retaining structures. It is designed to stay permanently submerged without losing adhesion or elasticity.

UNISEAL® MS POLYETHER has been tested to **MS 1583 : Part 1 : 2003** for non-metallic products in contact with water intended for human consumption – covering odour and flavour, appearance of water, growth of aquatic microorganisms and extraction of metals – and has passed the **cytotoxicity test** under MS 1583 : Part 2.

It bonds strongly to concrete, metals, plastics and most construction materials, and cures even on damp or wet surfaces. With a movement capability of ±25% (50% total), it accommodates thermal expansion, vibration and settlement while staying watertight under hydrostatic pressure. It is UV and weather resistant, low in odour and VOC, and paintable once fully cured.

SUITABLE FOR DRINKING WATER CONTACT
Tested to MS 1583 and cytotoxicity test

Advantages

Drinking Water Contact Tested (MS 1583)
Watertight & Leakproof Protection
Superior Water Resistance
High Hydrostatic Water Pressure Resistance
Long-Term Flexibility & Durability
Low VOC Content

Fields of Application

Water Treatment Plant	Swimming Pools & Spas
Sewerage Treatment Plant	Dams & Water-Retaining Structures
Bathrooms & Kitchen Installation	Rainwater Harvesting System
Water Tanks	Water-based Industrial Application
Reservoirs	Concrete Panels & Underground Tunnels

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Paintability

UNISEAL® MS POLYETHER 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
Appearance	Thixotropic Paste
Cure Method	Moisture Curing
Specific Gravity (ASTM D792)	1.55 ± 0.03
Curing Rate	> 3mm / 24 hours
Skin Formation	60 to 180 minutes
Shore A Hardness (ASTM D2240)	40-45
Tensile Strength (ASTM D412)	> 1.5 MPa
Elongation at Break (ASTM D412)	> 450%
Movement Capability	±25%
Total Joint Movement	50%
Resistance to UV Radiation & Weatherability	Good
Service Temperature	-40°C to +80°C
Application Temperature	+5°C to +35°C
VOC Rating - g/L (USEPA Method 24)	<10g/L
Suitability for Contact with Drinking Water (MS 1583 : Part 1 : 2003) Cytotoxicity Test (MS 1583 : Part 2 : Section 5 : 2003)	Complies Pass

Typical properties after cured at 23°C and 50% Relative Humidity Conditions and Environment

Physical Properties

Material	:	MS Polymer (Polyether Sealant)
Colour	:	Grey
Size & Packing	:	**UNISEAL® MS POLYETHER** - 600ml per sausage / 20 sausages per carton

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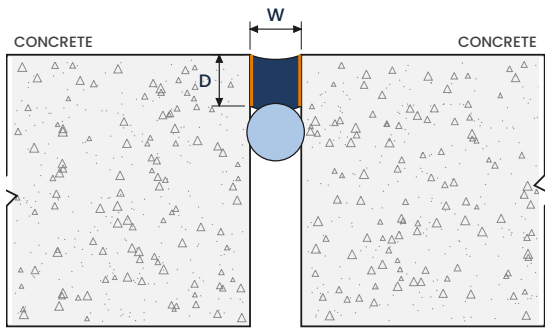
Joint Design Geometry

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.

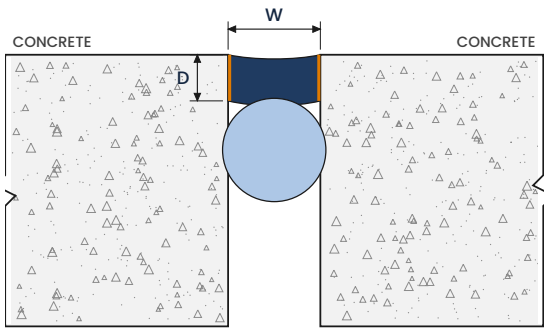
Minimum joint depth 6mm : maximum joint width 35mm for vertical installation

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® MS POLYETHER**

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.

This technical data sheet is given in good faith and does not guarantee the application work.
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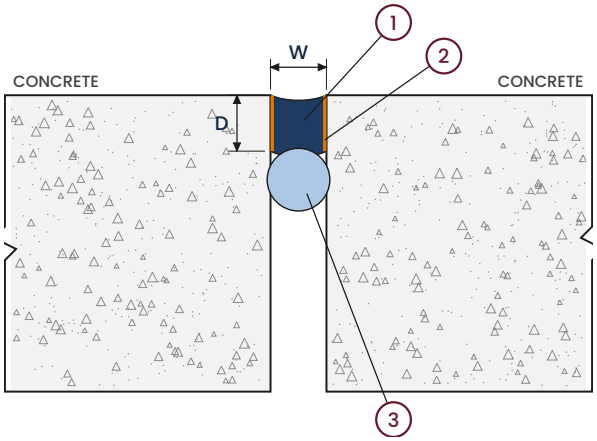
Typical Drawing & Application

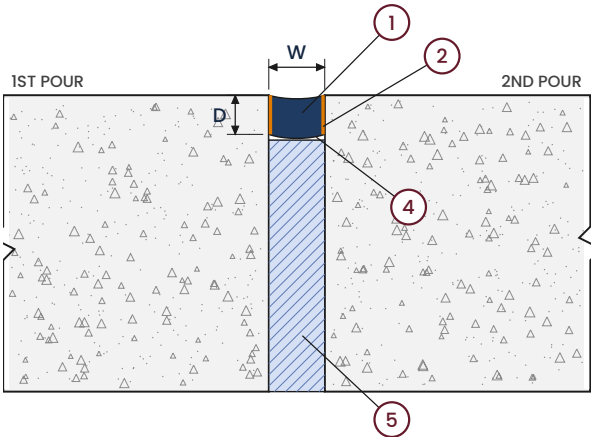
1 SEALANT ON BACKER ROD

Not to scale



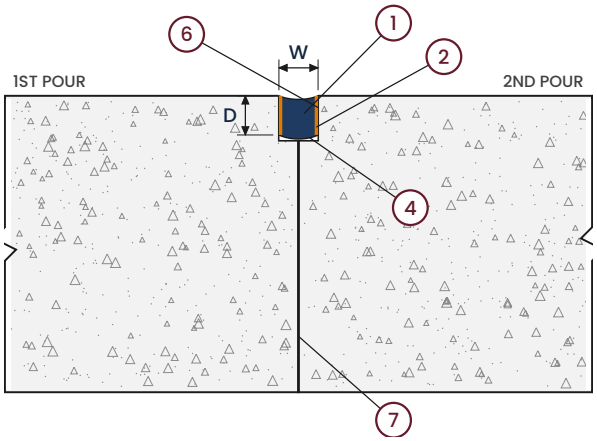
2 SEALANT OVER FILLERBOARD

Not to scale



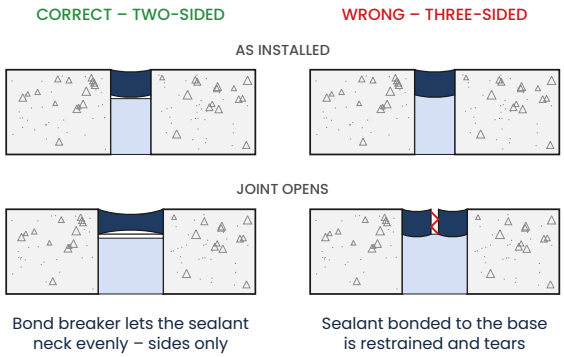
3 SEALED GROOVE

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.

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Installation Procedures

1 Surface Preparation | Primer (If Required) | 3 Sealant Application | 4 Finishing & Cleaning

Step 1
SURFACE PREPARATION

Before application, all joint surfaces must be **clean, sound and free from dust, oil, laitance, loose particles** or any contaminants that may impair adhesion. The sealant **cures even on damp or wet surfaces**. Surface preparation may include **wire brushing, grinding, sandblasting, or solvent wiping**.

On glazed or non-porous substrates such as ceramic, terrazzo, or porcelain enamel, it is recommended to **abrade the surface** with sandpaper or 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® MS POLYETHER** has good inherent adhesion to clean, prepared surfaces.

Where used, apply the primer by brush, ensuring full coverage of the bonding surface, 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 ensure the correct depth and to prevent three-sided adhesion, which can inhibit proper movement.

Apply **UNISEAL® MS POLYETHER** with a hand-operated or air-powered barrel gun. Cut the nozzle of the sausage pack to the desired 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. Excess uncured sealant can be cleaned with xylene or a suitable solvent. **Cured sealant must be removed mechanically.**

UNISEAL® MS POLYETHER should be applied when the ambient temperature is between +5°C and +35°C.

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Accessories



BARREL GUN



MASKING TAPE

Shelf Life & Storage

Store in a cool, dry place and keep away from all sources of heat and sunlight. In tropical or hot climates, store in air-conditioned rooms. The shelf life is up to 12 months in un-opened condition and if stored as per recommendations.

Excessive exposure to sunlight, heat, and humidity, will result in the deterioration of the quality of the product and reduce its shelf life.

Application Photos





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