

Urochem 299

TWO-PART POLYURETHANE JOINT SEALANT – “WASTEWATER TREATMENT PLANTS”

DESCRIPTION

Urochem 299 is a two-component sealing compound based on a polyether polyurethane, blended with fillers and a chemical curing agent, which reacts after mixing to form a durable rubber like seal. This sealant is highly elastic and is able to withstand continuous extension and recovery. It may be used with most common building materials such as concrete, plaster, brick, and stone. It exhibits superior resistance to abrasion, ultraviolet light and ozone making it suitable for exterior use. Due to its excellent water resistance and adhesion plus resistance to biodegradation it forms the ideal material for use in sewage treatment plants.

PRODUCT APPLICATION

- To form a long-lasting water and weatherproof seal in both horizontal and vertical moving joints and joints which are subject to continuous cyclic movement.
- Typical applications include joints in curtain walls, floor expansion joints, drainage channels and sewage treatment plants, between precast units and to seal pipe sections.

SURFACE PREPARATION

The correct preparation of the joint faces is absolutely essential to the satisfactory performance of the sealant. All surfaces should be clean, sound, and dry, and laitance or surface contamination should be removed by thorough wire brushing, grinding or grit blasting. Vacuum or blow with compressed air to ensure thorough removal of dust. Metal surfaces should be free of mill scale and rust and mild steel treated with a suitable anticorrosive primer.

JOINT DESIGN

- The recommended minimum joint dimension is 6 x 6mm, but where possible we recommend a 10 x 10mm joint.
- For joints ranging from 6mm to 10mm wide, we recommend a width to depth ratio of 1:1, for anything wider a 2:1 width to depth ratio should be maintained.
- In water retaining structures a 1:1 ratio should be maintained due to Hydrostatic pressure and cyclic movement.
- These ratios provide the optimum geometry to allow movement to occur within the joint without placing excessive force on the joint faces.
- Joint faces should be parallel, and the joint width should be at least four times the anticipated movement.
- When placing the sealant, the joint opening should if possible be central to its maximum compression/expansion cycle.

BOND BREAKER

To ensure correct movement of the joint a bond breaker must be used at the base of the joint. Where a backing material such as polyethylene foam rod is used to ensure the correct joint geometry a bond breaking tape is not required. For water retaining structures care must be taken to comply with design requirements set by the engineer.



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PRIMING

- **Urochem 102** Silane Primer should be used on glass, ceramics and sound masonry and brick surfaces not subjected to water immersion.
- Refer data sheet.
- Apply a single thin coat by brush and allow to dry for at least ten minutes before application of the sealant. If sealant is not applied after three hours re-prime. For water retaining structures, porous or friable surfaces or where severe conditions are expected use **Urochem 101, 106 or 614**. Mix base and activator thoroughly and apply the mixed material with a brush to the joint faces ensuring complete coverage. Particular attention should be paid to any voids and hollows. Allow at least 30 min. for the solvent to evaporate before applying the sealant.
- ***If after 3 hours or the primer loses its tack, re-prime.***
- Protect the primed surface from dust and dirt, which could interfere with the adhesion of the sealant.

MIXING

- **Urochem 299** is supplied in a two-part kit, base, and activator in separate tins.
- Transfer the total quantity of activator into the base component and mix thoroughly using a slow speed electric drill fitted with a flat blade stirrer.
- Scrape down the sides of the can and the base and remix until the colour is uniform and free from streaks.
- Thorough mixing is essential and should take 5 to 10 minutes.

APPLICATION

- Fill the sealant into a closed barrel gun using a follower plate or small trowel. Gun the sealant into the joint using a continuous squeezing of the trigger to ensure a smooth continuous flow of material. Fill the joint from the bottom up and ensure that there is contact between the sealant and joint surfaces.
- To ensure contact of the sealant with the walls of the joint, the sealant should be tooled to a smooth finish using a rounded spatula. A soapy solution may be used to aid the process. Remove any masking tape applied before curing commences.

CLEANING

Clean all tools and equipment with **Urochem 901** before setting of the sealant has taken place.

SAFETY

Contains organic solvents which are flammable. Do not use in confined spaces. Ensure adequate ventilation and the absence of any ignition source. Wear protective clothing. In case of eye contact wash well with water and obtain medical advice.

Please refer to product MSDS for further information.



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TYPICAL PROPERTIES – AS PER UROCHEM QC

The below properties are based on in-house testing methodologies.

Mixing Ratio	Two component – mix as supplied – Do not part mix
Pot Life	1 Hour @ 25°C
Tack Free	3 Hours
Full Cure	7 Days
Colour	Grey – Other colours available on order
Hardness	± 25 Shore A
Movement accommodation	± 25%
Chemical resistance	Most dilute chemicals – Not aggressive chlorinated water
Density	1,53 g/cm ³
Theoretical coverage	See Material Usage Guide below
Shelf Life	12 Months, depending on storage conditions
Application Temp.	5 to 35°C
Service Temp.	-10 to 90°C
Pack Size	2 Lt Kits
Cleaning	Urochem 901
Storage	Store in a cool dry well ventilated place away from heat & sunlight

MATERIAL USAGE ESTIMATING GUIDE

(No allowance made for wastage)

		Joint width in mm									
		6	8	10	12	15	20	25	30	35	40
Joint depth in mm	6	27	20,8	16,6	13,8						
	8		15,6	12,5	10,42	8,3					
	10			10	8,3	6,6	5				
	12				6,9	5,5	4,2	3,3			
	15					4,4	3,3	2,6	2,2		
	20						2,5	2	1,6	1,4	1,2
	25							1,6	1,3	1,1	1
	30								1,1	0,9	0,8
	35									0,8	0,7
	40										0,6
Lm per Litre, excluding wastage											



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CHEMICAL RESISTANCE

Chemical:	Result
Acetic Acid (10 %)	I
Acetic Acid (25 %)	NR
Ammonium Hydroxide Solution (0,88 %)	I
Ammonium Nitrate (50 %)	I
Ammonium Sulfate Solution (50 %)	R
Boric Acid Solution (Saturated)	NR
Chromic Acid (10 %)	NR
Citric Acid (20 %)	NR
Cresol (5 %)	I
Formic Acid (40 %)	NR
Glycerol	R
Hydrochloric Acid (conc)	NR
Lactic Acid (25 %)	NR
Maleic Acid (30 %)	NR
Mineral oil	I
Ozone	NR
Nitric Acid (30 %)	NR

Chemical:	Result
Nitric Acid (70 %)	NR
Phenol	I
Phosphoric Acid (50 %)	NR
Phosphoric Acid (90 %)	NR
Propanol	I
Sodium Hypochlorite	NR
Sodium hydroxide (30 %)	I
Sodium hydroxide (50 %)	NR
Sugar solution (saturated)	R
Sulphuric Acid (30 %)	NR
Sulphuric Acid (70 %)	NR
Sulphuric Acid (98 %)	NR
T.E.A. (Saturated)	I
UREA (30 %)	I
Chlorinated compounds	NR

R = Compatible, I = Intermediate, NR = Not recommended

Urochem 299 shows very good bacterial resistance.

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