

SOUTHERN DUROSEAL GASKET TYPE U

METAL & PLASTIC PRODUCTS

SPECIFICATION DATA & PROCESSING INFORMATION

1. PRODUCT NAME

Duroseal Gasket Type U

Water-swelling acrylate-ester that provides a perpetually active seal inside concrete joints.

2. MANUFACTURER

Southern Metal & Plastic
3400 Tree Court Industrial Blvd.
St. Louis, MO 63122 USA
Tel: 800.325-3597
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3. PROPERTIES

Duroseal Gasket Type U is a soft, pliable yet durable bar that reacts with water in a controlled, reversible and ageless manner to provide and maintain a seal against water intrusion and hydrostatic pressure. A joint width of up to 5 mm can be sealed with **Duroseal Gasket Type U** against water pressure up to 5 bar. The STUVA test of technical applicability can be obtained if requested.

Duroseal Polymers are flexible and chemically high resistant, acrylate polymers, with the unique ability to absorb water into their molecular structure and increase in volume. The swelling process of the Duroseal products is reversible.

In contact with water, **Duroseal Gasket Type U** increases in volume without changing the homogenous structure of the polymer matrix. As swelling pressure rises, the **Duroseal Gasket Type U** forms an exact seal with the surrounding surfaces and prevents water intrusion.

4. APPLICATION AREAS

As a waterstop in construction; for cold and control joints where two concrete surfaces abut; where concrete abuts another existing surface, such as masonry or rock. Typical applications include building foundations, water and waste water treatment facilities, potable water tanks, septic tanks, chemical tanks, sewer pipes and manholes, tunnels, dams, parking garages, pre-cast members, etc.

5. COMPOSITION

An innovative technology based upon water-swelling acrylate-ester. Essentially, water or other liquid molecules are held in the acrylate-ester polymer matrix by electro-chemical bonds that cause Duroseal to swell and maintain a gasket seal without undergoing a "wicking" effect. (See Table 1)

6. LIMITATIONS

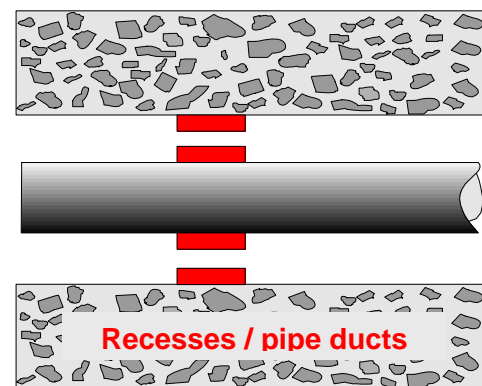
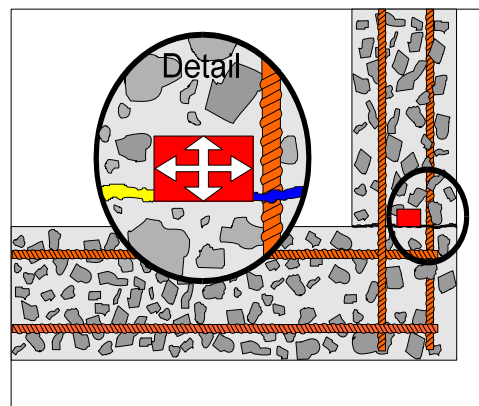
Duroseal Gasket Type U should not be placed in standing water.

Maintain a minimum 2 ½" concrete coverage over **Duroseal Gasket Type U** when using 3500 PSI or greater compressive strength concrete. Increase the coverage on reduced strength concrete.

Duroseal Gaskets should not be used in expansion joints or joints where large movements are expected.

AVAILABLE SIZES

Catalog Number	Width X Thickness X Roll Length
102510	20mm (.79") X 10mm (.39") X 10m (32.8 ft.)
102525	25mm (.98") X 20mm (.79") X 5m (16.4 ft.)
102505	20mm (.79") X 15mm (.20") X 20m (65.5 ft.)



7. INSTALLATION

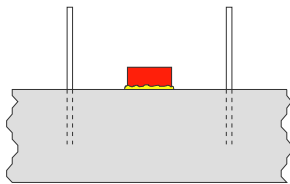
Preparatory Work:

- ❖ Clean dirt and debris from substrate.
- ❖ Remove any standing water, however, **Duroseal Gasket Type U** may be installed on damp surfaces.

8. APPLICATION METHODS

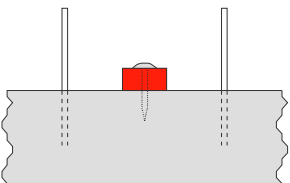
Method 1

Duroseal Gasket Type U can be adhered to the substrate with **Duroseal Adhesive Glue**, which is available in 310ml (10.3 oz) cartridges. Cut the nozzle of the Duroseal Adhesive Glue to a minimum diameter of 5mm and place cartridge in a standard caulking gun. Using caulking gun, place a continuous bead of the Duroseal Adhesive Glue onto the face of the **Duroseal Gasket Type U** to be applied onto the substrate, then press the **Duroseal Gasket** firmly against the surface and slide it into place.



Method 2

Duroseal Gasket Type U can be fastened to the substrate using power activated fasteners, masonry or concrete nails. (See Figure 2) Fasteners should be placed at minimum spacing of 25cm. In all cases, the **Duroseal Gasket Type U** must follow the contour of the substrate, otherwise additional fasteners are required at bumps or hollows on the surface.

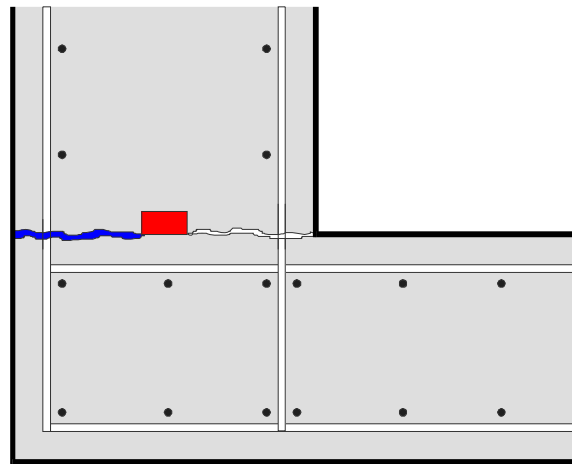


Method 3

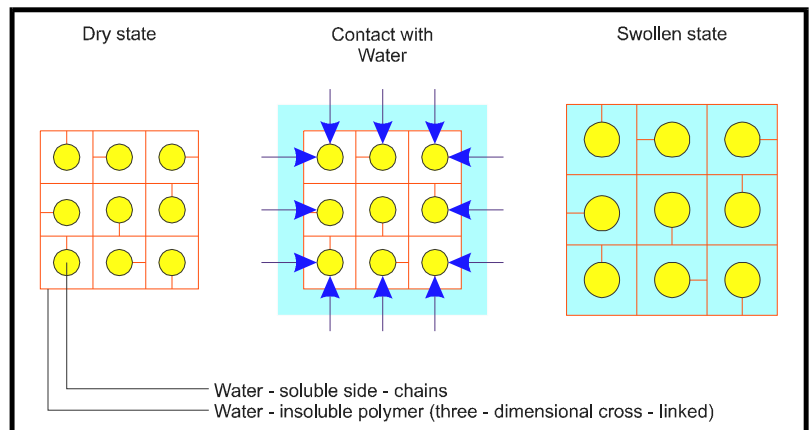
Use **Duroseal Paste** if the surface of the substrate is particularly rough, such that **Duroseal Gasket Type U** would not come into continuous contact with that surface.



Duroseal Paste is a one-component expanding paste based on polyurethane, suitable for the permanent sealing of construction joints in concrete structures.



- Because of its active behavior with water, the swelling gasket is an effective joint sealant.
- Swelling gaskets are simple to apply and have a high sealing effect due to their swelling capability.
- Swelling gaskets require less installation labor than traditional embedded waterstops, reducing time and cost of installation.



For a crack width from 0 – 5 mm and a water pressure up to 50 m (5 bar, 70 psi).

9. TECHNICAL DATA

See Tables 1 through 4

TABLE 1 - DUROSEAL GASKET

Density	ASTM D 3800-79	1.3 – 1.6 g/ml (68°F, 20°C)
Tensile Strength	ASTM D 638 M-89	25 – 35 psi
Percent Elongation	ASTM D 638 M-89	70 – 100%
Shore Hardness	DIN 53505	25 – 35
Shrinkage	1 Week at 131°F (55°C)	10 – 20% (by Weight)
Degree of Swelling		Approximately 170%
Corrosiveness		Non-Corrosive
Toxicity		Non-Toxic

TABLE 2 – SWELLING CURVE

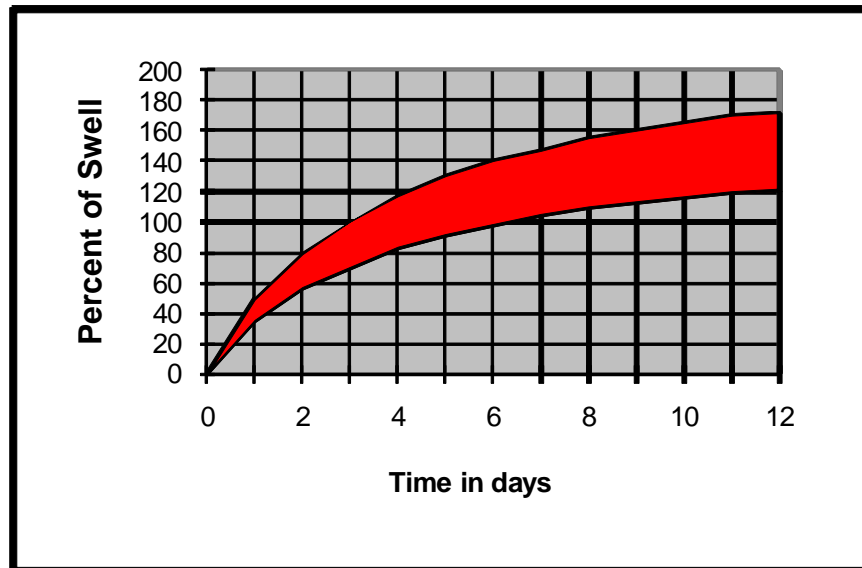


TABLE 3 – EXPANSION PRESSURE DURING SWELLING

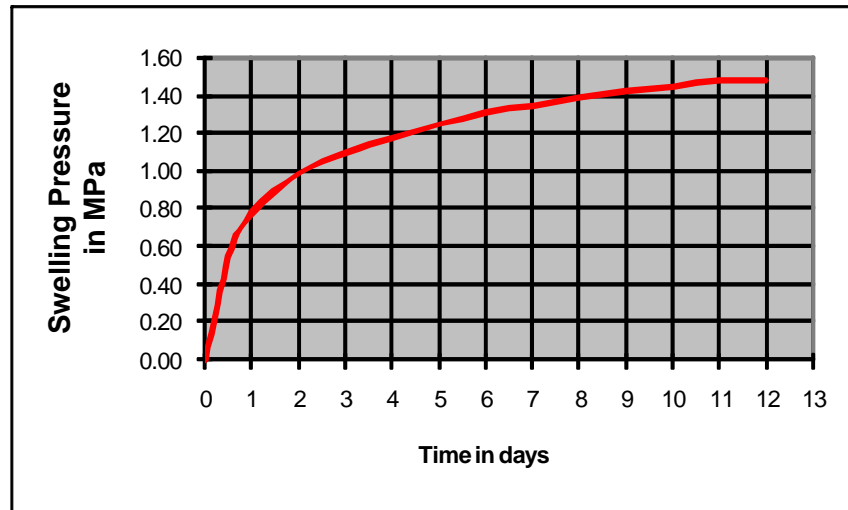


TABLE 4 – CHEMICAL RESISTANCE

The test piece was kept in the test liquid for a period of 42 days., visual evaluation.

Test liquid	Evaluation	Swelling
unleaded gasolin	resistant	approx. 4%
diesel fuel	resistant	approx. 1%
toluene	resistant	approx. 17%
p-xylene	resistant	approx. 16%
methanol 50%	not resistant	approx. 260%
2-propanol 50%	not resistant	approx. 340 %
ethylendichloride	resistant	approx. 100%
N-methylpyrrolidone	not resistant	approx. 350%
ethyl acetate	resistant	approx. 30%
methylisobutylketone	resistant	approx. 10%
acetic acid 10 %	resistant	approx. 200%
formaldehyde 36%	not resistant	approx. 320%
sulphuric acid 2 %	resistant	approx. 160%
sulphuric acid 20 %	resistant	approx. 150%
sodium hydroxide 2%	resistant	approx. 200%
sodium hydroxide 20 %	resistant	approx. 8%
common salt 20 %	resistant	approx. 10%
calcium hydroxide pH 11 - 12	resistant	approx. 180%

10. WARRANTY

Southern Metal & Plastic Products warrant that the products manufactured by them shall be free from material defects. The obligation of Southern Metal & Plastic Products under this warranty, should any of the products prove defective, shall be limited to replacement of the defective product. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THERE ARE NO WARRANTIES, WHICH EXTEND BEYOND THE DESCRIPTION OF THE FACE HEREOF.

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