

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
TEL: 800.325-3597
FAX: 636.825-6567

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 under volume expansion.

The swelling process of the Duroseal products is reversible.

In contact with water, ***Duroseal Gaskets Type U*** increase their 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 prevent water intrusion.

4. APPLICATION AREAS

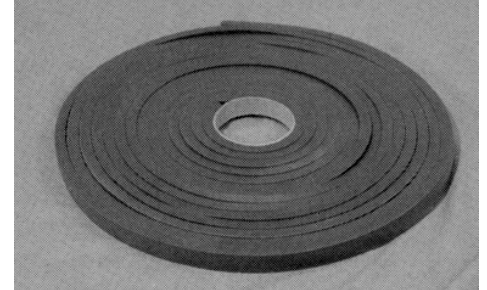
As a waterstop in construction; for cold and control joints where two concrete surfaces abut; where concrete abuts another existing surface, such as masonry or rock. Typical applications include building foundations, water and waste water treatment facilities, potable water tanks, septic tanks, chemical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

5. COMPOSITION

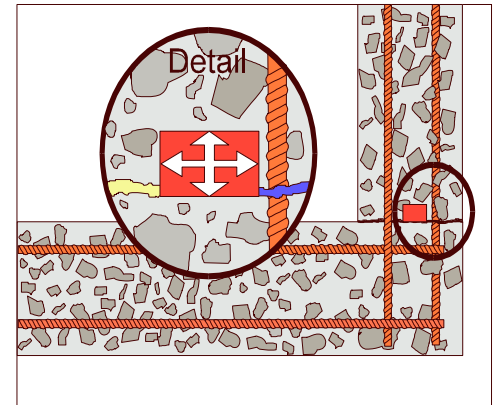
Patent pending technology based upon water-swelling acrylate-ester. Essentially, water or other liquid molecules are held in the acrylate-ester polymer matrix by electro-chemical bonds that cause Duroseal to swell and maintain a gasket seal without undergoing a “wicking” effect. (See Table 1)

6. LIMITATIONS

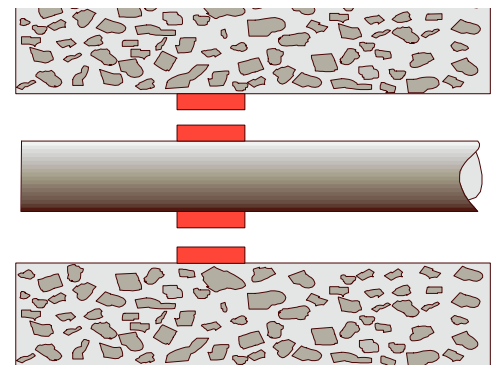
Duroseal Gasket Type U should not be placed in standing water. In the event that the substrate is heavily contaminated with acids, alkaline, mediums, brine or solvents, contact the manufacturer, a special material can be formulated for specific conditions.



Connecting and working joints



Recesses / pipe ducts



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.

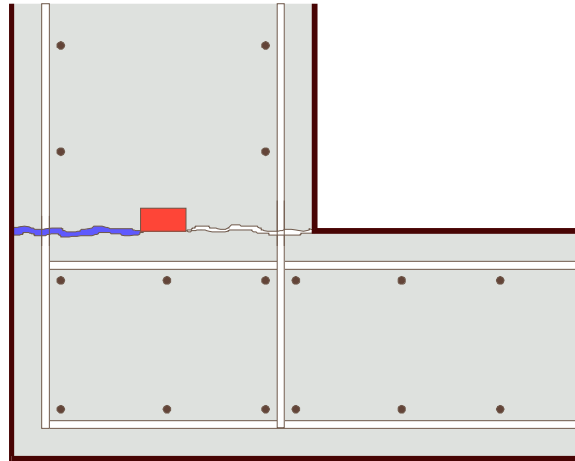
8. APPLICATION METHODS

Duroseal Gasket Type U can be adhered to the substrate with the use of Duroseal Adhesive Glue. 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 on to the face of the **Duroseal Gasket Type U** to be applied on to the substrate, then press the **Duroseal Gasket** firmly against the surface and slide it into place. (See Figure 1)

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

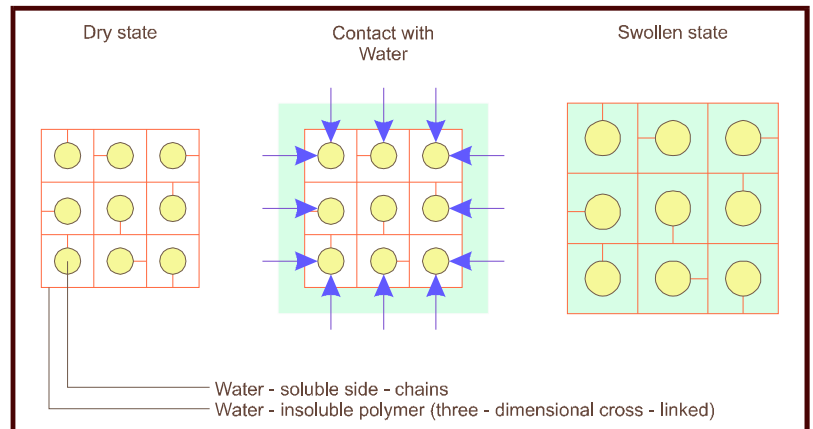
Use Duroseal Paste if the surface of the substrate is particularly rough, such that **Duroseal Gasket Type U** would not come into continuous contact with that surface.



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 do not require additional work in the construction and therefore no increased salaries and material expenses.



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

Duroseal Polymers are flexible and chemically high resistant, acrylate polymers, with the unique ability to absorb water into their molecular structure under volume expansion.

The swelling process of the Duroseal products is reversible.

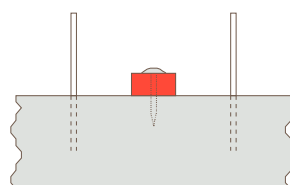


Figure 2

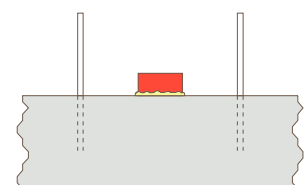


Figure 1

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		Not Measurable
Corrosiveness		Non-Corrosive
Toxicity		Non-Toxic

TABLE 2 – SWELLING CURVE

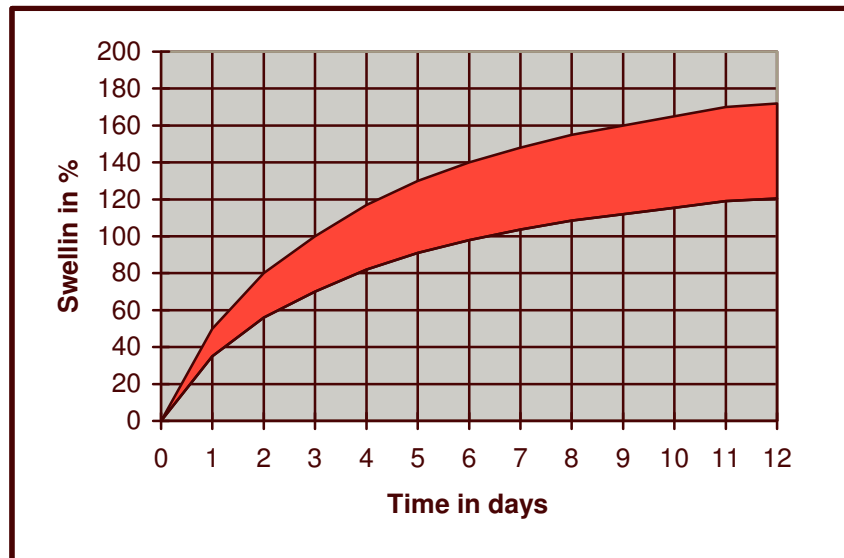


TABLE 3 – EXPANSION PRESSURE DURING SWELLING

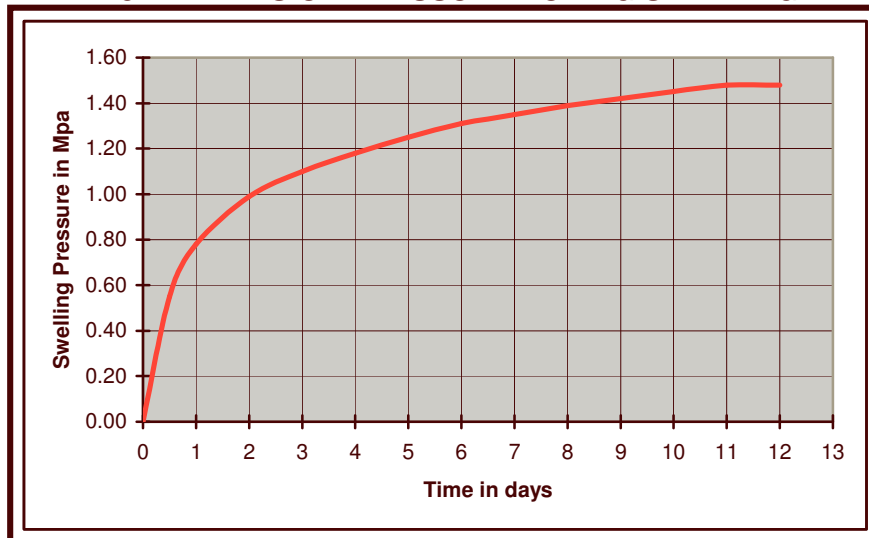


TABLE 4 – CHEMICAL RESISTANCE

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. PACKAGING

DUROSEAL PRODUCT DIMENSIONS AND PACKAGING				
Width	Thickness	Roll Length	Rolls per Carton	Length per Carton
25 mm (.98")	20 mm (.79")	5 m (16.4 ft.)	6	30 m (98.4 ft.)
20 mm (.79")	10 mm (.39")	10 m (32.8 ft.)	6	60 m (196.8 ft.)
20 mm (.79")	5 mm (.20")	20 m (65.5 ft.)	6	120 m (393.7 ft.)

