

# Donseal® PU440

One component, non sag, high modulus, elastomeric polyurethane sealant with high tear and weather resistance



## DESCRIPTION

Donseal PU440 is a one component, solvent free, non sag, high modulus polyurethane sealant that cures by reacting with air humidity to form a tough and highly elastic sealant. Donseal PU440 has a very wide service temperature range. Suitable for vertical and horizontal joints.

## APPLICATIONS

- » General sealing of construction and expansion joints.
- » Basement walls.
- » Precast concrete elements.
- » For concrete, wood, marble, stone, aluminum, steel, ceramic, gypsum boards, glass, etc.

## ADVANTAGES

- » Very easy and economical to use.
- » One component.
- » Solvent free.
- » Excellent aging resistance.
- » Paintable, consult DCP Technical Department for more details.
- » Remains elastic at low temperatures.
- » Good resistance to microorganisms and a variety of chemicals.
- » Good adhesion to concrete without the need for priming.

## STANDARDS

Donseal PU440 complies with:

- » ASTM C920, Type S, Grade NS, Class 25, Use NT, T<sub>1</sub>, A, G, M and I\*.
  - » LEED® EQc 4.1 SCAQMD, Rule 1168.
  - » EN 15651-1:2017 F-EXT-INT-CC, 25 HM and 20 HM.
- \* For use I — at normal condition for immersion test on porous substrates.

## TECHNICAL PROPERTIES @ 25°C & 50% RH:

Colour:	White, grey, beige
Specific gravity:	1.47 ± 0.05
Shore A hardness: ASTM C661	25 ± 5 @ 48 hr 40 ± 5 @ 7 days
Service temperature:	-20 up to 70°C
Application temperature:	5 to 50°C
Adhesion in peel: ASTM C794	Concrete Pass, no adhesion loss Aluminum Pass, no adhesion loss Glass Pass, no adhesion loss
Tack free time: ASTM C679	1:00 to 2:00 hr @ 23°C & 50% RH
Curing rate:	≈ 2.5 mm/day @ 23°C & 50% RH
Elongation at break: ASTM D412	≥ 400% @ 7 days
Tensile strength: ASTM D412	≥ 1.7 MPa @ 7 days
Tear strength: ASTM D624	7 kn/m @ 7 days
Effects of accelerated weathering: ASTM C793	No cracking
Effects of heat aging: ASTM C1246	Pass @ 70°C
Effects of continuous Immersion: ASTM C1247 After 10 weeks of immersion at 50°C water	Pass, Class 2 (on Glass and Aluminum)
Movement accommodation: ASTM C719 ISO 9047	± 25%
Elastic recovery: ISO 7389	> 80%
Loss of volume: ISO 10563	< 10%

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## METHOD OF USE

### SURFACE PREPARATION

All substrates should be clean, dry, free from dust, oil, grease and any contaminations that could effect the adhesion.

If the substrates need to be cleaned, use methyl ethyl ketone (MEK) or acetone. Always be sure that the substrates are dry before the application.

### PRIMING

- » Donseal PU440 generally has strong adhesion to common clean, dry and sound substrates without primers. However, for stronger adhesion, Strongcoat Primer or Flexprime Universal can be used on porous and nonporous surfaces in order to achieve optimum adhesion strength.
- » For joints which will be continuously submerged in water, Flexprime Universal or Strongcoat DPM should be used. Consult DCP's Technical department for best primer suggestions.
- » Using a small brush apply one thin coat at the joint sides and avoid over priming. Apply Donseal PU440 over the primed surface after 12 - 24 hours to achieve optimum adhesion strength.

### APPLICATION

The recommended application temperature range is 5°C to 50°C. For cold weather application, store the product in a heated area at 20°C for 24 hours prior to use. Install polyethylene joint backing rod to control the sealant depth.

For optimum performance in expansion joints, the ratio of width to depth of the sealant should be 2:1. Minimum sealant depth should however be 6 mm.

For optimum performance, Donseal PU440 should be applied when the joint is at mid-point of its designed expansion and contraction.

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### TECHNICAL PROPERTIES @ 25°C & 50% RH:

Skin time:	30 - 50 min @ 23°C & 50% RH
Tooling time:	20 min @ 23°C & 50% RH
VOC: ASTM D2369	≤ 10 g/ltr (comply with LEED)

Performance Characteristics	EN 15651 Requirements (20 HM)	Measured Value
Tensile properties at maintained extension	NF	NF
Loss of volume	≤ 10%	≤ 6%
Elastic recovery	≥ 60%	≥ 90%
Resistance to flow	≤ 3 mm	Nil
Secant tensile modulus	> 0.4 MPa @ 23°C OR > 0.6 MPa @ -20°C	> 0.6 MPa
Adhesion/Cohesion properties at maintained extension after water immersion	NF	NF - Primer is recommended
Adhesion/Cohesion properties at variable temperature	NF	NF - 25% Movement accommodation factor

Performance Characteristics	EN 15651 Requirements (25 HM)	Measured Value
Tensile properties at maintained extension	NF	NF
Loss of volume	≤ 10%	≤ 6%
Elastic recovery	≥ 70%	≥ 85%
Resistance to flow	≤ 3 mm	Nil
Secant tensile modulus	> 0.4 MPa @ 23°C OR > 0.6 MPa @ -20°C	> 0.9 MPa
Adhesion/Cohesion properties at maintained extension after water immersion	NF	NF
Adhesion/Cohesion properties at variable temperature	NF	NF - 25% Movement accommodation factor

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## For cartridge application:

- » Use a utility knife to cut/trim the nozzle cap diagonally so that it fits the joint width.
- » Open the tip of the cartridge by using a pin to cut the seal (Caulking guns usually have a pin tool to be used).
- » Place Donseal PU440 cartridge into the cartridge gun.
- » Press the tip of the gun firmly towards the point of application and pull the trigger to release the sealant.

## For sausage application:

- » Place Donseal PU440 sausage inside the caulking gun barrel.
- » Use scissors or utility knife to cut the clip off the sausage while still in the gun.
- » Cut/trim the nozzle cap diagonally so that it fits the joint width.
- » Extrude Donseal PU440 by squeezing the large trigger.
- » To replace the sausage, simply unscrew the end cap, dispose of the used pack, and load in the new sausage.

Extrude and dispense firmly into the joint while ensuring complete contact between the applied sealant and joint walls. Maintain a steady flow of sealant to avoid air entrapment, and avoid overlapping the sealant. Tooling and finishing should be carried out immediately after the application of the sealant.

## LIMITATIONS

- » Not recommended for unsound substrates.
- » Although Donseal PU440 is generally paintable, it is advisable test for the specific paint for compatibility.
- » Long exposure to UV, will reduce surface gloss, but will not affect sealant performance.
- » For lower thicknesses, tool immediately.
- » Not recommended for use on bituminous substrates, natural rubber, or materials that may bleed oils, plasticizers, or solvents, as these may adversely affect sealant performance
- » Compatibility with EPDM, rubber, or similar gaskets in direct contact with the sealant should be confirmed by preliminary testing prior to application.
- » Adhesion to plastics may vary depending on type and surface condition; preliminary testing is recommended.
- » Lower temperatures and humidity levels will extend skin time and final cure time

## CLEANING

Clean tools and equipment first with paper towels and then wipe with Acetone, xylene or other suitable solvents.

## PACKAGING

Donseal PU440 is available in 600 ml sausages. 300 ml sausages and 300 ml cartridges are available on request.

## CONSUMPTION IN JOINTS

(Linear metre per 600 ml sausage)

Width Depth	6 mm	10 mm	15 mm	20 mm	25 mm	35 mm
6 mm	16.6	10				
7.5 mm			5.3	4.0		
10 mm				3.0	2.4	
15 mm					1.6	1.1

## STORAGE

Donseal PU440 should be stored in original unopened packages at temperatures between 4°C and 30°C in a dry place.

## SHELF LIFE

Donseal PU440 has a shelf life of 18 months from date of manufacture if stored under the recommended conditions.

If these conditions are exceeded, contact DCP Technical Department for advice.

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## CAUTIONS

### HEALTH AND SAFETY

If Donseal PU440 comes into contact with the eyes, flush with copious amounts of cold water and obtain medical attention.

Product is non-hazardous once cured.

For further information refer to the Material Safety Data Sheet.

### MORE FROM DON CONSTRUCTION PRODUCTS

A wide range of construction chemical products are manufactured by DCP which include:

- » Concrete admixtures.
- » Surface treatments
- » Grouts and anchors.
- » Concrete repair.
- » Flooring systems.
- » Protective coatings.
- » Sealants.
- » Waterproofing.
- » Adhesives.
- » Tile adhesives and grouts.
- » Building products.
- » Structural strengthening.

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#### Note:

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