

CHEMICAL RESISTANT POLYURETHANE-BASED SELF LEVELLING ELASTIC SEALANT

DESCRIPTION

U-SEAL 816 is an elastic, semi-liquid, single component, self-levelling, polyurethane sealant, specifically developed to be used as a multipurpose floor joint sealant, in applications, where a high chemical resistance to fuels, oils and hydrocarbons is requested. It cures under the influence of atmospheric moisture, to form a low modulus sealant with excellent adhesive properties and resistance to ageing and weathering.

RECOMMENDED FOR

- ▶ Sealing expansion and construction joints
- ▶ Warehouses and production sites
- ▶ Indoor and outdoor applications for pedestrian and traffic areas where there is contact with chemical agents, such as hydrocarbons, oils, fuels, diesels, aviation fuels, etc. (petrol station, decks, car parks)
- ▶ Joints in waste water and sewage treatment plants – preliminary contact with the Technical Department of PENETRON ROMANIA is required
- ▶ Floor joints in tunnel construction
- ▶ Floor joints in working areas and runways and parking areas in airports

ADVANTAGES

- ▶ One part - no mixing on site
- ▶ Pitch free
- ▶ Movement capability up to 25%
- ▶ Bubble-free curing
- ▶ Good mechanical and chemical resistance
- ▶ Very good adhesion to most construction materials
- ▶ Permanently elastic over a wide range of temperatures

TECHNICAL CHARACTERISTICS

Characteristics	Test Result	Test Method
<i>Chemical nature</i>	Polyurethane	
<i>Color</i>	Grey	
<i>Curing mechanism</i>	Moisture-curing	
<i>Specific gravity</i>	92.39 ± 1.25 lbs/ft ³ (1.48 ± 0.02 kg/Lt)	At 73.4 °F (23 °C) and RH 50%
<i>Tack-free time</i>	60-80 min	At 73.4 °F (23 °C) and RH 50%
<i>Shore A hardness</i>	26	DIN 53505
<i>Elastic modulus at 100%</i>	≥ 0,4 N/mm ²	ISO 37 DIN 53504
<i>Tensile strength</i>	≥ 1.8 N/mm ²	ISO 37 DIN 53504
<i>Elongation at break</i>	≥ 750%	ISO 37 DIN 53504
<i>Application temperature</i>	41 to 104 °F (5 to 40 °C)	
<i>Temperature resistance</i>	-40 to 194 °F (-40 to 90 °C) for short period at 248 °F (120 °C)	

Chemical resistance of U-SEAL 816T

Chemical resistance to spillage with chemical agents such as dilute acids, dilute alkalis, aviation fuels, diesel fuels, lubricant oils, petrol, kerosene, cleansing agents, sea water and lime water.

All data are average values obtained under laboratory conditions. Impractical use, temperature, humidity and absorption of the substrate may influence the above given values.

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DIRECTIONS FOR USE

Surface Preparation: Surfaces must be clean, dry, free of water, oil, grease or rust and of sound quality. Remove all loose particles or residues with a jet of compressed air, sandpaper or hard brush. Glass, metal and other non-porous surfaces must be free of any coatings and wiped clean with solvent. Pre-cast elements, using form-release agents other than polyethylene film, must be sandblasted or mechanically abraded and dust free. U-SEAL 816 has very good adhesion properties, even without the use of primer on most common building materials. However, varieties of brick, natural stone, plastics, paints, coatings and other treatments of surfaces, often present a difficult surface, to which to adhere. Due to the number of unpredictable natures of these substrates, a preliminary test is recommended. Apply a coating of primer on the joint walls. Porous substrates, such as concrete, cementitious renders, mortars, brick, etc. have to be primed with U-PRIMER 110 by using a brush. Before sealing, allow a flash off time of at least 15 min.

Application: Screw on the plastic nozzle and cut it at an angle, according to the desired bead thickness and profile. Fit the cartridge into a manual or pneumatic air operated gun (provided with telescopic piston) and extrude the U-SEAL 816 carefully, preventing air entrapment.

For sealing purposes: In order to guarantee free movement of the sealant in joints, it is imperative that the sealant does not adhere to the bottom of the joint, therefore for correct joint caulking, a closed-cell polyethylene bead (joint backing rod) PENETRON® BACKING ROD of suitable diameter is to be placed at the proper depth. Apply appropriate primer, if needed, to joint sides and observe the waiting time to avoid that any trapped solvent can form bubbles in the uncured sealant, due to rising temperatures. Firmly extrude U-SEAL 816 in the joint and keep the nozzle in the U-SEAL 816, continue on with a steady flow of sealant, preceding the nozzle to avoid air entrapment. Avoid overlapping of sealant to eliminate entrapment of air. U-SEAL 816 should be tooled to a smooth finish, ensuring a full contact to the sides and back up material into the joint, this will also contribute in breaking the air bubbles, which may be formed inside the sealant.

NOTE: Masking tape should be used, where sharp exact joint lines or exceptionally neat lines are required. Remove the tape, while the sealant is still soft.

Coverage: 6 linear meters of 1x1 cm joint per 600 ml cartridge.

Finishing indications and limitations: Tooling and finishing must be carried out within the tack-free time of the sealant. U-SEAL 816 can be over-painted. The paint must be tested for compatibility with U-SEAL 816, by carrying out preliminary trials. Attention must be observed with the use of alcohol or alkyd-resin, since they may interfere with the curing process of the sealant and reduce the drying time of the paint itself. It should be understood that the hardness and film thickness of the paint may impair the elasticity of the sealant and lead to cracking of the paint film.

SPECIAL CONSIDERATIONS

U-SEAL 816 may be painted. However, some coatings may crack if movement occurs, preliminary tests recommended.

Avoid exposure to high levels of chlorine (avoid to seal joints in chlorinated swimming pools).

Avoid contact with alcohol and other solvent cleaners, during cure.

DO NOT apply, when moisture or vapour transmission condition exists from the substrate, as this can cause bubbling within the sealant.

Avoid air entrapment, when applying the sealant.

Ensure adequate exposure to air, as the system cures with air moisture.

Once opened, packs should be used up within a relatively short time.

The ultimate performance of U-SEAL 816 depends on good joint design and proper application with joint surfaces properly prepared. The optimum operating temperature for both substrate and sealant is between 59 °F and 77 °F (15 °C and 25 °C). For easy application or for application in low temperatures, the material to be stored at approximately 77 °F (25 °C) prior to use.

Clean tools with acetone or alcohol immediately after use. Cured material can only be removed mechanically.

Contact PENETRON ROMANIA for further information, regarding your project.

PACKAGING

U-SEAL 816 can be purchased in Alu-bags 37 in³ (600 ml) (20 bags per box).

STORAGE / SHELF LIFE

U-SEAL 816 can be stored for 12 months in its original packing (unopened container) at 50 – 77 °F (10 – 25 °C) in a cool, dry place. The storage temperature should not exceed 77 °F (25 °C) for extended periods of time. Keep away from wet areas, direct sunlight and heat sources.

SAFE HANDLING INFORMATION

Avoid skin and eye contact. If eye occurs, flush immediately with lots of water and seek medical advice. If skin contact occurs, remove immediately and wash with soap and water. KEEP OUT OF REACH OF CHILDREN.

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CERTIFICATION

Conform according to ISO 11600/F/25HM and BS 5212 for determination of resistance to heat ageing and fuel immersion.



EN 14188-2
NPT srl
Via G.Rossa 2
Loc. Crespellano – 40053 Valsamoggia (BO)
Italy
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U-SEAL 816

Sealant for normal or fuel resistance joints in concrete pavements to be used in road, parking decks, bridge decks, airfields and other trafficked areas

Class C
Conditioning : Method A
Substrate : Mortar M1
Pre – treatment with U-Primer 110 (mortar)

Bonding strength
Tensile modulus at -20° C [MPa]: 0.44
Tensile modulus at 23° C [MPa]: 0.29
Cohesion
Tensile modulus at -20° C [MPa]: 0.59
Adhesion/cohesion failure: Pass
Resistance to deformation
Elastic recovery [%]: 95
Loss of volume [%]: 2.6
Durability of watertightness against chemicals
Change in mass [%]: -18
Change in volume [%]: +12
Durability of cohesion against liquid chemical
adhesion/cohesion failure: Pass
Durability of all mandated characteristics against ageing
Change of tensile modulus [%]: 11
Adhesion/cohesion failure: Pass

2538
EN 15651-4
NPT srl
Via G.Rossa 2
Loc. Crespellano – 40053 Valsamoggia (BO)
Italy
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U-SEAL 816

One component polyurethane sealant for the application in pedestrian walkways

Type PW INT-EXT
Conditioning : Method A
Substrate : Mortar M2
Pre – treatment with U-Primer 110 (mortar)
Reaction to fire: NPD

Release of chemicals dangerous to the environment and health: NPD

Water tightness and air tightness
b) Loss of volume: ≤ 10%

- d) Tensile properties at maintained extension: Not failure
- i) Adhesion/cohesion properties at maintained extension after 28days water immersion: NPD
- j) Adhesion/cohesion properties at maintained extension after 28days salt water immersion: Not failure

- k) Tear resistance: Not failure
- l) Durability: Pass

WARRANTY – DISCLAIMER

PENETRON ROMANIA warrants that its products are manufactured under certified ISO Standard procedures, are of excellent quality and shall be free from material defects and contain all components in their proper proportion. Should any of the products be proven defective, the liability to PENETRON ROMANIA shall be limited to replacement of the material proven to be defective, since the standard application procedures have been met and the suitability of the product for the particular application have been proven. PENETRON ROMANIA makes no warranty as to merchantability of fitness for a particular purpose. User, after contacting the distributor of the product, shall determine the suitability of the product for his intended use and assume all risks and liability in connection therewith. While every care has been taken, the information provided in this product's data sheet make no part of any contract. All recommendations, technical data and test data contained in this product's data sheet are based upon the results of control laboratory tests or in actual field tests. However, PENETRON ROMANIA makes no warranty of any kind, concerning this data. In any case, this data are given in good faith based in the PENETRON ROMANIA experience, till the publication of this sheet. Due to variance in storage, handling and applications of the materials, PENETRON ROMANIA accepts no liability for the results obtained. It is suggested that potential users try small applications to determine the suitability of each individual product for their specific requirements. The users should always refer to the most recent edition of the product's data sheet. PENETRON ROMANIA may particularly differentiate its versions of the product's data sheet compared with those of PENETRON INTERNATIONAL LTD or respective PENETRON companies worldwide. These changes are due to text formatting, different application weathering and procedures or different product names and aim at the optimal consumer information.