PRODUCT DATA SHEET

U-SEAL 816

Version, Penetron Hellas 17.08.2026

ONE-PART POLYURETHANE SELF-LEVELLING SEALANT
CERTIFIED ACCORDING TO EN 15651/4 TYPE PW INT/EXT
CERTIFIED ACCORDING TO EN 14188 SYSTEM S TYPE SL CLASS D
BASED ON NPT BUBBLE-FREE CURING LC-TECHNOLOGY

DESCRIPTION

U-Seal 816 is a one-component, polyurethane, concrete pavement self-levelling sealant. It cures under the influence of atmospheric moisture to form a high performance compound with permanently elastic sealant with excellent adhesive properties and resistance to ageing and weathering. U-Seal 816 is based on LC-Technology, developed to avoid bubbling present in traditional one-part PU Sealants. LC-Technology combines the best properties of traditional polyurethane sealants to a bubble-free curing system and very low emissions. U-Seal 816 has been specifically developed to be used as a pourable joint sealant in rigid pavements in airfields, roads and concrete floors where high adhesion, abrasion-resistance and high chemical resistance to fuels, oils and hydrocarbons is required.

RECOMMENDED FOR

U-Seal 816 has been specifically developed to be used as a pourable joint sealant in:

- Joints in rigid pavements of airports and concrete roads
- Joints in concrete floors
- Indoor and outdoor applications for pedestrian and traffic areas
- Floor joints in warehouses and production areas
- Floor joints in tunnel construction

ADVANTAGES

- One part - no mixing on site. Self-levelling consistency
- Bubble-free curing. Non staining
- Resistant to hydrocarbons, oils and fuels. Bitumen free
- Very good adhesion on all typical construction materials
- Primerless adhesion on green concrete
- Permanently elastic; accommodates joint movement of ±25%
- Resistant to chemical spillage by: dilute acids, dilute alkalis, aviation fuels, diesel fuels, lubricant oils, petrol, kerosene, cleansing agents, seawater and limewater.

TECHNICAL CHARACTERISTICS

Characteristics	Test Result	Test Method
Type	Pourable Semi-liquid	
Chemical nature	Polyurethane	
Color	Grey	
Curing mechanism	Moisture-curing	
Specific gravity	1,49 kg/cm^3 (92,39 lbs/ft^3)	At 23 °F (73,4 °C) and RH 50%
Skin time	~ 85 min	At 23 °F (73,4 °C) and RH 50%
Curing through volume	~ 2.0 mm	After 1 day at 23 °C (73,4 °C) and RH 50%
Shore A hardness	~ 28	DIN 53505
Elastic modulus at 100%	~ 0,6 N/mm^2	ISO 37 DIN 53504
Tensile strength	~ 1,8 N/mm^2	ISO 37 DIN 53504
Elongation at break	~ 700%	ISO 37 DIN 53504
Tear resistance propagation	~ 5,1 N/mm	ISO34-1
Application temperature	5 to 40 °C (41 to 104 °F)	
Temperature resistance	-40 to 90 °C (-40 to 194 °F) for short period at 120 °C (248 °F)	

Note: 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 panels 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.

***For sealing purposes*:** 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. Recommended application temperatures: 15°-25°C (59 – 77 ºF). For easier use or cold weather application we recommend the material to be stored at approximately 25°C (77 ºF) prior to use. 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.
All joints must be properly designed and dimensioned by the designer and the main contractor in accordance with the relevant standards, materials and technical characteristics. The recessed joint design protects the sealant against mechanical loads. Fill the joint with U-Seal 816 1,0 mm below the surface of the joint sides.

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.

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.

Coverage 6 linear meters of 1x1 cm joint per 600 mL unipack.

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.

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

Contact PENETRON HELLAS S.A. for further information, regarding your project.

PACKAGING

U-SEAL 816 can be purchased in unipacks of 600 mL (37 in^3) (20 bags per box) and Alu-bags of 13,26 lb (6 kg) (2 Alu-bags per box).

STORAGE / SHELF LIFE

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

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SAFE HANDLING INFORMATION

Avoid skin and eye contact. If in eye, 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. For further information please refer to Safety Data Sheet. PENETRON HELLAS S.A. has recently updated Safety Data Sheet on the safe use of PENETRON® products. Each Safety Data Sheet contains health and safety information for the protection of your employees and your customers.

CERTIFICATION

Certified according to:
EN 15651-4 PW INT/EXT
EN 14188-2 System S Type SL Class D (test fuel II)
ASTM C920 Type S, Grade P, Class 25, Use M and G

Compliant to:
ISO 11600 Type F Class 25 sub-class LM
LEED iEQc 4.1; SCAQMD Rule 1168; BAAQMD Reg 8 Rule 51
CARB VOC levels regulation

CE
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 Primer
Reaction to fire (EN 13501): NPD
Release of chemicals dangerous to the environment and health: NPD
Water tightness and air tightness
a) Loss of volume (ISO 10563): ≤ 10%
b) Tensile properties at maintained extension (ISO 8340): Not failure
c) Adhesion/cohesion properties at maintained extension after 28days water immersion (ISO 10590): NPD
d) Adhesion/cohesion properties at maintained extension after 28days salt water immersion (ISO 10590): Not failure
e) Tear resistance (ISO 8340): Not failure
f) Durability: Not failure

WARRANTY - DISCLAIMER

PENETRON HELLAS S.A. 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 HELLAS S.A. 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 HELLAS S.A. 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 HELLAS S.A. makes no warranty of any kind, concerning this data. In any case, this data is given in good faith based in the PENETRON HELLAS S.A. experience, till the publication of this sheet. Due to variance in storage, handling and applications of the materials, PENETRON HELLAS S.A. 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 HELLAS S.A. 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.

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