PRODUCT DATA SHEET

U-SEAL 500

Version, Penetron Hellas 17.08.2026

ONE-PART POLYURETHANE MULTIPURPOSE ADHESIVE SEALANT

DESCRIPTION

U-Seal 500 is a one-component, gun-grade, non-sag polyurethane elastic adhesive and sealant. It cures under the influence of atmospheric moisture to form a high-performance compound with permanent elasticity and resistance to ageing and weathering.

RECOMMENDED FOR

U-Seal 500 is a high quality and versatile elastic adhesive and sealant for use in:

- Sealing and elastic bonding even between different materials
- Construction and industrial assembly, automotive, transportation and marine
- Replaces rivets and mechanical fasteners
- Sealing joints in vertical and horizontal applications
- Weatherproofing of joints between brickwork, block-work, masonry, wood, concrete, metal frames
- Metal roof and gutter sealing

ADVANTAGES

- Bonds and seals at the same time
- Permanently elastic; accommodates joint movement of ±25%
- Easy to gun with excellent tooling consistency
- Good thixotropy, non-sagging
- Shock and impact resistance
- Vibration and sound dampening properties
- Excellent primerless adhesion on all typical construction and industrial materials
- Elastic bonding between metal, plastic, glass and other materials
- Non-staining. Neutral behavior, does not attack support surface
- Good resistance to ageing, weathering and cleansing agents, sea water, lime water
- Over-paintable with many water and solvent based paints (preliminary tests recommended)

TECHNICAL CHARACTERISTICS

Characteristics	Test Result	Test Method
Appearance	Non-sag thixotropic paste	
Chemical nature	Polyurethane	
Color	Grey, white, black. Other on request	
Curing mechanism	Moisture-curing	
Curing through volume	~ 2,3 mm	At 23 °C (73,4 °F) and RH 50%
Shore A hardness	~ 38	DIN 53505
Density	~ 1,33 g/cm³ (83,03 lb/ft^3)	At 23 °C (73,4 °F) and RH 50%
Tack-free time	~ 50 min	At 23 °C (73,4 °F) and RH 50%
Elastic modulus at 100%	~ 0,7 N/mm^2	ISO 37 DIN 53504
Tensile strength	~ 1,7 N/mm^2	ISO 37 DIN 53504
Elongation at break	~ 570%	ISO 37 DIN 53504
Joint Movement Capability	±25 % of joint width	ASTM C920
Application temperature	5 to 40 °C (41 to 104 °F)	
Temperature resistance	-40 to 100 °C (-40 to 212 °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.

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. U-Seal 500 has very good adhesion properties without the use of primer on most common building materials. Consequently, the use of the primer is not necessary if the support to be sealed is properly prepared and consolidated. However, varieties of brick, natural stone, plastics, paints, coatings and other treatments of surfaces often presents a difficult surface to which to adhere. Due to the number of unpredictable natures of these substrates, a preliminary test is recommended. Pre-cast panels using form-release agents other than polyethylene film must be sandblasted or mechanically abraded and dust free. Cleaners and/or primers may be required to achieve optimal adhesion. The substrates must be prepared in accordance with the PENETRON HELLAS S.A. instructions. Contact PENETRON HELLAS S.A. for further recommendations and guidance, regarding adhesion on specific surfaces.

***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 500 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 500 and apply in the joint, making sure that it is in full contact with the sides of the joint and with the backing rod at the bottom. Keep the nozzle in the U-SEAL 500, 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 500 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 whilst the sealant is still soft.

For adhesive purposes: Apply U-SEAL 500 in spots or bead on the prepared surfaces, then firmly press the parts, which have to be bonded together.

Finishing indications and limitations: Tooling and finishing must be carried out within the tack-free time of the sealant. U-SEAL 500 can be over-painted. The paint must be tested for compatibility with U-SEAL 500, 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 cartridge or 3 linear meters of 1x1 cm joint per 310 ml cartridge.

SPECIAL CONSIDERATIONS

U-SEAL 500 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.

Bonded elements may require additional holding or support, during curing period.

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

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

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 500 can be purchased in cartridges of 310 mL (18,92 in^3) (12 pieces per box) or unipacks of 600 mL (37 in^3) (20 pieces per box).

STORAGE / SHELF LIFE

U-Seal 500 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.

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 15651-1/4 TYPE F INT/EXT; PW INT/EXT

Compliant to:
ISO 11600 Type F Class 25 sub-class HM;
LEED iEQc 4.1; SCAQMD Rule 1168; BAAQMD Reg 8 Rule 51

CE

2538
EN 15651-1
EN 15651-4

NPT srl
Via G.Rossa 2
Loc. Crespellano – 40053 Valsamoggia (BO)
Italy
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U-SEAL 500
One component polyurethane
for the application in facades
Type F EXT-INT / PW INT-EXT
Conditioning: Method A
Substrate: mortar M2
Pre – treatment with U-Primer 110 (mortar)
Reaction to fire: Class E
Release of chemicals dangerous to the environment and health: Evaluated
Water tightness and air tightness
a) Resistance to flow: ≤ 3 mm
b) Loss of volume: ≤ 10%
c) Tensile properties at maintained extension after water immersion: Not failure
d) Tensile properties at maintained extension: Not failure
e) Tensile properties at maintained extension after 28days water immersion: Not failure
f) Tensile properties at maintained extension after 28days salt water immersion: Not failure
g) Tear resistance: Not failure
i) Durability: Pass

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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