

ONE-PART ELASTIC POLYURETHANE-BASED ADHESIVE/SEALANT

DESCRIPTION

U-SEAL 500 is a single component, non-sag, multipurpose, high performance, polyurethane sealant and elastic adhesive. Bonds well to a wide variety of substrates and enables permanent elastic sealing with high adhesive strength. Once extruded, it cures by reaction to the atmospheric moisture to form a high performance, dual purpose adhesive and sealing compound with permanent elasticity.

RECOMMENDED FOR

- ▶ Concrete
- ▶ Metal
- ▶ Wood
- ▶ Painted surfaces and plastics

ADVANTAGES

- ▶ Permanently elastic over a wide range of temperatures
- ▶ Non-sag consistency. Good thixotropy
- ▶ Stable – No shrinkage
- ▶ Short cut-off string
- ▶ Bonds and seals at the same time
- ▶ Replaces rivets and mechanical fasteners
- ▶ Allows equalised stress transfer due to permanent elasticity.
- ▶ Easy to gun, can be easily smoothed and levelled out
- ▶ Good adhesion on a wide range of substrates
- ▶ Vibration and sound dampening properties
- ▶ Good resistance to ageing and weathering. Suitable for indoor and outdoor use
- ▶ Over-paintable with many water/solvent based paints (preliminary tests recommended)

TECHNICAL CHARACTERISTICS

| Characteristics | Test Result | Test Method |
|-------------------------|---|-------------------------------|
| Type | Thixotropic paste | |
| Chemical nature | Polyurethane | |
| Color | White, grey, black | |
| Curing mechanism | Moisture-curing | |
| Specific gravity | Black 81.78 ± 1.25 lbs/ft ³ (1,31 ± 0,02 kg/Lt) Grey 83.03 ± 1.25 lbs/ft ³ (1,33 ± 0,02 kg/Lt) White 84.28 ± 1.25 lbs/ft ³ (1,35 ± 0,02 kg/Lt) | |
| Tack-free time | 41 – 75 min | At 73.4 °F (23 °C) and RH 50% |
| Curing | 2.0 -3.0 mm / 24 h | At 73.4 °F (23 °C) and RH 50% |
| Shore A hardness | 35–45 | DIN 53505 |
| Elastic modulus at 100% | ≥ 0.8 N/mm ² | ISO 37 DIN 53504 |
| Tensile strength | ≥ 1.8 N/mm ² | ISO 37 DIN 53504 |
| Elongation at break | ≥ 450% | ISO 37 DIN 53504 |
| Application temperature | 41 to 104 °F (5 to 40 °C) | |
| Temperature resistance | -40 to 194 °F (-40 to 90 °C) and for short period up to 248 °F (120 °C) | |

Chemical resistance of U-SEAL 500

Long term resistance to fresh water, seawater, limewater, caustic solutions and cleaning agents. Short term resistance to Petrol, grease and mineral oil. Not resistant to organic acids, concentrated mineral acids or solvents. This information is offered for general guidance only. Advice on specific applications will be given on request.

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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. Pre-cast elements 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 ROMANIA instructions. Contact PENETRON ROMANIA for further recommendations and guidance, regarding adhesion on specific surfaces.

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 500 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 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.

The ultimate performance of U-SEAL 500 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 storage temperature should not exceed 77 °F (25 °C) for extended periods of time.

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 500 can be purchased in Alu-cartridge 19 in³ (310 ml) (12 cartridges per box) or Alu-PE bags 37 in³ (600 ml) (20 bags per box).

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STORAGE / SHELF LIFE

U-SEAL 500 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 contact is made, flush areas with lots of water and seek medical advice. Protective gloves, mask and goggles should be worn. **KEEP OUT OF REACH OF CHILDREN.** For further information please refer to Material Safety Data Sheet. PENETRON ROMANIA has recently updated brochure on the safe use of PENETRON® products. Each data sheet contains health and safety information for the protection of your employees and your customers.

CERTIFICATION

Conforms to ISO 11600/F/25HM.

WARRANTY – DICLAIMER

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.



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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
Conditioning : Method A
Substrate : mortar M1
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: ≤ 5 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) Adhesion/cohesion properties at variable temperature: Not failure
f) Durability: Pass

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