

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

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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. 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 ROMANIA instructions. Contact PENETRON ROMANIA 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 °F). For easier use or cold weather application we recommend the material to be stored at approximately 25°C (77 °F) 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 ROMANIA for further information, regarding your project.

PACKAGING

U-SEAL 500 can be purchased in Alu-cartridge 310 mL (18,92 in³) (12 cartridges per box) or Alu-PE bags 600 mL (37 in³) (20 bags 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 °F - 77 °F) in a cool, dry place. The storage temperature should not exceed 25°C (77 °F) 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. 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



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: $\leq 10\%$

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

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and will conform to formulation standards and contain all components

in their proper proportion. Should any of the products be proven defective, the liability to BEST IMPORT PRODUCTS PENETRON shall be limited to replacement of the material proven to be defective, and BEST IMPORT PRODUCTS PENETRON shall in no case be liable otherwise or for incidental or consequential damage.

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