



U-Seal 500

One-part polyurethane multipurpose adhesive sealant
☞ Certified according to EN 15651/1 Type F INT/EXT
☞ Certified according to EN 15651/4 Type PW INT/EXT

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Description

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

Certified according to:

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

Compliant to:

ISO 11600 Type F Class 25 sub-class HM

Areas of Application

- Sealing and bonding between different materials
- Elastic bonding between metal, plastic, glass and other materials
- 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 over a wide range of temperatures; accommodates joint movement of $\pm 25\%$
- Non-sag consistency with short cut-off string
- Non-sticky / does not pick up dirt
- Easy to gun with excellent tooling consistency
- Performant adhesion on metal, plastic and construction materials.
- Non-staining
- Vibration and sound dampening properties
- Allows equalised stress transfer due to permanent elasticity
- 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 data

Appearance	Non-sag thixotropic paste
Colour	Grey, white, black. Beige and brown on request
Chemical nature	Polyurethane
Curing mechanism	Moisture-curing
Curing through volume [mm] (NPT Method 07) (24h - 23°C and 50% RH)	ca. 2,3
Shore A hardness [N/mm ²] (DIN 53505)	ca. 38
Density [g/cm ³] (NPT method 06) (23°C and 50% RH)	ca. 1,32
Tack-free time [min] (NPT Method 17) (23°C and 50% RH)	ca. 50
Elastic modulus at 100% [N/mm ²] (ISO 37 DIN 53504)	ca. 0,7
Tensile strength [N/mm ²] (ISO 37 DIN 53504)	ca. 1,7
Elongation at break [%] (ISO 37 DIN 53504)	ca. 570
Joint movement capability (EN 15651/1; ISO 11600)	±25 % of joint width
Application temperature [°C]	from +5 to +40
Temperature resistance [°C]	-40/+90, with brief points at +120

Application

Surface preparation

Pre-test substrates for adhesion. Cleaners and/or primers may be required to achieve optimal adhesion. 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.





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 adhesive/sealant carefully preventing air entrapment. Once opened, packs should be used up within a relatively short time. The optimum operating temperature for both substrate and sealant is between 15°C and 25°C.

Chemical Resistance

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.

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) is to be placed at the proper depth. Apply appropriate primer 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 sealant 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 sealant, continue on with a steady flow of sealant preceding the nozzle to avoid air entrapment.

Avoid overlapping of sealant to eliminate entrapment of air. Sealant 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. 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.

The joint width must be designed to suit the movement capability of the sealant. In general the joint width must be > 10 mm and < 35 mm. A width to depth ratio of 2:1 must be observed. Minimum joint width for perimeter joints around windows: 10 mm.

For adhesive purposes

Apply 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 by carrying out preliminary trials. Attention must be observed with the use of 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.

Avoid exposure to high levels of chlorine (avoid sealing joints in chlorinated swimming pools). Avoid contact with alcohol and other solvent cleaners during cure. When applying sealant, avoid air-



ISO 9001



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entrapment. Since system is moisture-cured, permit sufficient exposure to air. Bonded elements may require additional holding or support during curing period.

Do not use U-Seal 500 on bituminous substrates, natural rubber, EPDM rubber or on building materials which might bleed oils, plasticizers or solvents which could attack the sealant.

Cleaning of equipment

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

Personal protective measures

Use in a well ventilated place. If skin contact occurs, remove immediately and wash with soap and water.

Packaging

Alu-cartridge 310mL:	12 cartridges per box
Alu-PE bags 600 mL:	20 bags per box
Alu-PE bags 400 mL:	12 bags per box (on request)
Alu-PE bags 1800 mL:	6 bags per box (on request)

Storage

U-Seal 500 can be stored for 12 months in its original packing (unopened container) at 10°- 25°C in a cool, dry place. The storage temperature should not exceed 25°C for extended periods of time. Keep away from wet areas, direct sunlight and heat sources.

General Information

The information contained in this technical data sheet is to the best of our knowledge correct, being based on our knowledge and experience to date and cannot be used as a guarantee, due to the various different materials present on the market and the fact that the application conditions are not under our direct control and supervision. NPT srl, however, guarantees constant product quality. NPT srl, has the right to modify or up-date this technical data sheet according to requirements. Customers are kindly requested to verify that they are in possession of the latest version.

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