Technical Data Sheet U-Seal 500
Ver. 5.0 May 2021

U-Seal 500

One-part polyurethane multipurpose adhesive sealant

DESCRIPTION

U-Seal 500 is a multipurpose 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.

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

AREAS OF APPLICATION

U-Seal 500 is a high quality and versatile elastic adhesive and sealant for use in elastic bonding and sealing applications, even between different materials, in construction and industrial assembly, automotive, transportation and marine, where a tough flexible rubber joint or a powerful elastic adhesive is required. Suitable for sealing joints in vertical and horizontal applications, replaces rivets and mechanical fasteners, seals metal roof and gutter sealing.

FEATURES

- 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 damping 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)

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TECHNICAL DATA

Appearance	Non-sag thixotropic paste
Color	White, Grey, Black. Other 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
Hardness Shore A (DIN 53505)	ca. 38
Density [g/cm³] (NPT method 06) (23°C and 50% RH)	ca. 1.33
Skin time [min] (NPT Method 17) (23°C and 50% RH)	ca. 50
Elastic modulus at 100% [N/mm²] (ISO 37 DIN 53504)	ca. 0.7
Tensile strength [N/mm²] (ISO 37 DIN 53504)	ca. 1.7
Elongation at break [%] (ISO 37 DIN 53504)	ca. 570
Joint movement capability (ASTM C920)	±25 % of joint width
Application temperature [°C]	From +5 to +40
Temperature Resistance [°C]	From -40 to +100

APPLICATION

The surfaces to be treated should be perfectly clean, dry and free from dust and grease. 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. Recommended application temperatures: 15°-25°C. For easier use or cold weather application we recommend the material to be stored at approximately 25°C prior to use. To guarantee free movement of sealant in joints, it is imperative that the sealant does not adhere to the bottom of the joint, therefore for correct joint making a closed-cell polyethylene bead (joint backing rod) is to be placed at the proper depth.

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If necessary, apply appropriate primer to joint sides and observe waiting time to avoid that trapped solvent, in condition of rising temperature, can blow bubbles in the uncured sealant. For best performance, sealant should be gunned into joint when the joint slot is at mid-point of its designed expansion and contraction. Firmly extrude sealant into 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 with a steady flow of sealant following the nozzle to avoid air entrapment. Avoid overlapping of sealant to eliminate entrapment of air.
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 alcohol or alkyd-resin since they may interfere with the curing process of the sealant and reduce the drying time of the paint itself. The hardness and film thickness of the paint may impair the elasticity of the sealant and lead to cracking of the paint film. Do not cure in the presence of curing silicone sealants. Avoid contact with solvent cleaners during cure. When applying sealant, avoid air-entrapment. Since system is moisture-cured, permit sufficient exposure to air. Bonded items may require additional clamping or support during the cure period.

CLEANING OF EQUIPMENT AND PERSONAL PROTECTIVE MEASURES

Clean the tools used with acetone or solvent. When the adhesive has not yet hardened, it can be removed using paper or a cloth. Once hardened, the product can only be removed mechanically. Avoid skin contact by using latex, rubber or polyethylene gloves. If it comes in contact with the skin, remove immediately and wash with soap and water.

PACKAGING

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Aluminum cartridges 310ml - 12 pieces per box
Foilpack 400ml – 12 pieces per box
Foilpack 600ml – 20 pieces per box

STORAGE AND SHELF LIFE

U-Seal 500 can be stored for 12 months in its original packaging (unopened container) between 10°C and 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.

ALWAYS CONSULT THE MATERIAL SAFETY DATA SHEET BEFORE USING THE PRODUCT

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