COSMO® PU-160.530

1-C-PUR-Adhesive

Examples for Application

- For universal use
- Manufacture of sandwich and parapet elements
- Bonding of surfaces
- Diverse industrial fields

Special Properties

- tough-elastic adhesive joint
- Solvent-free
- Expands (foams) during the curing process!
- Long open time
- It features an especially wide range of application possibilities on different materials
- Good adhesion characteristics to several types of material surfaces, e.g. PVC-hard, GRP (ground), Alu, HPL etc. on diverse insulating materials, e.g. PUR-, PS-foam and mineral wool after appropriate preparation of the surfaces
- Good bonding strength at heat
- Good weather-proofness
- Can be over-coated with many paint systems

Technical Data

Basis	1-C-humidity-cross-linking polyurethane
Colour hard-dry	brown
Viscosity as per cone and plate (2 s^{-1}) at +25 °C	approx. 6 500 mPa.s
Density as per EN 542 at +20 °C	approx. 1.12 g/cm^3
Skinning time - dry at +20 °C, 50 % r. H., applied quantity 500 µm-PE/PVC	approx. 110 min
Skinning time - wet at +20 °C, sprayed with water; applied quantity 500 µm-PE/PVC	approx. 40 min
Pressing time at +20 °C	approx. 240 min
Curing time at +20 °C, 50 % r. H. until it reaches the final strength	approx. 7 d
Applied quantity depending on carrier material	approx. 50-350 g/m^2
Processing temperatures adhesive and substrates	from +5 °C to +30 °C

General Information

If permanent humidity impact is expected, the bonded joints/bonded surfaces must additionally be sealed/protected using a "suitable sealant".

Bonding of materials with different longitudinal extension must be assessed regarding their long-term behaviour, especially when they are exposed to fluctuating temperature ranges.

The cured mass changes its colour due to UV radiation but not its strength in the cured bonded joint.

Caution: the viscosity of the 1-C-PUR adhesives is approximately twice as high at +15 °C as at +25 °C.

Observe the following instructions when taking it out of drums or containers: Dry the after-flowing air, e.g. by means of desiccant cartridges, to prevent curing in the trading units.

Skinning, joining times, as well as the required press and following processing times can only be determined accurately by self-tests because they depend on material, temperature, applied quantity, air humidity, material humidity, thickness of adhesive film, press power, and other criterions. For processing, appropriate safety allowances shall be planned in addition to the specified guiding values.

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Industrieverband Klebstoffe e.V.
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Preparation

Acclimatise the product before the application.

The surfaces of the workpieces to be bonded must be dry, and free from dust and grease.

Depending on the material surface, check if the bonding result can be improved by grinding or applying of primer.

Polyolefins (among others PE, PP) cannot be bonded without preparation, e.g. plasma- or corona treatment. If PS-hard surfaces are bonded, generally we recommend using a primer.

Bonding

The adhesive is homogeneously applied on one of the surfaces of the parts to be bonded using a spatula, an adhesive application roll, or a bead application unit, within the skinning time.

To ensure a controlled curing process when non-absorbent materials or materials with an internal humidity of <8 % are bonded, the adhesive film is sprayed with water (approx. 10 g water/m² at 150 g adhesive/m²)

To reduce the pressing time up to 20 % of the PU-accelerator COSMO® SP-900.120 are added to the reaction water, if necessary.

After that, the workpieces will be put together within the skinning time and pressed with a stacking pressure of 0.015 N/mm² until they have reached the functional strength.

If covering layers are laid, make sure that no air is enclosed, provide for air vent in the adhesive joint, if necessary.

Remove oozing adhesive when it is fresh.

Bonding of metals

Bonding of aluminium, copper, brass: only on chemically pretreated or varnished surfaces; these materials cannot be durably bonded to be age-resistant without appropriate pre-treatment of the surfaces to be glued.

Due to the difficult definition of aluminium surfaces and qualities, we generally recommend gathering sufficient information from the supplier to prepare the planned bonding process optimally; sufficient qualification tests are required.

Due to their variety, age and, if necessary, additional treatment with oil or wax, anodized surfaces do not allow any general statement about wettability or bonding characteristics of these bonding surfaces.

If stainless steel is manufactured or processed, auxiliary aids, e.g. wax, oil, etc, are often used, that usually cannot be removed by simple wiping away; it turned out that after the cleaning with solvent-based cleaning agents a clearly better bonding result will be achieved after grinding, or better sand blasting, of the surface and following cleaning with solvent.

Galvanized sheet metals must generally be protected from stagnant humidity that is permanently acting on it "formation of white rust". In this case, it must be excluded that occurring humidity can get onto the bonding surface.

Powder coatings with shares of PTFE cannot be bonded reliably without pre-treatment (e. g. plasma procedure).

Bonding of wood

Bonding of larch: If larch is bonded outdoors, generally 1-C-PUR-adhesives may not be used. Substances, included in the wood or possibly generated, e.g. "Arabicum Galactan", considerably destroy/weak the bonding strength . No problems are known for PVAc- and EPOXI adhesives.

If solid wood is bonded, the adhesive should preferably be applied on the two surfaces to be bonded. The press pressure shall be >1 N/mm².

If solid wood is bonded for outdoor application, perform appropriate tests to achieve optimum bonding depending on wood type, weathering intensity, surface protection and dimensions of adhesive joints.

Important instructions

Only instructed personnel in specialist firms are allowed to use the product!

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Our user instructions, processing guidelines, product- and performance data, and other technical statements are only general directives; they describe only the condition of our products (values, determination of values on the date of completion) and the performances do not represent a warranty in the sense of § 443 BGB. Because of the wide variety of applications of the individual product and the relevant special conditions (e. g. processing parameters, material characteristics, etc.), it is up to the user to test it itself; our free expert advice for application provided in speech, writing, and as test is nonbinding.

Please, also consider the Safety Data Sheet!

Cleaning

Storage of application devices in COSMO® CL-300.340 prevents/slows down the curing time of the adhesive.

Remove the fresh, not cured adhesive from the surfaces and the tools using COSMO® CL-300.150.

The tools are cleaned with COSMO® CL-300.220 .

Cured adhesive can only be removed mechanically.

Storage

Store the hermetically closed original trading units in a dry place at temperatures of +15 °C to +25 °C no direct sun radiation.

While transported within the usual transport times, the product may be exposed to temperatures from -30 °C to +35 °C.

Storage life in unopened original packaging: 12 Months

During the storage time, viscosity is increasing, reactivity is decreasing.

Packaging

Sizes of trade units on request.

Accessories

COSMO® CL-300.340 – immersion solution and equipment cleaner

COSMO® CL-300.220 – cleaner for tools

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