Examples for Application

- Aluminium window and door manufacturing for bonding of corner connectors
- Window and door construction
- Board joint bonding of cassettes in the wood, window and front door area
- Stair construction and building trade
- With many assembly bonding processes
- Diverse industrial fields

Special Properties

- Semi-hard adhesive joint
- Thin layers are transparent
- Solvent-free
- Thixotropic, does not drop off
- Compatible with natural stone
- Expands (foams) during the curing process!
- Joint filling
- Good adhesion characteristics to several types of wood, and building material, ceramics, metal, duroplast and thermoplastic after appropriate preparation of the surface
- If wood is glued to wood, it achieves the durability class D4 as per DIN EN 204.
- Meets the requirements as per DIN EN 14257 (WATT 91)
- Good bonding strength
- Good bonding strength at heat
- Can subsequently be powder-coated (30 min/+200 °C)

Technical Data

Basis	1-C-humidity-cross linking polyurethane
Colour	
Hard-dry	Opaque
Viscosity	
at +20 °C	Low-viscous-pasty
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. 10 min
Skinning time - wet	

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at +20 °C, sprayed with water Applied quantity 500 µm-PE/PVC	approx. 5 min
Curing time	
at +20 °C, 50 % r. H. to approx.. 75 % until it reaches the final strength	24 h 7 d
Functional strength depending on application at +20 °C	30 min
Applied quantity	
Depending on carrier material	approx. 200 g/m²
Minimum processing temperature adhesive and substrates	from +7 °C to +30 °C

General Information

Paint the bonded workpieces only after the adhesive has cured completely; if they are painted too early, formation of paint bubbles cannot be excluded.

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.

Skinning, joining times, as well as the required press and following processing times can only be determined accurately by selftests 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.

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.

For corrosion protection and for sealing of e.g. mitres and butt joints in the field of aluminium construction, the corrosionprotective sealant COSMO® HD-100.411 or the colour variants are applied on the blank aluminium cut surfaces before the connecting elements are bonded.

Bonding

The adhesive is applied one-sided as bead on one of the parts to be bonded.

If non-absorbing materials are bonded (material humidity <8 %), water must be "sprayed very finely" onto the adhesive to achieve complete curing.

The workpieces must be fit together and pressed within the skinning time.

After they have been fit together, the parts must be fixed and pressed until functional strength has been reached.

Remove oozing adhesive when it is fresh.

If the thickness of the joints is >2.5 mm, the setting times, press times and curing time are clearly longer, joint thickness ≥5 mm shall be avoided.

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.

If metals are bonded with absorbent materials (e.g. wood, building materials, etc.), humidity can be transported slowly through the absorbent material, through the bonded joint, to the metallic surface and here, it can cause corrosion damages on the metal.

Therefore, the metallic bonding surface must be equipped with an appropriate corrosion protection, e. g. varnish, powder coating!

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/mm^2.

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!

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

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

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 packagings: 15 Months

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

Colour changes from opaque to yellowish during the storage time.

Packaging

310 ml PE-Euro cartridge, net weight: 347 g

Other trading units on request.