



COSMO® EP-200.110

*** COSMOFEN AL

2-C-Epoxy Adhesive

Examples for Application

- In the field of aluminium window and door construction, for bonding corner joints (suitable for classic and injection bonding methods)
- For bonding of natural and artificial stone
- For bonding of Alu, HPL, GRP and other materials

Special Properties

- tough-hard adhesive joint
- Thixotropic, does not drip off
- Good weather-proofness
- Can be over-coated with many paint systems
- Can subsequently be powder-coated (30 min/+230 °C)
- Features easy handling of tandem cartridge with static mixer

Technical Data

Mixture COSMO® EP-200.110 (Component A COSMO® EP-205.110 + Component B COSMO® EP-201.110)

Basis	2-C-EPOXI adhesive
Colour hard-dry	grey
Density as per EN 542 at +20 °C	approx. 1.49 g/m ³
Shore hardness as per DIN 53505	approx. 85 Shore D
Viscosity at +20 °C	medium viscous-pasty
Mixing ratio parts by weight	A : B = 100 : 96
Mixing ratio parts by volume	A : B = 1 : 1
Pot life of a 100 g batch at +20 °C	approx. 60 min
Processing time of tandem cartridge with static mixing tube at +20 °C	approx. 30 min
Functional hardness e.g. bonding of corner angles at +20 °C	approx. 5 h
Curing time at +20 °C, 50 % r. H. to approx. 75 %	approx. 24 h
Curing time at +20 °C, 50 % r. H. until it reaches the final strength	approx. 7 d
Processing temperatures adhesive and substrates	from +5 °C to +30 °C
Applied quantity average	approx. 20 g per corner angle
Tensile shear strength as per DIN EN 1465, Alu/Alu, 0.2 mm joint at +20 °C	approx. 18 N/mm ²
Tensile shear strength as per DIN EN 1465, Alu/Alu, 0.2 mm joint at +80 °C	approx. 8 N/mm ²

Component A COSMO® EP-205.110

Colour	grey
Density as per EN 542 at +20 °C	approx. 1.52 g/m ³
Viscosity at +20 °C	medium viscous-pasty

Component B COSMO® EP-201.110

Colour	white
Density as per EN 542 at +20 °C	approx. 1.46 g/m ³



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Viscosity at +20 °C

medium viscous-pasty

General Information

The processing times become shorter at +30 °C to approximately half of the time, at +10 °C, they become longer to approx. double of the time.

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

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 adhesive can be coloured by adding of paste paints COSMO® SP-620, usually up to 1 %, however not more than 3 %.

Paste paints COSMO® SP-620 are added directly after dosing of the two components from the tandem cartridge, then they are mixed to be homogeneous with the adhesive.

Pot-life, processing time, as well as the necessary pressing time or fixing time, can only be determined accurately by self-tests because they are strongly influenced by material characteristics, temperature, mixed quantity, applied quantity, 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 corrosion-protective sealant COSMO® HD-100.411 or the colour variants are applied on the blank aluminium cut surfaces before the connecting elements are bonded.

Bonding

Reactivity and dosing behaviour are considerably influenced by the material temperature; under warm conditions, masses become faster and can be dosed significantly faster. At low temperatures <+7 °C, **homogeneously** heat the cartridges up to max. +35 °C.

Tandem cartridges

The static mixing tube is screwed onto the open cartridge and the cartridge is inserted in the dosing gun.

At an operating pressure of max. 8.0 bar, the air pressure guns COSMO® SP-750.112 and COSMO® SP-750.122, will achieve a working power of 3.3 kN.

Avoid overloading of the tandem cartridge due to too high forces >3.6 kN. If the air pressure guns type COSMO® SP-750.111 or COSMO® SP-750.121 and a connected pressure of 8.6 bar are used, max. 2.8 kN can be reached, i.e. safety is ensured.

Depending on the type or brand of the air pressure gun, and when applying higher operating pressure, the cartridges can be damaged or become leaky due to the different forces caused by the pneumatic cylinders of the guns at usual application temperatures. For this reason, possibly the correct mixing ratios of the adhesive systems cannot be obtained; for instance Sulzer TS493X (Kröger), Schüco 296 704 allow max. 7.0 bar (max. 3.6 kN).

The first approx. 20g of the mixed adhesive (approx. walnut size) are not used for bonding for safety reasons (cartridge filling method)!

Within the processing time, apply the mixed adhesive directly from the static mixer into the profile or onto the surface to be bonded and fit the parts together.

310 ml single Euro-cartridges

The cartridges of component A and component B are cut open. Then, the adhesive is dosed evenly with a mixing ratio of 1 : 1 (parts by weight); after that, it is homogeneously mixed by means of a spatula.

1000 ml single Euro-cartridges

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The Alu-membranes of the cartridges of component A and component B are cut through. Then, after the assembly, the components are dosed evenly into the dosing dispenser with a mixing ratio of 1 : 1 (parts by volume); after that, it is homogeneously mixed by means of a spatula.

Note: Do not exchange component A and component B!

Mixing bowl

Alternatively, the two components are dosed in the mixing bowl using the dosing gun. Accelerators and/or paste paints are added in the adhesive by homogeneous manual mixing. It is applied on the bonding surface by spatula within the pot life and then, the parts are put together.

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.

In case of short interruptions of work, within the processing time, if dosed once more, new, fresh adhesive is filled in the static mixer. In this way, one static mixer can be used for a whole work day.

After work stoppages, make sure to change the static mixer within the specified time.

After the end of work, the used static mixer remains on the cartridge unit; if work starts again, the static mixer is to be replaced. If necessary, remove hardened adhesive from the cartridge nozzle. Now the safety shot, approx. 20 g of adhesive, is required, before bonding can be continued!

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 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.

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.

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.

Bonding of lead: Due to the sublimation characteristics of lead, it is strictly advisable to sand the lead surface as rough as possible. Then, the lead surface to be bonded is to be cleaned with COSMO® CL-300.120 or COSMO® CL-300.150. After the cleaning agent has vaporized and a waiting time of 2-3 minutes, the adhesive is applied onto the lead (keep the time period for the sublimation of the lead as short as possible). Consumption of adhesive approx. 250-300 g/m² depending on surface condition. The wood material, the coating etc. are fit together. The element is pressed with stacking pressure 0.015 N/mm²; pressure can be higher depending on the corrugation of the parts to be bonded. Pressing time is determined by the inherent stress of the material used approx. 6 h/+20 °C.

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

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

Bonding of wood

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

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 packaging 12 Months.

Packaging

2 x 310 ml tandem PP-Euro cartridge, net weight: 890 g

2 x 1 000 ml single PE-Euro cartridges, net weight: 3 000 g

Accessories

COSMO® SP-800.221 - Static mixer

COSMO® SP-800.120 - Static mixer

COSMO® SP-800.230 - Static mixer

COSMO® SP-750.121 - Air pressure gun



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