

OTTOCOLL®

M 560

Technical Datasheet



1-component hybrid polymer STP adhesive

For indoor and outdoor application

Characteristic:

- **Compatible with natural stone**
Does not cause greasy deposits on natural stones
- **Silicone-free**
- **Free of isocyanates**
- **Very broad adhesion spectrum**
Very good adhesion even on difficult substrates, e.g. on damp substrates, plastics, etc.
- **Very strong initial adhesion**
No fixation required
- **Fast thorough hardening**
Shorter processing time
- **Stress-compensating**
Compensates movements

Fields of application:

- Elastic bonding and mounting of various materials such as wood, derived wood products, glass, metals (e. g. aluminium, stainless steel, anodising aluminium, brass, copper), plastics (e. g. unplasticised PVC, plasticised PVC, fibrereinforced plastics etc.), mineral substrates (e. g. brick, tile, ceramic), fireproof building panels (gypsum board etc.)
- For the bodywork and vehicle construction, waggon and container construction, metal construction and apparatus engineering, ship building
- Elastic bonding of mirrors on ceramic, glass, plastic, stainless steel, aluminium, wood, concrete etc.
- Bonding of lacquered and enamelled glass
- Bonding of stone, natural stone and ceramic
- Bonding of window sills, floor strips, decorative strips and stairs
- Bonding of rigid foam boards

Standards and tests:

- Suitable for applications according to IVD instruction sheet no. 30+35 (IVD = German industry association sealants)
- EMICODE® EC 1 Plus - very low emission
- Declaration of no objection – tested for use in food-related area (ISEGA Forschungs- und Untersuchungs-Gesellschaft mbH, Aschaffenburg, Germany)
- Declaration in "baubook" Austria
- French VOC-emission class A+
- Classification according to building certification systems, see the sustainability data sheet

Important information:

EMICODE® is a registered trademark of GEV e. V. (Düsseldorf, Germany)
The initial adhesion can vary clearly depending on the material that is to be adhered and the method of application of the adhesive. According to experience a level application with a notched trowel (1,5 mm toothing) in horizontal lines is recommendable. The adhesive should be sprayed with water, using a spray bottle. When assembling the substrates the adherend should be wet evenly with adhesive by pressing down accordingly. We urgently recommend pre-tests before every application!

For the application we recommend premium equipment such as the hand-operated guns H37, H40, H245.

Before applying this product the user has to ensure that the materials in the area of contact (solid, liquid and gaseous) are compatible with it and also amongst each other and do not damage or alter (e. g. discolour) each other. As for the materials that will be used at a later stage in the surrounding area of the product the user has to clarify beforehand that the substances of content or evaporations do not lead to an impairment or alteration (e. g. discolouration) of the product. In case of doubt the user should consult the respective manufacturer of the material.

Paints, lacquers, plastics and any other coatings must be compatible to the adhesive/sealant. Experience has shown that the adhesive is compatible with a large number of glass coatings (e.g. Lacobel) and also shows good adhesion to many coatings without primer. It is not possible to test all coatings with a reasonable amount of effort and there are a number of cases where the glass is coated by the glass manufacturer with its own paints that are considered suitable and unknown to us. Apart from this, we are not informed about changes and modifications of coated glasses and paints by the glass manufacturer/coater in order to be able to test them with regard to adhesive suitability. In any case, the processing instructions of the glass manufacturer must be observed. If there are no findings regarding compatibility and adhesion, also with regard to the adhesion of the coating to the glass, we recommend preliminary tests.

For bonding or sealing of glass which is exposed to UV-radiation we recommend the use of our high quality silicone adhesives / sealants such as OTTOSEAL® S 110 / S 120 (for sealing of glazing rebate), OTTOSEAL® S 10 (e.g. for bonding), OTTOSEAL® S 7 (for weathersealing) or OTTOCOLL® S 81 (for bonded windows).

For bonding or sealing of transparent plastic material, such as acrylic glass, exposed to UV-radiation we recommend our silicone sealant OTTOSEAL® S 72.

Not suitable for sealing / bonding copper upon impact of UV-radiation and temperature.

The colours of the sealant may be affected by environmental influences (high temperature, chemicals, vapours, UV-radiation). This does not affect the characteristics of the product.

Technical properties:

Skin-forming time at 23 °C/50 % RH [minutes]	~ 10 - 15
Starting bonding at 23°C [kg/m ²]	~ 180
Curing in 24 hours at 23 °C/50 % RH [mm]	~ 3
Processing temperature from/to [°C]	+ 5 / + 40
Viscosity at 23 °C	pasty, stable
Density at 23 °C according to ISO 1183-1 [g/cm ³]	~ 1,5
Shore-A-hardness according to ISO 868	~ 50
Stress expansion modulus at 100 % according to ISO 37, S3A [N/mm ²]	~ 1,5
Tensile expansion according to ISO 37, S3A [%]	~ 300
Tensile strength according to ISO 37, S3A [N/mm ²]	~ 2,7
Temperature resistance from/to [°C]	- 40 / + 100 (1)
Shelf life at 23 °C/50 % RH [months]	12 (2)
Maximum permissible tension (for bonds without load transfer) for designing the area to be bonded [N/mm ²] 0,001	

1) temporarily (90 minutes) up to + 150 °C

2) from date of manufacture

These data are not suitable for the issue of specifications. Please contact OTTO-CHEMIE before issuing specifications.

Pretreatment:

All adherent surfaces must be clean and any contaminant such as release agents, preserving agents, grease, oil, dust, water, old adhesives or sealants and other substances which could affect adhesion, should be removed. Cleaning of non-porous substrates: Apply OTTO Cleaner T (airing time approx. 1 minute) using a clean, lint-free cotton cloth. Cleaning porous substrates: Clean surfaces with steel-wire brush e. g. or a grinding disk to remove loose particles.

The adherent surfaces have to be clean, free from dust and grease as well as sustainable.

Primer Table:

The requirements for elastic sealing and bonding depend on external influences. Extreme changes in temperature, expansibility and tensile strength, repeated contact with water, etc. demand a lot from a bonding. Therefore the use of mentioned primers is absolutely necessary.

Acrylic glass/PMMA (Plexiglas®, etc.)	+
Aluminium	+ / 1216

Aluminium anodized	+
Aluminium powder-coated	T / 1101
Concrete	+ / 1105 / 1215
Concrete block	+ / 1105
Stainless steel	+
Iron	T
Epoxid resin coating	+
Fibre cement	+ / (1105) (1)
Glass fibre reinforced plastics	+
Glass	+
HPL boards	+
Wood, painted (solvent systems)	+ / 1226
Wood, painted (aqueous systems)	+ / 1227
Wood, varnished (solvent systems)	+ / 1227
Wood, varnished (aqueous systems)	+ / 1227
Wood, untreated	T / (1105) (1)
Ceramic, glazed	+
Ceramics, unglazed	+ / 1215 / 1216
Plastic profiles (unplasticized, e. g. Vinnolit)	+
Copper	+ (3)
Painted glass	+ / 1216 / T
Melamine formaldehyde resins (e. g. Resopal®)	+
Brass	+
Natural stone	+ / 1216 (4)
Polycarbonate	+
Polyester	+ / 1216
Polystyrene	+ / 1217 / 1227
Cellular concrete	+ / (1105) (1)
Plaster	1105 / 1215
PVC unplasticized	+
PVC-soft-foils	+
Tinplate	+ / 1216
Zinc, galvanised iron	+ / 1227

- 1) For the adhesion of mirrors OTTO Primer 1105 is to be used solely.
- 2) Observe drying time
- 3) See "Important information"
- 4) Only suitable for bondings. For sealings we recommend our OTTOSEAL® S 70.

+ = good adherence without primer
- = not suitable
T = Test/pilot test advised

Application information:

In order to achieve optimal adhesion and good mechanical characteristics, the entrapment of air in the joint must be avoided.

Curing time can be reduced by humidification and increased temperatures.

For the full-surface bonding of steam-tight substrates the adhesive should be moistened.

Due to the many possible influences during and after application, the customer always has to carry out trials first.

The instructions described below apply both to the bonding of glass mirrors and to the bonding of painted glass.

Processing as mirror adhesive:

Only mirrors should be bonded, which have a reflecting and protection layer according to DIN 1238 5.1 and DIN EN 1036. In case of doubt please contact the manufacturer of the mirror.

When selecting the painted glass, it is important to take into account the customary local exposure, as well as the layer thickness and light transmission of the paint. With some non-opaque coatings it is possible that even transparent adhesives are visible on the front side.

Mineral substrates such as concrete, plaster, masonry, gypsum board, cellular concrete as well as untreated wood have to be primed with OTTO Primer 1105. This is essential. The use of this primer as barrier does not only improve the adhesion, but it is also a barrier to alkaline. Without a barrier the alkaline in combination with moisture can (amongst others) damage the back side of the mirror.

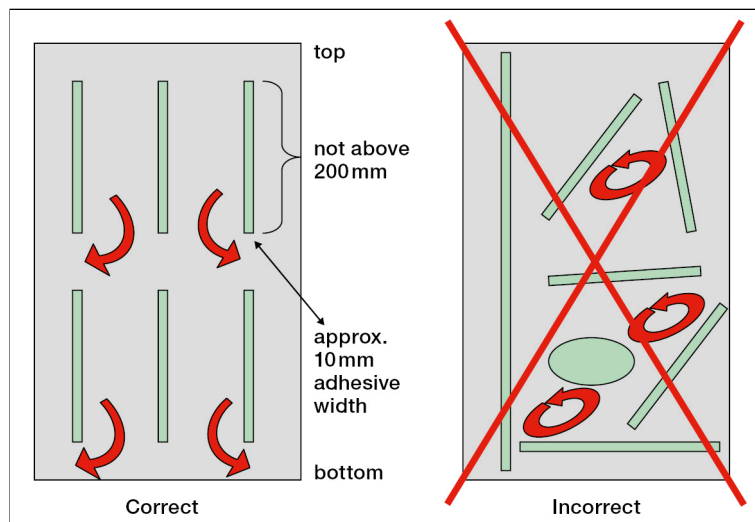
Never apply the adhesive in a point-shaped manner, but in vertical strips. The length of one adhesive strip should not exceed 200 mm. For each m² of glass/mirror at least 3 adhesive strips must be applied in such a way that the strip width does not exceed 10 mm after pressing on the glass/mirror and the distance between the adhesive strips is at least 200 mm, so that the air circulation required for vulcanisation is possible. An adhesive surface of at least 100 cm²/kg glass/mirror is required for optimum load-bearing capacity.

In order to avoid the confinement of the splitting product, a minimum space of 1,6 mm between mirror and substrate has to be kept mandatory. This space can be avoided most purposefully by sticking spacers onto the mirror. The minimum space specified serves the outbreathing of the splitting product. It does however not overrule the minimum distances for ventilation given by the Institute of Glass Manufacturing in Hadamar.

The mechanical strength, necessary for the bonding, will be achieved after approx. 48 hours at the earliest (+23 °C, approx. 50% RH). Until this point a mechanical fixation is necessary. This can be done with removable mechanical aids, e.g. blocks of wood, wedges or single-sided adhesive tapes used at the front of the mirror (mirror side) or with double sided adhesive tapes such as OTTOTAPE fixing tape applied in a double layer to the back of the mirror (rear).

We recommend OTTOSEAL® S 70 for the external sealing of the glass/mirror in connection with natural stones, and OTTOSEAL® S 120 and OTTOSEAL® S 121 in connection with other materials such as ceramics, metal, glass, etc.

Please note: The mirror must not be sealed before the mirror adhesive has not completely cured and splitting product has not discharged. Curing takes about 7 days. Concerning mirrors without a glass rear only the vertical mirror edges should be sealed, to avoid damaging of the mirror coating by condensation. Please observe the following drawing.



When mounting mirrors on ceilings or on walls, whose upper edge is more than 4 m above the floor must be secured additionally mechanically with screws or by placing them in frames.

STORAGE:

Please observe the recommended shelf life which is printed on the packaging.

We recommend to store our products in unopened original packagings dry (< 60 % RH) at temperatures of +15 °C up to +25 °C. If the products are stored and / or transported at higher temperatures / air humidity for longer periods (some weeks), a diminution of durability or a change of material characteristics may arise.

If stored for a longer period at higher temperatures (≥ 30 °C) a diminishment of the initial adhesion may occur.

Packaging:

	310 ml cartridge
black	M560-04-C04
grey	M560-04-C02
white	M560-04-C01
Packaging unit	20
Pieces per pallet	1200

Safety precautions:

Please observe the material safety data sheet.

After curing the product is completely odourless.

Disposal:

Information about disposal: Please refer to the material safety data sheet.

Warranty information:

All information in this publication is based on our current technical knowledge and experience. However, since conditions and methods of use and application of our products are beyond our control, we suggest that you test the product before final use. Information given in this technical data sheet and explanations of OTTO-CHEMIE in connection with this technical data sheet (e.g. service description, reference to DIN regulations etc.) is not to be seen as a warranty. Warranties require a separate written declaration of OTTO-CHEMIE to prove their validity. The characteristics stated in this data sheet define the characteristics of the article broadly and conclusively. Suggestions of use are not to be taken as confirmation of the appropriateness for the recommended intended use. We reserve the right to alter the product, adjusting it according to technical progress and new developments. We are at your disposal both for inquiries as well as specific application problems. If a governmental approval or clearance is necessary for the application of our products, the user is responsible for the obtainment of such. Our recommendations do not excuse the user from the obligation to take into consideration the possibility of infringement of third parties' rights and - if necessary - resolving it. For the rest our general terms and conditions apply, in particular regarding a possible liability for defects. You can find our general terms and conditions on our homepage: <http://www.otto-chemie.de/en/terms-and-conditions>