



OTTOCOLL®

M 500

Technical Datasheet



1-component hybrid polymer STP adhesive

For indoor and outdoor application

Characteristic:

- **Extremely water-resistant**
For bonds with high water exposure
- **Very good adhesion on many materials**
No pre-treatment required
- **Compatible with natural stone**
Does not cause greasy deposits on natural stones
- **Also bonding to damp surfaces**
No lost working time due to drying of the substrates
- **Elastic**
Compensates movements
- **Silicone-free**
- **Free of isocyanates**
Harmless to health

Fields of application:

- Bonding of stone, natural stone and ceramic
- Bonding of lacquered and enamelled glass
- Bonding of OTTOFLEX® sealing strip in the overlapping area and accessories such as sealing tape, corner tapes and sealing sleeves (according to the requirements of ETAG 022)
- Bonding of mirrors on ceramic, glass, plastic, stainless steel, aluminium, wood, concrete, etc.
- Bonding of window sills, floor strips, decorative strips and stairs
- Bonding in body and vehicle construction, carriage and container construction, metal and device construction, shipbuilding
- Bonding in food-related areas
- Bonding and mounting different materials, such as wood, wooden materials, plastics, metals and mineral substrates

Standards and tests:

- Declaration of no objection – tested for use in food-related area (ISEGA Forschungs- und Untersuchungs-Gesellschaft mbH, Aschaffenburg, Germany)
- Suitable for applications according to IVD instruction sheet no. 12+19-1+21+24+30+31+35 (IVD = German industry association sealants)
- French VOC-emission class A+
- Declaration in "baubook" Austria
- EMICODE® EC 1 Plus - very low emission
- Classification according to building certification systems, see the sustainability data sheet

Important information:

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.

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Technical properties:

Skin-forming time at 23 °C/50 % RH [minutes]	~ 20
Curing in 24 hours at 23 °C/50 % RH [mm]	~ 2 - 3
Processing temperature from/to [°C]	+ 5 / + 40
Viscosity at 23 °C	pasty, stable
Density at 23 °C according to ISO 1183-1 [g/cm³]	~ 1,4
Quantity of adhesive (rm/cartridge)	~ 4 (1)
Shore-A-hardness according to ISO 868	~ 55
Permissible movement capability [%]	10
Stress expansion modulus at 100 % according to ISO 37, type 3 [N/mm²]	~ 1,8
Tensile expansion according to ISO 37, type 3 [%]	~ 230
Tensile strength according to ISO 37, type 3 [N/mm²]	~ 3,5
Temperature resistance from/to [°C]	- 40 / + 90
Shelf life at 23 °C/50 % RH for cartridge/foil bag [months]	12 (2)
Shelf life at 23 °C/50 % RH for pail/drum [months]	9 (2)

1) Consumption with OTTO Flat fishtail nozzle (depending on adhesive thickness)

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 demands on elastic sealings and bondings depend on the respective exterior influences. Extreme fluctuations in temperature, tensile or shear forces, repeated contact with water etc. demand high requirements of a bonding. In such cases it is advisable to apply primer according to the recommendations of our technical department (e. g. +/OTTO Primer 1216) in order to achieve a resilient bonding.

Acrylic glass/PMMA	+ / 1227
Acrylic bathroom surfaces (e. g. bath tubs)	1101 (1)
Aluminium	+
Aluminium anodized	+
Aluminium powder-coated	T / 1216
Concrete	1105 / 1215

Concrete block	1216 (2)
Lead	T
Stainless steel	+ / 1216
Iron	T
Epoxid resin coating	+ / 1216
Fibre cement	1105 / 1215
Glass	+
Wood, painted (solvent systems)	+
Wood, painted (aqueous systems)	T
Wood, varnished (solvent systems)	+
Wood, varnished (aqueous systems)	+
Wood, untreated	T / 1225
Ceramic, glazed	+
Ceramics, unglazed	+ / 1215 / 1216
Plastic profiles (unplasticized, e. g. Vinnolit)	T / 1227
Copper	+ (3)
Painted glass	+ / 1216 / T
Melamine resin panels	+ / 1216
Brass	+
Solid surface material	+ / 1216 / 1226
Natural stone / marble	1216 (2)
Polyester	+ / 1216
Polypropylene	-
Cellular concrete	1105
Plaster	1105 / 1215
PVC unplasticized	1217 / 1227
PVC-soft-foils	1217
Tinplate	+ / 1216
Zinc, galvanised iron	1216 / 1227

- 1) Not recommended for elastic jointing in sanitary areas.
- 2) Only suitable for bondings. For sealings we recommend our OTTOSEAL® S 70.
- 3) See "Important information"

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

Application information:

In order to achieve good adhesion and good mechanical properties air entrapment 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. Our product can be overcoated with paint or varnish. The compatibility between the coating and our product has to be checked before the application by the user/processor - possibly under production conditions. Our OTTO application technology will gladly support you non-committally. If, in exceptional cases, after successful compatibility test our product is coated over the entire surface, this coating must also be able to follow the elastic movement of the sealant. Otherwise crack formations in the coat of paint or optical impairments may occur. Due to the many possible influences during and after application, the customer always has to carry out trials first. 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. 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 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 10 cm²/kg glass/mirror is required for optimum load-bearing capacity.

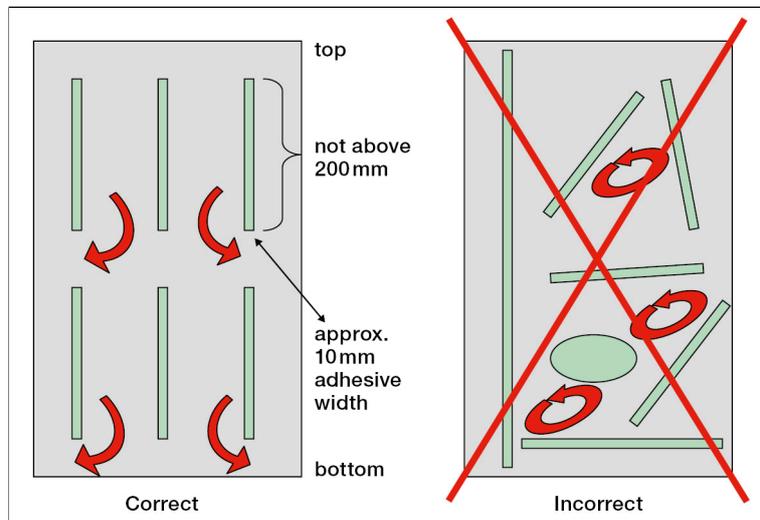
In order to avoid the confinement of the crosslinker splitting product, a minimum space of 1.6 mm between mirror and substrate has to be kept mandatory. This space can be avoided most purposefully by stickingspacers. The minimum distance prescribed here serves the outbreathing of the crosslinker splitting product.

The recommended adhesive layer thickness is 2 - 4 mm.

The strength values required for bonding are reached after 48 hours at the earliest (23°C, approx. 50% RH). Until then a pre-fixing is necessary. This can be done from the front (glass side) with removable mechanical aids such as blocks, wedges or one-sided adhesive tapes or from the back (reverse side) with double-sided adhesive tapes such as OTTOTAPE Fixing Tape (double-sided).

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.

It should be noted that sealing may only take place after complete curing of the adhesive and escape of the splitting products. This time is about 7 days. In the case of coated glasses without glass backs, only the vertical glass edges should be sealed in order to avoid damage to the glass coating due to condensation. Please note the following drawing.



When bonding to ceilings and walls (if the upper edge of the glass is 4 m above the floor surface), the glass must additionally be mechanically secured, e.g. by screwing or inserting it into frames.

Packaging:

	310 ml cartridge
black	M500-04-C04
grey	M500-04-C02
white	M500-04-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>