



Mirror bonding

General information

As, for esthetical reasons, mirrors are mostly applied to walls and doors without any mechanical support, special adhesives are used to fasten these mirrors "invisible" onto the supporting surfaces.

Mirrors are sensitive products, because of which not every mirror can be glued with every glue onto every surface.

It is evident that care has to be taken. The information given below will be helpful to achieve a good result. Besides the mentioned products in this bulletin, within den Braven assortment, there are more products for bonding mirrors, however these products are not advised as specific mirror adhesive.

The Mirror

The mirror is made of glass. On the back of the mirror a silver-layer and mostly a copper- or led layer are applied which are covered/protected with special coating layers. The silver- and copper or led layers are sensitive for contact with water, moisture or chemical fumes or liquids.

In case of contact, these metal layers can be attacked which will show through dark or hazy spots in the mirror. To avoid this attack the metal layers are to a certain extent protected by special coatings, although a 100% protection can't be achieved as this will depend on the circumstances of a particular application as well (See the instructions of the mirror manufacturer as well).

In this Technical Bulletin it is assumed that the quality of the mirror does apply to the Standard **DIN EN 1036-2** (For other mirrors like safety and plastic based and heated mirrors do contact the mirror- and adhesive manufacturer).

The adhesives

As adhesives for mirrors, only certain products, that are not aggressive towards the coating or metal layers, can be used. From the past, some solvent containing adhesives are still in use like **Zwaluw Mirrorfix-SBR** and are regarded suitable if application is done in the right way. However, Nowadays products, combining a good bond strength with a certain flexibility which will allow a difference in movement between the mirror and the substrate, are used.

In the Zwaluw program this is:

- ▶ **Zwaluw Mirrorfix MS**

Surfaces

The surfaces the mirror has to be applied on, do have to meet certain requirements like: Sufficiently even, so the mirror can be applied without tension. (Smaller irregularities can be picked up by the adhesive).

Sufficiently strong (stronger than the force that will be supplied to the substrate by the weight of the mirror)

Free of dust, grease and dirt. Sufficiently dry.

(For example a layer of stucco on a wall has to be dry enough to make sure that no accumulation of water can take place behind the mirror)

Although the adhesives do have very good and universal adhesion properties there can be surfaces where no adhesion can be achieved. Specially on unknown surfaces, plastics and coatings an adhesion test is advisable.

Application of the adhesive

Zwaluw Mirrorfix-SBR:

Only to be used for mirrors up to 6 mm thickness. Apply the glue both-sided (on the back of the mirror and on the surface) by means of a dented spreader (3mm tooth depth).

Leave the layers of glue open during 15-20 minutes, allowing part of the solvent to evaporate.

Then push the mirror onto the surface. Make sure it is directly in the right position as this can't be adjusted. Depending on the thickness and weight of the mirror it may be necessary to support the mirror for a few hours.

Do not apply the adhesive in strings or dots as this can cause staining! Besides dots result in a strong delay of strength development of the assembly.

Zwaluw Mirrorfix-MS

The adhesive with V-nozzle to be applied in vertical beads. Distance in between the vertical beads; approx. 10 cm. press the mirror to the wall until a distance in between remains of 2-3mm. Repositioning of the mirror is still possible.

By remaining a space of 2-3 mm, allowing some ventilation



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behind the mirror. This is even more necessary in wet areas to avoid condensation or water accumulation at the back of the mirror, which could result in damaging the reflective silver-layer.

The adhesive bead of 2-3 mm can absorb possible movement between the mirror and the wall.

Depending on the weight of the mirror it may be necessary to support the mirror during several hours. During the curing of the adhesive (curing speed approx. 2 mm per 24 hours) strength of the bond is build up
Maximum strength is achieved after complete cure, which might take 5 –7 days.

If joints between mirrors or mirror and wall have to be sealed to prevent water penetration behind the mirror it is advisable to do this sealing after the adhesive is fully cured. (approx. 1 till 2 weeks)

(If sealing is done to early the adhesive can be shut from the necessary moisture supply resulting in curing defects).

By sealing the joints around the mirror, water penetration through these joints is avoided, however ventilation is stopped as well which implicates that one has to be sure that no water accumulation, behind the mirror, through for instance the substrate can take place.

Liability

All supplied information is the result of our tests and experience and is of general nature. However they do not imply any liability. It is the responsibility of the user to verify by his own tests if the product is suitable for the application.

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