

PREFIT

FITTINGS FOR GLASS



Base of assembly with UV-glueable glass door hinges

Instructions for use for glass bonding with UV-curing adhesives.

1. Material selection (check suitability of adhesive):
Depending on the chosen material and the corresponding adhesive, different bonds will have different final strengths:

Maximum strength:

- glass/glass
- glass/metal (stainl. Steel)
- glass/stone (granite)
- glass/wood (hard wood)

Medium strength:

- glass/plastic
- tempered glass
- laminated glass
- coloured glass
- ornamental glass
- sand-blasted glass
- sanitised glass

Low strength:

all porous or open-pore materials and heavily structured (> 0,5 mm) materials as well as lacquered and coated materials.

The indications refer to transparent, UVA light permeable float glass. Clear float glass, mirror (on front) and tempered glass can be bonded without problems. Special glasses may lead to lower strength values or cannot be bonded at all. Problematic are all structured glasses, like ornamental glass, wired glass, sand-blasted glass or sanitised glass. The UVA light permeability depends on the glass thickness and how intensely coloured the glass is.

Attention: Glasses with high UV absorption like laminated glass, intensely coloured glass (e.g. green/blue/bronze) cannot be bonded with common UV adhesives. For these applications, only the highly sensitive adhesives are suitable.

Remember: The smoother the bonding surfaces and the thinner the adhesive layer, the stronger and more load-resistant the bond. When bonding glass to metal, the metal parts should be free of separating agents (e.g. grease, polishing agents, silicones, oils, etc.) and they should not be coated in any way (chrome, nickel, lacquer, etc.). Stainless steel is the most suitable material.

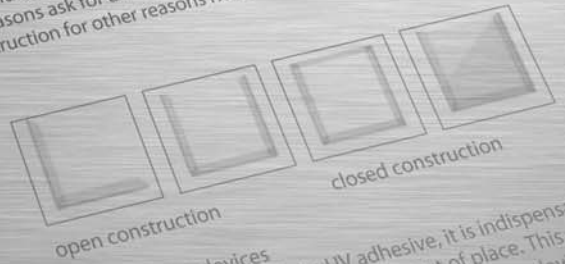
2.2. Heating
In order to obtain a durably stable bond, it is indispensable to heat parts prior to bonding in order to remove any invisible condensation. All bonding parts must be slowly and evenly heated to avoid any tension build-up in the later bond.

- Temperature: approx. 30°C above room temperature
 - Use hot air unit or blow dryer
 - Parts and adhesive should have room temperature.
- Disregarding any of these recommendations may lead to considerable, in cases not immediately noticeable loss of strength, finally resulting in a break of the bond

2.3. Pyrosil® surface pre-treatment
The additional pre-treatment of problematic surfaces with the PYROSIL® technology results in a durably high tensile/shear strength as well as a better moisture resistance of the bond. Especially important for high load-bearing glass/metal bonds.

3. Choosing the right adhesive
Depending on the requirement of the bonding materials, applicable loads, and intentions of use of the finished object, different UV-curing adhesives are recommended.

Glass/glass bonds: When planning an all-glass construction, a "closed" (i.e. self-stabilising) construction should always be strived for in order to obtain the highest possible stability (see illustrations). Elastic adhesives with medium viscosity are exclusively suitable for "closed" constructions. Should design reasons ask for an "open" construction or can a "closed" construction for other reasons not be realised.



4. Positioning devices
For optimum curing of the UV adhesive, it is indispensable to prevent bonding parts from sliding out of place. This task is considerably facilitated when using positioning devices

5. Application of adhesive

- Before applying the adhesive, it is recommended to check bonding parts fit in their intended position. This is best achieved by building the complete construction without bonding surfaces.

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not suitable.
Recommendation: IP clean

Assembly Instructions

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Assembly Instructions

Ease of assembly with UV-glueable glass door hinges

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2. Preparing the bonding surfaces

2.1. Cleaning

- Bonding surfaces must be absolutely clean, free of grease and dry.
- Use appropriate cleaners when UV bonding (without tensides and separating agents).
- Common glass cleaners are in most cases not suitable.
- Recommendation: IP cleaner in combination with steel wool

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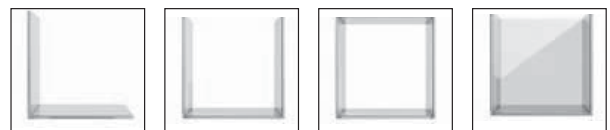
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open construction

closed construction

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For optimum curing of the UV adhesive, it is indispensable to prevent bonding parts from sliding out of place. This task is considerably facilitated when using positioning devices

5. Application of adhesive

- Before applying the adhesive, it is recommend to check if bonding parts fit in their intended position. This is best done by building the complete construction without bonding with

the help of positioning devices.

- *The adhesive should be applied within 5 minutes after having heated the parts. Should a longer period have passed, the parts should be heated again.*
- *Bonding should preferably be executed in horizontal position, vertical application of the adhesive may lead to problems.*
- *Too much adhesive reduces the strength of the bond and increases the workload for removing excess adhesive.*
- *Dispensing systems allow a precise and economic application of the adhesive.*

5.1 Adhesive application BEFORE joining the parts

Medium viscosity adhesive is always applied in form of a caterpillar before joining the parts.

When bonding surfaces, the adhesive is always applied before joining the parts.

When bonding horizontally, the bonding parts should be evenly and carefully lowered to avoid trapping any air bubbles. The weight of the bonding parts is sufficient to evenly spread the adhesive over the complete bonding area.

5.2 Adhesive application AFTER joining the parts

Low viscosity adhesives possess a capillary action creeping into the bonding gap by itself. Therefore the bonding parts can be joined before applying the adhesive.

Do not work on all parts at the same time but build the object step by step. Should the adhesive not have spread over the whole bonding surface, the parts should be slightly lifted and lowered again (enlarging and decreasing the bonding gap) before curing.

6. Curing (exposure to UV light)

Curing the bonding connection is done in two steps:

- 1. By pre-curing a working strength (approx. 70 % of the final strength) is achieved. At this stage, excess adhesive outside the bonding surface can easily be removed.*
 - 2. After the final curing the bond is fully functional and can be put under load.*
- *Use suitable UV lamp: The lamp should not be shorter/smaller than the bonding edge/surface to avoid build-up of tensions due to uneven curing.*
 - *For optimum final strength, use only white light, black light does not have the required intensity and therefore does not achieve maximum strength.*
 - *Position lamp as close as possible to the bonding surface.*
 - *Never move parts during curing process and do not expose to vibrations.*
 - *Pre-curing takes between 10 seconds to approx. 2 minutes, depending on type and efficiency of the lamp.*
 - *Exposing the bond longer than necessary to UV light does not have any negative effect, but does not improve the bond either.*
 - *After pre-curing, remove any positioning devices and clean object from possible adhesive residues. special cleaner, glass scraper, steel wool.*
 - *End-curing the bond: expose for between 60 seconds to approx. 5 minutes depending on the type of lamp.*

All UV lamps are equipped with UV filters to avoid any damage to eyes and skin. For your own safety, you should additionally use appropriate protection, for example, Art.Nr. 20320 UV protective glasses with UV filter. (Recommended by the Trade Association).

7. Test bonding

If you are uncertain of ideal bonding conditions, always make trial bonds:

- *Bond parts following above instructions.*
- *Test strength of the bond by subjecting to stresses in excess of those to which it would normally suffer, e.g. impacts, tilting or sudden movements. If necessary use tools like pliers etc.*
- *Put under load until parts disconnect or break to determine the load limit.*

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