



Leaf-enclosing door panel

Bonding technology

Introduction

For many years, in addition to the classic door designs with insert panel, the market of windows and doors has been offering the possibility of making leaf-enclosing doors with attachment panel. Compared with the classical variants, this type of door design gains more and more acceptance in the market due to its attractive appearance, safety-related advantages, improved heat-resistance, as well as its less demand on care.

For the production of this kind of door, 1- and 2-component STP- and PUR-based adhesives are used for gluing of top coat and section frames.

For this application, Weiss is offering the 2-C-STP construction adhesives **COSMO® HD-200.101** and **COSMO® HD-200.121** as well as their colour variants, as product solution with system primer. Due to its characteristic properties as flexible, controlled curing hybrid adhesive, it has just turned out to be an optimum product option compared with the 1-C-adhesives.



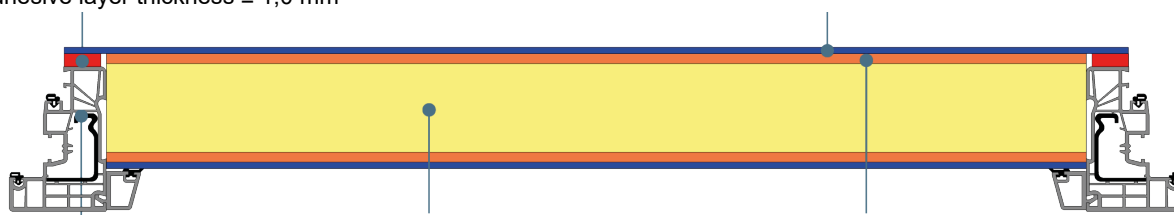
Construction adhesive
adhesive layer thickness $\geq 1,0$ mm

Top coat (aluminium, or GRP)

Leaf frame profile
(Aluminium powder-coated,
or PVC white)

Inner core
(PUR-or PS-rigid foam)

(Inner core is allready bonded
with top coat)



Loadability of elements

When frames and coatings for the leaf-enclosing entrance doors are glued together, combinations of equal and also unequal materials are used. Especially higher temperature differences (external and internal temperature) in the element cause shearing deformation in the adhesive layer. This can result in too high shearing load, the adhesive breaks cohesively.



Weiss Chemie + Technik
GmbH & Co. KG
Hansastraße 2
D-35708 Haiger

Tel.: +49 (0) 2773 / 815 - 0
Fax: +49 (0) 2773 / 815 - 200
Email: ks@weiss-chemie.de
Web: www.weiss-chemie.de

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To be able not to exceed the maximum permanent deformation, the **minimum adhesive layer thickness (min. 1 mm)** must be kept for production.

Furthermore, under these conditions, dynamic loads (torsion and impact load) occur in the element that must be considered. The cured adhesive damps operating loads directly acting together with the adhesive joint thickness.

Please, pay attention to the strict observance of the listed processing parameters!

For the production of the elements, the material processing temperature must be kept between min. +15 °C and max +35 °C.

Preparation

The surfaces to be glued are cleaned with **COSMO® CL-300.150 cleaner**.

The surfaces are carefully cleaned longitudinally with a clean, lint-free cloth.

Before applying the adhesive, the surfaces to be glued must be clean, dry, free of dust and grease, and the cleaning agent must be completely dried.

Displaced powder mist must be completely removed from all surfaces to be glued and adjacent areas.

Plastic surfaces (PVC, decorative films, powder lacquers, etc.) must be pre-treated before gluing using the primer **COSMO® CL-310.110**. In each case, the user has to test the adhesiveness of the surfaces, also of primed surfaces!

Caution:

Powder lacquers, especially structural lacquers, can contain portions of PTFE- and wax that can clearly reduce the bonding strength – this requires sufficient preliminary tests!

Blank aluminium surfaces are permitted to be glued with **COSMO® HD-200.101** and **COSMO® HD-200.121** as well as their coloured variants if no primer is applied before!

Bonding

For the application of the adhesive, please observe the instructions in the Technical Datasheet.

The thickness of the bonding joints of ≥ 1 mm is achieved, for instance, with an adhesive tape, e.g. a glazing tape.

On the external area of the top coat, for instance, a glazing tape, thickness min. 1 mm, (no compressible foam tape) is stuck on; this provides for a continuously homogeneous bonding joint thickness.

The adhesive is homogeneously applied as adhesive bead, all around with distance to the adhesive tape. The adhesive is distributed by the pressing force of the top coat until it reaches the bonding joint thickness. Check the ideal quantity of the applied adhesive (bead size and number) on a sample section (Make sure that the adhesive preferably fully wets the bonding surfaces after pressing on).

Directly after the application of the adhesive, the top coating/door panel is placed on, aligned and pressed on.

Pressing duration: min. 3 hours at +20 °C.

Important instructions

This description shall be understood as technical support for bonding of attachment door panels.

Due to the variety of door systems existing at the market it is not possible to provide the complete product range of system designs and the preparation required in each individual case.

Only instructed personnel in specialist firms are allowed to use the product!

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.



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Web: www.weiss-chemie.de