

Problem

Details are required on how to test laminated glass panes in the SBI

Agreement

Testing of laminated glass panes, laminated safety glass panes (according to EN 14449) and fire-resistant glazing elements (CUAP) in the SBI-test

Note: This Recommendation is only applicable to glass panes, not for windows. Windows shall be tested according to the windows product standard.

When glass panes have to be tested in the SBI test according to EN 13823 then the mounting and fixing and the direct rules of application of the test result shall be as described in the following:

Parameters which are relevant for the test procedure:

- Design of the glass panes
- Type and thickness of the glass used for the external glass pane layers
- Type (chemical composition) and thickness of the intermediate layers
- Type of the external coatings of the glass pane
- symmetrical or unsymmetrical construction of the glass pane;

General:

A vertical joint at a distance of 200 mm from the internal edge of the SBI test specimen and the horizontal joint arrangement will not be considered (= if they shall be considered then the product shall be treated as a window, handled e.g. in EN 14351-1).

The two wings of the test specimen are arranged on the trolley according to EN 13823, picture 2. On the backside there will be arranged a support frame made out of metal profiles. The function of this support frame is just to hold the glass against the lower U-profile and the upper stop for preventing the glass panes to fall over. The distance of the backside of the glass panes to the backing board is at least 80 mm. The measures for having free ventilation (see chapter EN 13823, 5.2.2 a) have to be taken.

When doing tests in the SBI-test, sealings and spacer bars have to be included in the test specimens.

Comment: When determining the PCS-values according to EN ISO 1716, sealings and spacer bars shall not be considered. That is also valid for the calculation of the PCS-values used as base for the purpose of classification according to EN 13501-1.

A **Symmetrical construction of the glass panes**

A.1 **Symmetrical construction of glass panes with one intermediate layer**

A.1.1 One single test (one test specimen) be carried out with a glass which has the thinnest thickness of the external glass panes (per type of glass to be used) and the intermediate layer which shows the maximum thickness and which verified the maximum heat value (PCS value) according to EN ISO 1716.

A.1.2 One single test (one test specimen) be carried out with a glass which has the thinnest thickness of the external glass panes (per type of glass to be used) and the intermediate layer which shows the maximum thickness and which verified the maximum heat value (PCS value) according to EN ISO 1716 and a possible external coating (e.g. foils, markings or enamels, etc.) with the most critical coating to be verified first by determination of the heat value according to EN ISO 1716.

A.1.3 With the most critical variant found from the tests A1.1 and A1.2 another two test specimens are tested so that the three test results on hand for this variant will be the basis for classifying the reaction to fire of the laminated glass.

The results with the smallest thickness of the glass will also include the use of larger glass thickness.

The use of an intermediate layer with the largest thickness and the most critical PCS also includes the use of intermediate layers with the same or a smaller thickness and/or a smaller PCS.

A.2 **Symmetrical construction of glass panes with multi-layer intermediate layers**

Tests in accordance with clause A.1 shall be carried out with the maximum number of intermediate layers, testing with both the thinnest and thickest layers.

B **Testing with asymmetrical construction of the glass panes – single-layer intermediate layer**

B.1 **Asymmetrical construction of the glass panes – single-layer intermediate layer**

For each side of the glass pane one single test (one test specimen) shall be performed according to section A1.1.

For the variant, which shows the more critical test result, tests following section A1.2 and A1.3 shall be carried out.

B.2 **Asymmetrical construction of the glass panes – multi-layer intermediate layers**

Test shall be done following test B1 with the maximum number of intermediate layers.

Comment: Using the above mentioned rules it is possible to make a grouping for getting different classifications and therefore families depending on

- the thickness, the type, the PCS-value and the number of the intermediate layers
- the type and thickness of the glass and
- the type of the external coating.