BF Bulletin 008/ 2010

Bundesverband
Flachglas

Installation recommendations for integrated systems in multiple-sheet insulating glass

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Introduction

There are no generally applicable regulations covering the products “integrated systems in multiple-sheet insulating glass” (ISiM). This Technical Guide describes how to install such systems in suitable structures and supplements the BF Technical Guides 005 and 007.

1.0 Scope of application:

1.1 The instructions and guidelines listed here do not supersede the regulations valid at the time of execution for the glazing of sheets of insulating glass in general and those of the system manufacturer. This Technical Guide is a supplement to the special case of systems in the cavity. These installation and glazing guidelines apply only to integrated systems in multiple-sheet insulating glass (ISiM) for fitting in insulating glass which is used in building construction in line with product requirements in window, facade and partition wall systems made from tried-and-tested standard materials and sections conforming to state-of-the-art technology. Compliance with this guideline is absolutely essential for installation and the prior condition for a warranty. Compliance with this guideline enables the builder to produce technically and physically flawless glazing using ISiM. This guideline is essential for obtaining and maintaining the typical functions of IsiM.

1.2 For object-related boundary conditions not recorded by this guideline, which must be clarified in detail prior to manufacture and installation, the consent of the system manufacturer is required for installation situations. The system manufacturer can give individual consent in these cases on an object-related and system-related basis.

1.3 This guideline applies only to rooms at normal room temperature and air humidity. It does not apply to swimming pools, special wet rooms and rooms subject to stresses and demands that extend beyond the norm. The specific regulations for swimming pools and wet rooms apply here. The generally valid guidelines and regulations and the DIBt (German Institute of Structural Engineering) Construction Products List published by the associations for professional glazing – in their latest versions – apply. The following in particular apply:

- VOB/C ATV DIN 18 361; “Glazing works”
- DIN/ÖN/EN-standards “Glazing works”
- Guidelines of the insulating glass manufacturers
- The generally accepted technical rules and standards
- Relevant parts of DIN V 18 073 “Roller shutters, awnings, rolling doors and other blinds and shutters in buildings – terms and requirements”
- The system description of the frame manufacturers

2.0 Glazing of integrated systems in multiple-sheet insulating glass

2.1 Requirements

A glazing system is based on the basic requirements of:

- a tight glazing system
- a sealant-free and
- outward-opening (steam-pressure equalizing) rebate area, and
- compatibility of all the materials used

These and divergent glazing systems, e.g. structural glazing, glued window systems, all-glass corners and glass joints etc. must be coordinated with the system manufacturer. The decision as to the effectiveness and suitability of the chosen design can only be made by the company carrying out the work, since it is the company which must ensure the operational capability of the overall glass system (ISiM) and construction.

2.2 Glass rebate formation

When dimensioning the glass rebate, it is necessary to bear in mind that the overall glass thickness and the edge seal width differ from usual glass systems.

2.3 Blocking

In some ISiM units, space must be provided in the glass rebate for cable routing or system-specific components. Nevertheless, functional and rule-compliant blocking of the glass element must be ensured.

3.0 Storage, transportation, installation, testing

3.1 Functional test

Storage, transportation and handling (vertical and horizontal) are system-specific and must be carried out in accordance with the manufacturer's specifications.
The insulating glass units with ISiM must usually be installed perpendicular and flush.
After installing in casement or fixed glazing, a system-specific functional test must be carried out after the insulating glass unit has been adjusted and aligned.
Damage and changes to the cables, cable connections, cable joints and other system components which are located on or outside the insulating glass element are not permitted. These elements must be properly protected during storage, transportation and installation.
Each ISiM unit must be function-tested – if necessary several times – during performance of the construction work. This includes, in addition to checking of the elements, manufacturer-specific functional testing of the ISiM.

3.2 Commissioning

Testing and commissioning of flexible ISiM units must be carried out under the boundary conditions of customary usage (see BF Technical Guide 005). System-specific user instructions must be handed over to the end customer.

4.0 Cable connection

4.1 Cable laying

All bores, penetrations, edges, corners etc. through or over which cables are laid must be blunted to prevent the risk of cable damage. Suitable cable bushings must be used. It must be ensured that cables are not subjected to any tensile stresses.

4.2 Accessories

Only electrical and accessory components approved by the system manufacturer are permitted.

5.0 Window contacts and transitions

5.1 Contacts

The window contacts and transition must, for example in the case of turning or turning / tilting elements, preferably be arranged on the band side and outside the water-bearing level.

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