



Certification Performance Criteria Guidance

B5.2 Building Envelope – Fixings and Supports (including purlins, sheeting rails, etc.)

Revision A

Performance Criteria

Certifiers shall satisfy themselves that adequate details of the fixings and supports for the external envelope of the building have been prepared and that there are sufficient calculations or other evidence to demonstrate the adequacy of the design and that there is evidence that the design and details have had the appropriate level of checking.

Background

The building envelope will require to support its own weight, transfer wind loads into the structure and remain attached to the building under the effects of wind load.

The fixings and supports to the cladding are critical the performance of the building envelope.

The Standing Committee on Structural Safety (SCOSS) highlighted a number of potential problems arising from deficiencies in design of elements of the building envelope and these can pose a serious risk to the health and safety of people in and around buildings.

Guidance

The envelope of a building often comprises a series of mutually dependent elements, and it is the fixings and supports that provide important links in this chain. Failure of one link can cause failure of the entire system.

Items to be considered when certifying the fixings and supports to the building envelope are:

- Fixings between the cladding material and the structure supporting it
- The supporting structure. Often this will comprise secondary elements such as cladding rails, intermediate posts, roof purlins, wind posts, glazing mullions and transoms, etc.
- The connections between any secondary supports and the main structural elements
- The fixings between large glazing units and their supporting frames
- Wall ties within masonry walls and between masonry cladding and its supporting structure

Often glazing systems can be made up of a series of individual units and it is important that adequate fixings and supports are provided to ensure that the integrity of the overall system is adequate.

Components must also be durable and their ability to resist the effects of corrosion must be established. (A definition of durability is provided in the Technical Handbook). SCOSS has highlighted the need for regular inspection of fixings and Regulation 8 requires that materials should be reasonably accessible for maintenance.

Examples of Major Non-conformances

Absence of or grossly inadequate evidence of the Certifier's review of the design of fixings and supports for the building envelope.

The design of the fixings and supports which form part of the external envelope clearly does not meet the requirements of Standards 1.1 and 1.2.

Absence of or grossly inadequate details of the fixings or supports.

Absence of or grossly inadequate suitably checked structural calculations, load/span tables, test certification or other justification for the design of any of the fixings and supports.

Absence of or grossly inadequate performance specification and details on the warrant plans, where glazing fixings were included on Schedule 1 (RC1 buildings only).

Absence of or grossly inadequate calculations, etc. to justify the preliminary design shown on the warrant plans, where glazing fixings were included on Schedule 1 (RC1 buildings only).

Examples of Improvement Issues

Insufficient evidence of the Certifier's review of the design of fixings and supports for the building envelope.

Inadequate or insufficient details of the fixings or supports.

Insufficient or inadequate calculations or other justification for the design.

Inadequate performance specification and details on the warrant plans, where glazing fixings were included on Schedule 1 (RC1 buildings only).

Inadequate calculations, etc. to justify the preliminary design shown on the warrant plans, where glazing fixings were included on Schedule 1 (RC1 buildings only).

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