

Redundancy of fixings

Fixings have a higher risk of failure than monolithic metal components hence higher safety factors are normally applied.

The Approved Document to Part A of the Building regulations requires that cladding fixings are able to transmit loads on the cladding to the primary structure. In considering the safety of fixings account should be taken of whether the fixings are redundant or non redundant but non-redundant fixings are not prohibited.

The CWCT Standard (2006) requires that fixings shall be designed such that failure of any one connection does not lead to progressive failure of adjacent fixings. Fixings are defined as components providing the attachment of the structural frame (of the cladding) or brackets to the primary structure or backing wall. This requirement was in the CWCT Standard for walls with ventilated rainscreens but was not in the Standard for curtain walling.

The requirement of the CWCT Standard is a safety requirement not a serviceability requirement. Failure of an individual fixing may allow some movement and distress to seals to take place which may require repair but components should not fall from the building.

This requirement may be satisfied in a number of ways.

- Additional fixings can be used to give redundancy at any one bracket but it should be recognised that an additional fixing will not be in the same place and hence may not be able to resist the full load on the cladding.
- Tests can be carried out to determine the capacity of secondary load transfer mechanisms to transfer load in the even of a fixing or bracket failure.