

Curtain walling formed from stacked windows and spandrel panels

(January 2016) (First issue)

Question

Where curtain walling is formed from stacked door or window frame and spandrel panels* is it necessary to carry out on-site hose testing to every installation on a development scheme?

Considerations

- NHBC Standards contains guidance to clarify what is required to achieve technical compliance when individual door / window frames and spandrel panels are assembled to form part of a building envelope.
- For all assemblies the windows and doors should have been previously tested, by an independent accredited organisation, to prove performance with respect to relevant standards, in particular BS6375 'Performance of windows and doors' and in accordance with NHBC Standards Chapter 6.7 'Doors, windows and glazing'.
- Where this type of stacked assembly is one storey or more in height and not contained between a structural floor and ceiling, it is considered to be curtain walling and therefore the guidance found within the NHBC Standards Chapter 6.9 'Curtain walling and cladding' is applicable. This includes a requirement for system certification, usually in accordance with CWCT standards.
- CWCT standards require curtain walling systems to be off-site tested to prove performance before the product comes to site. But of equal importance, and to ensure that the system has been correctly assembled, the installed system should also be hose tested on-site to determine its resistance to water penetration.
- Coupled door/window frame and spandrel panel assemblies that are contained within two storeys and are less than 3m wide (see figure 1) can be defined as 'smaller' curtain wall systems.
- The guidance for on-site testing calls for at least 5% of a finished curtain walling assembly to be tested. Whilst this remains acceptable for most large curtain walling installations, it does not provide satisfactory guidance for sites with multiple numbers of 'smaller' curtain walling arrangements.

Answer

Where there are multiple 'smaller' curtain walling systems installed on one site the following policy should be adopted:

- Where multiple 'smaller' curtain walling systems have been installed across a development, on-site hose testing in accordance with the current CWCT Standard for curtain walling should be undertaken to at least 5% or not less than two of the completed installations (whichever is the greater).
- For more extensive and possibly phased building developments - where a large number of 'smaller' curtain walling systems are installed, the requirement would be for at least 5% of the installations to be tested as installed on each phase of the development scheme.
- Testing should be carried out on the first installation on any development or phase and the remaining tests should be reasonably evenly spread out across further installations as the development progresses.
- These minimum requirements for on-site testing may be increased in UK areas that are expected to be subject to severe weather exposure or where the quality of as-built site installation has given rise to concern from inspections carried out.

Where curtain walling extends over more than two stories** or is more than 3m wide, (see fig 2) at least 5% of the joints on each finished installation should be on-site hose tested in accordance with the current CWCT Standards for curtain walling.

Where the installation contains bespoke jointing and junctions within the assembly NHBC may request an increased percentage of these joints to be tested in the as-built condition to prove performance.

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* For the purposes of this guidance the curtain walling is made up of door/window frames and spandrel panels which are coupled together to form arrangements as shown in Figures 1 and 2. The spandrel panel may be a window frame containing infills, a framed panel supporting cladding or a single infill panel, used to hide the edges of floor slabs, ceiling details, insulation and other building elements. Door/window frames that are supported independently of the spandrel panel(s) and only joined by the sealing systems between frames and spandrel panel are still considered a curtain walling system.

** For the purposes of this guidance a storey is taken as a maximum height of 3.5m.

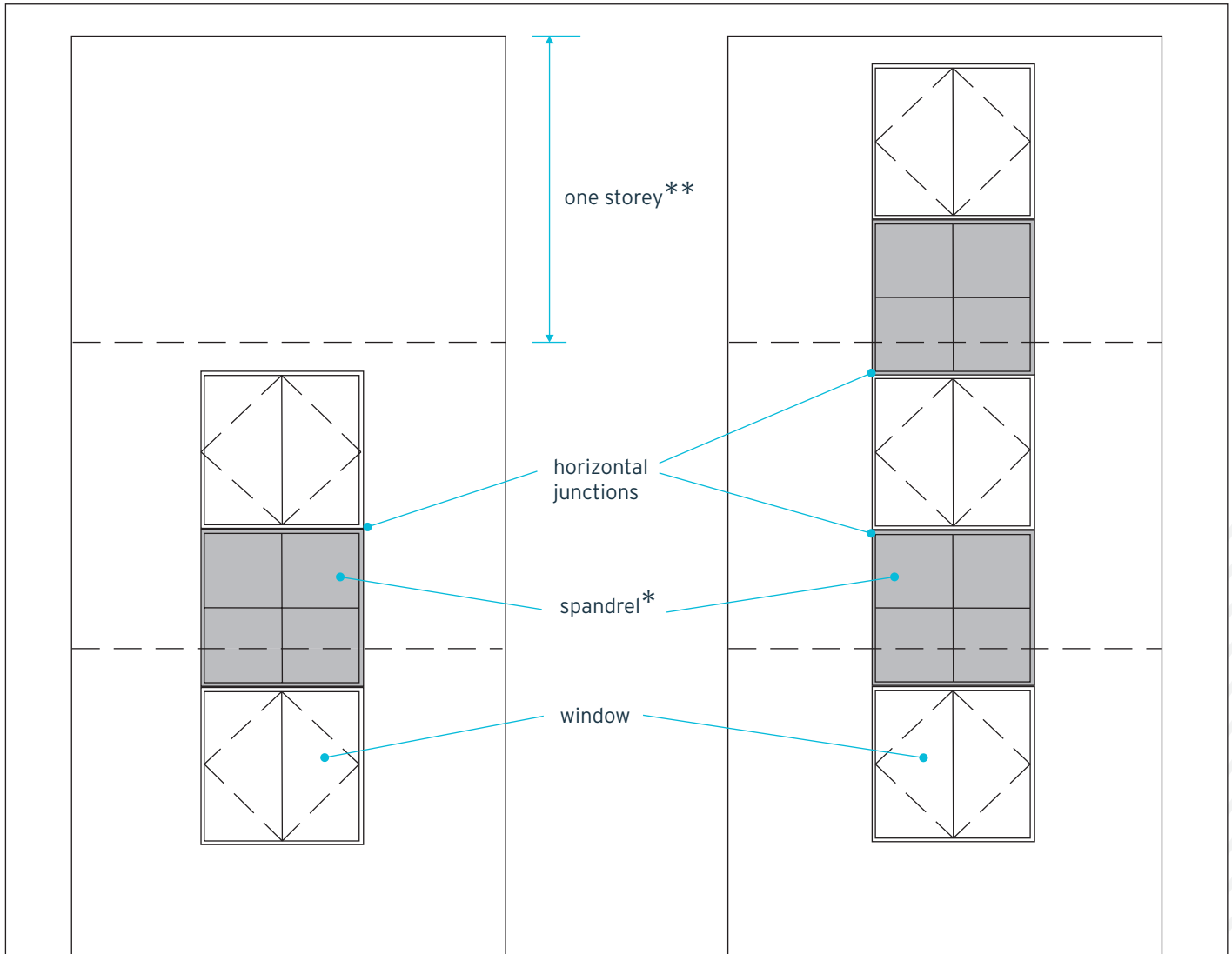


Figure 1
'Smaller' curtain walling contained within two storeys and less than 3m wide, requires on-site testing to all joints of at least 5% and not less than 2 no. installations.

Figure 2
Curtain walling extending over more than two storeys and less than 3m wide or, any curtain walling more than 3m wide, requires on-site testing of at least 5% of joints on each installation.