

FIRETEX® Technical Bulletin

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Raised Access Floors and Ceilings Around FIRETEX® Protected Steelwork

Many construction projects will employ raised access floors (RAF) and/or lowered ceilings to provide service space at the top and bottom of a building floor. These structures have the potential to affect the fire protection performance of intumescent fire protection applied to columns which they are in contact with or close proximity to.

To enhance the understanding of the potential impact on fire protection of such design/construction details Sherwin-Williams, in conjunction with other stake holders, has undertaken a fire test of a RAF and ceiling around FIRETEX protected columns.

The testing was conducted by an independent, ISO17025 accredited laboratory. The results obtained were evaluated by a Chartered Engineer and Fellow of the Institution of Fire Engineers, whose report can be made available to project engineers, if required, by contacting Sherwin-Williams.

RAF Construction:

Approximately 380mm depth

Floor tiles were Kingspan RMG 600 Medium Grade

The tiles were supported by Kingspan Alpha V Void 350mm-430mm support pedestals

The support pedestals used Kingspan K29 and Kingspan Perimeter Caps

Cut edges of floor tiles were finished with silver aluminium tape

Where cut tiles meet the perimeter of the columns, they are covered with a 10mm thick neoprene perimeter gasket

Ceiling Construction:

Approximately 400mm depth

Ceiling support frame constructed with Gypframe MF6 Perimeter Channels (20mm x 28mm 28mm x 0.7 galvanised steel) and Gypframe MF7 Primary Support Channels (14mm x 45mm x 14mm x 0.7mm galvanised steel). Channels spaced at 600mm centres.

The support channels were fixed to the perimeter channels using 13mm long British Gypsum Wafer Head Jack Point screws.

Vertical hangers nominally 350mm long cut from lengths of Gypframe FEA1 Steel Angle (25mm x 25mm x 2900mm x 0.5mm).

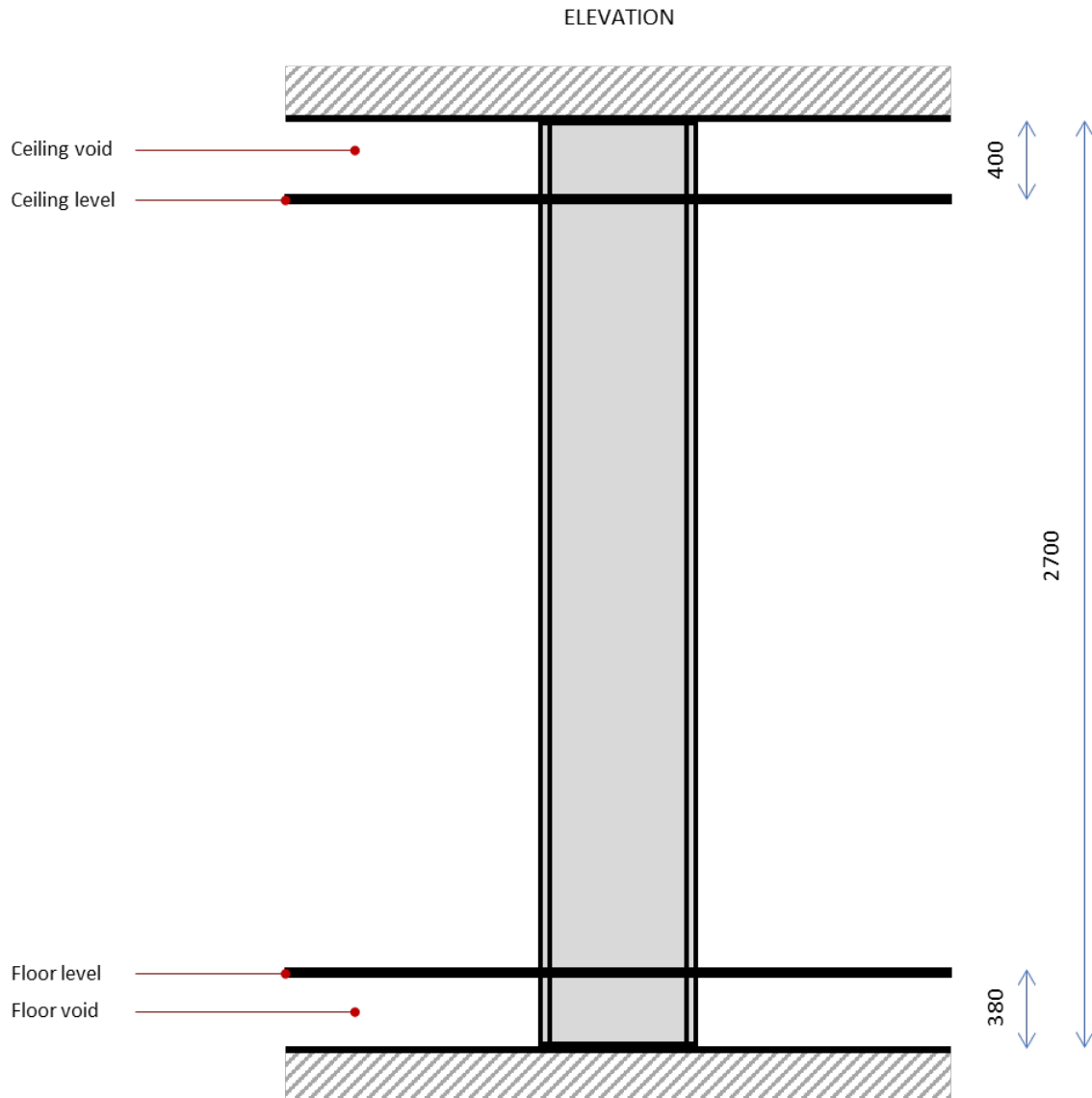
Gypframe MF5 Ceiling Channels (52mm x 25mm x 12mm x 0.5mm) were fixed to the bottom of the perimeter channels

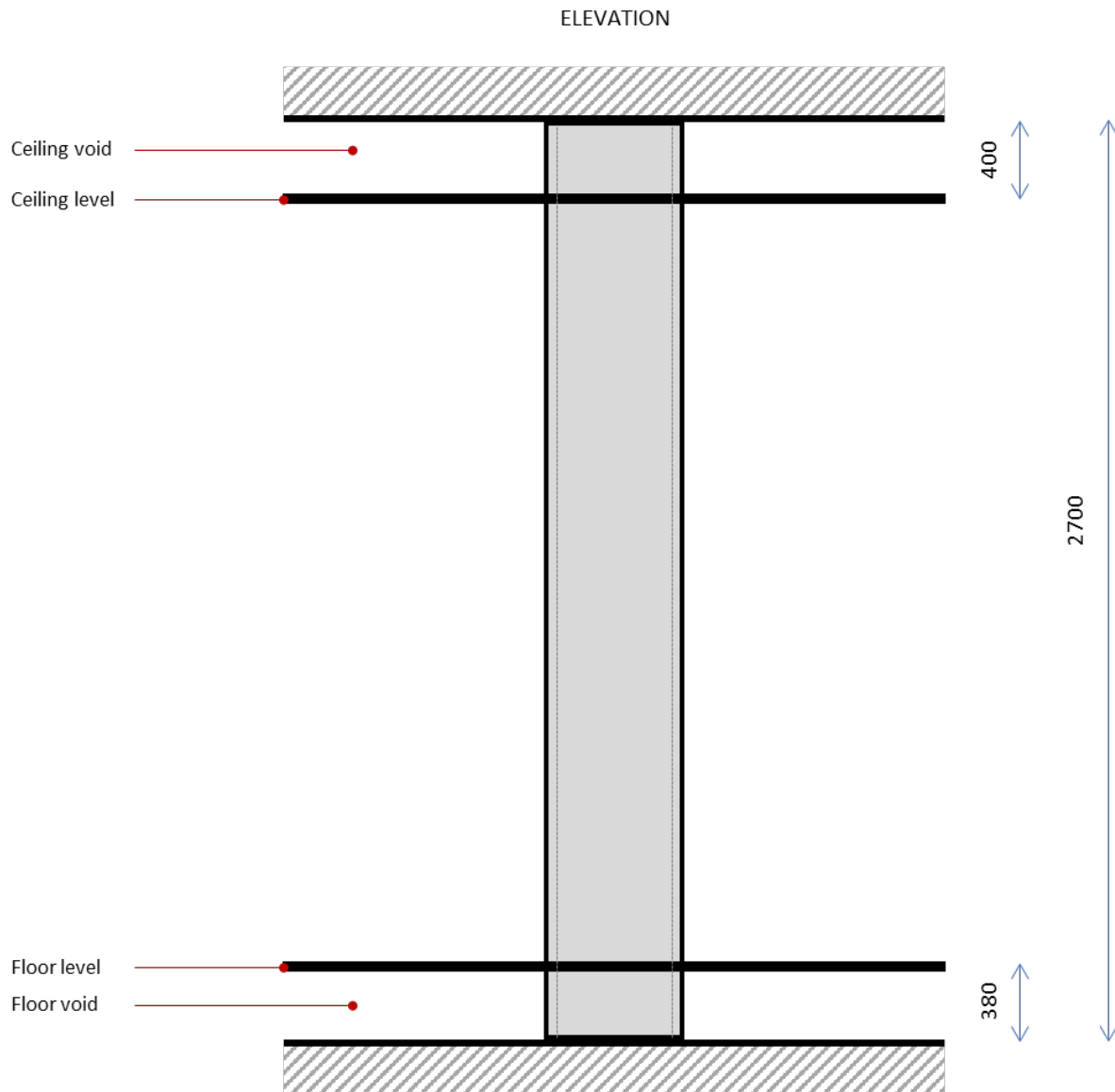
12.5mm thick Gyproc wallboard plasterboard was secured to the web face of the ceiling channels using 25mm long drywall screws at 300mm centres

25mm x 25mm plasterboard angle bead secured along the longitudinal edge and around the profile of columns where they met the plasterboard

Bead of Akfix AS606 decorators' caulk was gunned around the perimeter of the edge bead where the columns meet the plasterboard, before mesh joint tape was applied and all gaps jointed

The I or H shaped, and square hollow section columns were instrumented to allow detailed monitoring of the steel temperature and were protected using a 2 hour specification of FIRETEX along with nominally identical control samples.





The test results showed no reduction in the fire resistance period of the columns within the RAF and ceiling compared to the respective control test pieces.

The results of the fire tests should provide a degree of comfort to design teams, approving authorities or other project stakeholders, that the use of such designs does not lead to a detrimental performance of the fire resistance of the protected member.

The designs adopted for these fire test investigations are based on common industry constructional details, however it is recognised that an almost infinite number of permutations of encasement and attachment design detail may occur in practice. Where the tested details are used on projects, they may provide a direct correlation to expected performance. Where alternative constructional details are proposed on a project, then the outcome of this report may be used by design teams to make an informed decision on the anticipated performance and therefore suitability of the design detail itself. This type of engineering judgement may be made by an appropriately qualified person which may be part of the project's design team or an appointed third-party.

The information herein is subject to revision as a result of additional information or test evidence becoming available, please consult Sherwin-Williams to ensure you have the latest version.

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