



Richard Cave
To Colin O'Gara

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Colin,

Following the various discussions between Wintech (Façade Consultant), GMI (Main Contractor), Casu (Façade Sub-Contractor), Bruntwood (Developer/Client), Bridge Architects (Architect), Stroma (Building Control), Hilson Moran (Fire Engineer), and Richard Boothroyd & Associates (Quantity Surveyor & Project Management), you have requested commentary to provide an explanation for rationale behind the change of configuration of the upper spandrel panels, as denoted SP02 in the latest Casu design drawings.

These units were originally specified to comprise two panes of monolithic glass, with the innermost pane having a full coverage frit (ceramic paint). However, Clause 5.2.1.8.3 of BS EN 81-20:2020 requires that "*Glass panels, plane or formed shall be made of laminated glass.*", as confirmed by LECS UK (Lift Consultancy). Therefore, a revised configuration was proposed by Casu, which due to limitations imposed by the potential for elevated temperatures within a double glazed configuration, was to be a single ply of laminated glass, comprising two plies of 6 mm nominal thickness heat-strengthened glass with a 1.52 mm coloured interlayer.

As required by Hilson Moran's fire strategy, these spandrels would require an EN 13501-1 classification of B-s3,d2 or better. Unfortunately, no glass manufacturer or processor will currently provide a CE or UKCA Declaration of Performance (DoP) with this classification provided for standard (non fire-rated laminated glass types). Guidance from Glass for Europe, a trade body for the glass industry in Europe, recommends that manufacturers and processors apply "NPD" (No Performance Declared) due to limitations associated with the relevant testing for determining performance when applied to laminated glass types. A fire-rated laminated glass has been discussed, however, the intumescent interlayer would lack stability at the expected service temperatures in this location. Fundamentally, without a classification, compliance with the requirements of the fire strategy cannot be confirmed, and the specification of a single laminated pane has therefore been deemed unsuitable.

The only remaining option for this area to allow compliance with the fire strategy is the specification of a PPC coated aluminium sheet, with a colour as per the original frit specified, suitably tested and certified with an appropriate EN 13501-1 classification. It is understood that the architect is satisfied with the aesthetics, with a high gloss coating providing an increased level of reflectance to try to replicate the appearance of glass insofar as is possible with the limitations on material selection. It is also understood that Casu will be able to supply relevant documentation to evidence performance with regards reaction to fire.

Kind regards,

Richard Cave MEng (Hons.), PhD, MSFE
Glass Engineer

WINTECH
FAÇADE ENGINEERING



w: wintech-group.com
Quartz House, Pendeford Business Park,
Wobaston Road, Wolverhampton, WV9 5HA
Wintech Limited Registered in England No.02430998
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