LABSS INFORMATION PAPER INFOP36 - Version 1 – 1 June 2022

Non-Domestic Handbook
Guidance clauses 2.1.15 and 2.2.7 – junctions with roofs

Information for verifiers

PURPOSE

The purpose of this information paper is to make verifiers aware of background information provided by the BSD, along with a summary of relevant matters highlighted through consultation with the LABSS CTWG, of which verifiers should be cognisant.

While this information paper relates to construction detailing normally associated with non-domestic buildings, the principles of the note equally apply to the requirements of guidance clause 2.2.10 within the Domestic Handbook.

RELEVANT MANDATORY STANDARDS

Mandatory Standard 2.1 Compartmentation requires that:

Every building must be designed and constructed in such a way that in the event of an outbreak of fire within the building, fire and smoke are inhibited from spreading beyond the compartment of origin until any occupants have had the time to leave that compartment and any fire containment measures have been initiated.

Mandatory Standard 2.2 Separation requires that:

Every building, which is divided into more than one area of different occupation, must be designed and constructed in such a way that in the event of an outbreak of fire within the building, fire and smoke are inhibited from spreading beyond the area of occupation where the fire originated.

OUTCOME OF RECENT DISPUTE CASE

A recent dispute resolution case related to these guidance clauses noted that a majority of verifiers were of the opinion that simply fire stopping a wall to a non-combustible/A1/A2 steel liner tray is unsatisfactory and that the 'roof substrate' relates to the panel as a whole. Therefore, if the insulation core does not attain an A1/A2 rating, the junction may not meet the required performance.

RECENT DISCUSSION AND FEEDBACK

Since the conclusion of the above noted dispute case, further discussion has been undertaken within the CTWG with regards to whether an ‘under cloaking’ of the junction would provide protection such that compliance with the guidance would be achieved.

An example of such a detail is noted in Annexe A.

BSD FEEDBACK

LABSS is grateful for feedback from the BSD in respect of the matters under consideration, as noted below:

The intent of the guidance in clause 2.1.15 of the non-domestic technical handbooks is to avoid fire within one compartment from flanking a compartment line wall head/roof junction and spreading too quickly into an adjacent compartment e.g., via radiation, conduction, direct flame impingement or any other means. Clearly the nature and fire performance of the material that passes over the wall head must be considered. The guidance provides four examples for junctions with roofs:

- Where the roof has a combustible substrate (e.g. Euro Class B,C,D,E or F), the compartment wall should project through the roof a distance of at least 375 mm above the roof. A sandwich panel with a combustible core is considered to be a combustible substrate.

- Where the roof has a non-combustible substrate (e.g. Euro Class A1 or A2), the wall may be taken up to the underside of the substrate provided the junction is suitably fire-stopped and the roof covering achieves a low vulnerability at least 1.7 m either side of the wall. The intent being that not only the junction detail is robust from a fire inside the building, but the guidance recognises the risk that burning brands could ignite a combustible roof covering close to the compartment wall and penetrate the compartment below.
- Where the roof covering is slates fixed directly to combustible sarking, the compartment wall need only be taken up to the underside of the sarking provided the junction is suitably fire-stopped.
- Where the roof covering is slates or tiles on battens, this creates a void that needs to be fully filled with cement mortar.

Any alternative proposal may be accepted by the LA verifier but an understanding of how the materials and systems behave in a fire is an important consideration. For example, a product with an expanded or extruded polystyrene core material is likely to melt at elevated temperatures creating a cavity for the fire to spread readily within the panel, whereas other combustible materials (including some polymer-based materials) will char providing a protective layer. Delamination exposing the combustible core is also a consideration as this will increase the fire load and hence increase the energy generated from the fire (heat release rate).

In any event, the use of the building e.g. residential or non-residential, as well as the evacuation strategy and all other fire safety measures including the construction and stability of compartment walls in the building all have a part to play in the decision-making process. In other words, consider the problem in a holistic sense including the views of the SFRS from a fire-fighting perspective i.e., the SFRS may have to adopt defensive fire-fighting tactics sooner if the compartmentation in the building is breached early in the fire incident.

VERIFIER CONSIDERATIONS

Given the varied nature of this type of detail and the building uses to which it may apply, each case should be considered on its own merits.

This notwithstanding, the verifier should consider the content of the BSD advice, particularly what is considered to be a combustible roof substrate and that a combustible insulation core may allow a fire to flank the junction.

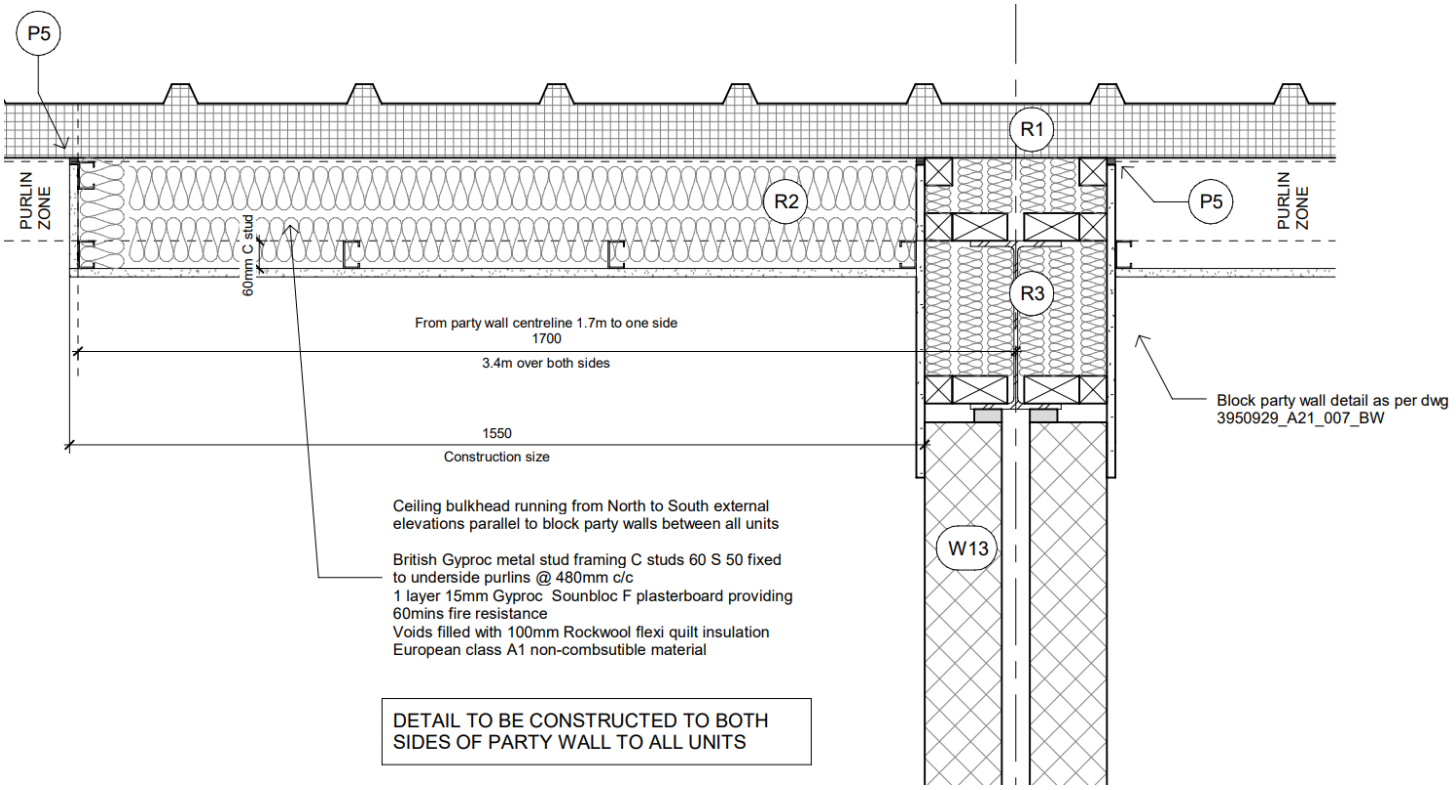
An alternative solution proposal would require consultation with SFRS.

SUMMARY

This information note does not prescribe or preclude any specific detail or approach but does outline BSD clarification of the intent of the standard including related factors which the verifier should consider when assessing any particular detail submitted in support of a building warrant application.

Given all the considerations noted, an under-cloaking solution may not provide any additional level of protection.

ANNEXE A – EXAMPLE UNDER CLOAKING DETAIL



Keynote Legend	
Number	Component
P5	Intumescent 1 hour fire resistant mastic fill to all gaps between plasterboard edge and underside roof panel
R1	5 degree monopitch insulated metal roof panel, Kingspan KS1000 RW Trapezoidal 120mm core (151mm overall thickness) colour RAL 9006 light grey
R2	Roof purlins as per Structural Engineers details
R3	Steel rafter beam as per Structural Engineers details
W13	140mm 7N fairfaced concrete blockwork to be painted