Holmes Fire

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To:	Damian O'Leary	Project:	137202.01
Company:	ICON		
Email:	Damian.Oleary@icon.co	Version:	D
Date:	2 December 2020		
Subject:	Fairvale Highschool, Fairfield West, NSW		

Damian,

Holmes Fire has been requested to review the external wall system including all components and the system as a whole for Fairvale Highschool in order to assess against the compliance of the external wall cladding with the Building Code of Australia (BCA) Deemed-to-Satisfy Provisions.

1 EXTERNAL WALL SYSTEM

This letter is based on information from the client and architect regarding proposed wall system components including product specifications, test reports and architectural drawings prepared by Collard Maxwell Architects (CM+A) dated April 2020.

1.1 Aodeli Solid Aluminium Panels

Aodeli Solid Aluminium Panels (SAP) manufactured by Aodeli, is a 3 mm non-combustible solid aluminium cladding system. The product has been tested to AS 1530.1-1994 by Exova Warringtonfire (REPORT No 55828000.3) dated 26 November 2018. The test results demonstrate that the material is deemed non-combustible in accordance with this Australian Standard test. Based on this the product complies with BCA 2019 Clause C1.9 as a non-combustible material allowed to be used in external walls.

The product has also been tested to AS/NSZ 1530.3-1999 by CSIRO (Ref No FNE12387) dated 24 May 2019. The results showed that Ignitability Index of 0, Spread of Flame Index of 0, Heat Evolved Index of 0, and Smoke Developed Index of 0-1.

It is understood that the Aodeli SAP system is to be used as cladding to the external walls and top hats attached to a steel frame in accordance with the Manufacturers installation guide.

1.2 Equitone System

Equitone system manufactured by Fairview, is a pre-finished high-density fibre cement façade panel. It is proposed to use this system to the external walls including spandrel walls.

Based on supplier documentation, EQUITONE façade materials are manufactured in compliance with AS/NZS 2908.2:2000, Cellulose-cement products Part 2: Flat sheets, (ISO 8336:2009 Fibre-cement flat sheets), and are classified as fibre-reinforced cement sheeting in accordance with AS/NZS 2908.2 (ISO 8336:2009 Fibre-cement flat sheets).

BCA 2019 Clause C1.9(e)(iv) allows Fibre-reinforced cement sheeting to be used wherever a non-combustible material is required. Based on this, the Equitone panels comply with BCA 2019 to be used in external walls.

1.3 Sarking

Holmes Fire has been advised by the client that it is proposed to use non-combustible sarking, hence complies with BCA 2019 Clause C1.9 to be used in the external walls. Note that Holmes Fire has not been provided with an AS 1530.1 test report to verify that the material is non-combustible.

It is noted that BCA 2019 Clause C1.9 allows for sarking-type materials that do not exceed 1 mm in thickness and have a Flammability Index not greater than 5 to be used without being deemed non-combustible as per AS 1530.1. The proposed thickness of the sarking is not known however this is not applicable for sarking materials deemed non-combustible as it complies with the BCA regardless of thickness.

1.4 Insulation

It has been advised by the client that it is proposed to use non-combustible Fibretex 820 or approved equal Rockwool insulation.

Holmes Fire has not been provided with a test report for the specific product to be used. However Holmes Fire has reviewed general test reports for rockwool which confirms that rockwool is not deemed combustible in accordance with AS 1530.1-1994 (refer to test report by CSIRO dated 23 March 2017, ref CO4643). The test also shows that Rockwool achieves an Ignitability Index of 0, Spread of Flame Index of 0, Heat Evolved Index of 0, and Smoke Developed Index of 1 when tested to AS/NSZ 1530.3-1999.

1.5 TBA Firefly Intumescent Rainbar 60 & Rainbar 60 PLUS Cavity Barrier

It is proposed to use TBA Firefly intumescent cavity barrier to the ventilation cavity of spandrel walls as shown in Figure 1-1. It is proposed to use TBA Firefly Rainbar 60 small cavity closer where the ventilation cavity is up to 50 mm, and where the ventilation cavity exceeds 50 mm (up to 352 mm) it is recommended to instead use Rainbar 60 PLUS large cavity closer. This is in accordance with the product sheets from TBA Firefly which states that Rainbar60 is suitable for gaps up to 50 mm, and Rainbar60 PLUS is suitable for gaps up to 352 mm. The gap between the intumescent layer once installed and the external cladding panels should not exceed 50 mm. The use of this product has been addressed by a Performance Solution to address BCA 2019 Clause C2.6, in a Fire Engineering Report by Holmes Fire, (137202.01.FER001f, dated 2 December 2020). The FER has demonstrated that the provision of a –/60/60 spandrel with an intumescent cavity barrier to the ventilation cavity which achieves 60 minutes of fire integrity once it has activated, will provide sufficient protection of vertical fire spread via openings and addressed Performance Requirement CP2 of BCA 2019. The data sheets states that the TBA Firefly Rainbar 60 & TBA Firefly Rainbar 60 PLUS will close a gap of up to 50 mm whilst maintaining 60 minutes of fire integrity once it has activated. Based on this, the use of TBA Firefly Rainbar 60 comply with the BCA by a Performance Solution.

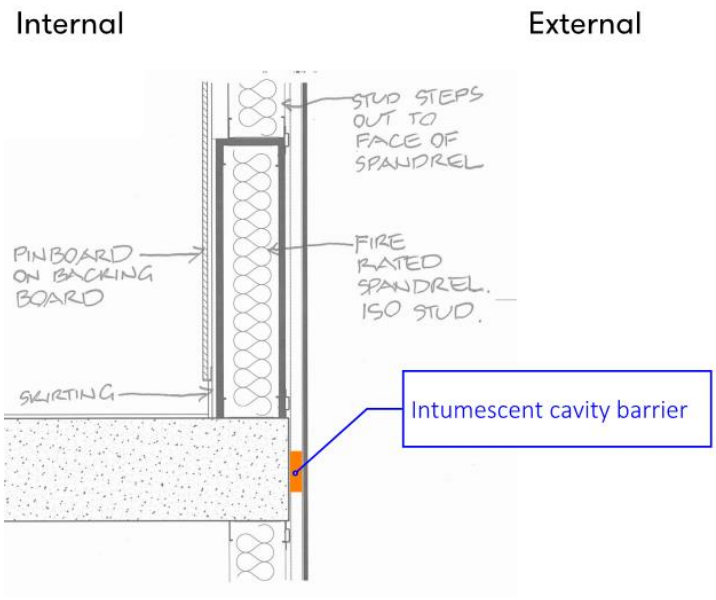

Figure 1-1: Location of Intumescent Cavity Barrier

1.6 External Wall System as a whole

Based on the above review, all proposed components of the external walls are either deemed non-combustible or are exempted under BCA 2019 Clause C1.9(d) or (e), hence the external wall system as a whole complies with BCA Clause C1.9.

As stated above, the use of a cavity barrier to spandrel construction has been addressed by a Performance Solution to address BCA 2019 Clause C2.6. in a Fire Engineering Report by Holmes Fire, (137202.01.FER001f, dated 2 December 2020).

Based on the above, the external wall system complies with BCA 2019 by either the Deemed-to-Satisfy provisions or by a Performance Solution.

Yours sincerely,

Josefin Nilsson
Fire Engineer

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