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Fairview Architectural Pty Ltd
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Attention: Mr Andrew Gillies

RE: Vitracore G2 aluminium composite panel (ACP) incorporating a corrugated aluminium core.

Thank you for your request to clarify some of the confusion regarding CSIRO reports relating to the above mentioned product. Recently the Australian Building Codes Board (ABCB) released Advisory Note 2016-3, titled 'Fire performance of external walls and cladding' dated August 2016. This advisory note provides guidance on how the National Construction Code (NCC) should be interpreted to assist decisions on product selection, installation and certification relating to cladding products used on high rise buildings.

Section 6 of this advisory note relates to the characteristics required for bonded laminated materials subject to NCC, Volume 1, clause C1.12 and provides a list of materials that, though combustible or containing combustible fibres, may be used wherever a non-combustible material is required.

Specifically, clause C1.12(f) permits the use of bonded laminated materials where:

- i) each laminate is non-combustible (as determined under AS 1530.1); and
- ii) each adhesive layer does not exceed 1 mm in thickness; and
- iii) the total thickness of the adhesive layers does not exceed 2 mm; and
- iv) the Spread-of-Flame Index and the Smoke-Developed Index of the laminated material as a whole does not exceed 0 and 3 respectively.

The advisory note states that for a laminated material to receive the concession available under clause C1.12(f), every condition listed above must be satisfied. If one or more of the laminates is combustible as determined in accordance with AS 1530.1, the concession cannot apply.

Vitracore G2 aluminium composite panel (ACP) has been the subject of AS 1530.1 – 1994 'Combustibility test for materials' testing, as well as AS 1530.3 - 1999 'Simultaneous determination of ignitability, flame propagation, and smoke release' testing, undertaken by CSIRO Infrastructure Technologies, Fire Technology Laboratory at North Ryde NSW, as summarised below:

CSIRO report reference	Test standard	Specimen details	Results
FNC11476B	AS 1530.1 - 1994	Aluminium corrugated profiled core material and aluminium flat skins only (no adhesive or coating).	The material is NOT deemed combustible.
FNE11459A	AS 1530.3 - 1999	Complete Vitracore G2 composite panel (including coating and adhesive).	Ignitability Index 0 Spread of Flame Index 0 Heat Evolved Index 0 Smoke Developed Index 1

The Vitracore G2 is described as an aluminium composite sandwich panel comprising of 5 layers:

- Layer 1: 0.7-mm thick aluminium laminate face, finished with 30- μ m thick surface finish;
- Layer 2: 0.1-mm thick adhesive film;
- Layer 3: 0.3-mm thick corrugated profiled aluminium laminate core, expanded to 2.6 mm;
- Layer 4: 0.1-mm thick adhesive film;
- Layer 5: 0.5-mm thick aluminium laminated face finished with 10- μ m thick surface finish.

The testing summarised above demonstrates that each laminate is not deemed combustible under AS 1530.1 which therefore satisfies the requirements of C1.12(f)(i). Also the laminated panel as a whole has a Spread of Flame index and Smoke Developed index of 0 and 1 respectively which satisfies the requirements of C1.12(f)(iv).

In addition to the testing results, the construction of the Vitracore G2 aluminium composite panel is such that the each adhesive layer does not exceed 1 mm in thickness (actual \sim 0.1 mm) and that the total thickness of adhesive does not exceed 2 mm (actual \sim 0.2 mm) which satisfies the requirements of C1.12(f)(ii) and C1.12(f)(iii) respectively. This is based on documentation provided by your company and visual inspection by CSIRO.

As the Vitracore G2 panel satisfies every condition of clause C1.12(f) the bonded laminate material receives the concession available under clause C1.12. This concession is consistent with the conclusion contained in CSIRO assessment report FCO-3166A dated 23 November 2015.

In relation to your enquiry regarding the 'open letter' from Olsson Fire & Risk dated 5 August 2016. The letter included the attachment of CSIRO report FNC11718 which relates to an AS 1530.1 – 1994 test on an unknown specimen comprising a complete composite panel specimen comprising 0.7 mm thick painted aluminium facings fixed using an adhesive film to a 0.3 mm thick corrugated aluminium core expanded to 3 mm thick. Clause 1.4 of AS 1530.1-1994 states that the test method is not applicable to products which are coated, faced or laminated.

The letter from Olsson Fire and Risk states that '...OFR had organised independent testing with CSIRO, it has been determined that ... as a whole assembly is combustible as determined by AS 1530.1', this statement is incorrect. The test certificate states there were departures from the standard and that the specimens did not comply with the requirements of clause 1.4 of AS 1530.1-1994. Therefore the determination was that the material is deemed combustible in accordance with the criteria of Clause 3.4 of AS1530.1-1994 only. CSIRO does not recommend that this report be used for determination of compliance (or non-compliance) with the NCC as it is not in strict accordance with ALL the testing requirements of AS1530.1-1994.

I hope that this assists with the correct interpretation of all the available facts regarding this matter.

Yours faithfully,



Brett Roddy
Manager, Fire Testing & Assessments
CSIRO Infrastructure Technologies and Testing Services

8 September 2016