A member of LIVE Consulting Group

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IGNIS ENGINEERING CERTIFICATE

Evaluation No.IGNS-6038 Issue 01 Revision 02 [2017]

StoneClad – SmartStone System External Wall Cladding System

1 Introduction

The purpose of this engineering advisory note, being an engineering certificate is to review the compliance of the StoneClad panel for compliance against the National Construction Code 2016 – Volume Two – Building Code of Australia to be used in Bushfire Prone Areas.

This engineering certificate serves as a certificate from professional engineer in accordance with Clause 1.2.2 (a)(iii) of the National Construction Code Volume Two Building Code of Australia comprising a natural stone, reconstituted stone or porcelain veneer bonded to a backing panel being 50mm thick Foamular XPS Thermoplastic Extruded Insulation sheet. The veneer being a natural stone, reconstituted stone or porcelain is considered to be non-combustible.

An image of the panel is provided below.

The jointing between the panels is to include a 3-5mm gap sealed with a 10mm backing rod and appropriate silicon sealant. Where a 10mm gap is provided for the egress of any water, an appropriate bushfire weephole protection or equivalent is to be installed.

2 Building Code and AS 3959 Compliance

Ignis Solutions has evaluated the general aspect of the Stone Clad panel in compliance with the National Construction Code – Volume Two - Building Code of Australia 2016 (BCA).

BCA Clause 3.7.4.0 requires Class 1 or Class 10a buildings located in designated bushfire prone areas to comply with AS 3959.

AS 3959 permits the external wall to be a masonry veneer, concrete or natural stone or non-combustible material. The external element of the StoneClad being non-combustible satisfies this requirement.

All joints in the external surface material of the wall is to be covered, sealed, overlapped, backed

or butt-jointed to prevent gaps greater than 3mm.

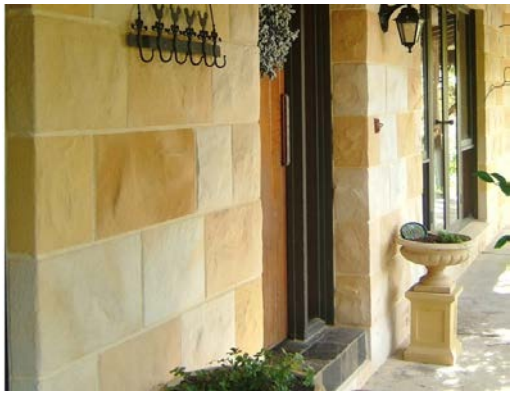
Vents and weepholes in external walls shall be screened with a mesh with a maximum aperture of 2mm, made of corrosion-resistant steel, bronze or aluminium, except where the vents and weepholes have an aperture less than 3mm.

The above compliance elements applies to BAL 12.5, 19, 29, 40 and FZ. It is important to note that both the BCA and AS 3959 does not require the wall insulation to be tested to fire hazard properties.

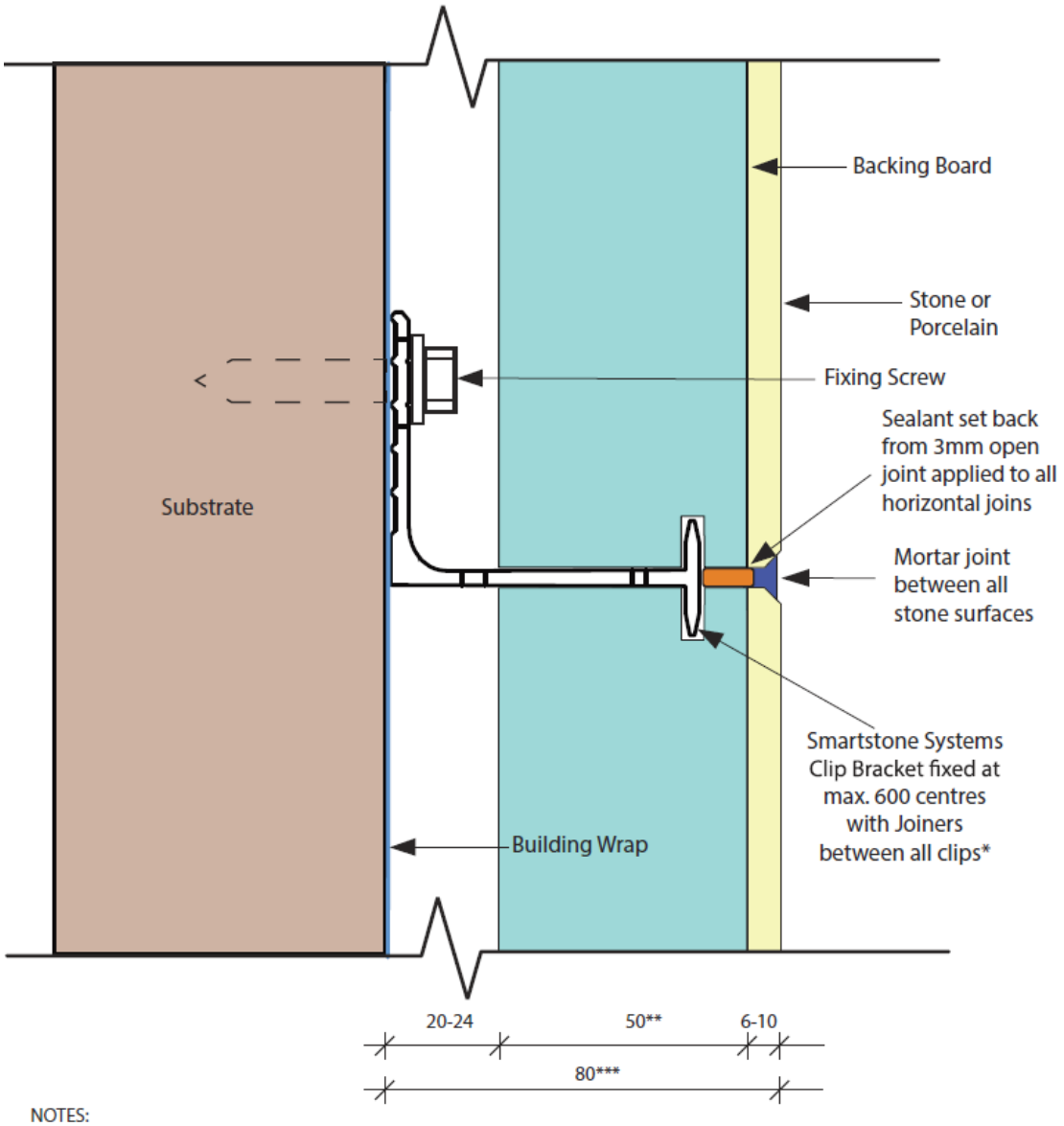
3 Installation

The Stone clad is installed as per the image below where the panel is fixed to the buildings frame via the angle to the PIR Board. The stone is adhered to the PIR board via Sika Boom FR high yield fire -retardant polyurethane foam adhesive.

The joint is initially sealed with Sika Firerate being a fire resistant intumescent joint sealant. The remaining joint is sealed with a non-combustible mortar based material to finalise the stone finish. A number of images are provided below to detail the joint seal. It is important to note that the stone finish will be different. The images are provided to represent the final joint detail not the stone finish.



Smartstone Systems
Typical Horizontal Mortar Joint Detail - Section View



NOTES:
* Maximum space between joiners or joiners & clips to be 20mm. Care must be taken to ensure sealant is applied along all extrusions and clips, and that particular care is taken to ensure adequate sealant applied to ensure spaces are filled.

**Thickness of backing may vary between 20 and 50mm.

*** Overall thickness of systems using Smartstone Systems Commercial extrusions is 50mm

19/8/17
Not to Scale

STONECLAD

4 Conclusion

Based on the above detail the following compliance is achieved

Volume Two– Building Code of Australia

Clause 1.0.2 (a) evidence to support the use of a material meets the nominated Performance Requirements and Deemed-to-Satisfy Provisions complying with a combination of Performance Solutions and Deemed-to-Satisfy Solutions.

Performance Requirement P2.3.1 – Protection from the spread of fire – The StoneClad does not contribute to the spread of fire.

P2.3.1 Resistance to the Spread of Fire

i. Part 3.7.4 Bushfire areas up to a Bushfire Attack Level (BAL) of FZ.
    1. AS 3959:2009 – Construction of buildings in bushfire-prone areas, section 4 BAL – Low to Section 9 BAL FZ.

State and Territory Variations

The StoneClad can be used in all States and Territories within Australia. This includes the following variations:

Queensland

- Qld GP5.1, Qld G5.1, Qld 3.7.4.0

New South Wales

- NSW GP5.1, NSW G5.2, NSW 3.7.4.0

South Australia

- SA G5.1, SA G5.2, SA G5.3, SA P2.3.1(a)(ii) and SA 3.7.4.0

Tasmania

- Tas GP5.1, Tas G5.3 and Tas G5.4, Tas P2.3.4, Tas 3.7.4.

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