

IGNIS ADVISORY NOTE

Evaluation No. IGNS-8301 Issue 01 Revision 00 [2020]

ALPOLIC NC BUSHFIRE COMPLIANCE

1 Introduction

- a. Ignis Solutions has been requested to evaluate the application of the ALPOLIC/NC composite panel and its compliance with the requirements set by the National Construction Code – Volume One and Two – Building Code of Australia 2019 (BCA) as well as AS 3959:2018.
- b. The ALPOLIC/NC composite panel has been tested by Warringtonfire in their report RTF190153 R3.0 dated 24 July 2019 as well as the CSIRO in their report FNE 12292 dated 12 December 2018 and deemed suitable to be used where the BCA nominates non-combustible material in accordance with BCA Clause C1.9(e)(vii).

2 National Construction Code Building Code of Australia 2019

- c. The National Construction Code under Volume One for Class 2-9 buildings and Volume Two for Class 1 and 10 buildings sets requirements for Class 1, 2, 3 or Class 10a building or deck located in a designated bushfire prone area to comply with the requirements of AS 3959:2018.
- d. Clause A4.1 of BCA Volume One and Two, respectively, details that the NCC overrules in any difference arising between it and any Standard, Rule, Specification or provision in a document listed in Schedule 4. AS 3959 is listed within Schedule 4. With respect to the term non-combustible, the definition and application of non-combustible under the BCA via Clause C1.9 is deemed to apply where AS 3959 references non-combustible. This applies for the ALPOLIC/NC composite panel.

3 AS 3959:2018 Construction in Bushfire Prone Areas

- e. AS 3959 is primarily concerned with improving the ability of buildings in designated bushfire-prone areas to better withstand attack from bushfire thus giving a measure of protection to the building occupants (until the fire front passes) as well as to the building itself.
- f. Improving the design and construction of buildings to minimise damage from the effects of bushfire is but one of several measures available to property owners and occupiers to address damage during bushfire. Property owners should be aware that AS 3959 is part of a process that aims to lessen the risk of damage to buildings occurring in the event of the onslaught of bushfire. Other measures of mitigating damage from bushfire fall within the areas of planning, subdivision, siting, landscaping and maintenance.
- g. It should be borne in mind that the measures contained in AS 3959 as well as this advisory note cannot guarantee that a building will survive a bushfire event on every occasion. This is



substantially due to the degree of vegetation management, the unpredictable nature and behaviour of fire, and extreme weather conditions.

- h. AS 3959 is limited to sites where the Bushfire Attack Level (BAL) has been determined as BAL—LOW, BAL—12.5, BAL—19, BAL—29, BAL—40 or BAL—FZ. BAL means of measuring the severity of a building’s potential exposure to ember attack, radiant heat and direct flame contact, using increments of radiant heat expressed in kilowatts per metre squared, and the basis for establishing the requirements for construction to improve protection of building elements from attack by bushfire.

4 External Wall AS 3959 Compliance

- i. AS 3959-2018 Clause 5.4, 6.4, 7.4, 8.4 and 9.4 for BAL 12.5, BAL 19, BAL 29, BAL 40 and BAL FZ respectively details the requirements for external walls. The exposed components of an external wall that are less than 400mm from the ground or less than 400mm above decks, carport roofs, awnings and similar elements or fittings having an angle less than 18 degrees to the horizontal and extending more than 110mm in width from the wall requires specific requirements for compliance in accordance with AS 3959 for BAL 12.5 to BAL 19. This requirement is that the material must be tested in accordance with AS 1530.8.1 or be non-combustible. Based on the non-combustibility of the ALPOLIC/NC composite panel, it can be used over the entire external wall of a building.
- j. Exposed parts of an external walls of BAL 12.5, 19, 29 or 40 under Clause 5.4, 6.4, 7.4, 8.4 of AS 3959 requires that material must be tested in accordance with AS 1530.8.1, be non-combustible or a combination of the requirements. This applies to the entire wall. Based on the non-combustible status of the ALPOLIC/NC panel it can be used within BAL 12.5, 19, 29 or 40 areas. The remainder of the wall is to be at least 90mm in thickness and comply with the requirements of BAL 29 or 40 requirements.
- k. Exposed parts of an external walls of BAL FZ under Clause 9.4 of AS 3959 requires that materials must be tested in accordance with AS 1530.8.2 from the outside, be non-combustible, a system with a Fire Resistance Level (FRL) of 30/30/30 or a combination of the requirements. It is recommended that within a BAL FZ location that the external wall incorporate an FRL of at least 30/30/30 between the building frame and external ALPOLIC/NC composite panel.
- l. The ALPOLIC/NC panels are suitable to be used in the areas detailed above in accordance with AS 3959. The total wall system associated with the use of the ALPOLIC/NC panel is to be a minimum of 90mm in thickness.
- m. **Installation** | Where the panels are used in a bushfire application, they must be installed in accordance with the relevant installation instructions and the relevant BAL requirement of AS 3959. Where the total wall system is to be a minimum of 90mm in thickness.
- n. **Joints** | All joints in the external surface material of the wall shall be covered, sealed overlapped, backed or butt-jointed to prevent gaps greater than 3mm.
- o. **Roof Penetrations** | Roof penetrations are to be non-combustible and to be sealed with non combustible material limiting any gaps to no greater than 3mm.
- p. **Vents and weep holes** | Vents and weep holes are to be protected as per AS 3959:2018 being screened with a mesh made of corrosion-resistant steel, bronze or aluminium.

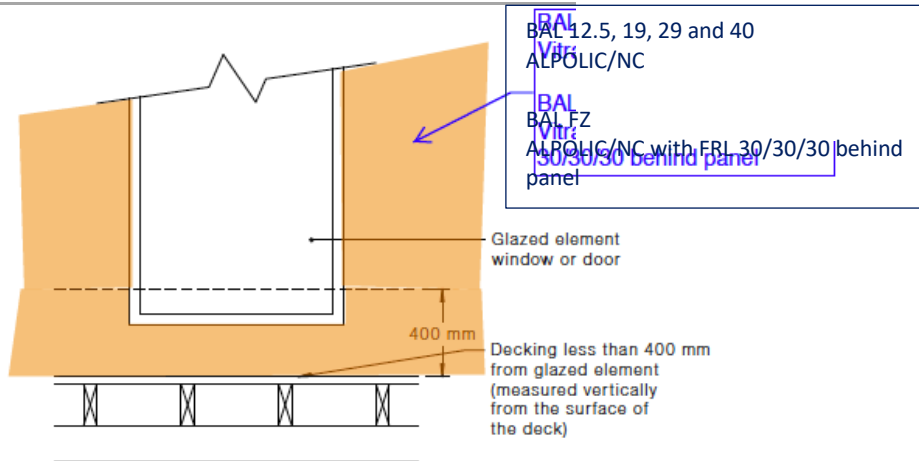


- q. All other elements of installations for the subject material is to be in accordance with the requirements of the relevant installation instruction as well as AS 3959-2018 and that of the relevant Volume of the National Construction Code 2019 including Amendment 1.

5 External Wall AS 3959 Graphic Compliance

- r. The following graphic details in each BAL the location requirements of external walls.

BAL 12.5, 19, 29, 40 and FZ – Elevation View



6 Summary

- s. In the opinion of Ignis Solutions, the ALPOLIC/NC products can be used as part of the external wall of a building located in a designated bushfire prone area depending on the BAL value requirements. The panels are to be mechanically fixed, either direct screw or cassette in accordance with ALPOLIC installation instructions.

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