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Project: Fire Engineering Review - Use of Weathertex Cladding in Class 2 to Class 9 Buildings

Introduction

This document outlines the National Construction Code (NCC) 2016 Building Code of Australia Volume One Amendment 1 Deemed-to-Satisfy (DtS) provisions regarding the use of Weathertex product in Class 2 – 9 buildings.

In all cases, the Builder/Designer/Architect may choose to follow the DtS provisions prescribed in the NCC to achieve compliance with the relevant Performance Requirements. Where the design application does not fit with DtS solutions, a Performance Solution must be developed by a suitably qualified engineer.

Deemed-to-Satisfy Provisions

The National Construction Code (NCC) Volume 1: Section C - Fire Resistance is divided into the following parts:

- Part C1 – Fire Resistance and Stability
- Part C2 – Compartmentation and Separation
- Part C3 – Protection of Openings

Parts C2 and C3 focus on specific design and not material selection and will not be discussed further in this document.

Under the NCC Deemed-to-Satisfy (DtS) provisions, Types of construction are divided into Types A, B and C. The Type of construction varies by the occupancy classification as well as the building size.

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Weathertex can be used in the external walls of the buildings required to be a minimum of Type C construction. For buildings that are required to be a minimum of Type A and B construction, the NCC DtS provisions generally require external walls and their components to be non-combustible. However, there are concessions available that allow combustible materials to be used in the external walls of Type A and B constructions.

Table 1 summarises the suitability of Weathertex for use in various building classifications and applicable conditions.

Table 1 - Summary of Weathertex suitability for use in Class 2-9 buildings

Building classification	Applicable conditions	Maximum rise in storeys
2, 3	None. DtS Clause C1.9(c) applies.	1
	DtS Clause C1.5 or Specification C1.1 Clause 4.3	2
	Specification C1.1 Clause 3.10(a)	3
	Specification C1.1 Clause 3.10(b)	4
4	Suitability depends on the other classification within the building.	
5, 6, 7, 8	None. DtS Clause C1.9(c) applies.	2
9a	None. DtS Clause C1.9(c) applies.	1
9b	None. DtS Clause C1.9(c) applies.	1
9c	None. DtS Clause C1.9(c) applies.	1
	DtS Clause C1.5	2

Performance Solutions

Weathertex can be used in buildings that exceed the maximum rise in storey listed in Table 1 provided it is addressed in a Performance Solution by a suitably qualified fire safety engineer¹. There are four means of determining if the Performance Requirements are met (from NCC Clause A0.5):

- (a) Evidence to support that the use of a material or product, form of construction or design meets a Performance Requirement or a Deemed-to-Satisfy Provision as described in A2.2. [A2.2 lists Evidence of Suitability]
- (b) Verification Methods such as—
 - (i) the Verification Methods in the NCC; or
 - (ii) such other Verification Methods as the appropriate authority accepts for determining compliance with the Performance Requirements.
- (c) Expert Judgement.
- (d) Comparison with the Deemed-to-Satisfy Provisions.

All approaches in A0.5 are equally permissible. Although AS 5113:2016 – *Fire propagation testing and classification of external walls of buildings* is required as part of Verification Method CV3, other Performance Solution methodology such as a 'first principles' approach towards demonstrating compliance with the relevant Performance Requirements is equally acceptable by the NCC.

¹ i.e. a fire safety engineer who is registered/accredited by a state-based authority where applicable, otherwise one who is registered as a Fire Safety Engineer on the National Engineers Register, <https://www.engineersaustralia.org.au/portal/ner/search>



Fire Resistance of Building Elements

NCC Specification C1.1 specifies the minimum Fire Resistance Level (FRL) for several building elements including external walls.

Weathertex can be used on external walls not required to achieve a minimum FRL or on wall systems with an FRL provided it does not impair the fire resistance of the wall system on which it is installed.

Most manufacturers of lightweight fire-rated wall systems provide information regarding whether or not installation of cladding ancillary to their systems would impair their FRL. This information can be obtained directly from fire-rated wall manufacturers.

For example, CSR (manufacturers of 'Gyprock' fire rated wall systems) in their Redbook addendum Nov 2017 on page AD15 provides a list of FRL systems which '...feature cladding options which may be substituted with any alternative cladding materials to achieve the stated FRL.'

This includes systems up to and including 120/120/120 FRL for timber and steel frame construction.

Fire Hazard Properties

Weathertex has been tested in accordance with AS/NZS 5637 and achieved a Group 3 rating with an average specific extinction area of 38.7 m²/kg.^[2]

Weathertex can be used as a wall and ceiling lining material wherever a Group 3 material is deemed acceptable by Specification C1.10 Table 3.

Use in Bushfire Prone Areas

Weathertex is manufactured from fire-resistant timber species as listed in Appendix E1 of AS 3959-2009. Weathertex has an average density of 1,020 kg/m³, which in accordance with AS 3959-2009, is suitable for use in the following Bushfire Attack Level (BAL) areas³: BAL-LOW, BAL-12.5 and BAL-19.

Conclusion

Weathertex is cladding product that can be used in buildings of Type C construction and subject to applicable concession requirements, it can be used in building of Type A and B construction to meet the DtS Provisions of the NCC.

Furthermore, Weathertex can be used on buildings of Type A and B construction if it has been assessed in a Performance Solution by a suitably qualified fire safety engineer.

² AWTA Product Testing, 2016. Group Number Assessment. Number: 1608001, Date: 2/08/2016. AWTA Product Testing: Flemington, Victoria.

³ EWPA, 2015. Declaration of AS 3959 BAL19 Claim for Weathertex. Date: 30 July 2015. EWPA: Eagle Farm, Queensland.



Weathertex can be used on fire-rated walls required to achieve a minimum FRL up to 120/120/120 provided it has approval from the fire-rated wall manufacturer the FRL of the wall will not be impaired.

Weathertex can be used as a ceiling or internal wall lining material wherever Group 3 materials are acceptable in accordance with the requirements of NCC Specification C1.10 Table 3. Weathertex meets the requirements of AS 3959 for use in bushfire prone areas up to BAL-19.

If you have any queries in regard to the above, please do not hesitate to contact the undersigned.

Yours sincerely,

A handwritten signature in blue ink that reads "Blair Stratton".

Blair Stratton

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