

PRODUCT TECHNICAL STATEMENT – FLAMEfixx dFx®

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| <i>Material, product or form of construction</i> | <i>FLAMEfixx dFx® Decking and Substructure</i> |
| <i>Issued by (company)</i> | <i>ITI (Australia) Pty Ltd</i> |
| <i>Reference number</i> | |
| <i>Version and date of issue</i> | <i>Version 3 – 30 August 2024</i> |

PRODUCT DESCRIPTION

FLAMEfixx dFx® is a wood product (radiata pine) that can be used in exterior above-ground applications, including deck structures (decking boards, bearers, joists and posts) and building sub-floors (bearers, joists and posts) in bushfire-prone areas for exposures up to and including Level BAL 40.

APPLICATION AND INTENDED USE

FLAMEfixx dFx® is suitable for structural timber applications, exposed to AS 3959 Bushfire Attack Levels BAL 12.5, 19, 29 and 40 and used in an above-the-ground and exterior environment, subject to periodic moderate wetting and leaching (AS 1604.1 [1] Hazard Level 3).

LIMITATIONS OF USE

- Not suitable for in-ground contact or other AS 1604.1 [1] Hazard Level 4 applications or above.
- Must be used above the flood hazard level.
- Construction activities are limited by recommendations contained in AS 1720.3 [2].

COMPLIANCE WITH THE NATIONAL CONSTRUCTION CODE
National Construction Code – Building Code of Australia – Volume 1 and 2 [3]

Only the relevant clauses are included in the description below.

NCC Volume One - Part B1P1 Structural Provisions and NCC Volume Two – Part H1

The performance requirements of Volume One Section B, B1P1 to B1P4 Part B1 are met via Deemed-to-Satisfy Provision B1D1, i.e., B1D2 to B1D6, and Volume Two Part H, H1P1 and H1P2 are met via Deemed-to-Satisfy Provision H1D2 to H1D11.

NCC Volume One - B1D4 Determination of structural resistance of materials and forms of construction (f) Timber construction and NCC Volume Two - H1D6 Framing (4)

FLAMEfixx dFx® decking boards are designed in accordance with TDA Decking Board Design Criteria [4]. The board has an appearance grade in accordance with AS 4785.1 [5], of grade Standard or better and meets the CSIRO's Low-rise Domestic and Similar Framed Structures Part 1. Design Criteria [6], deflection limit of 0.17 mm for 100 N concentrated load. The maximum concentrated load of 1.8 kN equals a maximum deflection of 3.0 mm.

The maximum decking board span is determined with AS 1684 Part 2 [7], Part 3 [8] or Part 4 [9].

FLAMEfixx dFx® substructure timbers (bearers, joists, and posts) are to be designed in accordance with AS 1720.1 [10] or AS 1684 Part 2 [7], Part 3 [8] or Part 4 [9]. FLAMEfixx dFx® structure sawn timber complies with AS 1720.1 [10] or AS 1684 Part 2 [7], Part 3 [8] or Part 4 [9] by visually graded sawn timber conforming to the requirements of AS 2858 [11] or Mechanically graded timber conforming to the requirements of AS/NZS 1748 [12].

NCC Volume One - B1D4 Determination of structural resistance of materials and forms of construction (i) Termite Risk Management and NCC Volume Two - Part 3.4 Termite Risk Management

FLAMEfixx dFx® timber is not considered subject to termite attack as it has been preservative-treated to H3 in accordance with AS 1604.1 [1], meeting the requirements of Appendix D of AS 3660.1 [13].

Queensland Variation

FLAMEfixx dFx® has a 50-year target design life for above-ground decay hazard zones Ag:A, Ag:B, AG:C and Ag:D for the timber species Radiata pine that is preservative treated to H3 as described in the *Construction Timbers in Queensland Book 1 and 2, 2017* [14].

NCC Volume One - B1D6 Construction of buildings in flood hazard areas and NCC Volume Two - H1D11

Where FLAMEfixx dFx® is used in flood hazard areas, it must be used above the flood hazard level.

NCC Volume One - Section C Fire Resistance (applicable to Class 2 to 9), S7C7 Other Materials

| | Spread of Flame Index | Smoke Development Index |
|-----------------------------|-----------------------|-------------------------|
| FLAMEfixx dFx® Radiata Pine | 0 | 1 |

The Fire Hazard Index properties are from AWTA Product Testing Report 21-001921 [15].

NCC Volume One - Part G5 Construction in Bushfire Prone Areas and NCC Volume Two - H7D4

NCC Volume One: G5D3 Protection – residential buildings and G5D4 Protection — specific Class 9 buildings (except when used in the Building envelope) and a deck associated with the building.

NCC Volume Two Class 1 and deck associated with a Class 1 building.

BAL 12.5, 19 and 29

FLAMEfixx dFx® complies with AS 3959 [16] as a Bushfire-Resisting Timber for use in BAL Low, 12.5, 19 and 29 exposure.

FLAMEfixx dFx® is considered as an AS 3959 Bushfire-Resisting timber as it has been tested in accordance with AS/NZS 3837 [16] as specified in Appendix F Bushfire Resisting Timber, Clause F2 and F3 of AS 3959 [17] for the evaluation of fire-retardant-treated timber, and found to pass the performance requirement. In addition, before submitting the sample to the cone calorimeter, the sample was subjected to accelerated weathering in accordance with ASTM D 2898 Method B [18] as required by AS 3959 [17].

Confirmation of the test result is found in the BRANZ Test Report [19] and is available from www.FLAMEfixx.com.au.

BAL 40

FLAMEfixx dFx® has been tested to Clause 14 and 22 of AS1530.8.1 [20] for FLAMEfixx dFx® subfloor system and Clause 14 and 21 of AS1530.8.1 [20] for FLAMEfixx dFx® decking system and found suitable for use in bushfire prone areas up to and including BAL 40.

Confirmation of the test result is found in the Warringtonfire Australia¹ Test Reports [21] and [22], available from www.FLAMEfixx.com.au. In addition, the weather resistance has been verified by BRANZ report FH14174-01-C1 [23].

Furthermore, FLAMEfixx dFx® has been verified by Bureau Veritas CodeMark Certificate of Conformity to comply with the NCC. The CodeMark certificate is available from www.FLAMEfixx.com.au.

¹ Warringtonfire is an Accredited Testing Laboratory – NATA Accreditation No. 3277

INSTALLATION REQUIREMENTS

FLAMEfixx dFx® has no unique installation practice other than that required for traditional decks. It shall be installed in accordance with AS 1684 Part 2 [7] or Part 3 [8] or Part 4 [9], FLAMEfixx dFx® Guide for installer, 26 May 2022 [25], and Wood Solutions No 21 Domestic Timber Deck Design [26].

IDENTIFICATION

All packs of FLAMEfixx dFx® are wrapped in plastic with the distinctive ITI FLAMEfixx dFx® logo and brand. All decking, screening, and structural timber are edge-branded with the logo, BAL rating, treatment plant number, chemical identification number, and Hazard Class [H3], all in a single rectangular grid, with the relevant Australian Standards. An example of branding is below.



MAINTENANCE INSTRUCTIONS

Regular applications of penetrating oil will extend the life of the FLAMEfixx timber product. Large cracks and checks on the product's surface should be filled and sealed.

All FLAMEfixx timber products should be inspected regularly to ensure they perform as intended. If the installation environment has changed due to movement in the structure, moisture entrapment may cause a risk of decay.

SUPPORT

Refer to the website www.FLAMEfixx.com.au or phone (02) 8805 5000.

References

1. AS 1604.1, Specification for preservative treatment Sawn and round timber
2. AS 1720.3 Timber structures Design criteria for timber-framed residential buildings, Standards Australia, 2016
3. National Construction Code – Building Code of Australia – Volume 1 Class 2 to 9 Building, ABCB, 2022 and Volume 2 Class 1 and 10 buildings
4. TDA Decking Board Design Criteria, 2018
5. AS 4785.1 Timber - Softwood - Sawn and milled products Product specification, Standards Australia, 2002
6. Low-rise Domestic and Similar Framed Structures Part 1. Design Criteria, CSIRO, 1977
7. AS 1684.2, Residential timber-framed Construction, Standards Australia, 2010
8. AS 1684.3, Residential timber-framed construction Cyclonic areas, Standards Australia, 2010
9. AS 1684.4, Residential timber-framed construction non-cyclonic (simplified), Standards Australia, 2010
10. AS 1720.1, Timber structures Design methods, Standards Australia, 2010

11. AS 2858 Timber — Softwood — Visually stress-graded for structural purposes, 2023
12. AS/NZS 1748 Timber - Solid - Stress-graded for structural purposes, Part 1: General requirements, 2011
13. AS 3660.1, Termite management New building work, Standards Australia, 2014
14. Construction Timbers in Queensland Book 1 and 2, 2017
15. AWTA Product Testing Report number 21-001921
16. AS/NZS 3837, Method of test for heat and smoke release rates for materials and products using an oxygen consumption calorimeter, Standards Australia, 2016
17. AS 3959 Construction of buildings in bushfire-prone areas, Standards Australia, 2018
18. ASTM D 2898, Standard Practice for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing, American Society for Testing and Materials, 2010
19. BRANZ Test Report, Durable Flame Retardant (FR) treated wood product called FLAME Fixx FH10313-001, 2019
20. AS 1530.8.1 Methods for fire tests on building materials, components and structures, Part 8.1: Tests on elements of construction for buildings exposed to simulated bushfire attack — Radiant heat and small flaming sources
21. Warringtonfire, A simulated bushfire test report, Job No. FRT20042 Rev 1.0, 10 May 2021
22. Warringtonfire, A simulated bushfire test report, Job No. FRT210169 Rev 1.0, 25 August 2021
23. BRANZ Fire Test Summary FH14174-01-C1, 2022
24. Bureau Veritas, Certificate number: CM70124 FLAMEfixx dFx® Durable Flame Retardant Treated Wood Product
25. FLAMEfixx dFx® Guide for installer, 26 May 2022
26. Wood Solutions No 21 Domestic Timber Deck Design

The Product Technical Statement was prepared and reviewed by the Timber Development Association (NSW) Limited.