BEAM 15

PRODUCT TECHNICAL STATEMENT

NCC VOLUME ONE – CLASS 1 AND 10 BUILDINGS

HYNE TIMBER

Category	Specifications
MATERIAL, PRODUCT OR FORM OF CONSTRUCTION	**Beam 15**
ISSUED BY (COMPANY)	**Hyne Timber**
REFERENCE NUMBER	**Volume 1.0**
VERSION AND DATE OF ISSUE	**October 2021**

PRODUCT DESCRIPTION

Beam 15 consists of a range of Glue Laminated Timber (GLT) products with a Modulus of Elasticity of 14,800 MPa. Beam 15 has been designed to be used as structural components such as beams, columns, floor joists, roof rafters, girts and purlins and other similar structural applications.

PRODUCT RANGE

Beam 15, Appearance Grade A or B, Cambered or Straight Profile, H2 or H3 Durability Treatment

Thickness [mm]	Depth [mm]	Length Range [m]
65 / 85	130	2.4 to 12.6 in 0.6m increments
	165	
	195	2.4 to 12.6 in 0.3m increments
	230	
	260	
	295	
	330	3.6 to 12.6 in 0.6m increments
	360	
	395	4.2 to 12.6 in 0.6m increments
65 / 85 / 130	425	4.8 to 12.6 in 0.6m increments
	460	
	495	
	525*	

*not available in 65mm thickness

APPLICATION AND INTENDED USE

Beam 15 is suitable for use as structural members in framing for commercial, industrial, and other similar structures.

Beam 15 can be used in structural applications above the ground that are fully protected from direct weather, and specifically AS/NZS 4364 adhesive Service Class 1 (interior), 2 (exterior, but protected) **and 3 (exterior)** environments. Beam 15 must be installed as part of a complete envelope or roof design with adequate protection from the elements and consideration of long-term moisture control.

Where Beam 15 may be exposed to periodic moisture episodes such as balconies, veranda, subfloors, or where there is no termite barrier installed, treatment to Hazard Class H3 in accordance with AS/NZS 1604.1 is advised.

CONDITION

Beam 15 must be stored and installed in accordance with:

- Technical Data Sheet No. 5 - Hyne Timber products on site handling and protection requirements.
- Technical Data Sheet No. 6 - Hyne Timber products in Above Ground Weather Exposed Applications.
- Technical Data Sheet No. 8 - Painting, sealing or varnishing Hyne Timber products for external applications.
- Technical Data Sheet No. 9 - Hyne Timber products design for durability.

Technical Data Sheets can be found on Hyne Timber's website www.hyne.com.au

LIMITATIONS

Beam 15 must be used above the flood hazard level for sites designated to be Flood Hazard Area.

The use of Beam 15 in building structures is dependent on the use of structural fixings to join the elements together and to other structural elements. For the appropriate design and installation of the fixings, reference should be made to the relevant structural standards and material suppliers.

COMPLIANCE WITH THE NATIONAL CONSTRUCTION CODE

National Construction Code – Building Code of Australia – Volume 2 Class 1 and 10 Buildings

PART 2.1 — STRUCTURAL PROVISIONS

Part 2.1 Structure P2.1.1 – Structural stability and resistance

The performance requirements of Part 2.1 Structure P2.1.1 (a), (b) and (c) are met via compliance with the Acceptable Construction Practice provisions of 3.0.2, 3.0.3, 3.0.4 and 3.0.5.

PART 3 ACCEPTABLE CONSTRUCTION — STRUCTURAL PROVISIONS

NCC Volume One	Basis of Compliance	References
3.0.2 Resistance to action:	It is achieved through compliance with BCA Part 3.0 Clause 3.0.3 and 3.0.4.	
3.0.3 Determination of individual actions:	Through compliance with BCA Part 3.0 Clause 3.0.3 (a) - AS/NZS 1170.1 and AS 1720.3 (b) - AS/NZS 1170.1 and AS 1720.3, and (c) AS 4055. For snow, ice and earthquake actions, only the actions accounted for in AS 1684 and AS 1720.3 are included.	AS/NZS 1170.1 AS 1720.3 AS 4055 AS 1684
	Action not covered by 3.0.3 are liquid pressure and groundwater, earth pressure, and differential and ground movement actions.	
	Additional actions covered are the time-dependent shrinkage and creep, thermal effects, and construction activities limited to AS 1720.3 restrictions.	AS 1720.1
	Shrinkage: Beam 15 is manufactured from seasoned timber components that are within the equilibrium moisture content range for a protected environment.	AS 1720.1
	Creep: Through the Duration of Load factor j2 as per AS 1720.1. Beam 15 is assigned a j2 creep factor = 1.5 for Service Class 1 and Service Class 2 applications, and j2 = 2.0 for Service Class 3 applications.	Hyne Timber – Duration of Load Factor for Glulam
	Thermal effects: Timber's expansion coefficient due to temperature in an interior environment are minimal and is catered for through design to AS 1720.1.	AS 1720.1

	Construction Activity: Beam 15 shall be handled, lifted and stored in accordance with Technical Data Sheet No. 5 – Hyne Timber products on site handling and protection requirements.	Hyne Timber TDS 5
3.0.4 Determination of structural resistance of materials and forms of construction:	Part 3.1.4 Termite Risk Management 3.1.4.2 Requirements for termite management system	AS/NZS 1328.1
(c) Termite Risk management Part 3.1:	Where Beam 15 is used as a Primary building element without a termite management system installed – Beam 15 is preservative treated to at least Hazard Class H2 in accordance with AS/NZS 1604.1 and comply with (i) (1) (F) Preservative treated in accordance with Appendix D of AS 3660.1.	AS 3660.1 AS/NZS 1604.1
(h) Timber construction Part 3.4:	Where Beam 15 is used above a Termite Management System without preservative treatment – Beam 15 complies with Termite Management System (b) (i), where a termite management system is installed in accordance with AS 3660.1.	AS 3660.1
	Part 3.4.3 Timber Framing Beam 15 complies with AS 1720.1, AS 1684.2, AS 1684.3 and AS 1684.4. ■ AS 1720.1: Beam 15 meets AS 1720.1 Clause Design of timber structures 1.3.1 (f) Glue laminated timber as it complies with AS/NZS 1328.1	AS/NZS 1328.1
	Design Properties Beam 15 design properties are proprietary and are detailed in Griffith University – Experimental testing of the shear, bending and compression capacities of Hyne GLT products and Hyne Timber - Beam 15 Test Report. The characteristic properties have been determined in accordance with AS/NZS 4063.	Griffith University – Experimental testing of the shear, bending and compression capacities of Hyne glued laminated timber products

Property	Characteristic Design Value	
Modulus of Elasticity (E)	14,800 MPa	Hyne Timber – Beam 15 Test Report
Bending Strength (f'_b)	36 MPa	
Compression Strength (f'_c)	33 MPa	
Shear Strength (f'_s)	4.2 MPa	
Tension Strength (f'_t)	20 MPa	
Density	650 kg/m^3	

Strength Group

Beam 15 is Strength Group SD6.

AS 1720.1 Table H2.4

Joint Group

Beam 15 is Joint Group JD4.

AS 1720.1 Table H2.4

End Joints

Finger Joints in Beam 15 comply with AS 5068.

Hyne Timber – Beam 15 Test Report

Gluleline Integrity

Beam 15 is bonded with Type 1 adhesives that meet Service Class 3 requirements, and comply with AS/NZS 1328.1 Appendix C and AS/NZS 4364.

Hyne Timber – Beam 15 Test Report

Queensland State Variation

For Queensland, Beam 15 meets the requirements of Schedule A, B or C of Book 2 - Construction timbers in Queensland Book 1 and 2 for southern pine timber species, as the intended use is for interior conditions. Where used in above-ground exposed situations, Beam 15 is preservative treated to Hazard Class H3 treatment in accordance with AS/NZS 1604.1.

Construction Timbers in Queensland Book 1 and 2

AS/NZS 1604.1

Part 2.1 Structure P2.1.2 Building in flood areas

The performance requirements of Part 2.1 Structure P2.1.2 are met via compliance with the Acceptable Construction Practice provisions of

P2.1.2 Building in flood areas	Beam 15 must be used above the flood hazard level.

ENVIRONMENTAL

Environmental Product Declaration

An EPD has been completed for Australian produced Glue Laminated Timber in accordance with ISO 14025 and EN 15804+A1.

EPD Glue Laminated Timber (Glulam), WoodSolutions

Formaldehyde Emissions Rate

The formaldehyde emissions rate of Beam 15 is less than 0.3mg/L; this has been certified by testing of panels to AS/NZS 4357.4 and meets Super E0 Emission Class requirements in accordance with AS/NZS 2269.0.

Hyne Formaldehyde Test Reports 12-51 and 6-10

Forestry Certification

All softwood resources used in the production of Hyne Timber products are sourced from sustainably managed plantations in Queensland, New South Wales and Victoria. These forests are independently certified for compliance with AS 4707 under Responsible Wood. Responsible Wood has mutual recognition by the Program for Endorsement of Forest Certification scheme (PEFC), which is the world's largest forestry certification organisation.

Hyne Timber - Chain of Custody (CoC) Policy Statement

Chain of Custody

Hyne Timber is certified to the chain of custody (COC) standards of the global forest and wood product certification scheme PEFC by Bureau Veritas. Refer to our website: https://www.hyne.com.au/why-timber/chain-of-custody

Hyne Timber – Glulam Plant CoC Certificate

QUALITY ASSURANCE

Hyne Timber manufactures in compliance with AS/NZS 1328.1 and is in the process of obtaining third party product certification for Beam 15.

Hyne Timber - GLT S Mark Certificate

Beam 15 is manufactured in a facility which produces existing GLT products possessing third party S-Mark product certification, administered by Bureau Veritas.

Hyne Timber operates extensive internal Quality Assurance systems and has an industry leading range of externally calibrated equipment for confirming the performance and compliance of all products, including Beam 15. In-line and post-manufacture testing is conducted daily to assess the mechanical properties of feedstock and finished beams, the quality of adhesive bonds, and the adequacy of preservative treatment.

Hyne Timber's in-house capabilities and expertise, in conjunction with third party testing and review, ensure that Beam 15 will continue to comply with the properties and certifications provided in this Product Technical Statement.

MAINTENANCE INSTRUCTIONS

Beam 15 should be installed and maintained in accordance with the requirements of:

- Technical Data Sheet No. 6 - Hyne Timber products in Above Ground Weather Exposed Applications. — Hyne Timber TDS 6
- Technical Data Sheet No. 8 - Painting, sealing or varnishing Hyne Timber products for external applications. — Hyne Timber TDS 8

PRODUCT WARRANTY STATEMENT

Hyne Timber warrants that Hyne Timber Glue Laminated Timber products (GLT), manufactured and / or distributed by Hyne Timber, are considered fit-for-purpose for use in accordance with the National Construction Code Building Code of Australia, for the design life of the structure when stored, handled, designed, specified, installed and maintained as stated herein and in any other applicable instructions or requirements issued by Hyne Timber as at the date of purchase.

Hyne Timber - Glulam Product Warranty Statement

For the full Warranty Statement visit www.hyne.com.au or email enquiries to info@hyne.com.au

PRODUCT SUPPORT

For product support, contact your Hyne timber representative, visit www.hyne.com.au or email enquiries to info@hyne.com.au

BEAM 15

HYNE TIMBER

DECLARATION

Hyne hereby confirms that all information contained within this document is correct and up to date. This document has been reviewed internally and by an independent third party.

EXTERNAL REVIEWER:

Timber Development Association

DATE:

October 2021

REFERENCED DOCUMENTS

Hyne

- Technical Data Sheet No 5 - Hyne Timber products on-site handling and protection requirements.
- Technical Data Sheet No 6 - Hyne Timber Products in Above Ground Weather Exposed Applications.
- Technical Data Sheet No 8 - Painting, sealing or varnishing Hyne Timber products for external applications.
- Technical Data Sheet No 9 - Hyne Timber products design for durability.
- Hyne Timber – Duration of Load Factor for Glulam
- Hyne Timber – Beam 15 Test Report
- Hyne Formaldehyde 12-51
- Hyne Formaldehyde 6-10
- Hyne Timber - Chain of Custody Policy Statement
- Hyne Timber – Glulam Plant Chain of Custody Certificate
- Hyne Timber - Glulam S Mark Certificate
- Hyne Timber - Glulam Product Warranty Statement

Griffith University

- Experimental testing of the shear, bending and compression capacities of Hyne glued laminated timber products

Queensland, Department of Agriculture and Fisheries

- Construction timbers in Queensland. Book 1 and Book 2: Properties and specifications for satisfactory performance of construction timbers in Queensland. Class 1 and Class 10 buildings (houses, carports, garages, greenhouses and sheds)

Standards Australia

- AS 1684.2, Residential timber-framed construction Non-cyclonic areas
- AS 1684.3, Residential timber-framed construction Cyclonic areas
- AS 1684.4, Residential timber-framed construction Simplified - Non-Cyclonic Areas
- AS 1720.1, Timber structures Design methods
- AS 3660.1, Termite management New building work
- AS 4707, Chain of custody for forest products
- AS 5068, Timber Finger joints in structural products Production requirements
- Standards Australia and New Zealand Standards
- AS/NZS 1170.1, Structural design actions Permanent, imposed and other actions
- AS/NZS 1328.1, Glued laminated structural timber Performance requirements and minimum production requirements
- AS/NZS 1604.1, Preservative-treated wood-based products Products and treatment
- AS/NZS 1720.4, Timber structures Fire resistance of timber elements
- AAS/NZS 2269.0, Plywood Structural Specifications
- AS/NZS 4063, Characterization of structural timber
- AS/NZS 4357.4, Structural laminated veneer lumber Determination of formaldehyde emissions
- AS/NZS 4364, Timber Bond performance of structural adhesives

International Standards

- ISO 14025, Environmental labels and declarations Type III environmental declarations Principles and procedures
- EN 15804, Sustainability of Construction Works Environmental Product Declarations Core Rules for the Product Category of Construction Products

WoodSolutions

- Environmental Product Declaration Glue Laminated Timber (Glulam), FWPA