



Reliable | Sustainable | Assured

LASERFRAME®  
STRUCTURAL  
TIMBER

SG8

LASERFRAME®  
STRUCTURAL  
TIMBER

SG10

# LASERFRAME® PRODUCT GUIDE

SEPTEMBER 2022

## LASERFRAME® PRODUCT GUIDE

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*The information contained in this product information sheet is current as at September 2022 and is based on data available to Carter Holt Harvey Woodproducts as at the time of going to print.*

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## 1.0 LASERFRAME®

Laserframe® is a structural timber manufactured by Carter Holt Harvey Woodproducts used for residential and commercial building framing. CHH Woodproducts has developed a full range of sawn timber components with grades and properties from NZS 3603:1993 Timber Structures Standard, confirmed from testing to the requirements of NZS 3622:2004 Verification of Timber Properties (NZS 3622).

### 1.1 LASERFRAME® FEATURES

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- Manufactured from plantation grown New Zealand Radiata Pine.
- Kiln dried Radiata Pine.
- Machine stress graded for structural assurance.
- Service and support from CHH Woodproducts.
- Compliant with New Zealand Standards.
- The truly renewable building material and is available as Forest Stewardship Council® (FSC®) certified (FSC® C021357 and FSC® C011498) upon request.

## 2.0 LASERFRAME® PRODUCT RANGE

Laserframe® is specified and sold by actual dry size. It is machined in the dry state to the section sizes given in Table 1.

**Table 1: Laserframe® Size and Length Availability**

Depth (mm)	Thickness (mm)	Length (m) <sup>1</sup>	Depth (mm)	Thickness (mm)	Length (m)
<b>Laserframe® SG8</b>			<b>Laserframe SG10</b>		
70	45	3.6, 4.2, 4.8, 5.4, 6.0	90	45	4.8, 6.0
90	45	3.6, 4.2, 4.8, 5.4, 6.0	140	45	4.8, 6.0
140	35	Random			
140	45	3.6, 4.2, 4.8, 5.4, 6.0			
190	45	3.6, 4.2, 4.8, 5.4, 6.0			
240	45	4.8, 5.4, 6.0			

<sup>1</sup> Shorter, cut to length products such as studs are also available only in SG8.

<sup>2</sup> Laserframe SG6 may be available in 70x45 and 90x45 3.6, 4.2, 4.8, 5.4 and 6.0m lengths.

## 3.0 LASERFRAME® TREATMENT RANGE

Laserframe is available in a range of treatment options given in Table 2. The treatment option required is dependent on the in-service application and can be derived from New Zealand Building Code (NZBC) Acceptable Solution B2/AS1 and NZS 3602:2003, Timber and Wood-Based Products for Use in

Building (NZS 3602) as modified by B2/AS1.

Treatment may be carried out by third party service providers. Some chemical companies provide guarantees in relation to their products which may be available to Laserframe customers.

**Table 2: Laserframe® Treatment Range**

Hazard Class	Preservative	Identification Colour	Biological Hazard
H1.2	Boron	Pink	Borer, decay
H3.2	CCA	Green	Decay, fungi and borer

The table above shows the hazard classes relevant for structural framing used in frames and trusses.

## 4.0 DETERMINATION OF STRUCTURAL PROPERTIES

The structural properties of Laserframe® are verified according to the requirements of NZS 3622. Table 3 gives the characteristic strength and stiffness values for limit states design.

**Table 3: Characteristic Stresses for Machine Stress Graded Timber**

Moisture Condition – Dry (M/C = 16%)						
Species	Stress Grade	Bending Strength (MPa)	Compression Strength (MPa)	Tension Strength (MPa)	Modulus of Elasticity (GPa)	Lower Bound Modulus of Elasticity (GPa)
Radiata Pine	SG10	20.0	20.0	8.0	10.0	7.5
Radiata Pine	SG8	14.0	18.0	6.0	8.0	5.4
Radiata Pine	SG6	10.0	15.0	4.0	6.0	4.0

### 4.1 STRESS GRADING

The stiffness and strength of a piece of timber varies along its length. All Laserframe is machine stress graded in accordance with AS/NZS 1748:2011 Timber - Solid - Stress-Graded for Structural Purposes to test for stiffness. Regular, random samples are tested "off line" on purpose built test equipment to verify both strength and stiffness in accordance with NZS 3622.

### 4.2 VERIFICATION

Laserframe is manufactured to the requirements of AS/NZS 1748, verified to the requirements of NZS 3622 and treated to the requirements of NZS 3640. Verification of Laserframe is completed at different times of the manufacturing process depending on treatment level:

- H1.2 Boron treated Laserframe is kiln dried and verified in the dry state at the mill in accordance with NZS 3622 prior to treatment.

- H3.2 CCA treated Laserframe is processed at the mill then CCA treated, redried and verified in accordance with NZS 3622.

**Note:** From time to time some individual SG8 pieces to be H3.2 CCA treated for use in weather exposed applications may have a moisture content exceeding 21% at the time of stress grading. This product is then subject to CCA treatment, redried and verified in accordance with NZS 3622.

### 4.3 GRADES

SG10 Laserframe  
SG8 Laserframe  
SG6 Laserframe

All Laserframe pieces will carry a branded stamp applied to the face of each piece of timber.

1. Brand
2. Grade
3. Size
4. Date of Manufacture at sawmill
5. Machine Stress Grading Standard
6. Kiln dried
7. Sawmill Number

**Laserframe<sup>1</sup> SG8<sup>2</sup>**  
**90x45<sup>3</sup> DD/MM/YY<sup>4</sup>**  
**AS/NZS1748<sup>5</sup> KD<sup>6</sup> 015<sup>7</sup>**

## 5.0 MOISTURE CONTENT

### 5.1 MOISTURE METER READINGS

The Boron preservative in Laserframe® Boron H1.2 will affect the accuracy of moisture meter readings. For wood that has been allowed to equilibrate with its surroundings (normally 3 to 4 weeks after treatment), the following corrections apply:

**Table 4: Moisture Meter Correction**

Meter Reading % MC	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
True Moisture Content %																
Conductivity Meter* or Resistance Meter*	13	14	15	16	16	17	18	18	19	20	21	21	22	23	23	24

\* For meters calibrated against NZS 1080.1:2012 Timber - Methods of test. Method 1: Moisture Content, Appendix E refer E2/AS1.

The data contained in the moisture meter correction tables, was obtained by testing of Boron H1.2 Moisture Content using moisture meters and correlating the results to oven dried Moisture Content test results. This work was carried out

for CHH Woodproducts by Koppers, Inc. and SCION. CCA treatment also affects the conductivity of a moisture meter and the meter manufacturers correction factors for CCA treatment should be applied.

### 5.2 MOISTURE METER TIPS

- The only appropriate moisture meter to be used on site is the 'sliding hammer' type which is a resistance meter. To use a capacitance meter or another type will almost certainly give false readings.
- Use insulated electrodes only.
- The meter must be calibrated annually.
- The meter is to be used by inserting the probes to  $\frac{1}{3}$  the depth of the timber member (16mm), in line with the grain of the timber and no less than 500mm from the end of the timber member.

- The meter reading must then be corrected by applying correction figures for both species and treatment. Use the correction figures in the above tables or from 'Measuring the moisture content of wood' by Ian Simpson of SCION.

Note: Laserframe Boron H1.2 is treated with a water-based preservative and experiences an increase in moisture content as a result of treatment. However, the moisture content will return to normal levels during fabrication or construction.

## 6.0 NEW ZEALAND BUILDING CODE – DURABILITY

Laserframe is manufactured to meet the requirements of New Zealand Building Code (NZBC) Acceptable Solution B2/AS1 and NZS 3602 as modified by B2/AS1. As such, if the product is used in accordance with NZS 3604: 2011 Timber-framed buildings, NZS 3602, and/or CHH Woodproducts product

literature, it will meet the durability clauses of the NZ Building Code. The timber requires no special attention after installation other than the building envelope being maintained by the owner and any failures (roof, walls, floor, plumbing) being promptly remedied.

## 7.0 QUALITY ASSURANCE

CHH Woodproducts has strict quality assurance processes in place to monitor that Laserframe adequately satisfies structural and visual requirements. At our mill sites Bureau Veritas undertake independent, third party audits of the Machine Stress Grading processes. Independent audit inspections are carried out

bi-annually and include:

- Audit of the Machine Stress Grading process and procedures.
- Verification of the calibration of testing equipment.

## 8.0 ENGINEERING DISCLAIMER

The characteristic properties and stress grade classifications are attributes of a timber population. All Laserframe timber comes from a population that meets the characteristic properties of the designated SG grade. CHH Woodproducts is unable to warrant that any single piece or pack of timber has the characteristic properties of the designated SG grade.



## 9.0 STORAGE, HANDLING & INSTALLATION

Refer to the relevant product safety data sheet (SDS) available on our website. Store Laserframe® at least 100mm clear of the ground on bearers suited to keeping the timber straight. Lift packets off transport, do not tip.

Laserframe is sent from the sawmill in wrapped packets and it is important to ensure that the integrity of the wrap is maintained during storage. The benefits of Laserframe are optimised by looking after it as dry timber. Note the following:

- Minimise exposure to weather and rain.
- Protect pre-cut and pre-nailed frames.
- Enclose frames as soon as possible.
- Avoid ponding of water on floor and around plates.
- Dry out after exposure to moisture.
- Cut end protection is not required for end sections, holes, rebates, notches, machining etc. for H1.2 treated Laserframe identified pink.
- Cut end protection is required for end sections, holes, rebates, notches, machining etc. for H3.2 or higher treated Laserframe identified green.
- Exposure to normal weather patterns during ordinary construction will not adversely affect the treatment in the product.
- H1.2 treated Laserframe is compatible with virtually all other building materials fasteners and hardware.
- H3.2 treated Laserframe may be corrosive to galvanised fasteners, dependant on the levels of moisture present. Refer to NZS 3604 for guidelines on fastener durability when used with copper based preservatives.
- Laserframe is a truly renewable building material and is Forest Stewardship Council® (FSC®) certified (FSC® C021357 and FSC® C011498) upon request (surcharge applies).

## 10.0 LINING

Lining of buildings should be done at moisture contents that suit the finish requirements of the occupied building as per the requirements of NZS 3602, NZBC Clause E2/AS1, or the recommendations of the lining manufacturer as appropriate.

## 11.0 MAINTENANCE & DISPOSAL

Used as recommended, Laserframe requires no maintenance provided the building envelope is maintained weathertight. Treated Laserframe residues should be sent for disposal at an approved landfill site.

## 12.0 REFERENCES & SOURCES OF INFORMATION

- New Zealand Building Code.
- CHH Woodproducts technical notes – downloadable from [www.chhwoodproducts.co.nz/document-library](http://www.chhwoodproducts.co.nz/document-library).
- NZS 3602 - Timber and Wood-based Products for use in Building.
- NZS 3603 - Timber Structures Standard.
- NZS 3604 - Timber Framed Buildings.
- NZS 3622 - Verification of Timber Properties.
- NZS 3640 - Chemical Preservation of Round and Sawn Timber.
- AS/NZS 1170 - Structural Design Actions.
- AS/NZS 1748 - Timber – Stress-graded – Product requirements for mechanically stress-graded timber.
- Safety Data Sheets.
- APA ([www.buildabetterhome.org](http://www.buildabetterhome.org)).
- EWPAA ([www.ewpaa.asn.au](http://www.ewpaa.asn.au)).

Standards can be purchased online at [www.standards.co.nz](http://www.standards.co.nz)  
Building Code Compliance Documents can be downloaded free of charge at [www.building.govt.nz/building-code-compliance](http://www.building.govt.nz/building-code-compliance).



The Laserframe machine stress grading process and procedures are audited by Bureau Veritas.



The Laserframe timber treatment process and procedures are audited by Independent Verification Services or Assure Quality.



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