

Laserframe[®]

Reliable | Sustainable | Assured

LASERFRAME[®]
STRUCTURAL
TIMBER

SG8

LASERFRAME[®]
STRUCTURAL
TIMBER

SG10

LASERFRAME[®] PRODUCT GUIDE

SEPTEMBER 2022

CarterHoltHarvey
Woodproducts New Zealand

Information contained within this manual is specific to Laserframe[®] structural timber and cannot be used with any other timber manufacturers product no matter how similar they may appear.

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

- 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) ¹	Depth (mm)	Thickness (mm)	Length (m)
Laserframe® SG8			Laserframe SG10		
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			

¹ Shorter cut to length products such as studs are also available only in SG8.

² 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

Laserframe¹ SG8²

90x45³ DD/MM/YY⁴

AS/NZS1748⁵ KD⁶ 015⁷

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.



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