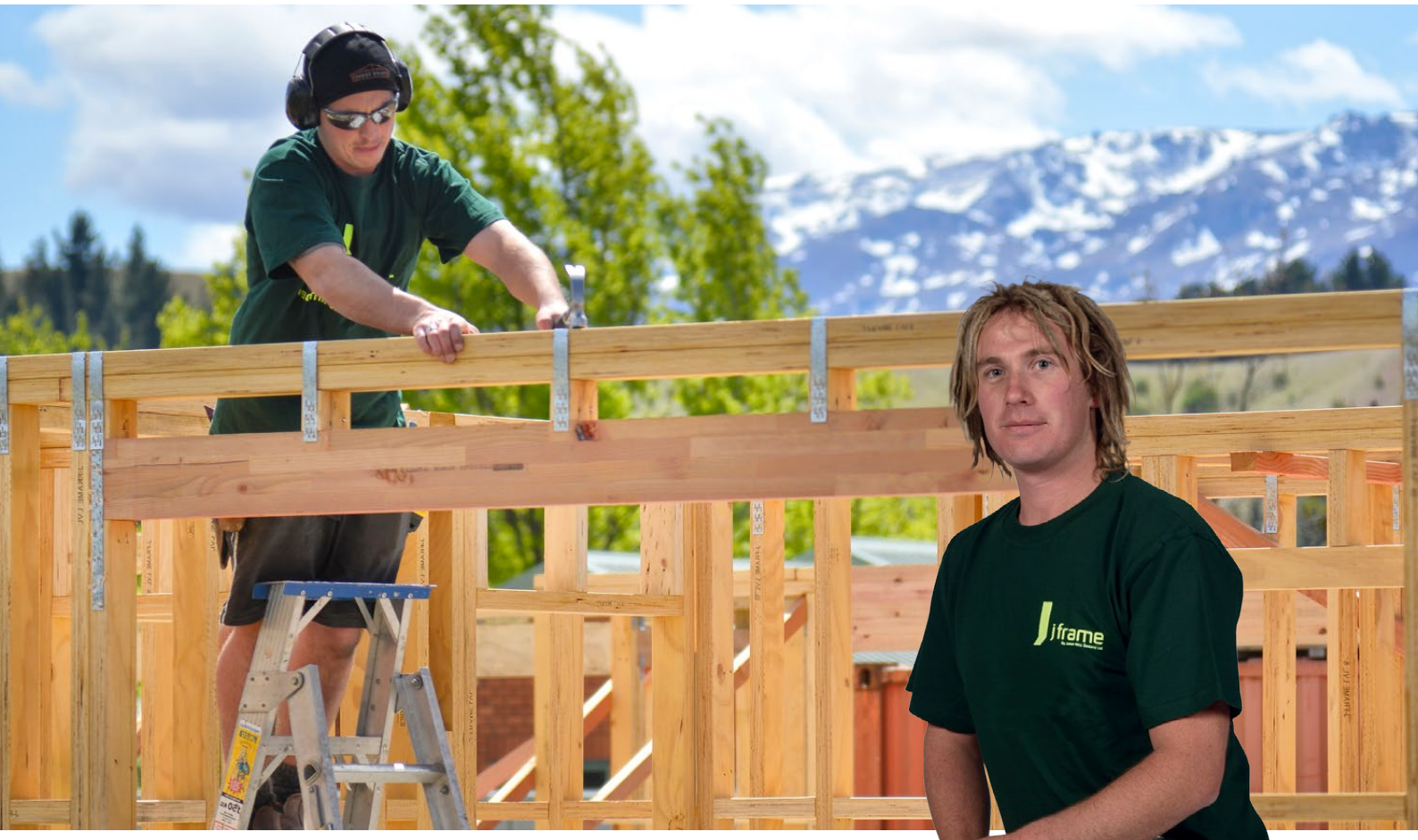
JUKEN NEW ZEALAND LTD

J-FRAME

Design & Installation Guide

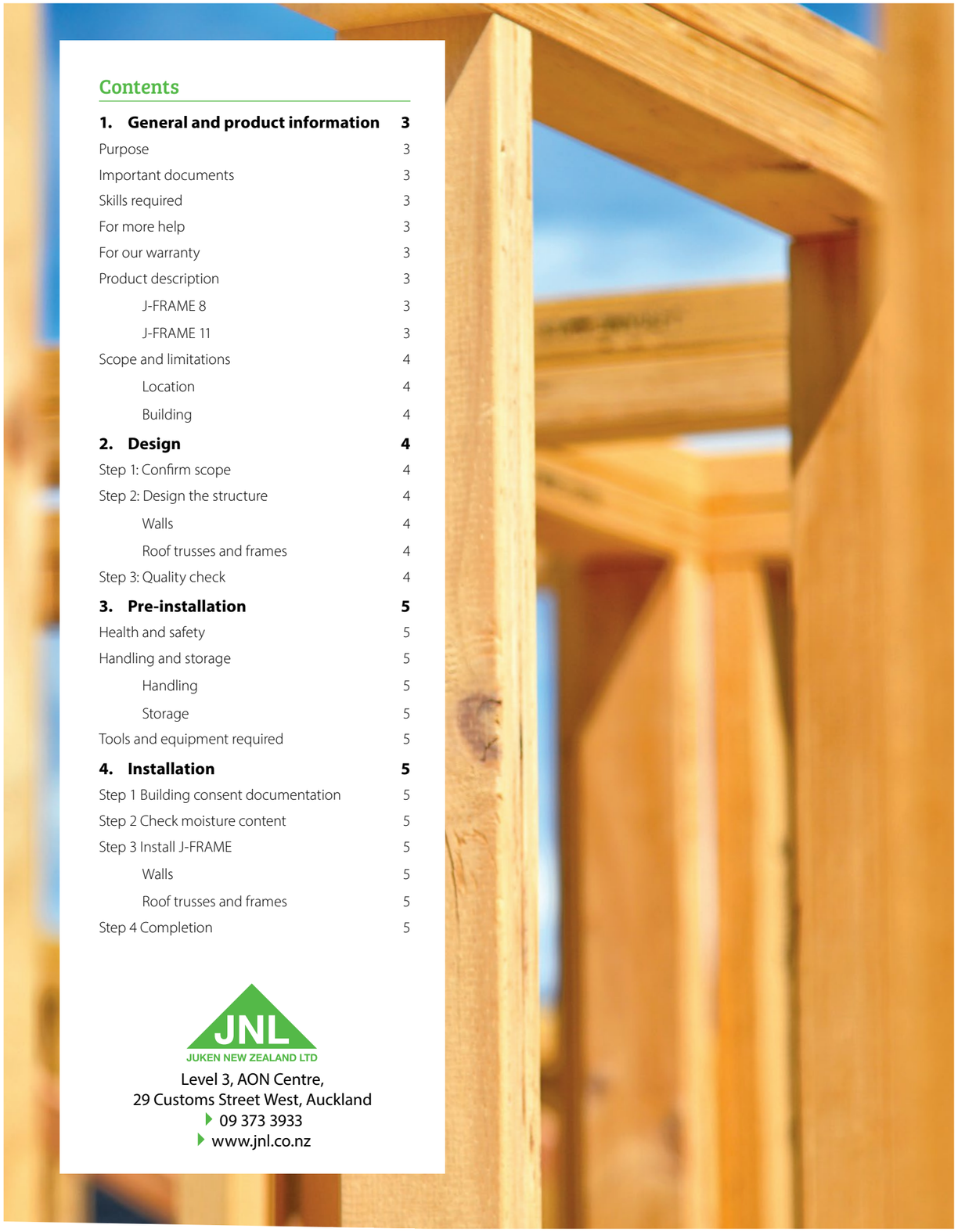
CodeMark
CM70031

VERSION 4.3 2025



"J-FRAME is straight, true and dimensionally accurate."

www.jnl.co.nz



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JNL Design & Installation Guide. V4.3. 2025
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1. General and product information

Purpose

This design and installation guide relates to JNL J-FRAME.

Important documents

This guide must be read in conjunction with:

- CodeMark CM70031
- NZS 3604:2011[1]
- NZS 3603:1993
- AS/NZS 1170:2002
- NZS AS 1720.1:2022
- Acceptable Solution, B1/AS1.

Skills required

This guide is suitable for use by licensed building practitioners (or deemed practitioners) licensed to the applicable class. Where applicable the person specifying or installing the J-FRAME must be able to meet all Restricted Building Work (RBW) provisions.

For more help

Technical assistance is available at www.jnl.co.nz.

While all reasonable efforts have been made to ensure the accuracy of information provided, this guide is a guide only. It may be subject to change.

For our warranty

Refer to www.jnl.co.nz.

Product description

J-FRAME structural LVL members are manufactured from radiata pine. J-FRAME is supplied treated in accordance with the JNL LVL Preservation Treatment Standard to meet the durability requirements where hazard class H1.2 or less applies.

J-FRAME is certified under the EWPAA Product Certification Scheme, to AS/NZS 4357.0:2022 and AS/NZS 1491:1996. Its consistent strength, stiffness and stability make it resistant to warping, twisting and bowing.

It is supplied to a standard thickness of 45 mm with the following options:

- Widths (mm): 90, 140, 190, 240.
- Standard lengths (m): 2.4, 3.0, 4.8, 6.0.
- Cut to length studs (m): 2.33, 2.48.
- Cut to length studs are supplied ready to use with a final length tolerance of +/- 1 mm.

J-FRAME is supplied in grades J-FRAME 8 and J-FRAME 11. J-FRAME 8 and J-FRAME 11 have been tested in accordance with AS/NZS 4063:2010 and have the following characteristic properties:

J-FRAME 8

J-FRAME 8 Characteristic properties	
Bending stiffness (MoE) (GPa)	8
Lower Bound MoE (GPa)	6.8
Bending Strength (MoR) (MPa)	14
Tension Parallel Strength (MPa)	6
Compression Parallel Strength (MPa)	18

J-FRAME 11

J-FRAME 11 Characteristic properties		
On Edge	Bending stiffness (MoE) (*E*) (GPa).	11
	Beam shear (f'_s)[2]	2.6
	Bearing perpendicular (f'_p)	8.1
	Plate shear (f'_{sj})	3.8
On Flat	Bending stiffness (MoE) (*E*) (GPa).	11
	Beam Shear (f'_s)[2]	2.8
	Bearing perpendicuxlar (f'_p)	9.4
	Plate Shear (f'_{sj})	2.9
Compression Parallel (f'_c)		33.5

Strength and Tension[3]

Size	Bending Strength f'_b		Tension parallel f'_t
	On Edge	On Flat	
90/140/190 x 45 (mm)	38	38	17.5
240 x 45 (mm)	34	36	

1 Where a standard is referenced it should be read "as amended by an acceptable solution or verification method" where applicable.
2 Beam Shear (f'_s) value is assumed, based on Bending Strength failures, on Beam Shear testing failed in shear.
3 No depth effect correction factor for Bending Strength (f'_b) or Tension Parallel (f'_t) as per NZS AS 1720.1:2022, is required as the Bending Strength and Tension Parallel, properties are based on the deepest end section.

Scope and limitations

Location

Scope	Limitation
In wind zones up to and including extra high as defined in NZS 3604:2011.	
In all corrosion zones as defined in NZS 3604:2011.	▶ Where microclimatic conditions may exist, the designer should consult with Juken New Zealand.

Building

Scope	Limitation
In new buildings that comply with the NZ Building Code or in existing buildings where the designer and installer are satisfied that the building is suitable for the intended building work.	
As frames or structural roof trusses, or in any load bearing and non-load bearing walls. In applications where the J-FRAME is protected from moisture.	▶ J-FRAME 8 and J-FRAME 11 can be used as a direct substitute to SG8 and SG10 respectively, as referenced in Section 8 of NZS 3604:2011, or specifically engineered to NZS 3603:1993, NZS AS 1720.1:2022, or AS/NZS 1170:2002. ▶ J-FRAME frames and structural roof trusses must be in accordance with NZS 3604:2011 or specifically designed in accordance with NZS 3603:1993 , NZS AS 1720.1:2022, or AS/NZS 1170:2002.. ▶ With fixing materials in accordance with NZS 3604:2011, Section 4 Durability. ▶ J-FRAME must not be used in the ground or in close proximity to the ground. ▶ J-FRAME should be enclosed as soon as possible to ensure optimal performance. ▶ Moisture content to be less than 20 % before installing internal lining. For measuring moisture content refer to Procedure for Testing Moisture Content of J-Frame LVL - December 2018. Click Here to download:

2. Design

Step 1: Confirm scope

Confirm the proposed use is within the scope and limitations. (Refer section 1 of this guide).

Step 2: Design the structure

J-FRAME can be used in the:

- ▶ construction of load bearing and non-load bearing walls
- ▶ prefabrication of structural roof trusses and frames.

Walls

For load bearing and non-load bearing walls, design the wall frame in accordance with NZS 3604:2011.J-FRAME 8 and J-FRAME 11 can be used where SG8 and SG10 respectively is specified in section 8 of NZS 3604:2011. Fixings must be in accordance with section 4 of NZS 3604:2011.

Alternatively, specifically design the wall frame in accordance with NZS 3603:1993, NZS AS 1720.1:2022, or AS/NZS 1170:2002.

Roof trusses and frames

The design and manufacture of frames and roof trusses must be carried out by a licensed truss and frame manufacturer.

Step 3: Quality check

Confirm all relevant design requirements are met.

Check that the building consent plans and specifications clearly define and include:

- ▶ J-FRAME dimension, grading, spacings, and all relevant installation details
- ▶ fixing requirements.

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3. Pre-installation

Health and safety

Take all necessary steps to ensure your safety and the safety of others. Consider the following:

- ▶ provision of adequate ventilation or mechanical dust extraction when cutting or drilling
- ▶ that J-FRAME is well supported when cutting and nailing
- ▶ that appropriate safety equipment, clothing and footwear is worn
- ▶ that all tools are used in accordance with relevant instruction manuals
- ▶ planning and monitoring a safe approach for working at height; select and use the right equipment
- ▶ clearing the work area of any obstruction before work starts.

For further information refer to:

- ▶ WorkSafe. [July 2018] Small Construction Sites, the Absolutely Essential Health and Safety Toolkit.
- ▶ WorkSafe. [December 2016] Health and Safety at Work, Quick Reference Guide.

These documents are available at www.worksafe.govt.nz.

Handling and storage

Handling

Care must be taken during loading, unloading and transporting the J-FRAME members, trusses or frames to prevent pre-installation damage.

Unload by hand, forklift or hiab using a spreader bar for long loads.

Storage

Store J-FRAME members in their plastic wrapping, on packers (where practical), to prevent moisture uptake.

Ensure J-FRAME members are stored above ground on a flat level surface.

Minimise exposure to the weather. Protect members, trusses and frames by closing in the building as soon as possible after installation. Before covering or lining, ensure J-FRAME has a moisture content equivalent to or less than 20 %.

Tools and equipment required

Install J-FRAME members, trusses or frames using standard carpentry tools and equipment. Use tools in accordance with good trade practice and supplier's instructions.

4. Installation

Step 1 Building consent documentation

Where applicable, access and view building consent documentation.

NZS 3604:2011 should also be available for reference https://www.standards.govt.nz/search/doSearch

Step 2 Install J-FRAME

J-FRAME can be used in the:

- ▶ construction of load bearing and non-load bearing walls
- ▶ prefabrication of structural roof trusses and frames.

Walls

For wall frames designed in accordance with NZS 3604, install the J-FRAME in accordance with the building consent documentation and section 8 of NZS 3604. Fixings must be in accordance with section 4 of NZS 3604.

For specifically designed wall frames, install the J-FRAME in accordance with the building consent documentation.

Ensure all wall frames are supported with temporary propping or permanently fastened to an adjacent structural wall.

Specific connections may also apply to pre-cut and pre-nail applications.

Roof trusses and frames

Fix and join trusses and frames in accordance with the truss and frame layout and construction details included in the building consent documentation.
When undertaking moisture checks, before closing in the J-Frame, please use the recommended procedure and conversions prepared by Scion for JNL.
Refer: **J-Frame 11 - Juken New Zealand** and look under FAQs.

Step 3 Completion

Check to ensure all components are installed correctly and in accordance with the building consent documentation.

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j frame
engineered timber