



★ NORTHBEAM SG10 – An Unsung Hero ★

SG10 is an engineering grade used where design requires higher strength and/or stiffness.

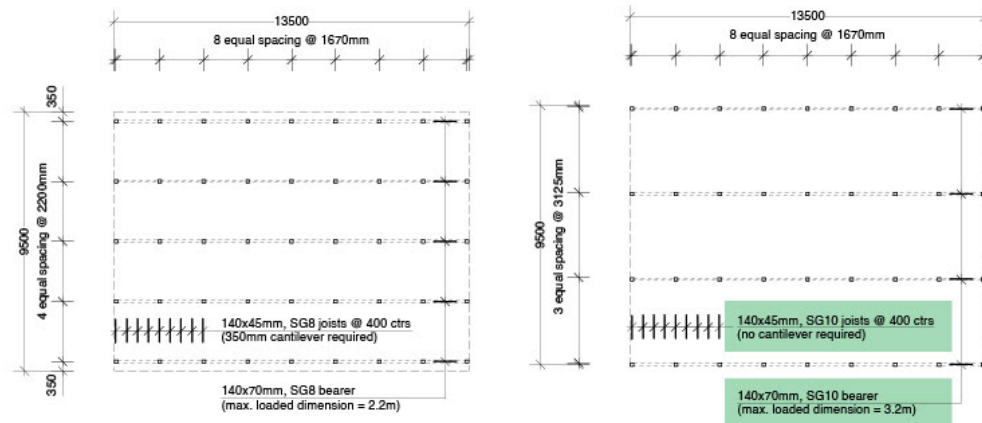
And that's Northpine's key advantage, says GM Bruce Larsen, "because we process only Radiata pine grown where the strongest mature pine comes from – the most northern forests of New Zealand".

"Some builders and specifiers tend to think that SG10 Radiata is either not available at all, or hard to get. We produce extremely strong, independently verified SG10 here. It's available within reasonable timeframes from merchants. In small piece lots, so you only order what you need."

Stuart Dale, director of Auckland-based consultancy Architectural Promotions, talks frequently with architects, engineers, designers and other specifiers. He says SG10 literally 'bridges the gap' between SG8 and Engineered wood products. The advantages are substantial and numerous. **In some cases an entire row of foundation piles can be eliminated.**

BEARERS

BEARERS & JOISTS



VALUE EQUATION

For the example shown, SG10 will save one line of piles (9 piles and 13.5 lineal metres of bearers).

1. All timber sizings ex NZS3604:2011, Tables 6.4, 7.1, A6.4 and A7.1
2. 1.5kPa floor load (dry in service)



SG10 190x45 joists were specified by engineers Mitchell Vranjes for a villa restoration in Herne Bay. Installed to an existing mid-floor structure by Fitzjames Construction.

“Northpine’s Span Tables Booklet is a very helpful tool for Specifiers that highlights the advantages of SG10, By showing SG8 and SG10 spans side-by-side it reveals how you can achieve increased spans, optimise stud centres and reduce timber volumes. Reducing the overall volume of timber required for a given project is likely to be very cost-effective compared with EWPs. And there’s the added advantage of making frames lighter, therefore easier and cheaper to transport. Frame and truss manufacturers will like the sound of that.

SG10 is about 25% dearer than SG8, but our calculations show LVLs are about 80% more expensive. These are substantial benefits. The booklet shows the SG8/SG10 data side by side on the same page for easy reference.

Specifying SG10 on their plans should be a carefully considered option. While it is not a panacea for all ills, SG10 has tended to be a neglected design solution for too long.

Northbeam SG10 is procurable in standard timber sizes, so no ‘packing’ is required. And the 7.2m length option opens up countless opportunities for designers and other specifiers because NZS3604:2011 requirements allow +10% span capacity when continuous over two or more spans.

ATTENTION DESIGNERS!

HOW CAN NORTHBEAM SG10 HELP?

CONSIDER SG10

- Use our unique SG8/SG10 Span Tables to calculate what works best for your project
www.northpine.co.nz/span-tables
- 3.6m to 7.2m lengths, treated up to H5
- Specify Northbeam on plans
- Bespoke orders via merchants nationwide
- Available within reasonable timeframes

LESS TIMBER VOLUME

- Environmental benefits
- Cost-effective choice
- Saves time and labour

LESS THERMAL BRIDGING

- Achieved by increasing stud and rafter centres
- Insulation is easier to install
- Up to 50% fewer studs required

BETTER CONSTRUCTION R-VALUES

(See Back Page for calculation)

- To meet new H1 requirements from May 2023

NEW H1 CODE AND CLIMATE ZONES

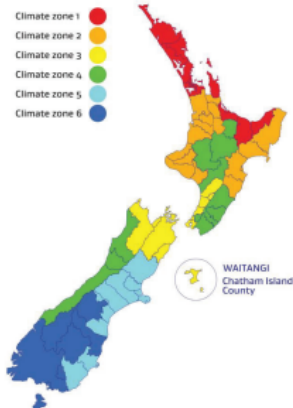
The thermal resistance (R-value) of a 90 x 45 timber member is currently R1. Under the new Building Code rules from May 2023, the least required R-value of a wall is R2.0.

ENERGY EFFICIENCY FOR LARGE BUILDINGS (OVER 300M²) EXCLUDING INDUSTRIAL

Building element	Climate zone					
	1	2	3	4	5	6
Roof	R3.5	R4.0	R5.0	R5.4	R6.0	R7.0
Windows	R0.33		R0.37		R0.40	
Wall	R2.2	R2.4	R2.7	R3.0		R3.2
Underfloor	R2.2		R2.4	R2.5	R2.6	

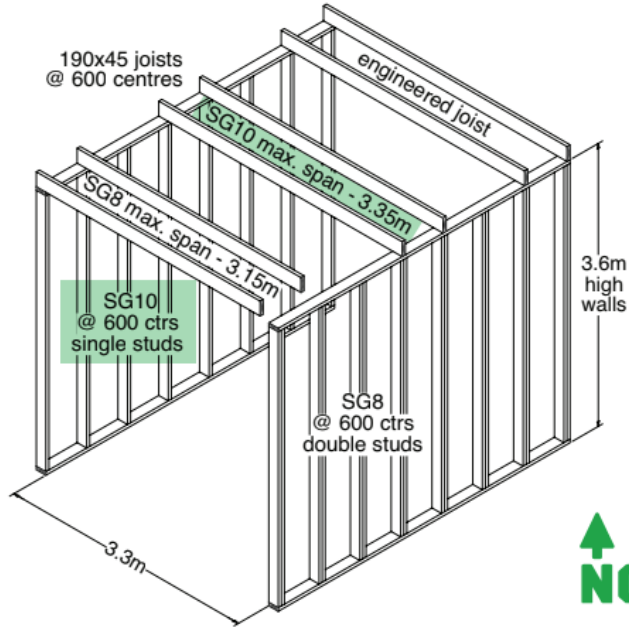
ENERGY EFFICIENCY FOR SMALL BUILDINGS (UNDER 300M²)

Building element	Climate zone					
	1	2	3	4	5	6
Roof	R6.6					
Windows	R0.37		R0.46		R0.50	
Wall	R2.0			R2.0		
Slab-on-ground floors	R1.5		R1.5	R1.6	R1.7	
Other floors	R2.5		R2.8	R3.0		



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JOISTS & STUDS



VALUE EQUATION

If SG8 costs 100%
then SG10 costs 125%
and Engineered timber costs 180%*

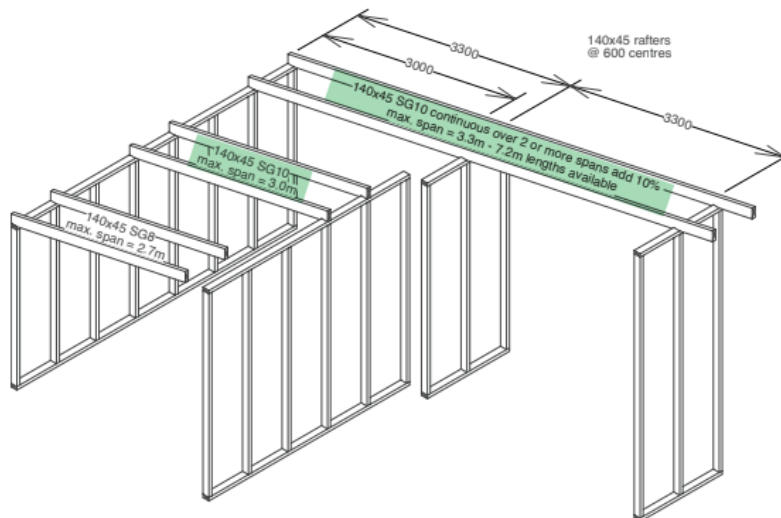
SG10 single stud wall cost about 65% less than
SG8 double stud wall and is much lighter to
manoeuvre on site.

*Indicative only, based on prices current October 2022

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BRANZ Appraised
Approval No. 5086 (2017)

RAFTERS



VALUE EQUATION

If SG8 costs 100%
then SG10 costs 125%
and Engineered timber costs 180%*

*Indicative only, based on prices current October 2022

CONSTRUCTION R-VALUE CALCULATION			
Layer description timber frame wall with insulation between timber framing (45mm x 90mm @ 600 ctrs) - DOUBLE STUD (SG8)			
External description	Thickness (mm)	Lambda (W/mk)	R-value(m ² K/W)
External surface resistance			0.030
Layer 1 - Bevel-backed weatherboard	19	0.125	0.152
Layer 2 - Knauf Insulation between timber framing			1.991
Layer 3 - Plasterboard lining	13	0.21	0.062
Internal surface resistance			0.090
TOTAL CONSTRUCTION R-VALUE			2.325

CONSTRUCTION R-VALUE CALCULATION			
Layer description timber frame wall with insulation between timber framing (45mm x 90mm @ 600 ctrs) - SINGLE STUD (SG10)			
External description	Thickness (mm)	Lambda (W/mk)	R-value(m ² K/W)
External surface resistance			0.030
Layer 1 - Bevel-backed weatherboard	19	0.125	0.152
Layer 2 - Knauf Insulation between timber framing			2.332
Layer 3 - Plasterboard lining	13	0.21	0.062
Internal surface resistance			0.090
TOTAL CONSTRUCTION R-VALUE			2.666

CONCLUSION: Using SG10 in place of SG8 can increase construction R-values by over 14% in walls.

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↓ They're using our timber here ↓



3D render of part of the proposed Molesworth Drive Boardwalk, Mangawhai



Molesworth Drive Boardwalk under construction. March 2023



Northbeam used for Mt Cardrona Station retaining wall



Northbeam 200x200 posts, Mt Cardrona Station retaining wall detail



A short video showcasing the Mangonui Waterfront completed May 2022.



Video walkthrough of the completed Avondale Bridge, Christchurch.

Read more about the [Avon River Project](#)



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