

sprucelam.[®]
European beauty. Kiwi ingenuity.

structural
laminated
timber
products,


techlam.[®]

0800 832 452 // info@techlam.co.nz // techlam.co.nz

Sprucelam[®] – the King of beams. Exceptional quality, excellent value.



Great visual product



Meets the NZ Building Code



Super strength and stability



Indoor: UT Natural



Small arised edges



Band sawn options

Being industry experts in structural laminated timber for over 25 years, we saw a gap in the New Zealand market for an aesthetically pleasing, high strength laminated interior product.

We sourced a better visual grade timber that has superior structural properties to Radiata Pine. It meets appropriate NZ Standards, is more dimensionally stable, is price competitive and environmentally certified.

We recognise that not all people want to use treated timber and we know that in Canada for example, durability of timber is assured primarily through good design, natural resilience of the timber and only lastly timber treatment.

We have also been careful to consider where and how the product should be used and have sought expert advice on the appropriate design and use of Sprucelam[®]. Our PASS (Product Technical Statements or PTS) are available for download from techlam.co.nz and clearly detail the full scope, use and limitations of Sprucelam[®].



Product Features

Sprucelam® is an extremely stable product due to the cell structure of the feedstock.

Refer below for details on the Species:

Species Name	Picea abies
Common Names	Norway Spruce, European Spruce, German Spruce
Tree Size	35-55m tall and 1-1.5m trunk diameter
Dried Weight	405 kg/m ³ (on average)
Specific Gravity	(Basic, 12% M.C.) 0.32, 0.41
Janka Hardness	1,680 N
Modulus of Rupture	63 MPa
Elastic Modulus	9.7 GPa
Crushing Strength	35.5 MPa
Durability	Class 4 (untreated)
Odour	No characteristic odour.
Colour/Appearance	Typically creamy white with a hint of yellow and/or red.
Grain/Texture	Fine, even texture, and a consistently straight grain.
Workability	Works well, although care is needed around knots. Glues and finishes well. If staining is done it is recommended that samples are done to ensure the desired results can be achieved. A sanding sealer, gel stain or toner is recommended when colouring Spruce.
Shrinkage	Radial 3.9%, Tangential 8.2%, Volumetric 12.1%, T/R Ratio 2.1
Allergies/Toxicity	Although severe reactions are quite uncommon, Spruce in the Picea genus has been reported as a sensitizer. Norway Spruce in particular has been reported to cause skin irritation and asthma-like respiratory effects.
Sustainability	This wood species is not listed in the CITES Appendices, and is reported by the IUCN as being a species of least concern.
Rot Resistance	Heartwood is rated as being slightly resistant to decay.

Sprucelam[®] FAQ

Q This range of Sprucelam[®] is far superior to standard Radiata Glulam, is it that much more expensive?

A No. Even though it is a superior product, it is only slightly more expensive than our Radiata Pine range meaning you get a great looking product and good value-for-money.

Q Can I use Sprucelam[®] instead of Radiata Pine, Douglas Fir or Macrocapa?

A Yes, Sprucelam[®] has proven structural properties that meet all structural performance characteristics. As long as the design protects the timber from prolonged exposure to moisture or wetting.

Q Sprucelam[®] is not mentioned in the NZ Building Code or NZ Standards, is it compliant?

A Yes, given its proven structural performance, it will comply with Code Clause B1 and providing that the timber is kept dry it will comply with B2 (Durability).

Q What is the durability of Sprucelam[®]?

A All sapwood is vulnerable to decay if allowed to remain wet. However, its heartwood durability is equivalent to Douglas Fir. Untreated Douglas Fir is included in NZS3602:2003 as suitable for use untreated as roof trusses.

Q Is there any defects that can occur?

A Yes. As with any natural timber product, it can be subject to the bending, splitting, twisting, bowing and cupping. The characteristics of Spruce make it superior to Radiata Pine. It grows very slowly in cold climates, so has very tight growth rings and hasn't got the troublesome core wood that is characteristic of Radiata Pine. This means it is more stable and a lot stronger and stiffer. The dry nature of Sprucelam[®] (approx. 12-15%) means that surface splitting is not uncommon but is unlikely to impact the structural properties of the timber.

Q Can you supply in different sizes and lengths?

A Yes. We can supply Sprucelam[®] in any length, size and shape.

Q Spruce is a European species. How will it perform in NZ conditions?

A Expectations of building performance is no different in Europe as it is in NZ. Providing it is specified correctly and designed for use in its untreated state, it will perform very well in NZ conditions.



The Range

Sprucelam® - Visual Grade Planer Finish

		Width															
		88	135	140	180	190	225	240	270	290	315	360	405	450	495	540	585
Thickness	42	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	65	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	88	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	135		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
	180				•	•	•	•	•	•	•	•	•	•	•	•	•

Notes: All products have a small arrised edge. Sizes in the table above are standard and any size is available upon request.

Manufactured to NZ Standards

All Sprucelam® products are manufactured and verified in accordance with the following New Zealand Standards:

- ✓ NZS 3603:1993A4
- ✓ NZS 3631:1988
- ✓ AS/NZS 1328:1998
- ✓ AS/NZS 5068:2006

GL Grade	Characteristic Strengths (MPa)				Elastic Moduli (GPa)	
	Bending	Tension	Shear	Compression	Modules of Elasticity	Modules of Rigidity (MoR)
GL12	25	12.5	3.7	29	11.5	0.77
GL10	22	11	3.7	26	10	0.67
GL 8	19	10	3.7	24	8	0.53

Design for durability

This checklist has been created to help ensure that Sprucelam[®] is used only in situations where the risk of moisture is minimised.

Interior Use
<input type="radio"/> Structural beam specifically engineered to NZS3603:1993
<input type="radio"/> Beams are to be fully exposed
<input type="radio"/> Beams do not form part of external primary structure
Primary Structural Use
<input type="radio"/> Structural beam specifically engineered to NZS3603:1993
<input type="radio"/> Stand alone units, less than 10m in building height
<input type="radio"/> Fixings to section 4 NZS3604:2011
<input type="radio"/> Risk matrix no more than 6 (E2/AS1 risk matrix)
<input type="radio"/> Roof slope 10° or greater
<input type="radio"/> If a skillion roof, corrugated iron or concrete, metal or clay tiles
<input type="radio"/> Roofs adequately ventilated
<input type="radio"/> 450mm (min) wide eaves (3m building height)
<input type="radio"/> 600mm (min) wide eaves (3-10m building height)

Disclaimer

Whilst every care has been taken to ensure that the above information is accurate, the authors take no responsibility for any errors or omissions, or for any specifications or work based on its contents. Furthermore, the designer must satisfy themselves that the assumptions listed in this guide are appropriate for the beams intended purpose.

Warranty

For our warranty information, refer to techlam.co.nz

Storage and Handling

For our Sprucelam[®] storage and handling requirements, refer to techlam.co.nz

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9th March 2015

To whom it may concern

Subject: Durability of heartwood Spruce compared to durability of sap/heartwood Douglas fir

All species are classified on the basis of heartwood durability because sapwood regardless of tree species is non-durable.

The heartwood of European grown Sitka spruce (*Picea sitchensis*), Norway spruce (*Picea abies*), and heartwood of Douglas-fir (*Pseudotsuga menziesii*) is Australasian durability Class 4 (AS 5605-2005). According to NZS 3602:2003 (Ref No 1E1) all roof trusses (excluding skillion roof) of Douglas fir is approved without preservative treatment with expected service life of 50 years. I see no reason why European grown heartwood of spruce would not be suitable for this end use.

Yours sincerely

A handwritten signature in black ink that reads "Tripti Singh". The signature is written in a cursive style with a long horizontal line extending from the end.

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**For further information please
visit our website or contact us:**

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WORKING WITH US.

To ensure a successful relationship, we endeavour to work to the framework set out below. We do understand that not all projects will follow this exact format, but we believe that this framework can assist with clarifying the different processes and responsibilities throughout your project.



COST ESTIMATE AND PRELIMINARY DESIGN

At the early evaluation stage of a project, basic drawings in any format are suitable for us to evaluate and provide guidance on likely member sizes and project cost indication. Where a preliminary design is required from our design team and/or our engineers to establish the scope of the project, we will always provide a quotation prior to proceeding.



FULL STRUCTURAL DESIGN AND SPECIFICATION

Once we have your agreement, we proceed with full structural design and specification. Depending on the scope, this document will include relevant producer statements along with full plans and specifications for presentation to council.



SHOP DRAWINGS

As with other factory-manufactured components, prior to manufacture, fully dimensioned workshop drawings of the components must be created, including the location of all slots, pre-drilling and penetrations as required. Techlam require full client approval and sign off of these drawings, including sign off by the project architect or engineer.



FINAL PROPOSAL

Upon completion of the full design, our QS team will provide a detailed Schedule of Quantities, and dependant on scope, a fixed price proposal. Once we have your approval, we will then schedule the project for production.



MANUFACTURE AND DELIVERY

Techlam proceeds with the manufacture of the product, along with any required detailing set out in the specification document. We will provide indicative lead times for delivery, dependant on workload at the time of acceptance. Accurate lead times can only be established upon approval of drawings and we will work with you to ensure satisfactory delivery times.



TECHLAM PRODUCT TECHNICAL SPECIFICATIONS

Techlam provides Product Assurance Supplier Statements (pass™) for specifiers to include in their specification. These statements can also assist with the acceptance of consents.