SCA

LIGHT, CLEAN AND FAST-GROWING

Nordic Lodgepole Pine

Visual properties

The share of sound knots is higher in Lodgepole Pine in relation to traditional Swedish Pine. The knot distance in Lodgepole Pine is approximately 35-45 centimeters in comparison with Swedish Pine which is approximately 10-15 centimeters. These properties make Lodgepole Pine suitable in manufacturing knot-free components, skirtings and frames.

Lodgepole Pine is a lighter wood species than Swedish Pine due to the absence of resinous red heartwood. This is of great advantage in treatment with translucent stains, waxes and oils, giving the ready-made panels and skirtings an even-looking surface.

A low share of heartwood is also a plus in gluing finger-jointed products and edge-glued panels. Due to the lack of fat resinous heartwood, adhesion properties are great, and the risk of production deficiencies and later product delamination is lowered.

Equally, a high share of sapwood makes the Lodgepole Pine a suitable wood species for pressure treatment. High sapwood share will give a high uptake leading to a treated product with great protection, no matter if it is against rot or fire. In time, this property makes it possible to fully use Lodgepole Pine in garden products such as decking, poles, fences and panels.

Mechanical properties

Density, stiffness and bending strength are all grade determining properties, which together define strength class according to EN 338 Structural timber – Strength classes.

Extensive testing of mechanical strength has proven that strength class C16 can be reached using a saw falling specification from the whole of north Sweden. This is well adapted to usage in construction purposes such as inner walls and battens with non-load bearing function. When calculating load-bearing capacity and stiffness, use the characteristic values stated in Eurocode 5,

The lower density (424 kg/m3) makes Lodgepole Pine well suited for use in packaging where low weight is of great interest for cheaper transport and an improved working environment. Low density is also an advantage when nailing and screwing, as the wood does not risk cracking to the same extent as wood with a higher density.

Table: Mechanical properties for Swedish Lodgepole Pine (Pinus Contorta) in comparison with pine (Pinus Sylvestris) and spruce (Picea Abies). MPa = N/mm2.

Properties		Pine (Pinus Sylvesris)	Spruce (PIces Abies)	Northern Lodgepole Pine (Pinus Contorta)
Mouisture content (%)	II	12	12	12
Basic density (kg/m3)	II	420	380	380
Density (kg/m3)	II	470	440	424
Tensile strength (MPa)	II	104	90	80
Bending strength (MPa)	II	87	75	60
Compressive strength (MPa)	II	46	40	33,7
	I	(7,5)	(6)	(7,0)
Shear strength (MPa)	II	10	9	8,2
Hardness (Brinell)	II	4	3,2	3,8
	I	(1,9)	(1,2)	(1,3)
Moduls of elasticity (MPa)	II	12 000	11 000	10 000
Strength class	II	C14-C-30	C14-C30	C14-C16

The values for strength and modulus of elasticity are average values, and refer to small test samples, with no imperfections, at an average temperature of 20°C. The figures with no brackets state properties parallel to the fibers (II) and the figures in brackets state properties perpendicular to the fibers (^). All the values relate to wood with 12% moisture content.Source: RISE

ThermoWood and reaction to fire class D

ThermoWood facades are increasingly popular in both residential and commercial properties.

Advantages of ThermoWood cladding:

- Natural design
- Low maintenance
- Low life cycle cost
- Low environmental impact
- No additives - pure timber.

When selecting raw materials for the ThermoWood treatment one of the main properties is knot structure and quality. High share of sound knots is of high importance to limit unwanted holes, cracks and discolouration. These aspects make it very suitable to use Lodgepole pine for ThermoWood products. With its high share of fresh knots, even in wider dimensions, this species makes a good choice for high quality ThermoWood facades.

SCA has full documentation on reaction to fire performance with third party certificate proofing class D on ThermoWood Lodgepole pine 19 mm and thicker. This equals traditionally used pine and spruce, both with and without ThermoWood treatment. SCA ThermoWood Lodgepole Pine is tested at the Latvian Forest and Wood Products Research and Development Institute MeKa.

Uniqe façade with SCA Wood ThermoWood Shingle facades

Our cladding shingles are available in heat-treated lodgepole pine from northern Sweden. The shingles are wedge-shaped, ranging from 5 to 18 mm from the thinnest to the thickest edge, and are available in widths from 70 to 150 mm.

The heat treatment ensures the shingles maintain their shape. ThermoWood shingles are warm brown upon delivery and gracefully turn gray over time. When correctly installed, they have a long lifespan without added chemicals.

Shingles are traditionally used in both roofing and facades and are normally made from heartwood pine to guarantee a long life. With ThermoWood modification of fresh knot timber the wood is given similar properties as heartwood, but with a higher yield resulting in a lower cost.

In modern construction western red cedar has become an attractive alternative to heart wood shingles. With increasing focus on sustainability and increasing the threat of possible trade barriers a local supply of shingle material is of great importance.