LENO® Surfaces

Contents

1. Cross-Laminated Timber (CLT) Surfaces with top layers made of single lamellae

Moisture changes in wood are accompanied by deformation such as shrinkage and swelling, an inherent property of wood and wood-based materials. To keep such deformations (e.g. cracks, gaps between layers) to a minimum, the wood is kiln-dried and all LENO® cross-laminated timber panels are delivered with a moisture content of 12±2%. This corresponds to the moisture content that occurs over the long term in a normal indoor environment, which reduces the potential deformation from swelling and shrinkage. Because of the natural properties of wood, as well as depending on how the panels are used and due to constantly changing climatic conditions, it is not possible to completely rule out deformation from swelling and shrinkage or the resulting formation of cracks and gaps. The quality descriptions listed out below apply on delivery and exclusively to the top layer of the CLT panels.

CRITERIA	**INDUSTRIAL** **COLOUR AND SURFACE NOT RELEVANT**	**INDUSTRIAL VISUAL** **COLOUR AND SURFACE MODERATELY RELEVANT**	**NORDIC VISUAL** (RESIDENTIAL QUALITY) **COLOUR AND SURFACE EXTREMELY RELEVANT**
Surface	Levelled, without further profiling	Sanded	Sanded
Colour and texture	No requirements	Largely uniform	Uniform
Type of wood	Admixtures from other wood species possible	Spruce	Spruce
Outer layer of individual boards	Yes	Yes	Yes
Width between individual boards	≤ 6 mm	≤ 4 mm	≤ 2 mm
Knots	No requirements	Firmly embedded knots (sound knots) permissible; black knots and unsound or loose knots / knot holes permissible up to 30 mm in diameter	Firmly embedded knots (sound knots) permissible; black knots and unsound or loose knots / knot holes permissible up to 15 mm in diameter
Resin pockets	Permissible	Permissible	Permissible up to 5 mm × 50 mm or equal surface area; larger areas to be repaired
Knot repair (filler or plug)	No requirements	Permissible	Permissible if isolated
Blue stain and red streaking	No requirements	Up to 20% of surface permissible	Up to 5% of surface permissible
Defects caused by insects	No requirements	Not permissible	Not permissible
Inbark	No requirements	Permissible	Permissible if isolated
Pith	No requirements	Permissible	Permissible if isolated
Compression wood	No requirements	Permissible	Permissible if isolated
Adhesive bleed-through	≤ 1 mm	Flush with surface	Not permissible
Rot	Not permissible	Not permissible	Not permissible
Cracks	Permissible subject to strength grading requirements	Permissible subject to strength grading requirements	Permissible subject to strength grading requirements
Others	Occasional process-related dirt and marks possible, possibly staple pins visible along edge areas and marks from fasteners	possibly staple pins visible along edge areas	none

1.1 Surfaces

Figure 1: Industrial quality

Figure 2: Industrial-visual quality

Figure 3: Nordic quality

2. Special Surfaces

2.1. Kerto® Fineline

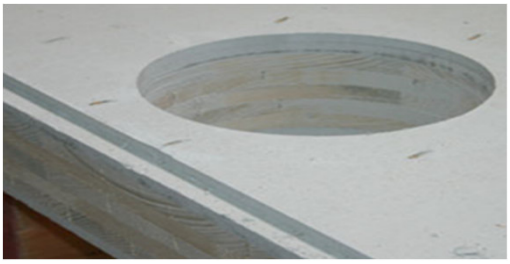
Description
Outer layer of Kerto® Fineline Premium on one or both sides creates a uniquely elegant look. Made using certified and quality-controlled Kerto® laminated veneer lumber panels.

Production
This surface option can be produced up to a length of 19.80 m with no visible joints. Curved panels can also be produced in this quality.

2.2. Oak Veneer (on request only)

Description
Sanded surface of approx. 5 mm thick oak veneer panels. Individual and at times multiple knots up to 35 mm in diameter with a generally even distribution create an elegant or rustic appearance. The typical growth characteristics of oak, such as reflection, structure and grain pattern, form a unique surface that make each panel one-of-a-kind.
The grading process ensures a predominantly uniform colour. Large imperfections and gaps or cracks are cut out or revised.

Production
Oak veneer surfaces can be produced up to a length of 5.90 m with no visible joints. Where multi-panel elements are used, the joint can be hidden above or below internal walls or joists.



2.3. Fermacell®

Description
Two 15 mm Fermacell® boards for fire resistance class F 90-B. Clamped, not glued at the joints, not filled, second layer applied staggered to the first.

2. Special Surfaces

2.4. Brushed Surface (on request only)

Description
Outer layer brushed on one or both sides with wire brushes. The bristles remove the soft early wood, accentuating the growth characteristics and unique grain patterns. All types of special surface options are available as brushed. On request, the surfaces can be brushed lengthwise and crosswise to achieve a rustic latticed look.

2.5. Single-Layer / Triple-Layer Panel (on request only)

Description
Solid softwood panel with D3 adhesive (EN 204) or triple-layer certified softwood panel. The panel is applied in place of the outer layer and butt-jointed along the width. Material: spruce with individual boards 38-75 mm wide, joined and glued together. Surface quality in accordance with DIN EN 13017.

Production
LENO® cross-laminated timber with special surfaces made of panel materials can be produced up to a length of 7.90 m with no visible joints. Due to the restricted size of the solid wood panel as a result of production limitations, lengths over 5.90 m (over 7.90 m with triple-layer panels) are produced with joints. To ensure a high visual quality, the joint can be hidden above or below internal walls or joists (specification of position required).
Moisture changes in wood are accompanied by deformation such as shrinkage and swelling, an inherent property of wood and wood-based materials. To minimise the risk of cracks, we recommend the use of 3-S panels instead of solid spruce panels when using LENO® cross-laminated timber constructions with outer layers having the same fibre orientation or when higher crack-reducing standards are required.

3. Notes

All information reflects the latest developments.
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