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HOISKO CLT Top Layers

Quality class	A	B	C
Gluing	No open glued joints	open joints < 100 mm/m glued joints permitted	open joints < 100 mm/m glued joints permitted
Visual appearance and color	well balanced in color and texture	considerably balanced in colour and texture	no requirements
Texture	rough texture permitted	rough texture permitted	no requirements
Knots	spruce knots: up to 40 mm Ø and sporadic black knots	healthy, strongly grown knots and sporadic black knots permitted	permitted
Dowel	natural branch dowel permitted	permitted	permitted
Resin pocket	sporadic up to 3 mm x 40 mm permitted	sporadic up to 5 mm x 50 mm permitted	permitted
Repaired resin pocket	permitted	permitted	permitted
In-growing bark	not permitted	permitted if sporadic	permitted
Shake	sporadic surface shakes permitted	surface and end-shakes up to 50 mm length, permitted if sporadic	permitted
Pith	sporadic up to 400 mm length permitted	permitted	permitted
Compression wood	permitted if sporadic	permitted	permitted
Insect attack	not permitted	not permitted	small sporadic holes from non-active larvae permitted
Discoloring	not permitted	slight discoloring permitted	permitted
Decay	not permitted	not permitted	not permitted
Sapwood	not permitted	permitted	permitted
Quality of the surface finish	small sporadic flaws permitted	sporadic flaws permitted	no requirements

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The wood moisture content change and the effects on the visual appearance in the three stages:

Production:

- HOISKO CLT building components' expansion and shrinkage are minimal due the cross-lamination of the technically dried lamellas (wood moisture content 12 % +/- 2 %).

Shell structure and assembly:

- HOISKO CLT building components are exposed to natural climate changes during the construction and assembling stage. Therefore, the prevailing climatic conditions may cause changes in the wood moisture content.

Building use:

- HOISKO CLT building components' wood moisture content stabilizes at the average level of 8 to 10 percent, not later than three seasons of heating. Changes in the visual appearance, such as shakes and cracks, may occur by the adaptation. However, it has no effect on the components' static features.
- The generation of shakes and cracks in the building components is possible and not preventable even with the greatest carefulness in the manufacture or even when the changes in the wood moisture content are minor.
- The mentioned flaws may be more visible in treated visible top layers.
- The bearing capacity of the thick CLT building elements is mainly better to thinner. The thick components are however susceptible to shrinkage and expansion and thus disposed to shakes and cracks.
- For the best visual result the residential visible top layers used are mainly 20 or 30 mm thick. Nonetheless, the actual top layer quality is visible after 1 to 3 heating seasons.