# SINTEF Technical Approval

## TG 20782

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Revised:
Amended:
Valid until 01.10.2026
Provided listed on
www.sintefcertification.no

SINTEF confirms that

## Kalevala OSB/3

has been found to be fit for use in Norway and to meet the provisions regarding product documentation given in the regulation relating to the marketing of products for construction works (DOK) and regulations on technical requirements for building works (TEK), with the properties, fields of application and conditions for use as stated in this document

**1. Holder of the approval**

AS Byggform
Eternitveien 8
3470 Slemmestad
www.byggform.no

**2. Product description**

Kalevala OSB/3 is wood based oriented strand boards for floors and roofs. The boards have tongue and groove profiles at all four edges, see fig. 1 and 2.

The boards are made of wood strands from spruce, pine, birch and aspen. The strands are cross-oriented in three layers and bonded under high temperature and pressure with PMDI glue. The face layer strands are mainly oriented with the wood fibers parallel to the length of the boards. The core layer strands are mainly parallel to the width of the boards.

The boards are produced in accordance with class OSB/3 as specified in EN 13986 and EN 300.

Standard floor board thicknesses are 18 mm and 22 mm, and 15 mm, 18 mm and 22 mm for roof boards. The boards are normally delivered with unsanded surfaces.

Standard sizes are 1220 mm x 2400 mm and 600 mm x 2420 mm. Boards with 1220 width have tongue and groove edges at the long sides only.

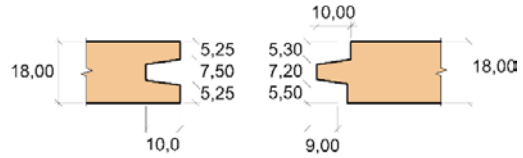
Declared tolerances on dimensions are as follows, measured according to EN 324-1 and -2:

- Tolerance on thickness ± 0,8 mm
- Length tolerance + 0 mm - 3,0 mm
- Edge straightness tolerance ± 1,5 mm/m
- Squareness tolerance ± 2,0 mm/m

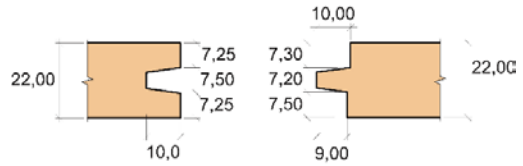
Mean panel density is approx. 650 kg/m³ measured according to EN 323. The panels are delivered from the factory with a declared moisture content between 5 and 12 % weight.

**3. Fields of application**

Kalevala OSB/3 can be used in buildings in risk classes 1 - 6 in fire classes 1, 2 and 3. For use in fire-rated constructions in fire class 3 a complete analytical fire design must be performed.

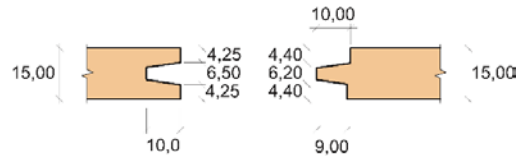



18 mm floor board

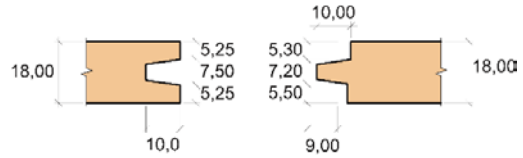



22 mm floor board

Fig. 1
Kalevala OSB/3 floor board. Tongue and groove profiles




15 mm roof board




18 mm roof board

Fig. 2
Kalevala OSB/3 roof board. Tongue and groove profiles

With condirions as specified in section 6, Kalevala OSB/3 can be used as a load-bearing subfloor on timber joists and battens in residentials and other buildings with an imposed floor load in category A and B according to EN 1991-1-1 ,and as load-bearing roof sheathing in roof structures.

Kalevala OSB/3 can be used in climate classes 1 and 2 in accordance with EN 1995-1-1, and as a subfloor in platform constructions. In the final construction, the average humidity shall not exceed 85% RH for more than short periods.

**4. Properties**

*4.1 Load capacity*

Installed as specified in section 6, Kalevala OSB/3 satisfies the functional requirements for floor and roof underlay according to EN 12871.

Characteristic values for structural design of load-bearing structures in general are given in EN 12369-1.

*4.2 Reaction to fire*

Kalevala OSB/3 with thicknesses 15 mm, 18 mm and 22 mm are classified according to EN 13501-1 as D-s2,d0. For use as visible flooring the fire classification is $D_{fl}$-s1.

*4.3 Thermal insulation*

Design thermal conductivity is $\lambda_d$ = 0,13 W/mK according to EN 13986.

*4.4 Properties related to moisture*

Moisture movement in the plane of the boards when the moisture content changes from equilibrium at 35 % RH to equilibrium at 85 % RH is considered to be approx. 2 mm/m, measured according to EN 318.

Thickness swelling after 24 hours of water immersion is ≤ 15 % according to the requirement in EN 300.

Based on EN ISO 10456, water vapor resistance for the boards used in dry indoor conditions is considered to be approx. $s_d$ = 1 m.

The adhesive in Kalevala OSB / 3 is moisture resistant, and the boards may be exposed to water for a limited time during the construction period.

**5. Environmental aspects**

*5.1 Substances hazardous to health and environment*

The boards contain no hazardous substances with priority in quantities that pose any increased risk for human health and environment. Chemicals with priority include CMR, PBT or vPvB substances.

*5.2 Effect on indoor environment*

The boards are not regarded as emitting any particles, gases or radiation that have a perceptible impact on the indoor climate, or to have any significant impact on health.

*5.3 Waste treatment/recycling*

For disposal the boards shall be sorted as wood material and delivered to an authorized waste treatment plant for energy recovery.

*5.4 Environmental declaration*

No environmental declaration (EPD) has been worked out for Kalevala OSB/3.

**6. Special conditions for use and installation**

*6.1 Floor sheathing*

Kalevala OSB/3 with thickness 18 and 22 mm may be used as load-bearing floor sheathing installed on floor joists or battens spaced maximum c/c 600 mm, provided that the imposed load is maximum 3,0 kN/m² uniformly distributed load and 2,0 kN concentrated load according to NE-EN 1991-1.

As underlay for thin flooring materials like vinyl or linoleum 22 mm floor boards must be used to achieve sufficient strength and stiffness. 18 mm boards can be used under stiff flooring materials like parquet, timber flooring or laminates.

*6.2 Roof sheathing*

Kalevala OSB/3 may be used as loadbearing roof sheathing with maximum spans as shown in Table 2. The table is valid for all roof slopes and for roofs with snow guards.

Table 2
Minimum board thickness for Kalevala OSB/3 loadbearing roof sheathing

| Rafter spacing mm | Snowload [1] kN/m² | Minimum board thickness mm [2] |
|---|---|---|
| Roof covered with roofing membranes and similar | | |
| 600 | $s_k \leq 5,5$ | 15 |
| | $5,5 < s_k \leq 7,5$ | 18 |
| | $7,5 < s_k \leq 9,0$ | 22 |
| Roof covered with turf roofing | | |
| 600 | $s_k \leq 2,5$ | 18 |
| | $2,5 < s_k \leq 6,0$ | 22 |

[1] Characteristic snowload on ground, $s_k$, according to NS-EN 1991-1-3 (based upon the basic snow load value for the municipality, with possible addition for height above the municipality center)

[2] For roof with slopes smaller than 1:20 it is recommended to increase the board thickness by 3 mm

In order to prevent that permanent deflections of roof sheathing lead to poor drainage of roofs with litle slope over time, the thicknesses given in Table 2 should be increased by 3 mm if the slope of the roof surface is less than 1:20 and the design snow load on the ground at the same time is larger than 3.0 kN / m².

The boards shall always be covered by a watertight roofing membrane, also when discontinuous roofing on battens is applied, and have a ventilated space underneath the boards.

*6.3 Safety in case of fire*

Fire classification D-s2,d0 and $D_{fl}$-s1 requies installation directly on an underlay with class A1 or A2-s1,d0 with density not less than 10 kg/m³ (e.g. mineral wool), or class D-s2,d2 with density not less than 400 kg/m³ (e.g. wood-based board). Or installed with an open or closed cavity behind the board, where the opposite side of the cavity is a product with class D-s2,d2 and density not less than 400 kg/m³.

*6.4 Installation*

The boards shall be installed staggered, with the long side perpendicular to the floor joists, rafters or roof trusses. The boards shall normally span continously over at least two spans. Free edges at walls and openings shall always be continuously supported.

Floor panels with 22 mm thickness and 600 mm width may be installed with the end joints placed between the joists as illustrated in fig. 3.

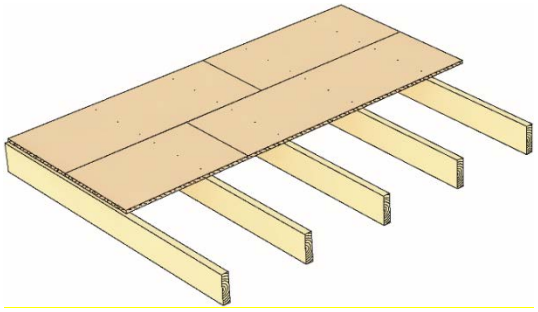


Fig. 3
The boards shall be installed staggered with the long side perpendicular to the supports. Floor panels with thickness 22 mm and width 600 mm may be installed with the end joints between supports.

All tongue and groove joints in floors shall be glued with two adhesive strings as shown in fig. 4. Floor sheathing shall also be glued to the floor joists with two continuous adhesives strings on top of the joists. A type of adhesive designed for subfloor installation and suitable for the relevant climate conditions during installation must be applied.

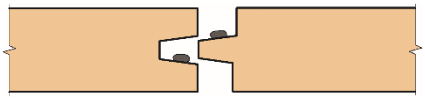


Fig. 4
Tongue and groove joints shall be glued with two adhesive strings. One is applied in the groove and one on the tongue.

*6.5 Surface treatment*
The boards must be cleaned and have a moisture content less than 10% before installation. Surface damages of floor sheathing must be repaired, and edge topping at joints joints must be leveled by sanding, before thin flooring materials are laid. Screw and nail heads must not be covered with levelling compounds.

*6.6 Substrate for ceramic floor tiles*
22 mm boards shall be installed on joists spaced c/c 300 mm when ceramic floor tiles are applied.

*6.7 Transport and storage*
The boards must be transported and stored in dry conditions on a stable and level support.

**7. Factory production control**
Kalevala OSB/3 is produced in Russia by Co. Ltd. WPM “Kalevala".

The holder of the approval is responsible for the factory production control in order to ensure that Kalevala OSB/3 is produced in accordance with the preconditions applying to this approval.

The manufacturing of Kalevala OSB/3 is subject to continuous surveillance of the factory production control in accordance with the contract regarding SINTEF Technical Approval.

Co. Ltd. WPM “Kalevala" has a quality system certified in accordance with EN ISO 9001.

**8. Basis for the approval**
The evaluation of Kalevala OSB/3 is based on reports owned by the holder of the approval. The use of the boards is also assessed on the basis of recommendations given in SINTEF Building Research Design Guides.

**9. Marking**
Kalevala OSB/3 must be marked with the name of the product and the manufacturer, quality type OSB/3, and a production number or date of production.

Kalevala OSB/3 is CE-marked according to EN 13986.

The approval mark for SINTEF Technical Approval TG 20782 may also be used.

**10. Liability**
The holder/manufacturer has sole product responsibility according to existing law. Claims resulting from the use of the product cannot be brought against SINTEF beyond the provisions of Norwegian Standard NS 8402

for SINTEF

Hans Boye Skogstad
Approval manager