SINTEF Technical Approval

TG 20155

Issued first time: 23.08.2012
Revised: 18.10.2023
Amended:
Valid until 01.10.2027
Provided listed on
www.sintefcertification.no

SINTEF confirms that

OSB 3 unsanded

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

SIA Kronospan Riga
Daugavgrivas soseja 7B
Riga LV-1016
Latvia
www.kronospan-express.com

2. Product description

OSB 3 unsanded is wood based oriented strand boards for floors and roofs.

The boards are made of wood strands from spruce and pine. 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 fibres parallel to the length of the boards. The core layer strands are mainly parallel to the width of the boards.

The boards are produced and CE-marked in accordance with class OSB/3 as specified in EN 13986 and EN 300. The boards are delivered with unsanded surfaces.

Standard board thicknesses are nominal 15 mm, 18 mm and 22 mm. Standard sizes on the Norwegian market are 2440 mm x 1220 mm with tongue and groove edges at the long sides (figure 1), and 2440 mm x 620 mm with tongue and groove at all four sides.

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

Tolerance on thickness:	± 0.8 mm
Tolerance on length and width:	± 3.0 mm
Edge straightness tolerance:	1.5 mm/m
Squareness tolerance:	2.0 mm/m

Mean board density is approx. 650 kg/m³ measured according to EN 323. The boards are delivered from the factory with a declared moisture content of 5 to 12 % weight, measured according to EN 322.

Formaldehyde emission class according to EN 13986 is E1.

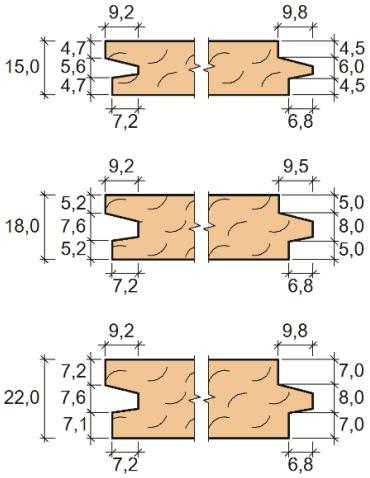

Fig. 1
OSB 3 unsanded. Tongue and groove profiles

3. Fields of application

OSB 3 unsanded can be used in buildings in risk classes 1 - 6 in fire classes 1, 2 and 3. For use in fire-rated/loadbearing constructions in fire class 3, or as a surface material in fire class 3, a complete analytical fire design must be performed in each project.

With conditions as specified in section 6, OSB 3 unsanded 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.

OSB 3 unsanded can be used as subfloor in service class 1 and as roof sheathing in service class 1 and 2 according to 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.

Boards with a thickness of 15 mm or more may be used as loadbearing roof sheathing in roof structures. Boards with a thickness of 18 mm or more may be used as subfloor on floor joists spaced c/c 600 mm in residential and other buildings with similar floor loads.

See special conditions for application in section 6.

4. Properties

General

OSB 3 unsanded fulfils the material requirements given for OSB/3 in EN 13986. OSB 3 unsanded fulfils the requirements for durability against moisture and strength and stiffness requirements for OSB/3.

Load capacity

Installed as specified in section 6, OSB 3 unsanded 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.

Reaction to fire

OSB 3 unsanded with thicknesses minimum 15 mm are classified according to EN 13501-1 as D-s2,d0 and Dfl-s1 for use as visible flooring, when used as described under section 6 of this document.

Thermal insulation

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

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. 3 mm/m, measured according to EN 318.

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

The water vapour resistance coefficient is μ = 50 for dry conditions and μ = 30 for wet conditions according to EN 13986. This is equivalent to s_d = 0,75 m and s_d = 0,45 m for 15 mm thick panels (equivalent air thickness value)

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

The boards are not specially treated against growth of mould or fungi.

5. Environmental aspects

Substances hazardous to health and environment

The product contains 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.

Effect on indoor environment

The product is evaluated according to SINTEF Technical Approval – Health and Environmental Requirements version 09.05.2022. The product is 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. The product meets the requirements in BREEAM-NOR v6.0, Emissions from building products according to Hea 02 Indoor air quality.

Waste treatment/recycling

The product shall be sorted as wood. The product shall be delivered to an authorized waste treatment plant for energy recovery.

Environmental declaration

No environmental declaration (EPD) has been worked out for the product.

6. Special conditions for use and installation

Floor sheathing

OSB 3 unsanded 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.

The use and installation of OSB 3 unsanded, including fastening by nails or screws, shall otherwise be in conformity with the recommendations in SINTEF Building Research Design Guide No. 522.861.

Roof sheathing

OSB 3 unsanded 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 together with the presumptions given in ch. 33 of SINTEF Building Research Design Guide No. 525.861

Table 1
Minimum board thickness for OSB 3 unsanded loadbearing roof sheathing based on material properties from EN 12369-1.

Rafter spacing mm	Snowload [1] kN/m²	Minimum board thickness mm
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
c/c 900	$s_k \leq 4.5$	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 EN 1991-1-3 (based upon the basic snow load value for the municipality, with possible addition for height above the municipality center)

In order to prevent that permanent deflection of the roof sheathing lead to poor drainage of roofs with little 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.

OSB 3 unsanded shall otherwise be used and installed in conformity with the recommendations in SINTEF Building Research Design Guide No. 525.861.

Safety in case of fire
Fire classification D-s2,d0 and D_{fl}-s1 requires installation directly on an substrates 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). Fire classification for minimum 15 mm boards is also D-s2,d0 and Dfl-s1 when mounted on a closed cavity, where the opposite side of the cavity is a product with class D-s2,d2 and density not less than 400 kg/m³.

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 continuously over at least two spans. Free edges at walls and openings shall always be continuously supported.

End joints shall be staggered, and always be continuously supported by joists.

All tongue and groove joints in floors shall be glued with two adhesive strings as shown in figure 2. For roof sheathing only the long sides shall be glued. 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.

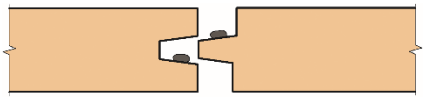

Fig. 2
Tongue and groove joints shall be glued with two adhesive strings. One is applied in the groove and one on the tongue.

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 must be levelled by sanding, before thin flooring materials are laid. Screw and nail heads must not be covered with levelling compounds.

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

7. Factory production control

OSB 3 unsanded is produced by SIA Kronospan Riga in Riga, Latvia.

The holder of the approval is responsible for the factory production control to ensure that the boards are produced in accordance with the preconditions applying to this approval.

The manufacturing of OSB 3 unsanded and the manufacturer's system for factory production control (FPC) is subject to continuous surveillance in accordance with the contract regarding SINTEF Technical Approval.

8. Basis for the approval

The evaluation of OSB 3 unsanded is based on reports owned by the holder of the approval.

9. Marking

OSB 3 unsanded is CE-marked in accordance with EN 13986.

The approval mark for SINTEF Technical Approval TG 20155 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

Susanne Skjervø

Susanne Skjervø
Approval Manager