
Guidelines for SINTEF Technical Approval for Wood based panels for floor and roof

1. General information about SINTEF Technical Approval

General information about SINTEF Technical Approval procedures is available at <http://www.sintefcertification.no/en-us/PortalPage.aspx?pageid=180>

2. Properties to be included in the approval and how the properties are determined

Table 1 and 2 show the material properties and panel performances normally declared in a SINTEF Technical Approval. Type testing must be performed by an independent test body, notified and/or accredited for such testing.

Table 1
Material properties

Property ¹⁾	Test method or classification standard	Minimum requirement	Comment
Bending strength	EN 310	According to EN 13986 for each panel type	Shown in the approval document as technical class according to EN 13986 Annex A
Bending stiffness			
Internal bond			
Thickness swelling	EN 319 (EN 314 for plywood)	Residual strength according to EN 13986 for each panel type	
Moisture resistance	NS-EN 317		
Formaldehyde class	Measurement of strength after cyclus testing according to EN 13986	Class E1 according to EN 13986 Annex B	
Reaction to fire	EN 717-1 or EN 120	D-s2, d2	
Water vapour resistance	Classification according to EN 13501-1 or EC Commission Decision 2007/348/EC (15.05.2007)	Total resistance $s_d \leq 0,5$ m for roof sheathing and roof underlay when used in roofs without ventilation between thermal insulation and sheathing	Testing is recommended because of large variations between manufacturers. Declaration according to tabulated values in EN 13986 Table 9 must be emphasized in the approval document
Thermal conductivity	EN ISO 12572		May be declared according to tabulated values in EN 13986 Table 11
	NS-EN 12664		

¹⁾ Bending strength, bending stiffness and internal bond shall be determined for the relevant panels. The need for testing of other properties shall be assessed, including use of results from prototype testing or other testing.

Table 2
Structural performance of load bearing floor and roof sheathing

Property	Test method or classification standard	Minimum requirement	Comment
Concentrated load resistance	EN 1195 and EN 12871	Characteristic failure load according to EN 12871: $Q_k \geq 2,0 \text{ kN}$ according to EN 1991-1-1 table 6.2 for floors category A and B $Q_k \geq 1,5 \text{ kN}$ according to EN 1991-1-1 table 6.10 for roof category H	Characteristic value according to EN 1058 for load resistance and mean value for deflection.
Deflection under concentrated load	EN 1195 and EN 12871	Maximum deflection under 1,0 kN point load 50 mm x 50 mm for floor sheathing, floors category A and B: - 2,0 mm in general - 2,5 mm for floors with stiff flooring material Maximum deflection under 1,0 kN point load 50 mm x 50 mm for roof sheathing: - $L/(6 \cdot t)$ where L is span width and t panel thickness	Loading in at least 6 different positions at panel joints, with at least 3 different panels. Loading in the expected most unfavourable positions.
Impact load resistance	EN 1195 and EN 12871	Floor sheathing: Impact class I according to EN 12871 Roof sheathing: Impact class II according to EN 12871	

The performance of floor and roof sheathing is normally determined according to the technical classes given in Table 1 in EN 1287. Tested panels must be representative for the relevant class. Test specimens for material testing (bending strength, bending stiffness and internal bond) should normally be sampled from the end of the same panels used for sheathing performance testing. Material properties should not be considerably higher than the required values for the relevant classes.

The minimum recommended panel thickness for floor and/or roof sheathing is given in the approval document, depending on the relevant imposed loads and snow loads according to EN 1991 with Norwegian national annex NA.

If required strength and stiffness values for structural design according to EN 1995-1-1 (Eurocode 5) may also be included. Structural design values is determined according to EN 789 or EN 636 and EN 1058. Reference to values in EN 12359-1 for OSB, particleboards and fibreboards may also be used.

Requirements concerning material and product properties related to impact on the environment is available at;

<http://www.sintefcertification.no/en-us/PortalPage.aspx?pageid=180>

3. Description of the manufacturer's factory production control

As a basis for the approval SINTEF must receive a copy of the description of the manufacturer's control plan for the product. This may be the relevant part of the manufacturer's quality control system for the product, or other documentation describing the manufacturer's factory production control. The person responsible for the factory production control shall be identified.

The control plan shall incorporate the requirements in EN 326-1 and EN 326-2, and as a minimum also describe the controls performed for:

- Incoming materials
- The production process
- Finished product
- Marking and storage

including the control frequency, how the controls are performed and by whom.

The factory production control description shall also include what measures are taken when faults are observed in the production or in the product.

4. Supervisory production control

The panels shall be CE-marked according to EN 13986 and system 2+ for assessment and verification of constancy of performance, with a factory production control system certified by a notified certification body according to Construction Products regulation (CPR).

The certification must cover control of the most important properties for the relevant intended use of the panels. Supervisory control of properties not covered by the certification may be considered.

Holder of SINTEF Technical Approval shall at least once a year send copies of control reports from the certification body to SINTEF Building and infrastructure.

5. Application for SINTEF Technical Approval and project management

Information regarding application and project management for SINTEF Technical Approval is available at;

<http://www.sintefcertification.no/en-us/PortalPage.aspx?pageid=180>

Copies of Declaration of Performance and CE-marking of the product according to EN 13986 shall follow the application form, as well as copies of test reports regarding floor and/or sheathing performance according to EN 13986 and EN 12871 (see cl. 3).

The product description must include the following:

- Panel thickness
- Panel sizes
- Section drawing of tongue and groove edges with measures
- Weight (density)
- Moisture content when delivered from factory

The product description must also specify the wood species used for the production, and the type of glue including specification of the chemical substances.

An approval project with a project manager at SINTEF is established when an application has been received, and an assignment contract is made between the applicant and SINTEF. The project manager makes a draft approval document together with a production control description. The applicant is consulted for information and control of the content before a final approval is settled.

When an approval is finalized a new contract is made in order to follow up the supervisory production control. The valid approval document is published on www.sintefcertification.no.

6. More information

Further information about SINTEF Technical Approval and valid approvals may be found on www.sintefcertification.no.