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Technical Data Sheet

EGGER OSB Flammex Installation guideline for Wall Sheathing



Product

Description

The EGGER OSB Flammex is a EN 13986 CE-certified flame-retardant OSB/3 board for interior use under dry (class of use 1) and damp (class of use 2) conditions, according to EN 300 - OSB:2006. Increased fire protection requirements coupled with high load-bearing capacity and stiffness make the OSB Flammex a perfect solution for the treatment of the OSB. Wood-based material for load-bearing and stiffening purposes.

The characteristic design values are given in the declaration of performance on the EGGER websites - see www.egger.com

Note: The Flammex surface coating must be protected from direct weathering/fluid water.

Key Benefits

With its B-s1,d0 classification, EGGER OSB Flammex meets increased fire protection requirements while offering reliable load-bearing capacity and excellent mechanical properties.

- CE certified according to EN 13986:2015
- Euroclass B-s1,d0 certified according to EN 13501-1
- The flame-retardant intumescent coating forms a barrier that slows the spread of flames
- In the event of a fire, the flame development is reduced
- The smoke development is kept low and there is no dripping
- The OSB/3 as a core material is glued formaldehyde-free and guarantees high mechanical strength and dimensional stability
- With the factory-applied white Flammex coating, the panel is ready for immediate use
- Conventional woodworking tools can be used to process the OSB Flammex
- OSB Flammex can be processed with fasteners commonly used in wood construction

Basics

This code of practice concerns the use of OSB Flammex boards of technical class OSB/3 according to EN 300-OSB:2006.

Essential design conditions for the verification of roof, ceiling and wall panes subject to shear loads are summarized in the European standard EN 1995-1-1 (Eurocode 5 / EC 5), paras. 9.2.3 and 9.2.4 and in the national annexes to the standard (e.g. DIN EN 1995-1-1/NA). These are also the basis for the tables for pre-dimensioning in the Technical Leaflet TLBP103.

Design rules for wall panels

According to EN 1995-1-1/NA (Eurocode 5), a maximum of one horizontal panel joint is permitted if all panel edges in the joint area are connected to each other in a shear-resistant manner by shear connectors.

A design without horizontal joint with the available storey-high OSB panel formats 2,500 mm, 2,700 mm is therefore recommended

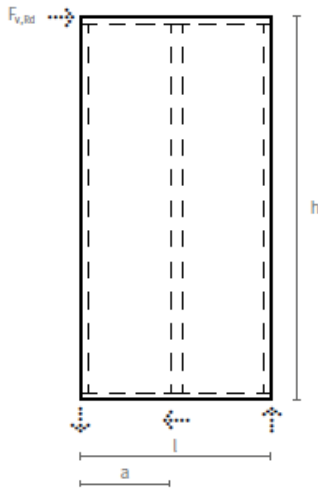


Illustration 1: Formation of the wall pane

- Sufficient tie rods are always required at the edge ribs.
- The minimum width of the boards l is $h/4$ (for example 625 mm for a wall height of 2500 mm).
- Wall areas with door or window openings are not used for the verification. Only the undisturbed wall areas to the left and right of openings are to be used.
- Individual openings in the planking that are smaller than 200 mm x 200 mm or multiple openings with a total maximum height/width of 10% of the panel height/width can be neglected.
- The lanyard spacing a_1 along the panel edges is constant and depends on the horizontal force to be absorbed. For multi-panel sheets with inner ribs, the planned lanyard spacing on the inner ribs can be doubled to a maximum of 150 mm.
- The panels must be installed with a joint of approx. 2 mm to ensure constraint-free planking. The joints between the elements must not exceed 3 mm
- The construction product may be used on substrates corresponding to Euroclasses A1 or A2-s1, d0, with a minimum thickness of 9 mm and a minimum density of 653 kg/m³
- When installed on a timber or metal substructure, Euroclass A1 insulation with a melting point of >1000 °C and a minimum density of 35 kg/m³ must be installed directly behind the panels in the space between the timber or metal slats (40 mm). A ventilated cavity of 40 mm between the insulation and a Euroclass D-s2,d0 substrate is permitted.
- Installation may only be carried out mechanically using metallic fasteners on wooden or metal substructures.
- Horizontal and vertical joints up to 3 mm, or with butt-jointed boards.
- Can be used as wall and ceiling cladding indoors.
- Not to be used horizontally as floorings.

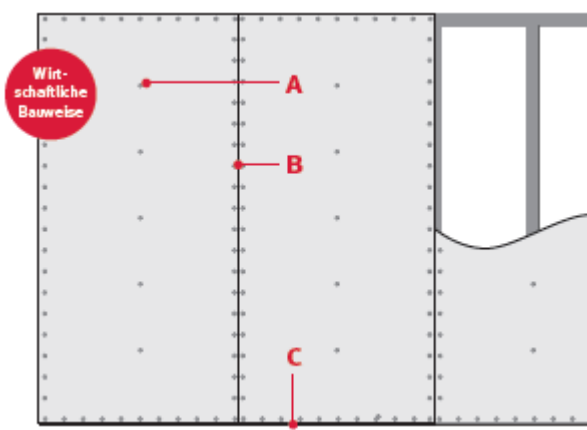


Illustration 2: Vertical planking

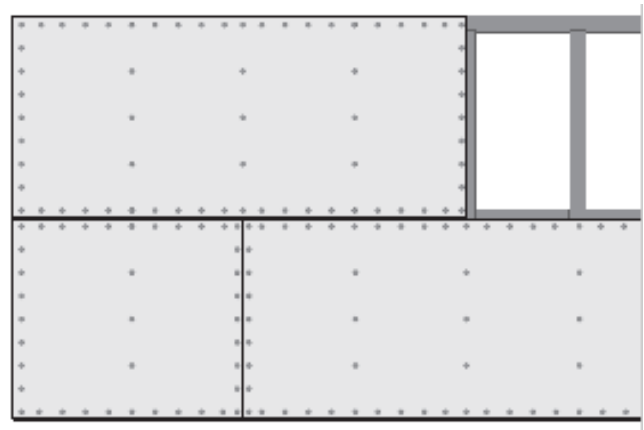
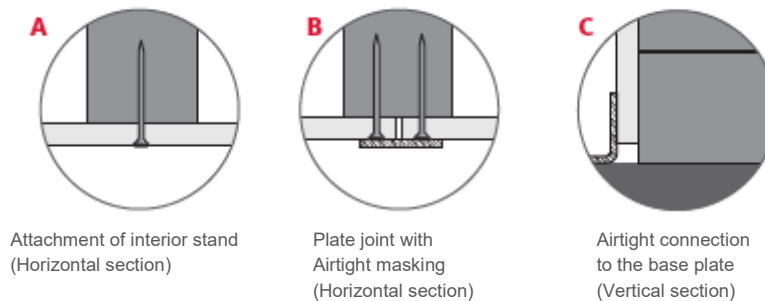


Illustration 3: Horizontal planking



Imperfections

Consideration of the effects of imperfections can be neglected for blackboards in the case of

- panel widths of at least 1/3 of the table height,
- panel widths of at least 1/4 of the table height,
- if the panel is directly supported on a rigid substructure and if the optional increase of the characteristic values of the load-bearing capacity of the fasteners is dispensed with,
- Rib spacing a_R of a maximum 50 times board thickness t .
- The undisturbed areas are to be regarded as individual panels. The individual panels must each be anchored independently.

Sawing, drilling, milling

A sharp saw blade must be used to cut the OSB Flammex boards without tearing. Fine, carbide-tipped saw blades with a high number of teeth should be used to ensure a chip-free cut. When sawing with the hand-held circular saw, the panels should be stored with the coated side down and vibration-free. OSB Flammex drilling can be done with all electric and hand machines suitable for solid wood. With a two-sided Flammex coating, it is important to ensure that the coated side, which is installed on sight, faces downwards during application.

Fastening

The fastening of OSB Flammex boards can be done with suitable fasteners such as screws, clamps and nails. The crosswise aligned strands and the high core layer compaction ensure that the fasteners also fit firmly on the outer edge of the slab. The high bulk density ensures high pull-out strength in the edge area.

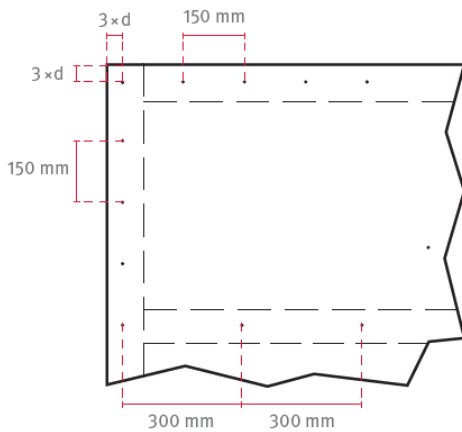


Illustration 4: Recommendation for maximum fastener spacing

For the planking of components subject to disc-like loads, the minimum fastener distances specified in the table must be observed.

When fastening, care must be taken in accordance with EN 1995-1-1 to avoid stresses and crushing.

In general, the following applies to staples and nails:

- Proof of usability required by the building authorities such as approval or standard
- Length of fasteners: $2.5 \times$ board thickness, minimum 50 mm
- Clamps with a wire thickness of at least 1.53 mm
- corrosion-resistant, made of galvanized or stainless steel
- When using nails: flat-head nails with ring groove, screw nails or grooved nails

Nails

Table 1: Minimum distances according to EN 1995-1-1, para. 8.3.1.3 in wood and the board surfaces of EGGER OSB Flammex for nails $d_n < 5$ mm

	amax distance between each other in grain direction	a1 Distance between each other in grain direction	a _{4,c} from the unstressed edge _l_ to the grain	a _{4,t} *from the stressed edge _l_ to the grain
Wood	$40 \times d_n$	$10 \times d_n$	$5 \times d_n$	$7 \times d_n$
EGGER OSB Flammex	$40 \times d_n$ $80 \times d_n^{**}$	$8,5 \times d_n$	$5.95 \times d_n$	$5.95 \times d_n$

* Only in exceptional cases when load is applied via the edge rib without distributor (edge rib stressed on bending), for load-grain angle of 90°

** Only stiffening planking

Staples

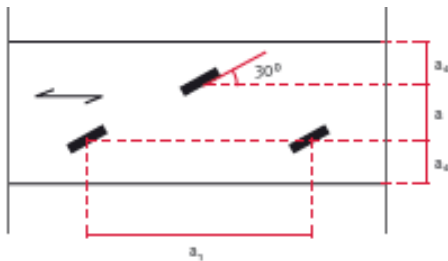
Table 2: Minimum distances according to EN 1995-1-1, para. 8.4 in wood and the board surfaces of EGGER OSB Flammex for clamps

	amax distance between each other in grain direction	a1 ***Distance between each other in the grain direction	a _{4,c} from the unstressed edge _l_ to the grain	a _{4,i} *from the stressed edge _l_ to the grain
Wood	40 x d _n	15 x d _n	10 x d _n	20 x d _n
EGGER OSB Flammex	40 x d _n 80 x d _n **	12.75 x d _n	8,5 x d _n	17 x d _n

* Only in exceptional cases when load is applied via the edge rib without distributor (edge rib stressed on bending), for load-grain angle of 90°

** Only stiffening planking

Clamp grain angle ≥ 30°



Hint:
Further information on fasteners are set out in EN 1995-1-1, Section 8 and the respective National Application Documents.

Illustration 5: Clamp Spacing and Clamp Grain Angle

Coating

A classification in accordance with EN 13501 classifies the fire behavior of the coating material of a certain manufacturer on its systems. The classification is therefore specific to the manufacturer and not transferable to other manufacturers. Fundamental changes to the material or installation system require reclassification. It is not possible to apply a commercially available water-based emulsion interior paint, wallpaper or other coating materials. This also includes laminates or other coating materials that must be applied using a hot press. These are not approved and therefore cannot be applied to OSB Flammex.

Defects

When installing the OSB Flammex using the approved fasteners, the OSB Flammex coating may come off. Defects around the fasteners up to a maximum size of 3 mm do not impair the functioning of the OSB Flammex.

Panel joint sealing

Under review

Corner formation

At this stage, we recommend the use of flame-retardant coatings available on the market. Further tests are being carried out. The following flame-retardant coatings are approved:

- In development



Supplementary documents

For more information, please refer to the following Technical Data Sheets:

- CE declaration of performance EGGER OSB Flammex,
- Storage instructions for EGGER OSB, OSB Flammex and EGGER DHF,
- Transport and handling instructions for EGGER OSB, OSB Flammex and EGGER DHF,
- Packaging guideline for EGGER OSB, OSB Flammex and EGGER DHF,
- Structural Guidelines for EGGER OSB, OSB Flammex and EGGER DHF

Preliminary note:

This technical data sheet has been prepared to the best of our knowledge and with special care. The information is based on practical experience as well as our own and correspond to our current state of knowledge. They are intended as information and do not imply any assurance of product properties or suitability for specific uses. No liability can be assumed for printing errors, standard errors and errors. In addition, the continuous development of our wood-based materials as well as changes to standards and documents under public law. changes. Therefore, the content of this Technical Data Sheet cannot be regarded as an instruction manual or as legally binding. Our general terms and conditions apply.