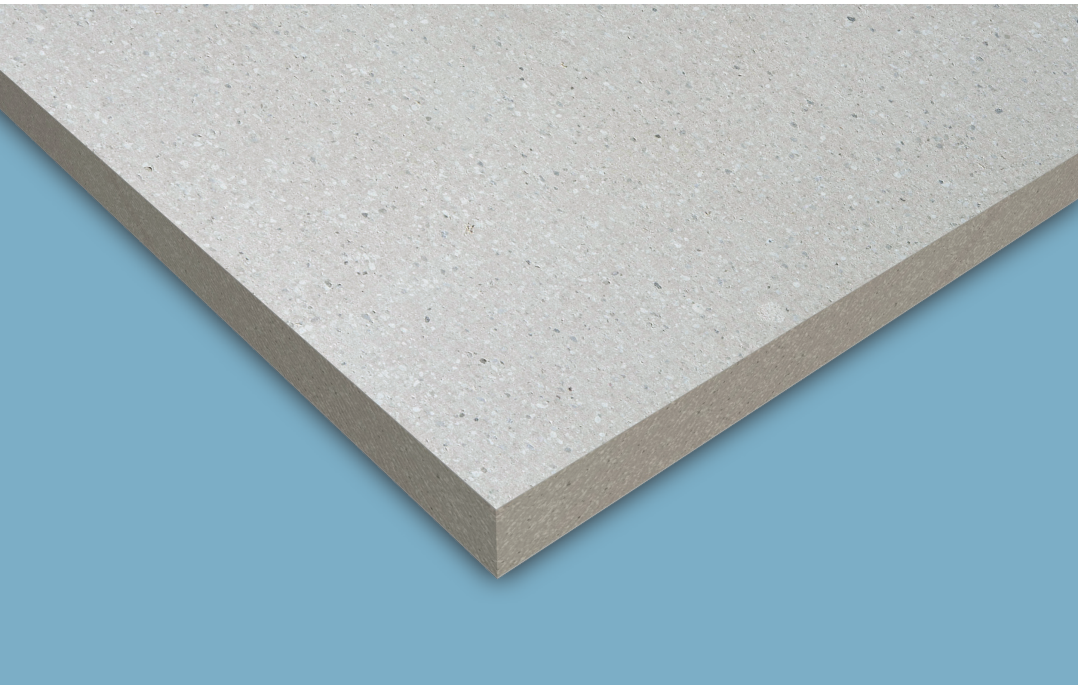

Drywall Systems

K871b.de

Product Data Sheet 04/2018

# DESIGNBOARD 211

The gypsum fibreboard for further processing

## Product description

### Board type

DESIGNBOARD 211 according to EN 14190 consists of a non-flammable gypsum fibreboard according to EN 15283-2 which has been specially developed for further processing in industry and workshops.

### Storage

Dry and even on board pallets

### Quality

In compliance with EN 14190, the product is subject to an initial test as well as continuous production monitoring in the plant, and carries the CE mark.

## Properties and added value

- Non-flammable A1
- Dimensionally stable
- Universally applicable
- Very high stability
- Simple processing
- Freedom of design in form, surface and structure
- High ecological standards in a safe production and recycling cycle
- Eco-friendly
- Various coating possibilities
- Simple and quick to install

## Application area

DESIGNBOARD 211 is used in all areas of high-quality interior construction as well as drywall systems with enhanced design requirements. Due to its classification as a non-flammable carrier board, DESIGNBOARD 211 is used for example in furniture manufacture, as a ceiling and wall covering or as a component in a system or an OEM product. DESIGNBOARD 211 can be coated with high pressure laminate (HPL), continuous pressure laminate (CPL), real wood veneer or painted.

## Processing

DESIGNBOARD 211 can be processed using the usual machines and carbide-tipped tools used in wood processing: sawing, routering, drilling, sanding, stapling, nailing, screwing, gluing and filling.
Diamond-coated tools also have the benefit of longer service lives, and are recommended for high-speed machines. Dust extractors are recommended for reducing dust generation.
Surface possibilities: Veneering, painting, laminating, lasering.

**Note**

- Screw connections can be carried out depending on the screw diameter and screw type used.
- Pilot holes are recommended for wood screws, wood material screws and Euro screws.
- Always carry DESIGNBOARD 211 vertically upright and store it horizontally. During processing, make sure that the moisture content of the air is approximately the same as the application location.
- Hygrothermal installation conditions +10 °C to +35 °C and 50 – 80% r.h. [1)]
- When applying the gypsum fibreboards to the substructure, it is helpful to leave expansion joints in order to allow for shrinkage and swelling of the boards.
- Design measures taken on the substructure make it possible to avoid cracking and distortions at abutting joints.

## Gluing

Gluing systems (PUR, white glue, hot-melt glue, etc.) can be used depending on the application purpose. Other gluing systems must be checked for their suitability. Adjust the temperature and pressing time to the board material and thickness for different pressing processes.

**Note**

- Prior to gluing, check the base to ensure they are free of dust and oil films.
- The carrier boards and coatings can be subject to different expansion behaviours, as a result of which they should be conditioned together prior to gluing so that both the board and the coating will match one another.
- Gluing should be carried out directly after the conditioning.

## Gluing types

Manufacturer's recommendations
Different glues achieve good strength values in combination with DESIGNBOARD 211. There are recommendations from different glue manufacturers for absorbent surfaces (carrier material).

### Surface coatings

(e.g. veneers, laminates)

**White glues (PVAc dispersion glue)**

**Urea resin glues (UF glue)** [2)]

To avoid distortion of the boards as a result of tension, a backing material must be used for coatings.
This should have the same properties with regard to the influence of heat and moisture.

### Doubling up/gluing together

**White glues (PVAc dispersion glue)**

To achieve an optimum result, the pressing time at room temperature should be complied with. Different manufacturers state guidance times between 15 and 20 minutes at a room temperature of ≥ 20 °C.

### Constructional joints

(e.g. corner joints, assembly gluing)

**Polyurethane glues (PU glue)**

Joints that arise because of stresses can subsequently be sealed and sanded, e.g. using a gypsum-based joint filler. White glues (PVAc dispersion glue) are also suitable on coated elements. Reinforcement sections should be incorporated for better stability.

### Edge coating

(e.g. edges, edge material) [3)]

On veneer and plastic edges (e.g. ABS, PP, PVC, laminate, Melamine), it is recommended to use thermoplastic (e.g. EVA, PA) as well as reactive hotmelt glues (e.g. PUR, POR). White glues (PVAc dispersion glue) are suitable for solid wood edges.

**Note**

- To achieve a perfect result, test gluing should be carried out under real conditions.
- A glue should be selected that matches the load and the binder of the gypsum carrier material.
- The following values from glue manufacturers are provided for guidance regarding surface coating:

| | |
|---|---|
| Glue application | 150 – 200 g/m² |
| Press temperature | approx. 60 °C (PVAc glue) |
| | approx. 90 °C (UF glue) |
| Pressing time | approx. 5 – 6 min (PVAc glue) |
| | approx. 3 – 4 min (UF glue) |

We wish to point out that all information provided is in line with the current state-of-the-art, but may differ if different products are used. Manufacturing processes in individual plants are always different. As a result, our data only provides reference values. Comply with product data sheets from the specific glue manufacturers.

*1) Normal climatic zones are assumed. Contact the Engineering department if extreme climatic conditions are involved.*

*2) There may be difficulties when gluing with urea resin glues due to certain constituents as well as the structure of different wood types. Gluing can be improved by adding white glue.*

*3) Primers can be used to achieve the best possible adhesion of the edge material.*

## Technical data

| DESIGNBOARD 211 | Unit | | Standard |
|---|---|---|---|
| Standard formats | mm | 3000 x 1250 | – |
| Thicknesses | mm | 12 / 15 / 18 | – |
| Dimensional tolerances<br>Length<br>Width<br>Thickness<br>Exception for 18 mm | <br>mm/m<br>mm/m<br>mm<br>mm | <br>+/– 5<br>+/– 4<br>+/– 0.15<br>– 0.0 /+ 0.15 | – |
| Edge configuration | | unprocessed | – |
| Reaction to fire | Class | A1 | EN 13501-1 |
| Water vapour diffusion resistance coefficient μ | | 21 | DIN 52615 |
| Thermal conductivity λ | W/(m•k) | 0.3 | EN 12664 |
| Unprocessed density | $kg/m^3$ | 1250 +/-50 | – |
| Specific heat capacity c | J/(kg•K) | > 1000 | – |
| Hygrothermal installation conditions | °C<br>% r.h. | +10 – +35<br>50 – 75 | – |
| Hygrothermal usage conditions | °C<br>% r.h. | 1 – 35<br>35 – 75 | – |
| Coefficient of thermal expansion α | 1/K | $12.9*10^{-6}$ | – |
| Change in length on change in temperature | mm/(mK) | ≤ 0.02 | – |
| Flexural strength | $N/mm^2$ | ≥ 5.5 | – |
| Modulus of elasticity | $N/mm^2$ | ≥ 3800 | – |

## Non-polluting properties: Evaluation of the eurofins emissions test results

| DESIGNBOARD 211 | | | |
|---|---|---|---|
| Regulation or protocol | Conclusion | | |
| French VOC regulation | A+ | after 28 days | Below the evaluation limit |
| French CMR components | Met | after 28 days | Below the evaluation limit |
| AgBB / ABG | Met | after 3 and 28 days | Below the evaluation limit |
| Belgian regulations | Met | after 28 days | Below the evaluation limit |
| Indoor Air Comfort | Met | after 3 and 28 days | Below the evaluation limit |
| EN 717-1 | E1 (0.008 mg/m$^3$) | after 28 days | Below the evaluation limit |
| | | | |
| BREEAM International | Compliant | GN22: BREEAM Recognised Schemes for VOC Emissions from Building Products | |
| LEED v4 (outside U.S.) | Compliant | LEED v4 for Building Design and Construction (April, 2015) | |
| Carcinogenic substances [1)] | after 3 and 28 days | | Not identifiable |
| TVOC [3)] | after 3 and 28 days | | Below the evaluation limit |
| SVOC [4)] | after 28 days | | Below the evaluation limit |
| VOC[2)]-individual substances RD and RB | after 28 days | | Below the evaluation limit |
| VOC[2)]-individual substances without NIKD | after 28 days | | Below the evaluation limit |
| Formaldehyde | after 28 days | | Below the evaluation limit |

*1) Carcinogenic substances = substances which can cause cancer*
*2) VOC = volatile organic compounds*
*3) TVOC = total volatile organic compounds*
*4) SVOC = semivolatile organic compounds*

The VOC emissions have been tested on the product and meet the requirements of national regulations in Europe.

**Comply with safety data sheet!**
Safety data sheets and CE marking, see
**www.knauf-design.com**

Texts of calls for tender for all Knauf Design systems and products.
**www.knauf-design.com**

**Knauf Design**
Technical information:
**Tel.: +49 7904/944681-0**
**info@knauf-design.com**
www.knauf-design.com

**Knauf Design** Knauf riessler GmbH & Co. KG Süßwiesenstraße 10, 74549 Wolpertshausen

Subject to technical modifications. The latest edition applies in each case. The information contained is based on our current state of the art. The generally recognised rules of building technology, relevant standards, guidelines and trade rules must be complied with by the persons carrying out the work, along with the processing regulations. Our warranty only covers correct composition of our material. Information about consumption, quantities and versions are based on experience, and are not applicable directly to other situations if the conditions are different. All rights reserved. No modifications, reprinting and reproduction either photomechanically or by electronic means, in whole or in part, without our express approval.



**The design, structure engineering and physical properties of Knauf systems can only be guaranteed if exclusively Knauf system components or products recommended by Knauf are used.**