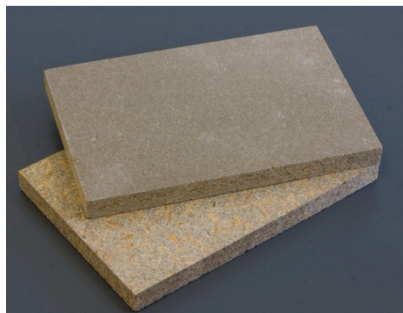


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## PLAKARD-Panel B1 - Product description

### PLAKARD Panel B1 - the monolithic cement particle board



Depending on the production process, cement-bonded particle panels are classified into multi or single layered panels. Especially when exposed to moisture, multi-layered panels have a tendency to delaminate, i.e. the individual layers lose their bond from each other. We are the only manufacturer with the ability to produce a monolithic cement particle panel that is completely resistant to delamination. The PLAKARD Panel provides an unmatched level of construction quality for all exterior and interior applications with variable moisture exposure.

All our products are manufactured as a single layer panel and are based on the B1 product. Consequently, all technical specifications and characteristics of the B1 panel also apply to all other products or product versions.

## PLAKARD-Color Primed Product description



PLAKARD Color-Primed is the product version used for customized finish painting at the construction site.

The product PLAKARD Color-Primed is ideally suited for applying the finished paint coat to the facade at the construction site. The front facing side and edges are primed in RAL 9010 (white) and the rear facing side is finish coated in RAL 7035 (light grey). The finish coat that is applied at the construction site creates vapor diffusion equilibrium between the front and rear facing sides. The factory applied primer does not yet completely seal the front facing side.

The finish coat must be a paint-manufacturer-approved paint that is weather proof and alkaline stable. We recommend Amphibolin ELF made by Caparol for this purpose.

The finish coating at the construction site is best applied prior to installation and/or directly afterward to the dry and dust-free panel.

PLAKARD Color-Primed is also suitable for:

Flooring for wet spaces to be surface treated with ceramic materials, or similar Walls in wet spaces that will be surface treated with ceramic materials.

A single primed surface on both sides is suitable for certain interior applications calling for reduced vapor diffusion characteristics (for instance subsequent carpeting installation).

However, the panels with primer on both sides (grey/grey) are not suited for exterior applications.

Note: Calcium stains and leaching cannot be excluded if the paint coat is applied at the construction site! This does not constitute a quality defect. Minimum quantity: approx. 100 m<sup>2</sup>

## PLAKARD-Color Finish Product description

Sandgelb RAL 1002	Kupferrot
Himmelblau RAL 5015	Laubgrün RAL 6002
Lichtgrün RAL 6027	Basaltgrau RAL 7012
Lichtgrau RAL 7035	Kupferbraun RAL 8004
Tiefschwarz RAL 9005	Reinweiß RAL 9010

The exterior facade is the part of the building with the highest exposure to climatic conditions, requiring a permanently weather proof design for cladding of rear ventilated facades.

PLAKARD Color Finish is ideally suited for this, and is also an ecologically sound product that supports a variety of architectural concepts. The new two component paint coat features a high degree of chemical stability and mechanical strength. Its granular structure inhibits soiling from weather influences and also improves scratch resistance.

The standard version is available in panel sizes from 3,100/2,600 x 1,250mm and a thickness between 8-14 mm (max. 40mm), in available RAL colors. The front side and edges are painted with RAL color and the rear side is sealed.

All our products are manufactured as a single layer panel and are based on the B1 product. Consequently, all technical specifications and characteristics of the B1 panel also apply to all other products or product versions.

PLAKARD Color Finish is:

- resistant to weather and frost
- rotting proof
- UV and weather proof
- impervious to water
- easy to install

Minimum quantity: 50m<sup>2</sup>

## PLAKARD-Rustical - Product description



PLAKARD-Rustical is fully imbued and only comes in a sanded version. It is used for decorative interior construction, for instance for walls, ceilings and flooring. PLAKARD-Rustical is available in charcoal grey, amber, neutral or brick red.

PLAKARD-Rustical has the same technical specifications as the PLAKARD-Panel B1. For wall and ceiling design applications on new construction, trade shows and exhibits, but also for remediation of existing construction, PLAKARD-Rustical offers an architecturally appealing, statically superior product with outstanding characteristics.

This provides for a broad spectrum of applications. PLAKARD-Rustical is also an excellent choice as a permanently exposed floor surface. For this application, the panels should be treated with an impact resistant clear-coating.

The rear-facing side should be coated in order to facilitate the vapor diffusion equilibrium. Alternatively, the panels can also be ordered from the factory with an impact resistant and additionally hardened surface. If the panels are ordered with a factory applied coating, a minimum order quantity of 50 units is required.

**Note: PLAKARD-Rustical only comes in widths up to 1,100mm!**

Minimum quantities by color: bei 8mm – 63 pieces

(for lengths of 3,200/2,600mm)      bei 10mm – 54 pieces

bei 12mm – 48 pieces

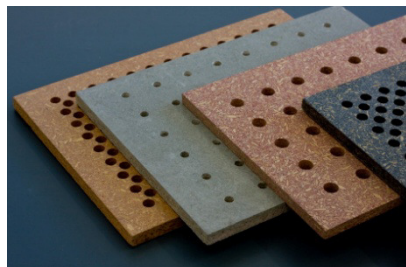
bei 14mm – 42 pieces

bei 16mm – 38 pieces

bei 18mm – 35 pieces

bei 20mm – 32 pieces

## PLAKARD-Acoustic - Product description



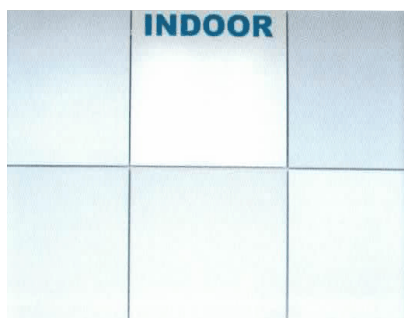
Demand for panels with superior visual appeal for interior and trade show construction has increased steadily in recent years. For these applications, we provide a factory perforated panel in four different standard versions. Products can be selected from 32 x 32 mm patterns with 8 or 10 mm holes and 16 x 16 mm patterns with 6 or 8 mm holes. The product can be shipped in grey simulated concrete

(unsanded), or as a ground and imbued panel in neutral, amber, brick red, or charcoal grey colors, and complies with the B1 fire protection code.

Upon request, all products are available with a factory applied clear coat. We recommend Capadur wood flooring varnish from Caparol for on-site coating applications.



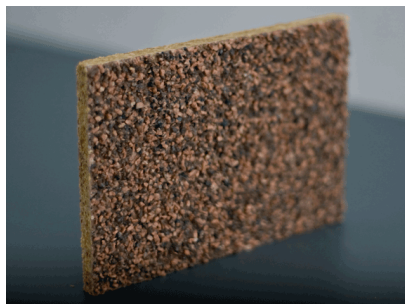
## PLAKARD- Indoor Product description



We offer a wall panel with a superior surface coating for interior applications. Starting with the PLAKARD Color-Primed product, a highly resilient and also permeable surface is additionally applied. Because of its resistance to chemicals, PLAKARD Indoor is particularly suitable for high traffic or heavy duty applications, such as hospitals or wet spaces.

The surface is smooth and matte. The standard versions feature plain, but also metallic colors. On a project specific, and custom quoted basis, colors and gloss levels can be ordered from matte to glossy.

## PLAKARD-Granit - Product description



The panel can be cut to the required dimensions on-site from the rear facing side by means of a grinder (using a hard-coated cut-off disc). All generally valid application technology basics apply to the facade installation procedures.

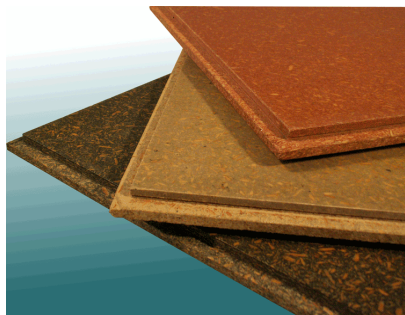
Upon request, we can quote a color matching track system.

PLAKARD-Granite is yet another product we provide for facade applications, but also for the building foundation.

This product features a crushed rock surface on the front facing side and is available in eight different colors, respectively cut to 3,100/ 2,600 x 1,200 x 8 mm sizes. A rear ventilated installation can either be achieved with gapped joints or with a metal track system.



## PLAKARD-Flooring - Product description



The PLAKARD panel stands up to the highest expectations when used as drywall, and features superior walking comfort, compressive strength and acoustic insulating characteristics. The "one man" panel in a 1,250 x 625mm size has proven its use. It has a sanded surfaces on both sides, and features a tongue and groove edge profile on all sides. The panel can be used in floating installations, requiring the panels to be glue-bonded at the profiled edges at all times. A felt substrate layer (or similar) is used as a footfall sound insulator and increases

walking comfort. Furthermore, a vapor diffusion barrier must be installed under the floor panel. As an additional installation option, the panels can be mounted to floor beams for modernization work on old structures.

For this application, the panels are also bonded to each other with glue and are additionally mounted to the sub-structure with screws. An important consideration is that seams should not be freely floating between beams. On floor beam installations, the required panel thickness is determined as a function of the foottraffic and the support centers, in consideration of the required safety parameters (see load tables).



Depending on the floor space and shape, allowances should be made for expansion joints based on flooring installation guidelines. It is common practice that several weeks can pass between the installation of the panels and the application of the surface treatment. This results in inconsistent drying of the panels, causing "cupping" (arching of the panel) As a countermeasure, the flooring must be covered with plastic sheet until the surface treatment is applied. Using panels that are factory primed on both sides (grey/grey) eliminates this problem.

We therefore recommend the use of the factory primed panels PLAKARD Color-Primed. The required installation quality can only be achieved by taking this step, especially with respect to a subsequent surface treatment with ceramic or similar materials.

▶for the facade	<p>economical facade construction</p> <p>permanent weather protection</p> <p>Diverse color design options with commonly used color coatings</p> <p>high airborne sound attenuation</p>
▶for sports arenas	<p>highly resistant to mechanical wear and tear</p> <p>proven impact resistance</p>
▶for wet rooms	<p>high resistance to moisture</p> <p>can be treated with ceramic materials</p>
▶for lumber frame construction	<p>statically effective paneling</p> <p>highly resistant to mechanical wear and tear</p> <p>high sound attenuation</p> <p>rot resistant, weather and icing proof</p>
▶for ceiling construction	<p>provides fire protection when used as upper and lower ceiling panel</p> <p>Sound protection</p>
▶for agricultural buildings	<p>cost effective construction methods</p> <p>resistant to animal waste and chemical cleaning agents</p>
▶for module and container fabrication	<p>cost effective construction methods</p> <p>excellent fire protection</p> <p>convenient processing options</p>
▶for flooring	<p>excellent foot fall attenuation</p> <p>high walking comfort</p> <p>highly suitable for double floor systems</p> <p>diverse options for surface treatment and coatings</p>
▶for removable concrete mold systems	<p>the single layer panel provides for high screw extraction forces</p> <p>excellent bond with the dispensed concrete</p> <p>good environmental conditions</p> <p>walls are ready for painting, wallpapering and nailing</p>
▶for fire protection construction	<p>fire retardant in accordance with DIN 4102</p>
▶for sound protection construction	<p>the high material density provides for outstanding suitability as sound protection barriers</p>

## Application principles

▶ PLAKARD panel is shipped from the factory with an average moisture content of  $9\pm 3\%$ . Any intermediate storage that is required until the panels are processed, but also the installation itself, must occur in a dry environment. If this is not observed, and the panels absorb an inadmissibly large amount of moisture, damage may occur to the closed seams and/or fastening locations, and also to the on-site surface treatment.

▶ PLAKARD panel may be used for any applications that permit the use of panels of the wood material classes 20, 100 and 100 G - "in accordance with DIN 68800 wood protection: preventive construction measures for structural engineering".

When panels are applied to exterior walls, or to interior walls in spaces with direct surface exposure to moisture, DIN 68800 must be observed in consideration of vapor diffusion conditions in the wall interior.

▶ PLAKARD panel is recommended for all exterior applications and wall paneling (provided that special requirement do not call for a sanded surface) with an unsanded, as-molded surface. Panels with sanded surfaces, where the wood particles are directly visible on the surface, are generally only used for flooring applications (due to the exacting thickness requirements), but also for special applications.

## Installation

### ►General machining procedures

PLAKARD panel can be machined using carbide tipped tooling. If machining is performed in enclosed spaces, a dust collection system is recommended. Machining can be performed with any commercially available wood processing equipment.

### ►Cutting

When using stationary formatting saws in combination with vertical/horizontal operating modes, a cutting blade with 48-72 teeth and a diameter of 250-400mm should be used.

When working with hand-held circular saws, a setting between 3,000-4,000 RPM should be used. The blade diameter should be between 250-400mm. The tooth count depends on the panel thickness:

- for panel thicknesses up to 12mm: 48-72 teeth
- for panel thicknesses in excess of 12mm: 36-60 teeth

To obtain a clean cutting edge, the cutting blade should extend past the underside of the panel as little as possible. When working with table rip saws without a scoring system, the cutting blade should also extend past the material as little as possible. Jigsaws are suitable for curved shapes and cut-outs.

### ►Milling, drilling, grinding

Milling is performed using commonly available carbide tipped tooling. The rule here is: the higher the RPM's the cleaner the milled edge.

When drilling, the hammer drill feature must be disabled. HSS drills can be used for a small number of holes. However, carbide tipped drills are recommended for continuous use. The use of a centering spider will promote accurately placed holes.

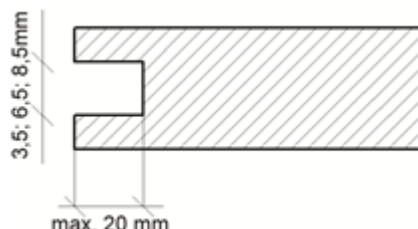
If the panels still need to be sanded, this can be done with a normal hand held orbital sander. We recommend the use of a dust collection system for indoor operation.

The same machining pointers apply to PLAKARD Rustic and PLAKARD Color-Primed.

## Edges and joints - Delivery options

### Only for separate tongue:

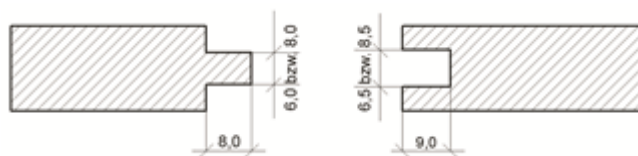
- min. panel thickness: 16mm
- max. panel thickness: 37mm (sanded)
- Groove height at 16mm: 3,5mm; 6,5mm  
starting at 18mm: 6,5mm; 8,5mm



The groove depth is variable up to a maximum of 20mm.

### Tongue and groove - Standard:

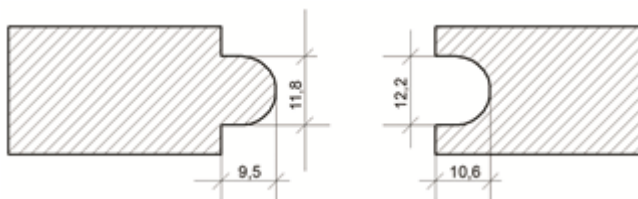
- min. panel thickness: 16mm bei B1
- max. panel thickness: 37mm (sanded)



For panel thicknesses up to 24 mm, the tongue width is 6.0mm, the groove is 6.5mm, starting at 26mm 8.0 and 8.5mm respectively

### Tongue and groove - half-round (only on the long edges):

- min. panel thickness: 22mm
- max. panel thickness: 37mm (sanded)

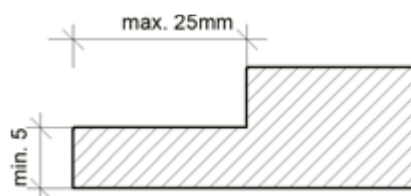


## Edges and joints - Delivery options

### Step joints:

-min. panel thickness: 12mm

-max. panel thickness: 37mm



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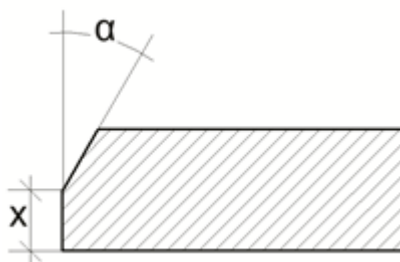
### Bavel:

-min. panel thickness: 22mm

-max. panel thickness: 37mm

-Step high:  $x > 5\text{mm}$

-Bevel angle:  $\alpha = \text{any}$



## Fastening methods

### ►Generell

As a rule, the same fastening methods used for wooden particle boards are suitable. If the panels are nailed or stapled, the panels must be in direct contact with the sub-structure. Furthermore, corrosion-free fasteners should be used for exterior applications and in wet spaces. It is important to ensure that the panel joint does not float in the space between two supports.

### ►Nailing

If nails are used as fasteners, the panels must be pre-drilled with the 0.8 fold of the nail diameter. The panel thickness must be no less than the four-fold of the nail diameter. Special nails in accordance with DIN 1052 should be used for this fastening method.

### ►Stapling

Stapling is a very economic fastening method. It is used as a permanent form of attachment with the help of power or compressed-air tools, especially in the industrial sector. It is important to ensure that the staples are driven into the panel edge at a 30° angle. Resin coated staples have proven to be particularly effective. In accordance with DIN 1052, the staples should have a wire diameter of  $d_n \geq 1.8\text{mm}$ . The recommended thickness range of the panels for stapling is 10 - 20mm.

### ►Screws

When screw fastening, the screws should correspond to DIN 1052. In this case, the panels must be pre-drilled with the 1.2 fold of the screw diameter. If the screws are self-tapping and have a general construction oversight permit, power tools can be used to do the work without pre-drilling.

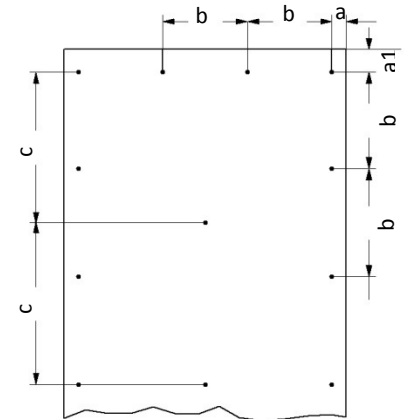
Depending on the sub-structure, screw attachments with countersunk screws permit only very limited movement of the panels when subjected to changes in moisture. For this reason, the use of these screws is not recommended. An attachment with flathead facade screws permits a tension-free installation, and also absorbs swelling and contraction (hole > screw shaft).

### ►Sub-structure

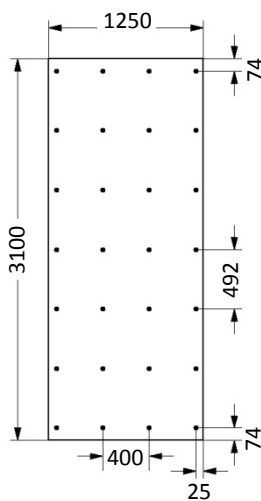
We recommend the installation on wooden sub-structures for exterior applications. In principle, the panels can also be installed on a steel sub-structure. However, we call attention to the fact that metal is subject to significant expansion at high temperatures on facades, resulting in significant movement that can also cause cracks to the panels. As a rule, we do not recommend fastening the panels to an aluminum sub-structure.

for non- structural, reinforcing components e.g. ceilings or composite constructions:

Fixing method	Thickness of panel (mm)	Fixing measures (mm)			
		a	a1	b	c
Nails, staples	10-20	25	35	100	300
Screws	8-12	20	30	200	400
	14-20	25	35	300	500
	22-30	25	35	400	500



for non- structural, reinforcing components e.g. facades or walls. For buildings higher than 8m there have to be 2 middle rows.



### Thickness of panel 10mm

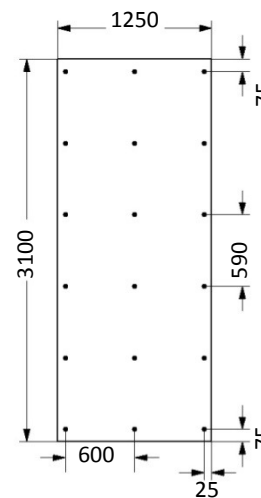
#### Fixing points

Distance to edge:

- vertical 25mm
- horizontal 74mm

Distance in between:

- vertical 492mm
- horizontal 400mm



### Thickness of panel 12-16mm

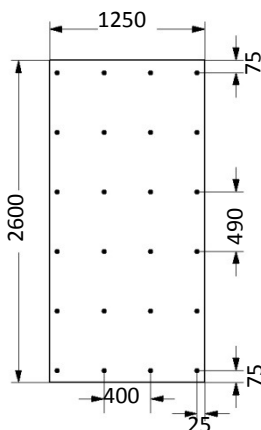
#### Fixing points

Distance to edge:

- vertical 25mm
- horizontal 75mm

Teilung:

- vertical 590mm
- horizontal 600mm



### Thickness of panel 10mm

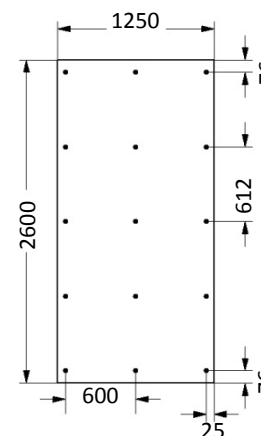
#### Fixing points

Distance to edge:

- vertical 25mm
- horizontal 75mm

Distance in between:

- vertical 490mm
- horizontal 400mm



### Thickness of panel 12-16mm

#### Fixing points

Distance to edge:

- vertical 25mm
- horizontal 76mm

Distance in between:

- vertical 612mm
- horizontal 600mm



## Adhesives and glues

Accounting for the PLAKARD panels' pH value of 11-13, the glues intended for use must be alkaline stable. The PLAKARD panel with sanded surface is the most suitable choice for superior adhesive joints. If a single-sided surface treatment is applied to the panels by means of an adhesive joint, a counteracting force of equal size should be applied to the back of the panels to prevent them from warping.

### Application and adhesive type

Adhesives to be used for bonding ceramic materials to the entire surface of the PLAKARD panel:

- Reaction resin adhesives based on a polyurethane or epoxy basis.
- The use of a dispersion adhesive is permitted for dry environments or small dimensions.

The back side of the PLAKARD panel must be sealed if the room's interior side is completely covered with ceramic materials, as is the case in laboratories or sanitary facilities, thus creating a vapor diffusion barrier. Without sealing the panel back side, condensation moisture can penetrate the panels, resulting in warping. This same affect can also occur if only the back side of the panel dries out. Here as well, the panel back side should be sealed. The PLAKARD Color-Primed panel is recommended when bonding floating floor treatment, to avoid the single-sided penetration of moisture and the resulting warping.

Note: Panels with a sanded surface absorb moisture at a faster rate than unsanded and/or uncoated panels. For joint covering surface treatments, we recommend PLAKARD Color-Primed with tongue + groove, and to bond the profiled edges with glue.

### Adhesives to be used for full surface bonding of the AMROC panel:

▶with each other	- in dry spaces	Dispersion adhesives (such as Ponal Super 3 by Henkel Bautechnik)
	- in wet spaces	Single component polyurethane adhesives 1K-PUR-Leim
▶in combination with surface treatments:		veneer glue, foil glue
▶in combination with floor covering :		Synthetic resin dispersion

We also ask that you adhere to the adhesive manufacturer's instructions

## On-site painting

►Applying a paint coat on-site is generally possible. In addition to decorative considerations, a paint coat is also always applied for construction engineering reasons as a protective layer to prevent moisture absorption. Although PLAKARD panels are weather and rot resistant without a paint coat, it is a wood based material nonetheless. This causes minor dimensional changes to the length and width (swelling and contraction characteristics) as the ambient moisture levels change, or if the panel is directly exposed to water (for instance the facade). Please refer to the technical specifications for more information.

►A properly applied paint coat reduces the swelling / contraction characteristics by containing the moisture absorption. Depending on the materials used, moisture absorption can even be largely eliminated. For this reason, the facade area, which is the area most exposed to the weather, should always be protected with an effective paint coat.

►A single-sided paint coat results in uneven vapor diffusion between the front and back sides of the panel, causing the panel to warp. For this reason, the back side must be coated with the same effectiveness as the front side, thus allowing even vapor diffusion to occur. This requirement is mandatory particularly for rear ventilated facades, since the back side is exposed to ambient moisture.

►Prior to applying the paint, the panels must be prevented from absorbing moisture by observing proper storage and processing procedures. If this is not done, easily water soluble constituents of the cured cement can leach to the surface with the subsequent evaporation of moisture as calcium carbonate, resulting in paint damage.

**Note:** Calcium stains and leaching cannot be ruled out if the paint coat is applied at the construction site! This does not constitute a quality defect.

## Load tables for single span girders at triple safety factor

The following specifications correspond to DIN 1052 – Design of Timber Structures – and apply to products of construction material grade B1.

The rated surface load  $q$  is specified in  $\text{KN/m}^2$ . The  $q$ -values should be considered to be maximum values, since the dead weight of the panel is included.

$d$  - Panel thickness

$$\delta \times 8 \times d^2$$

$$\text{Gap } q_{(\delta_{zul})} = \frac{\delta \times 8 \times d^2}{L^2 \times 6} \text{ at } \delta_{zul}=1,8\text{N/mm}^2 \text{ at B1}$$

$E$  - Modulus of elasticity

$$L^2 \times 6$$

$I$  - Moment of inertia

$L$  - Span length

$$384 \times E \times I$$

$$\text{Gap } q (L/300) = \frac{384 \times E \times I}{L^3 \times 5 \times 300} \text{ at max. Deflection } L/300$$

$\delta$  - Bending stress

$$L^3 \times 5 \times 300$$

## Load tables for single span girders at triple safety factor

### Span length $L$ (mm)

Panel thickness $d$	300		400		500		600	
(mm)	$q (\delta_{zul})$	$q (L/300)$	$q (\delta_{zul})$	$q (L/300)$	$q (\delta_{zul})$	$q (L/300)$	$q (\delta_{zul})$	$q (L/300)$
<b>Construction material grade B1 certification Z-9.1-285</b>								
16	11,38	22,65	6,40	9,56	4,10	4,89	2,84	2,83
18	14,40	32,26	8,10	13,61	5,18	6,97	3,60	4,03
20	17,78	44,25	10,00	18,67	6,40	9,56	4,44	5,53
22	21,51	58,89	12,10	24,85	7,74	12,72	5,38	7,36
24	25,60	76,46	14,40	32,26	9,22	16,52	6,40	9,56
26	30,04	97,21	16,90	41,01	10,82	21,00	7,51	12,15
28	34,84	121,41	19,60	51,22	12,54	26,23	8,71	15,18
30	40,00	149,33	22,50	63,00	14,40	32,26	10,00	18,67
32	45,51	181,24	25,60	76,46	16,38	39,15	11,38	22,65

## Load tables for single span girders at triple safety factor

### Load tables for single span girders at quintuple safety factor

Span length L (mm)								
Panel thickness d	300		400		500		600	
(mm)	q ( $\delta_{zul}$ )	q(L/300)	q ( $\delta_{zul}$ )	q(L/300)	q ( $\delta_{zul}$ )	q(L/300)	q ( $\delta_{zul}$ )	q(L/300)
	Construction material grade B1 certification Z-9.1-285							
16	6,83	22,65	3,84	9,56	2,46	4,89	1,71	2,83
18	8,64	32,26	4,86	13,61	3,11	6,97	2,16	4,03
20	10,67	44,25	6,00	18,67	3,84	9,56	2,67	5,53
22	12,91	58,89	7,26	24,85	4,65	12,72	3,23	7,36
24	15,36	76,46	8,64	32,26	5,53	16,52	3,84	9,56
26	18,03	97,21	10,14	41,01	6,49	21,00	4,51	12,15
28	20,91	121,41	11,76	51,22	7,53	26,23	5,23	15,18
30	24,00	149,33	13,50	63,00	8,64	32,26	6,00	18,67
32	27,31	181,24	15,36	76,46	9,83	39,15	6,83	22,65

### Load tables for twin span girders at triple safety factor

Span length L (mm)								
Panel thickness d	300		400		500		600	
(mm)	q ( $\delta_{zul}$ )	q(L/300)	q ( $\delta_{zul}$ )	q(L/300)	q ( $\delta_{zul}$ )	q(L/300)	q ( $\delta_{zul}$ )	q(L/300)
	Construction material grade B1 certification Z-9.1-285							
16	11,38	54,42	6,40	22,96	4,10	11,76	2,84	6,80
18	14,40	77,49	8,10	32,69	5,18	16,74	3,60	9,69
20	17,78	106,30	10,00	44,84	6,40	22,96	4,44	13,29
22	21,51	141,48	12,10	59,69	7,74	30,56	5,38	17,69
24	25,60	183,68	14,40	77,49	9,22	39,67	6,40	22,96
26	30,04	233,53	16,90	98,52	10,82	50,44	7,51	29,19
28	34,84	291,68	19,60	123,05	12,54	63,00	8,71	36,46
30	40,00	358,75	22,50	151,35	14,40	77,49	10,00	44,84
32	45,51	435,39	25,60	183,68	16,38	94,04	11,38	54,42

## Load tables for single span girders at triple safety factor

### Load tables for twin span girders at quintuple safety factor

Panel thickness d (mm)	Span length L (mm)							
	300		400		500		600	
	q ( $\bar{\delta}_{zul}$ )	q(L/300)	q ( $\bar{\delta}_{zul}$ )	q(L/300)	q ( $\bar{\delta}_{zul}$ )	q(L/300)	q ( $\bar{\delta}_{zul}$ )	q(L/300)
	Construction material grade B1 certification Z-9.1-285							
16	6,83	54,42	3,84	22,96	2,46	11,76	1,71	6,80
18	8,64	77,49	4,86	32,69	3,11	16,74	2,16	9,69
20	10,67	106,30	6,00	44,84	3,84	22,96	2,67	13,29
22	12,91	141,48	7,26	59,69	4,65	30,56	3,23	17,69
24	15,36	183,68	8,64	77,49	5,53	39,67	3,84	22,96
26	18,03	233,53	10,14	98,52	6,49	50,44	4,51	29,19
28	20,91	291,68	11,76	123,05	7,53	63,00	5,23	36,46
30	24,00	358,75	13,50	151,35	8,64	77,49	6,00	44,84
32	27,31	435,39	15,36	183,68	9,83	94,04	6,83	54,42

**Permit:**

General Manufacturing Permit Nr. Z-9.1-285

**Class of Material:**

B1 according to DIN 4102 (highly fire resistant)

**Thickness:**

19 mm

**Density:**

approx. 1250 kg/m<sup>3</sup> min. (434 pcf)

**Moisture Content** (ex factory):

9% ± 3

**Bending Strength** (load perpendicular to the surface of the board):

11.0 N/mm<sup>2</sup>, average value

**Bending Strength** (load perpendicular to the surface of the board):

9,0 N/mm<sup>2</sup> - 95%-value

**Modulus of Elasticity 1** (load perpendicular to the surface of the board):

7.000 N/mm<sup>2</sup>

**Transverse Tensile Strength 1 :**

0,5 N/mm<sup>2</sup>

**Tensile Strength 1** (parallel to surface of the board):

4,0 N/mm<sup>2</sup>

**Compression Strength 1** (parallel to surface of the board):

15,0 N/mm<sup>2</sup>

**Thickness Swelling** (after 24-hrs water immersion):

< 1%

**Change in Length and Width due to Expansion and Contraction:**

(calculated values per standard procedure)

- at 1% change in board moisture content 0,03%

- at 30% change of relative humidity of air 0,15 %

**Thermal Conductivity:** (calculated value per standard procedure)

$\lambda_R = 0,35 \text{ W/m} \times \text{K}$

**Vapor Diffusion Resistance Coefficient:**

According to DIN 4108  $\mu = 20/50$

**Sound Transmission Loss** (airborne noise):

8 mm board thickness  $R_W = 30 \text{ dB (A)}$

12 mm board thickness  $R_W = 32 \text{ dB (A)}$

16 mm board thickness  $R_W = 33 \text{ dB (A)}$

18 mm board thickness  $R_W = 34 \text{ dB (A)}$

24 mm board thickness  $R_W = 36 \text{ dB (A)}$

28 mm board thickness  $R_W = 37 \text{ dB (A)}$

**Surface Alkalinity:**

pH-Wert 11-13

## Shipping units and weights

### ►Product overview

Unsanded panel thicknesses:	8-40mm
Sanded panel thicknesses:	8-37mm
Sizes (standard dimensions):	3,00mm*x 1,250mm und 2,600mm x 1,250mm 1,250mm x 625mm for PLAKARD-Flooring panel 3,100mm x 1,100mm und 2,600mm x 1,100mm for PLAKARD-Rustikal *3,200mm upon request
Custom sizes:	any perpendicular fixed sizes, variable to order Length production 3,200mm and 2,600mm (each upon request or depending on quantity)
Edge profiles:	Blunt Bevel and step rabbet starting at panel thicknesses of 10 mm Tongue+groove starting at panel thicknesses of 16mm Round tongue+round bottom groove starting at panel thicknesses of 16mm Groove for separate tongue starting at panel thicknesses of 16mm

► Shipping units and weights

Thick- ness  mm	Kg/m2	3100 x 1250 mm			2600 x 1250 mm			1250 x 625 mm		
		per pallet			per pallet			per pallet		
		Pcs	m²	Kg	Pcs	m²	Kg	Pcs	m²	Kg
8	10,0	50	193,7	1.937	60	195,0	1.938			
10	12,5	40	155,0	1.938	48	156,0	1.950			
12	15,0	33	127,9	1.919	40	130,0	1.950			
14	17,5	28	108,5	1.899	34	110,5	1.950			
16	20,0	25	96,9	1.938	30	97,5	1.950			
18	22,5	22	85,2	1.917	26	84,5	1.934	25	19,5	439
20	25,0	20	77,5	1.938	24	78,0	1.950	25	19,5	488
22	27,5	18	69,7	1.917	22	71,5	1.901	25	19,5	537
24	30,0	16	62,0	1.860	20	65,0	1.950	20	15,6	468
26	32,5	15	58,1	1.888	18	58,5	1.966	20	15,6	507
28	35,0	14	54,2	1.897	17	55,2	1.950	20	15,6	546
30	37,5	13	50,4	1.890	16	52,0	1.901			
32	40,0	12	46,5	1.860	15	48,7	1.932			
34	42,0	11	42,6	1.811	14	45,5	1.950			
36	45,0	11	42,6	1.917	13	42,2	1.948			
38	47,5	10	38,7	1.938	12	39,0	1.933			
40	50,0	10	38,7	1.935	12	39,0	1.899			