

PROCESSING RECOMMENDATION

FORMBOARD

**MAKE
YOUR
VISIONS
WORK.**

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Product Information

Our Pfleiderer particleboards provide the basis for high-quality, durable formwork solutions.

Our coated panels:

- **FormBoard P5**
- **FormBoard P7 S**



With film weights of up to 450 g/m² for high-quality formwork and the highest architectural concrete requirements up to architectural concrete class 4*.

Our raw panels for structural application:

- **LivingBoard P5/ P7**
- **LivingBoard face contiprotect P5/ P7**
- **PremiumBoard P5/ P7 S und MFP Living P5**



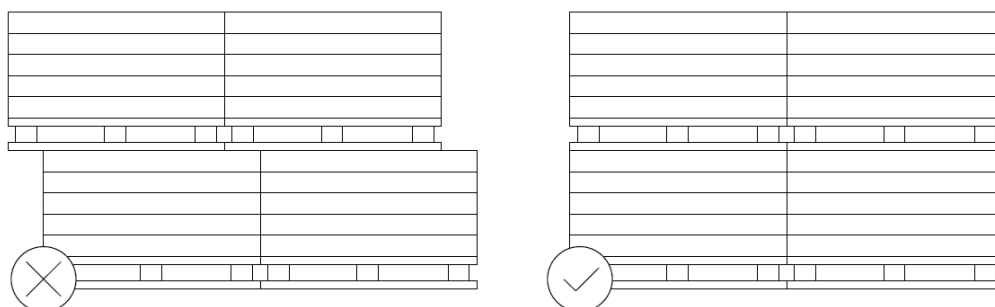
Ideally suited for absorbent formwork with a natural surface appearance or for use as bracing elements!

* Note: The architectural concrete classes (ACC) reference to the German requirements (class 1 to 4)

Storage and Transport

The following instructions should be observed when storing and transporting wood-based panels:

- Wood-based panels should preferably be **stored horizontally in enclosed areas**, without direct contact with the floor, **on dry bearers**.
- **The top panel must be fully covered with a protective board or cardboard.** Sufficient clearance from masonry and walls must be maintained, and direct contact must be avoided.
- If several panel stacks are stored on top of one another, square timber battens must be used as intermediate spacers after every 15 to 20 panels in order to allow air circulation. **Support battens of identical thickness must be used** and positioned at regular intervals, maximum 80 cm apart, in vertical alignment. This rule applies to panels with a thickness of 15 mm and above. For thinner panels, smaller support spacing must be selected.
- The **panel overhang** at the end of the stack **should not exceed 150 mm**.
- **Prior to the planned processing, the panels**, if stored outdoors under protected conditions with relative humidity > 65%, **should be acclimatised** to the climatic conditions at the place of processing, e.g. 20°C and 65% relative humidity, for **at least 24 hours** in advance.
- The goods must be inspected for integrity upon receipt or collection. In the event of damage, this must be noted on the delivery note and reported to the manufacturer or supplier.

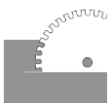


Processing

The following instructions apply to the machining and processing of our raw and coated particleboards for formwork construction!

Cutting & further processing

Cutting



Cutting is carried out using standard saw blades for wood-based panels, e.g. carbide-tipped saw blades.

Routing/ Drilling



If routing or drilling is required, this can be performed using conventional router heads and drill bits suitable for woodworking.

Fixing to Substructures

Nails, staples or screws suitable for woodworking may be used to fix our products to timber substrates or to each other.

Specific recommendations can be found from page **Fehler! Textmarke nicht definiert.** onwards!

The specified fasteners have been selected to ensure that, when driven in, they cause little to no damage to the board coating and do not cause it to chip or flake off.

If structural verification is required for the formwork, it must be carried out in accordance with the provisions of DIN EN 1995-1-1.

The following should be observed when fixing with nails or staples:

- Use a compressor pressure of 7.0 ± 0.5 bar
- Maximum countersinking depth of the staple crown / nail head: 2.0 mm

When using screws, ensure that they are equipped with a cutting tip. Otherwise, the boards must be pre-drilled.

Preparation of the Formwork

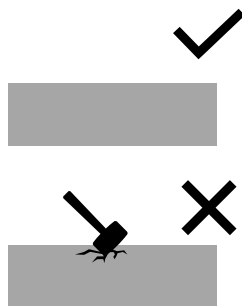
Edge-sealing



To reduce swelling behaviour, the cut edges of the FormBoards should be treated with the recommended products. By doing so, the already low swelling behaviour can be significantly reduced further, by up to 70%.

If several boards are to be treated, it is recommended to stack them first and then apply the treatment, either by spraying or rolling.

Surface treatment



Before concreting, the surfaces must be checked for damage and any concrete residues must be removed.

To prevent concrete adhesion and possible damage, the FormBoards should be treated with suitable formwork oils / concrete release agents before use.

The application should be as uniform as possible. Ponding must be avoided, e.g. by rubbing in, polishing or wiping off the release agent film.

The boards must be protected from moisture and heat exposure prior to concreting.

Repair and Correction Work

Damaged surface



If the coating chips or flakes off during use, e.g. during screwing or cutting, the loose coating residues must be carefully removed using a chisel.

Filling



Scratches, dents or fastener holes must be filled with suitable filling compounds. It is recommended to apply the filler in two passes and to remove excess filler immediately. The repaired areas must then be sanded using grit size 80 to 180.

To reduce subsequent discolouration on the concrete surface, the filled and sanded area should be treated twice with release agent, as the filled areas and sanded board surface may exhibit increased absorbency.

Technical Attributes

For preliminary sizing of your formwork project, our design charts can be used.

FormBoard P5 combines:

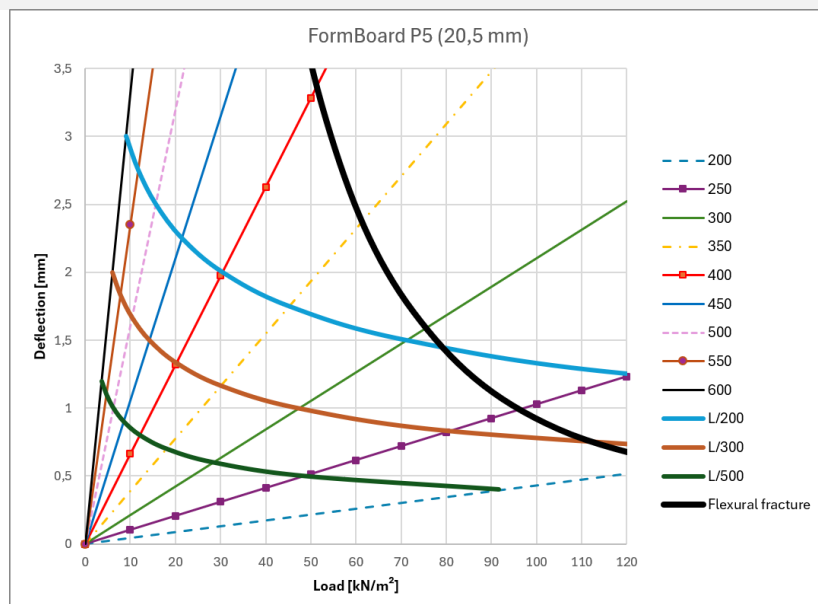
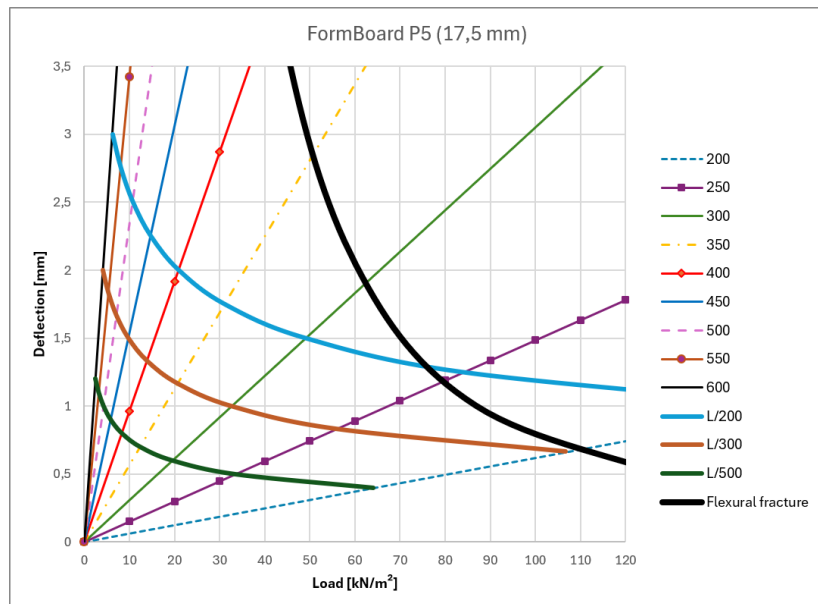
- Stability
- Load-bearing capacity
- Durability

It is supplied with a film weight of approx. **160 g/m²** and is available in the following thicknesses:

- 17,5 mm
- 20,5 mm

The range of formats extends from standard formwork panel size, 500 x 2,500 mm, through to large-format panels, 2,100 x 5,310 mm.

Thanks to its melamine resin coating, it can be **reused** for formwork applications **up to 7 times** when used properly.



FormBoard P7 S with:

- Increased stability
- Higher Load-bearing capacity
- Improved durability

It is supplied with a film weight of approx. **320 g/m²** or, **on request, 450 g/m²**, and is available in the following thicknesses:

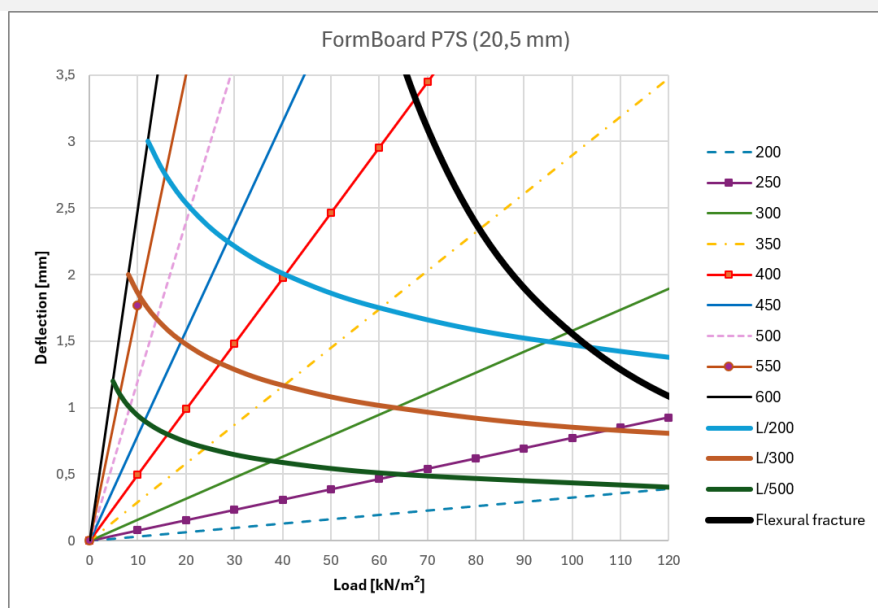
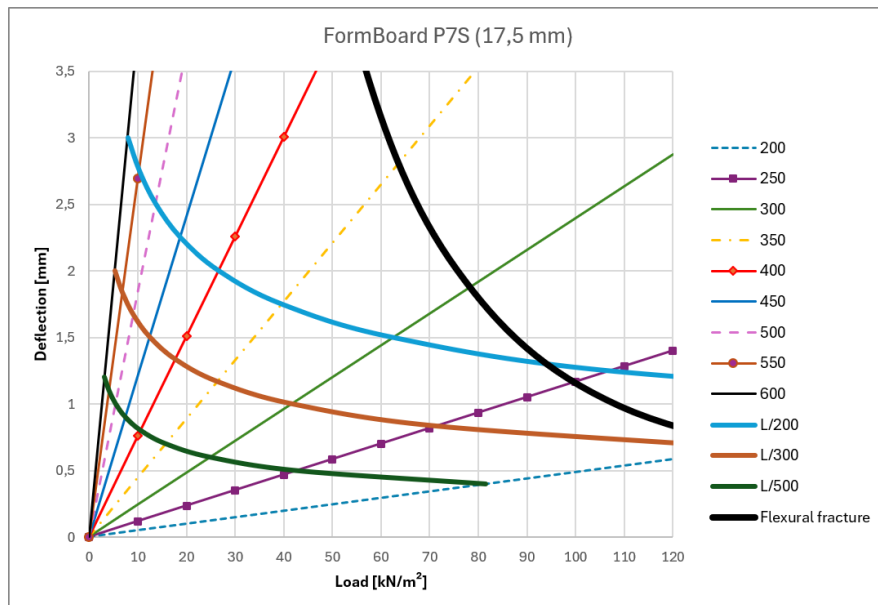
- 17,5 mm
- 20,5 mm

The range of formats extends from standard formwork panel size, 500 x 2,500 mm, through to large-format panels, 2,100 x 5,310 mm.

Thanks to its melamine resin coating, it can be reused for formwork applications **up to 25 times** when used properly.

Note:

The load diagrams can also be used for our raw particleboards type P5 / P7!



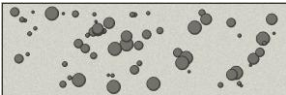
Note:

The characteristic strengths in accordance with DIN EN 12369-1 for particleboards type P5 and P7 were used as the calculation basis. The deflection of the board was calculated for various support spacings, assuming an acting area load. In addition, the permissible loads for the deflection criteria L/200, L/300 and L/500 were determined. The bending failure line refers to the absolute failure of the board without safety factors or reduction factors.

These diagrams are intended for preliminary sizing only and do not replace project-specific structural verification.

Identification and Classification of Surface Defects

A high-quality concrete surface is achieved through the optimum interaction of formwork, concrete and workmanship. The following overview shows typical defect patterns, possible causes and practical recommendations for prevention.

Visualisation	Defect Pattern	Appearance	Potential Cause	Relation of Formwork
	Voids / Blowholes	Small, round depressions, often occurring on vertical formed surfaces.	Air or water inclusions, unsuitable compaction, concrete consistency, excessive or insufficient release agent application, condition of the form-facing surface.	Smooth, low-absorbency melamine-coated formwork panels may make pores at the interface more visible.
	Clouding / Colour Variations	Cloudy light-dark areas, uneven grey tone.	Uneven hydration, varying w/c ratio, different concrete batches, weather conditions, release agent application.	Different panel ages, damaged coating or varying absorbency may promote colour variations.
	Marking of Panel Joints / Seams	Linear markings, fins, offsets or visible joint edges.	Leaking or misaligned formwork panel joints, damaged edges, escaping cement paste.	P5 / P7 S particleboards are moisture-resistant; however, edges and joints remain critical areas. Edge sealing can reduce the "rippling" effect.
	Release Agent Stains / Oily Patches	Patchy, smooth, darker or lighter areas.	Excessive, unevenly applied or unsuitable release agent, or contaminated form-facing surface.	For low-absorbency melamine-coated panels, a very thin and uniform film is essential.
	Imprint of Wood / Particle Structure	Texture imprints, matt areas or visible directionality / particle structure.	Damaged coating, surface roughening, swollen areas, cement residues, repeated use.	If the melamine coating is damaged, the wood-based panel structure may absorb water or become visible on the concrete surface.
	Colour Changes Due to Different Form-Facing Sections	The panel grid appears as light-dark areas.	New and old panels used together, different form-facing materials, varying release agent application.	For high-quality architectural concrete surfaces, panel batches and reuse cycles should not be mixed in an uncontrolled manner.

Requirements for Form-Facing Classes

For which architectural concrete class can previously used Pfleiderer particleboards be reused, and which general requirements apply? The overview is intended to provide guidance.

Criteria	Form-Facing-Class ¹⁾		
	Class 1	Class 2	Class 3
Drill holes	Permissible, provided they are sealed with plugs or repaired using an appropriate repair method	Permissible only if repaired professionally	Not permissible ²⁾
Nail / screw holes	Permissible	Zulässig – ohne Absplitterung der Beschichtung	Not permissible ²⁾
Vibration damage	Permissible	Nicht zulässig	Not permissible ²⁾
Surface scratches	Permissible	Bei SB 2 bis 1 mm Tiefe zulässig – sonst Reparatur	Not permissible ²⁾
Concrete residues	Permissible, if there is no extensive surface adhesion	Not permissible	Not permissible ²⁾
Cement laitance	Permissible	Permissible	Not permissible ²⁾
Swelling (panel edge or fasteners)	Permissible	ACC 2 – Permissible ACC 3 – Not Permissible ³⁾	Not permissible ²⁾
Architectural concrete class (ACC)	ACC 1	ACC 2 / ACC 3	ACC 4
Example for application	Basement walls, ancillary rooms, columns	ACC 2: Stairwells, internal walls ACC 3: Facades, high-quality architectural concrete surfaces	Representative buildings

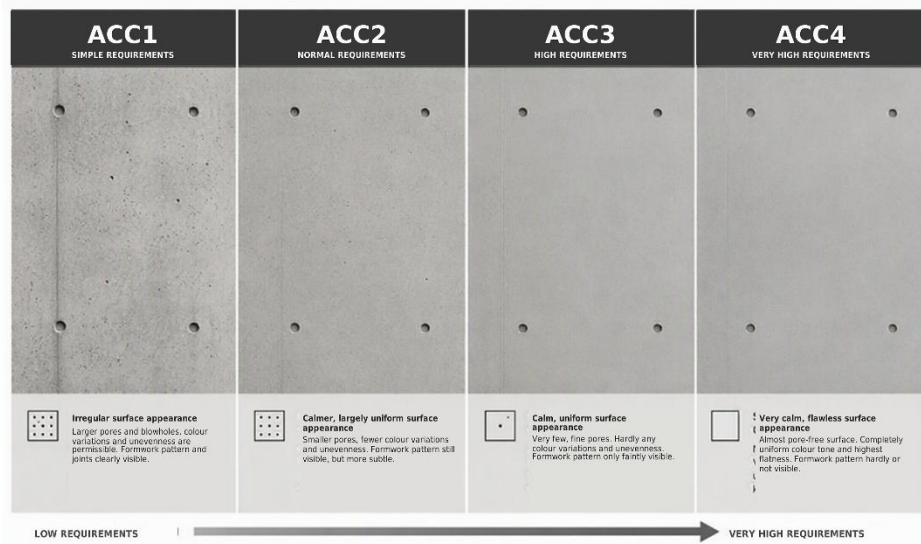
Footnotes according to the DBV Code of Practice:

- 1) Inspection of the form-facing surface before each use to determine whether the requirements can be met.
- 2) Permissible as a repaired area in agreement with the client
- 3) Permissible in agreement with the client

Source: DBV Merkblatt Sichtbeton (2015)

ARCHITECTURAL CONCRETE CLASSES IN COMPARISON

Surface appearance - requirements increase from ACC1 to ACC4



Note:

In addition to the requirements for the form-facing surface, the following criteria are also used to assess the concrete surface:

- Texture
- Porosity
- Colour uniformity
- Flatness
- Construction and panel joints

These aspects are addressed in the DBV Code of Practice "Architectural Concrete" (2015).

Note: The images displayed are only for orientational purpose

Recommended Products

For the preparation of formworks using our panels we recommend following products for the different fields of application.

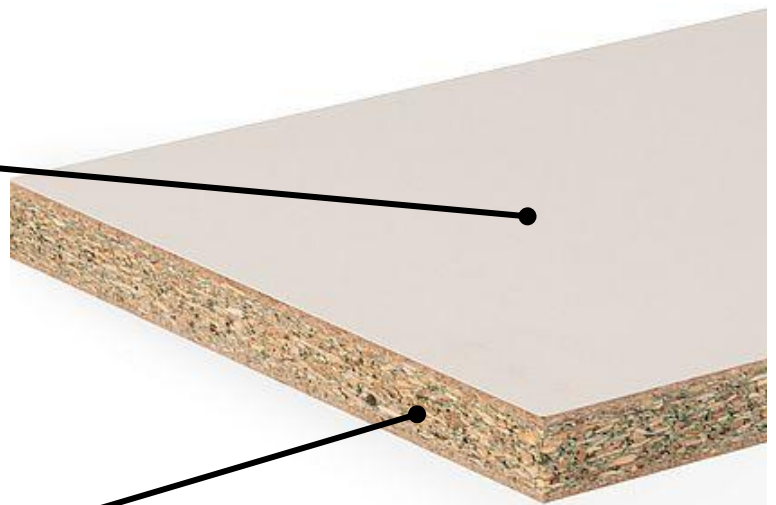
For the surface:

Release agent:

SIKA Separol 235 Care
SIKA Separol 162 W
SIKA Separol 330 W
SIKA Separol F 500

Repair filler:

Würth VAKU 30



For the edges:

Edge-sealer:

ADLER LACKE Aquawood Endgrain-Sealer

Suitable boat lacquer

Suitable Joint sealing tape

Further

Corner formation:

Timber or plastic chamfer strips

Spacers:

Suitable Spacers
(Plastic, fibre-reinforced concrete)

Sealing:

Sealing and formwork plugs

Fixing to timber substructure:

Nails:

Haubold collated coil nails

Staples:

Haubold KG700

Screws:

Würth ASSY plus 4 CSMP

Cleaning of the coated surface may only be carried out using cleaning agents and methods suitable for formwork construction. Standing water on the surface must always be avoided.

For questions regarding the respective additional components, please contact the relevant manufacturers.

CONTACT

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