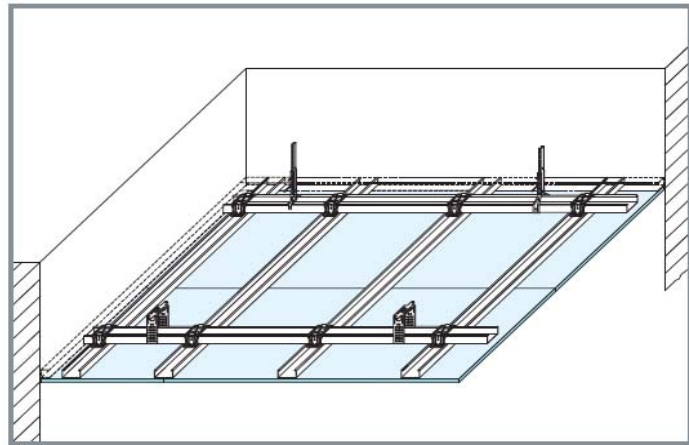
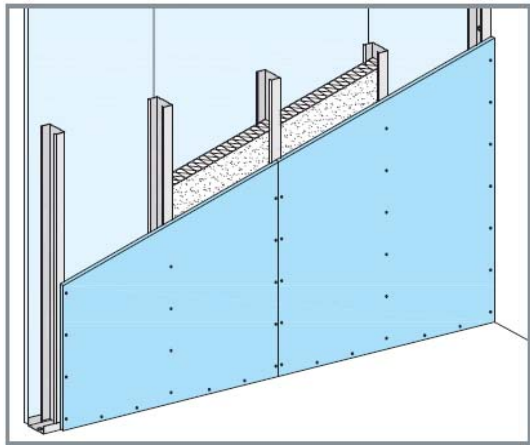


# Micronal® PCM SmartBoard™ 23/26

## Technical data, material, preparation, jointing, finishing

Aug/2006



### Technical data

#### Mechanical Values

Thickness: 15 mm  
Width: 1250 mm  
Length: 2000 mm  
Weight: ca. 11,5 kg/m<sup>2</sup>

Edges: Long edges flattened (AK)  
reinforced with fibreglass mesh  
Short edges cut (SK)

#### Thermic Values:

Operating temp. 23°C or 26°C  
Latent heat capacity ΔH: ca. 330 kJ/m<sup>2</sup>  
Spez. heat capacity: ca. 1.20 kJ/kgK  
Heat conductivity: ca. 0.134 W/mK

### Material

Micronal® PCM SmartBoard™ reinforced with coated fibreglass mesh.

#### Transport

The boards are flexible and should be carried on the building site edge up.

#### Storage

Store dry on SmartBoard™ pallets.

### Preparation

#### Cutting:

Score Micronal® PCM SmartBoard™ with a knife, break along the score and, if necessary, clean up the edges with a rasp-plane. Micronal® PCM SmartBoard™ can also be cut with a keyhole saw.

#### Note:

Prevent from dust exposure. If necessary use respiratory mask. Do not cut with an electric circular saw or fast turning angle grinder.  
- Risk of dust explosion -  
- Avoid grinding swarf inhalation -

### Jointing and finishing

#### Joint compound

- Hand-fill the joints with joint compound (e.g. Knauf Ready Mix Lite) and joint tape (e.g. Knauf Fibre Tape).

#### Preparation

- Sprinkle joint compound into clean, cold water until its level is just below the surface of the water (e.g. max. 2.5 kg Knauf Ready Mix Lite in approx. 1.9 l water).
- Without adding further ingredients, stir to a thick, creamy consistency with a filling knife.
- Do not mix joint compound with other materials as this may significantly alter its properties.

#### Amount of material:

Joint compound: approx. 0.3 kg/m<sup>2</sup>  
Skimming: as required

#### General:

- Plaster over any visible screw heads.
- Apply fibreglass joint tape to cut-edge joints as well.

#### Jointing:

Apply a thin layer of joint compound and lay fibreglass joint tape along the joint. Before proceeding, the joint compound must be hard and dry.

#### Skimming:

An additional coat with a suitable finishing plaster (e.g. Knauf Multi-Finish or Knauf Board Finish) is recommended if the surface has to meet special requirements.

#### Application temperature and weather conditions

- Jointing should be carried out only when Micronal® PCM SmartBoard™ are no longer undergoing any no significant length changes, e.g. as a result of changes in humidity or temperature.
- The room temperature must not be below about 10°C.
- Where mastic asphalt flooring is to be laid, do not joint Micronal® PCM SmartBoard™ until the floor has been laid.

#### Finishing

Lightly sand the jointed areas, if required, when they are dry. Prime the surface (e.g. with Knauf Wallboard Primer) before applying a coating (e.g. paint or wallpaper).

# Micronal® PCM SmartBoard™ 23/26

## Construction + Installation

### Walls: construction and installation

Metal stud walls consist of simple studwork lined on one face or both with Micronal® PCM SmartBoard™. The studwork is connected around its perimeter with adjoining structural members.

Insulation, electric wiring and plumbing may be installed in the wall cavity.

Expansion joints in the main structure must be repeated in the stud wall construction. Expansion joints are required every 15 m or so in continuous walls.

#### Substructure

- Apply sealant or sealing tape (two beads) to the reverse side of profiles for connecting the SmartBoard™ to adjoining structural members. Where sound proofing is required, carefully apply sealant according to DIN 4109, Suppl.1, Section 5.2. Porous sealing strips such as sealing tapes are generally unsuitable for this purpose.
- Where a ceiling span deflection of  $\geq 10$  mm is expected, the ceiling should have a floating edge.
- Fix edge profiles to adjoining structural members with suitable fixings. Spacing of fixings 1 m; at least 3 fixings to walls.

Fixing method for solid adjoining structural members: rawl plugs (e.g. Knauf Nailable Plugs).

For hollow-core structural members: special fixing elements suitable for the material.

- Insert the C studs perpendicularly into the U channels at 415 mm centres and align.

#### Lining

- SmartBoards™ should preferably be fixed vertically. Stagger vertical joints. No SmartBoard™ joints above door jambs.
- Stagger horizontal joints by at least 400 mm. Fill joints using fibreglass joint tape.
- Fix SmartBoards™ with drywall screws, TN 3.5 x 25 mm, spaced 250 mm apart.

### Ceilings: construction and installation

SmartBoard™ ceiling linings are fixed directly to the ceiling structure. SmartBoard™ suspended ceilings are attached with wire or rigid hangers to the ceiling structure. SmartBoards™ are screwed to a timber substructure of battens and counter battens, a metal grid of main runners and cross runners, or a flush metal grid of main runners and cross runners.

Expansion joints in the main structure must be repeated in the SmartBoard™ ceiling construction. Expansion joints are required if the ceiling is longer than approx. 15 m or significantly narrowed (e.g. narrow sections due to projecting walls). Allow a gap between SmartBoards™ and structural members made of other materials, especially pillars, or fixtures subject to high thermal stress such as modular light fittings, for example with recessed joints that allow movement.

#### Substructure

##### Fixing to ceiling structure

- Timber: Use approved screws (e.g. Knauf Drywall Screws used according to the German Building Code, No. Z- 9.1-251),

- Reinforced concrete: approved expansion bolts (e.g. Knauf ceiling nails - use according to the German Building Code, No. Z-21.1-1519),
- Other building materials: fixing elements specially approved or standardized for the material.

Substructure is hung with hanger wires and rapid hangers, direct hangers or Nonius hangers.

- For fixing distances on ceiling and centre distances of main runners/ ceiling battens, see table below.
- Centre distances of cross runners/ counter battens 400 mm.

Fasten main runners or ceiling battens to hangers, ensuring that the substructure is suspended at the required height and completely level.

##### Runner/batten connections

- 50 x 30 mm mm ceiling battens and 50 x 30 counter battens with TN 4.3 x 55 mm drywall screws
- C-shaped main runners and cross runners with C-shaped clips or intersection clips

High-rigidity U-shaped main runners and C-shaped cross runners with high-rigidity U-shaped clips

Ceiling is connected to walls, where necessary, using 28 x 27 mm wall mouldings. Fixings should be suitable for the building material, fixing distance max. 1 m.

#### Lining

- Fix SmartBoard™ sheets at right angles to battens or runners.
- Stagger end joints by at least 400 mm and fix over battens or runners.
- Fix SmartBoards™ in the middle or begin at one corner to avoid compression and bowing. Press boards firmly against the substructure while they are being fixed. Use TN 3.5 x 25 mm drywall screws, or TN 3.5 x 35 mm for a timber substructure, spaced 170 mm apart.
- Fill joints using fibreglass joint tape.
- Fill joints between SmartBoards™ and other structural members using separating tape (e.g. Knauf Trenn-Fix 65) and joint compound or acrylate.

### Maximum spacings in ceiling substructure

Substructure	Spacing of hangers/fixings [mm]	Centre distances main runners or ceiling battens [mm]	Centre distances cross runners or counter battens [mm]
Timber / Metal substructure (60 x 27 mm C-shaped runners)	1000 / 950	900 / 1000	
Level metal substructure	1100	1250	400
Metal substructure, 50 x 40 mm high-rigidity U-shaped main runners and 60 x 27 mm C-shaped cross runners	2050	1000	
Assumed load rating: 0.15 kN/m²			