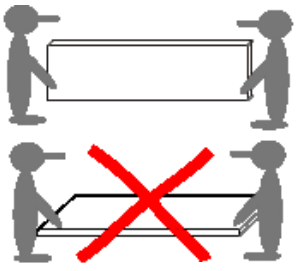
WEM Dry Construction System (for walls)

General notices

Use only original WEM connection pipes and press fittings, otherwise you will lose your guarantee for the system. For connections to other systems, use press-fit screw fittings.

Storage and transport

Protect the panels against moisture! Avoid deflection (transport the panels in upright position, see Ill. 1)!
Do not set down WEM Climate Panels on connecting pipes! If thick plaster layers are applied (10 mm or more), provide for forced drying! Ill. 1



Ill.1

Prerequisites

The following information refers exclusively to the installation at walls. For installation on ceilings and sloping roofs, please refer to the “Installation Instructions for Climate Ceilings".

The wall surface or substructure that will accommodate the heating system must have sufficient strength and stiffness to bear the WEM Climate Panels. Moreover, the walls ought to be sufficiently flat and even to prevent distortion of the WEM Climate Panels when fixing them to the surface. Uneven walls can be levelled with levelling plaster or a timber batten frame.

The thermal protection of the building should be checked for compliance with regulations on the energy efficiency of buildings, like the German Gebäudeenergiegesetz (GEG). For reasons of energy conservation, it is not recommended fitting a wall heating to exterior walls with a U-value > 0.5 W/m²K without additional thermal insulation measures.

Our Clay Panels and Climate Panels are not suitable for exposure to splashing water or for installation underneath tiles. In these cases, Climate Grids or the Climate Pipe System should be used in combination with hydraulic mortar.

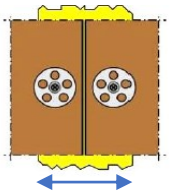
WEM Climate Panels and WEM Clay Panels should not be installed at temperatures below 5 °C. If there is a high humidity content in the air (e. g. due to screed laying) operate the WEM Climate Panels with a supply temperature of 35 °C at least and ensure sufficient ventilation. Fit heavy loads to the wall structure or substructure.

Preparation

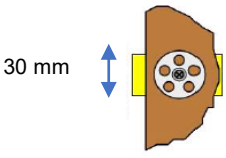
In new buildings, the Climate Panels should be fitted to the wall prior to the installation of the flooring (screed or dry flooring) to make sure that the connecting pipes can be integrated in the later flooring structure. If the floor is already installed (e. g. in refurbishment projects), you can cover the pipes with a baseboard or with plaster. In general, the Climate Panels can be installed in any position. If the connecting pipes are exposed on the wall or ceiling, fit WEM Clay Panels in the empty spaces up to the connecting pipes. Remaining gaps are filled with WEM Universal Clay Plaster or remainders of the Clay Panels soaked in water.

Preparation of the substrate

The panels are fixed with screws to an even subsurface or a substructure at the provided fastening points. The length and type of the screws depend on the substrate (e. g. SPAX® screws 5 x 50 mm).
A substructure can be created with timber battens or metal studs. When installing a timber substructure, the battens in the area of butt joints should have a minimum width of 80 mm (Ill. 2). When fitting the battens in transverse direction, a width of 30 mm should be observed (Ill. 3). When using metal studs, we recommend bracing the structure by clamping a batten into the profile.



Ill. 2



Ill. 3

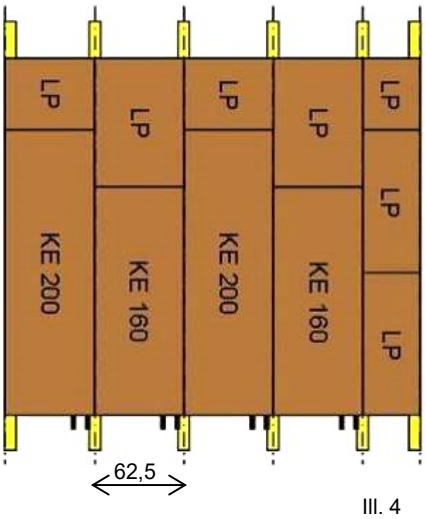
Substructure

Substructure made of timber battens or metal studs:

LP = Clay Panel

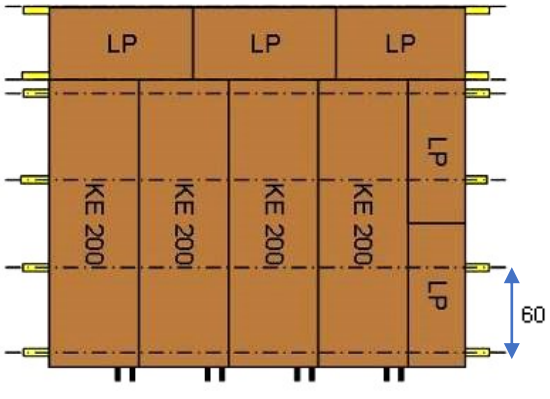
KE = Climate Panel

Vertical substructure:



Ill. 4

Horizontal substructure:



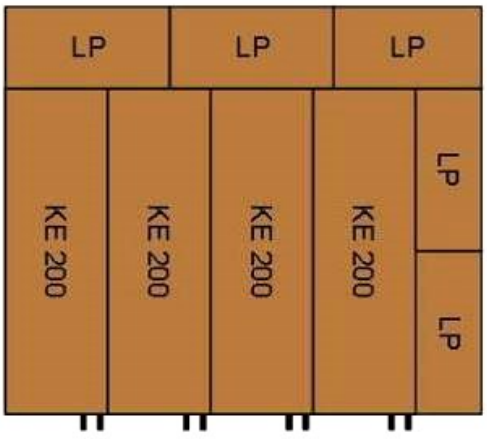
Ill. 5

Substructure

Solid substrate**:**

LP = Clay Panel

KE = Climate Panel



Ill. 6

Mounting the Climate Panels MV

Two fitters are needed to fit WEM Climate Panels to a wall. We recommend fitting a timber batten at the desired installation level with a distance of at least 8 cm to the floor (Ill. 7). You can set the panels down onto the batten for fastening. Leave some space at the side of the batten for the pipe ends protruding from the panel so that they are not damaged.

Fix the panels with screws at the disk fasteners cast-in at the factory (Ill. 8). The length and type of the screws depend on the substrate (e. g. flat head screws 5 x 50 mm).

To fasten the panels in additional fixing points, use the disk fasteners and make sure not to damage any pipes inside the panel. The run of the pipes can be seen on the surface.

Ill. 7

Ill. 8

Connecting the WEM Climate Panels

Cut the pipe ends to length, deburr, and calibrate them prior to the installation!
Use WEM Composite Metal Pipes to connect the WEM Climate Panels to each other. Cut a pipe section to the required length and press two elbows onto the ends of the pipe. Subsequently, push the pipe section onto the pipe ends of the WEM Climate Panels (Ill. 9) and fit it by pressing. Lay the connecting pipes from the supply connection of the first panel and the return connection of the last panel to the manifold (Ill. 10) and connect them.


Ill. 9

When bending the pipes, observe a minimum bending radius of 80 mm, when bending by hand, and of 64 mm, when using a spiral spring!


Ill. 10

Connect not more than five WEM Climate Panels in series!

Filling, flushing, pressure testing

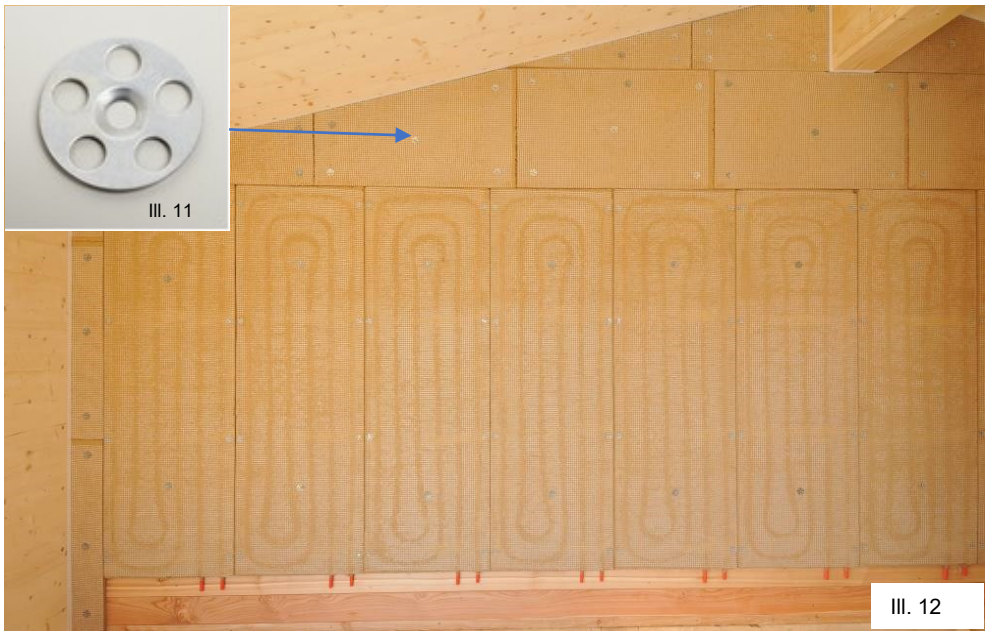
The wall heating is now ready for flushing and pressure testing.

Flushing and filling should be carried out with great care. For further details, please refer to our "Commissioning" data sheet.

Perform the pressure test before commencing any plaster work. Conduct the pressure test in accordance with the Pressure Test Protocol and document it.

Levelling of the surfaces

Use the Clay Panels to raise the remaining wall surface to the level of the installed heating surface. Fix them with screws at four retaining points at least per panel using the WEM Disk Fasteners (Ill. 11).


Ill. 11

Ill. 12

Cutting to size

You can cut the Clay Panels to size with a jig saw or a cutting disk. (Make sure that you wear protection glasses and a breathing mask because of the dust emission and ensure good ventilation, if possible). Otherwise, scribe the textile covers on both sides of the panels with a knife and break the panels off at the cutting edges (Ill. 13 and 14).


Ill. 13


Ill. 14

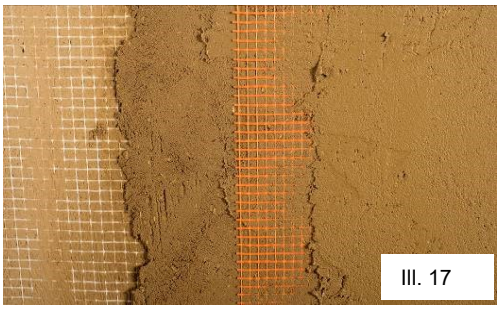
Cut-outs and smaller pieces can be created best with a jig saw. Hole cutting drill bits are suitable for drilling socket openings (Ill. 15).


Ill. 15

Smoothing and reinforcing

Seal the entire wall surface with WEM Universal Clay Plaster, apply a coat of about 5 mm thickness, moisten the wall beforehand. Insert the WEM Reinforcing Fabric into the plaster while it is still in a plastic state. Overlap the fabric layers by at least 10 cm at the joints. After the first layer of plaster has dried completely, apply WEM Fine-Finish Plaster to finish the surface (application thickness approx. 3 mm).

Ill. 16


Ill. 17

A single plaster coat must not exceed a thickness of 10 mm!

Important notice: Dry heating must be started immediately after the application of each layer of plaster (exception: lime plasters). Humidity must be removed, e. g. by airing or using a condensation dryer. If the heating is not yet in operation, other drying measures must be undertaken.

Finishing

Apply the desired finish over the entire wall surface including the heating and levelled surfaces.

To preserve the beneficial properties of the clay we recommend WEM FarbTon Clay Paint or a coloured Design Clay Plaster for finishing.


Ill. 18