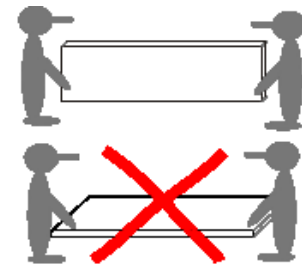


Installation Instructions

WEM Climate Ceiling (for horizontal ceilings and roof pitches)

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 III. 1)! Do not set down WEM Climate Panels on connection pipes! Start dry heating immediately after applying the plaster layer (exception: lime plaster)!



III. 1

Prerequisites The following installation instructions only apply to panelling with Climate Panels and Clay Panels and the connection of the Climate Panels. A prerequisite for the installation of the substructure is knowledge of the state of the art in dry construction. The ceiling surface or substructure to be covered must have sufficient strength and load-bearing capacity. The surface of flat substrates ought to be sufficiently smooth and even to prevent distortion of the WEM Climate Panels when fixing them.

Our Clay Panels and Climate Panels are not suitable for exposure to splashing water. Use only WEM Climate Panels D for the WEM Climate Ceiling. In comparison to the Climate Panels MV (for wall mounting), the Climate Panels D have additional fastening points and are stabilised with a polymer dispersion (< 1 %). Use WEM Clay Panels D, which are also stabilised, to fill the gaps.

Do not install and connect any panels 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 D with a supply temperature of 35 °C at least and ensure sufficient ventilation.

Fit heavy loads to the structural ceiling or substructure.

Substrate/Preparation Fit the panels with screws at the provided fastening points to an even subsurface or a substructure. The length and type of the screws depend on the substrate. The flat substrate or the substructure must be designed for a weight of 55 kg/m² at least. Suitable flat substrates include load-bearing derived timber boards.

A substructure can be created using timber battens or metal profiles, e. g. for suspended ceilings.

Installation variant 1

Suspended ceilings made of metal profiles (1):

Substructure of metal profiles as suspended ceiling

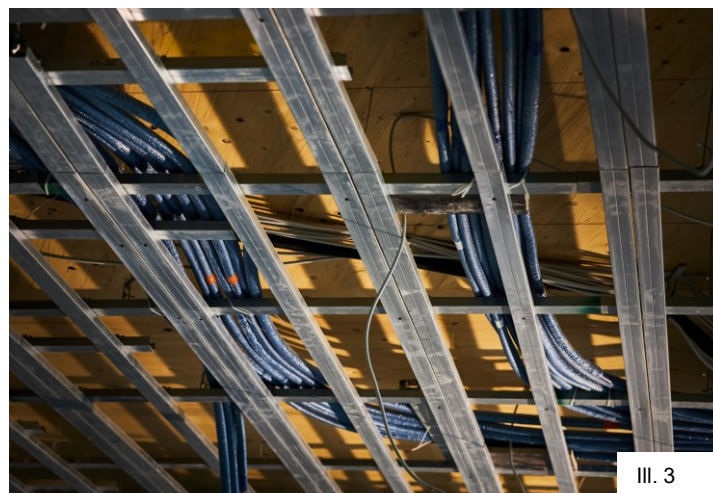
The substructure of metal profiles, consisting of base and support profiles, shall be assembled in accordance with the manufacturer's guidelines (weight per unit area of the Climate Ceiling is 55 kg/m² at least). The distance from the lower edge of the support profile to the structural ceiling must be at least 13 cm. Timber battens can be clamped into the support profiles for additional stabilisation. Arrange the support profiles in such manner that there are always two metal profiles next to each other in the butt joint area of the panels. Fix an additional support profile in such position that the panels can additionally be bolted to the fixing points in the middle (III. 2).

Suitable screws are drywall screws with flat heads and double thread (e. g. Knauf Universal Screw FN 4.3 x 65 mm).



Laying the connecting pipes

With suspended ceilings, the connecting pipes can be conveniently routed above the base profiles and positioned in such a way that they can be suitably connected later. Line the pipes with protective hoses (III. 3).



Installation variant 1 Suspended ceilings made of metal profiles (2):

Mounting the Climate Panels D

At least two fitters are needed to fit WEM Climate Panels to a ceiling. We recommend using a panel lifter as an aid to conveniently position the panels (III. 4).



Mounting the Climate Panels D

Fix the panels with screws at the disk fasteners cast-in at the factory. 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. (III. 5)



Installation variant 1 Suspended ceilings made of metal profiles (3):

Connecting the WEM Climate Panels D

Cut the pipe ends of the Climate Panel D to length, deburr, and calibrate them prior to the installation!

The WEM Climate Panels D are connected using WEM Pipe Bends (art. no. 02020). Two elbows are pressed onto the ends of this pipe that was pre-bend to fit suitably. Fit the WEM Pipe Bend in such way that it runs above the base and support profiles. Connect the connecting pipes that you laid beforehand to the supply connection of the first panel and the return connection of the last panel. (III. 6)

Connect not more than five WEM Climate Panels D in series!



Levelling of the surfaces

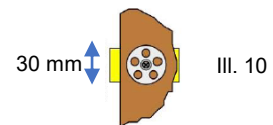
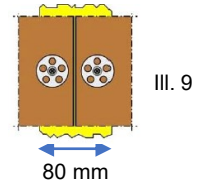
Use WEM Clay Panels D to raise the remaining ceiling surface to the level of the installed heating surface. Use a jig saw, for instance, to cut out the Clay Panels D in the area of the connectors and fit them precisely to the Climate Panels D (III. 7). Fix them with screws at five retaining points per panel at least, using WEM Disk Fasteners (III. 8).



Installation variant 2 Horizontal ceilings and sloping roofs with substructure (1):

Substructure of timber battens

The substructure of timber battens must be designed for an additional weight of at least 55 kg/m² (at eight fixing points). The batten width should not be less than 80 mm in the butt joint area (III. 9). When fitting the battens in transverse direction, observe a width of 30 mm (III. 10). The axis-to-axis spacing of the battens is 31.25 cm. (III. 11 and III. 12).

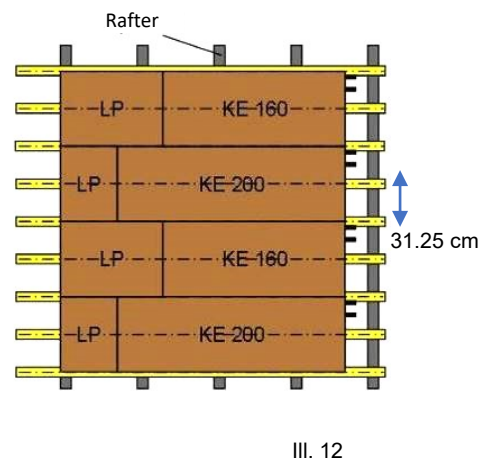
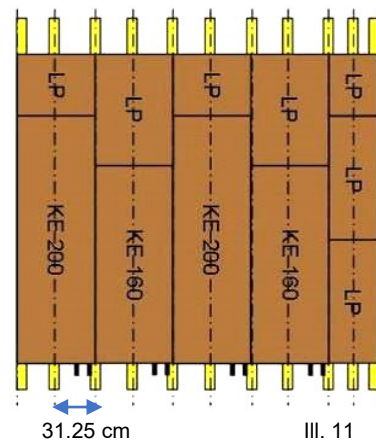


Battens parallel to the Climate Panels

Climate Panels across the rafters

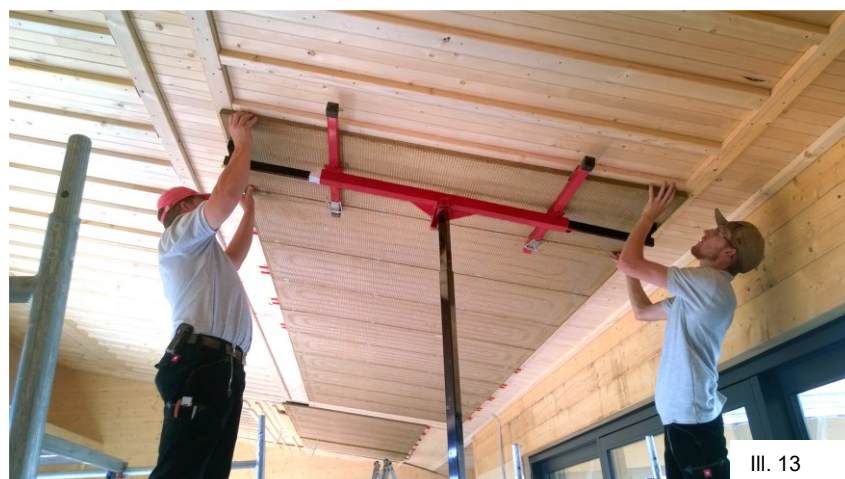
LP = Clay Panel

KE = Climate Panel



Mounting the Climate Panels D

At least two fitters are needed to install the WEM Climate Panels D. We recommend using a panel lifter as an aid to conveniently position the panels (III. 13). Fix the panels with screws at the disk fasteners cast-in at the factory. 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.



Installation variant 2

Horizontal ceilings and sloping roofs with substructure (2):

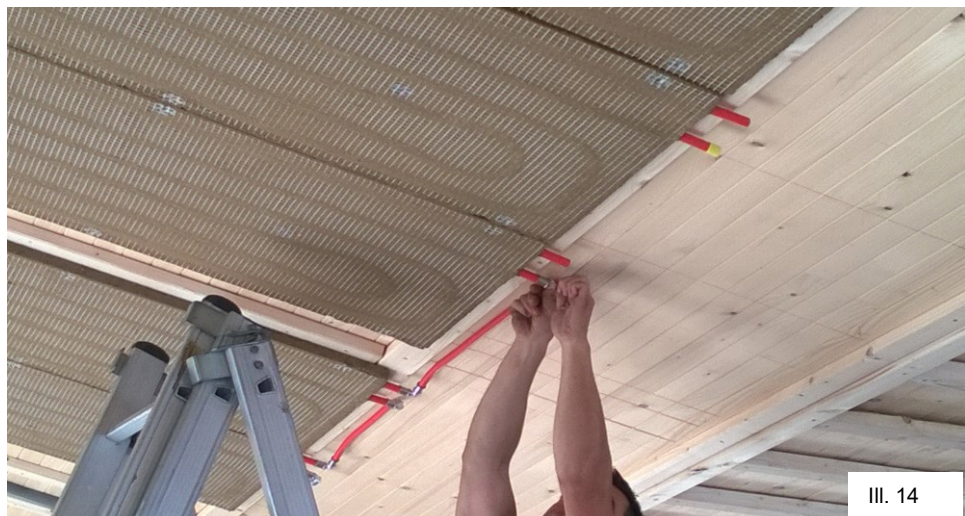
Connecting the WEM Climate Panels D

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 D 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 D and fit it by pressing. 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!

Lay connecting pipes from the supply connection of the first panel and the return connection of the last panel to the manifold and connect them.

Connect not more than five WEM Climate Panels in series!



Levelling of the surfaces

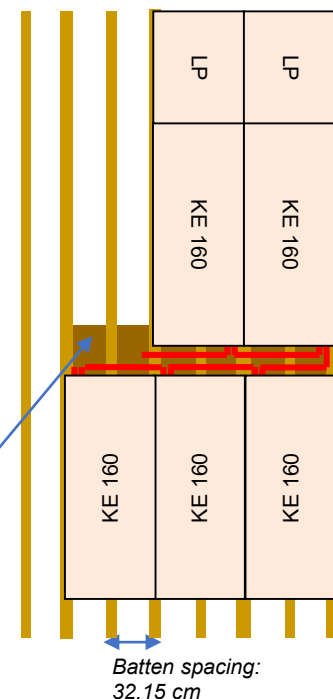
In the area of the connecting pipes, backfill with Universal Clay Plaster. To create a subsurface that is suitable for plastering, fill the gaps between the battens with an appropriate material such as wood fibre boards, for instance (III. 15).

LP = Clay Panel

KE 160 =
Climate Panel
with a height of
160 mm

Level the area that is not covered with Climate Panels D with WEM Clay Panels D. Fix them with screws at five retaining points per panel at least, using WEM Disk Fasteners.

Board suitable for plaster application in the area of the connecting pipes.



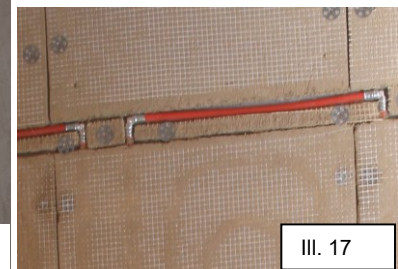
III. 15

Installation variant 3

Panelling of a solid substrate on horizontal ceilings and sloping roofs

Substructure Suitable solid substrates include solid wood or load-bearing derived timber boards such as OSB/ESB boards. The boards must be designed for an additional weight of at least 55 kg/m² (at eight fixing points). With concrete ceilings, we recommend creating a substructure. This minimises the installation effort and ensures thermal decoupling.

Mounting the Climate Panels D Fix the panels with screws at the provided fixing points. The type of screw depends on the substrate (e. g. flat head 5 x 50 mm). To fasten the Climate Panels in additional fixing points, use WEM Disk Fasteners and make sure not to damage any pipes inside the panel. The run of the pipes can be seen on the surface.



Connecting the WEM Climate Panels D

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 D 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 D and fit it by pressing. 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! Lay connecting pipes from the supply connection of the first panel and the return connection of the last panel to the manifold and connect them. Route the connecting pipes between the Climate Panels.

Connect not more than five WEM Climate Panels in series!

Levelling of the surfaces

Use WEM Clay Panels D to raise the remaining ceiling surface to the level of the installed heating surface. Fix them with screws at five retaining points per panel at least, using WEM Disk Fasteners. In the area of the connecting pipes, fit the Clay Panels as close as one centimetre or even less (III. 17). Close the remaining gaps with WEM Universal Clay Plaster.

Installation variant 4

Panelling of a solid substrate on concrete ceilings (1):

Substructure With concrete ceilings, we recommend creating a substructure. This minimises the installation effort and ensures thermal decoupling. In rooms with a low room height, you can fit the Climate Panels immediately below the concrete ceiling. In this case, a thin wood fibreboard insulation that is fitted between the Climate Panel and the Concrete Ceiling provides for thermal decoupling.

Mounting the Climate Panels D

The concrete ceiling is covered over the whole surface with thin wood fibreboard insulation (e. G. Steico Isorel, thickness: 10 mm) (III. 18). The climate panels are pressed against the insulating boards using a panel lifter (III. 19)



Pre-drill with an auger of 6.5 mm diameter through the disk fasteners cast in at the factory (III. 19). When drilling it is important to press the panel tight to the substrate in order to avoid the accumulation of drill dust behind the panel (III. 20).

Installation variant 4

Panelling of a solid substrate on concrete ceilings (2):

Fix the panel subsequently using concrete screws (e. g. Würth AMO® III, Ø 7.5 mm, length 72 mm). Please tighten the screw with a torque of 15 Nm at least.



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.

Important notice: *Cut the pipe ends to length, deburr, and calibrate them prior to the installation!*

Connecting the WEM Climate Panels D

Use WEM Composite Metal Pipes to connect the WEM Climate Panels D 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 D and fit it by pressing (III. 22). 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!

Lay connecting pipes from the supply connection of the first panel and the return connection of the last panel to the manifold and connect them. Route the connecting pipes between the Climate Panels.



Connect not more than five WEM Climate Panels in series!

Levelling of the surfaces

Raise the remaining surface to the level of the heating surface with WEM Clay Panels D. Fix them with screws at five fixing points per panel at least using WEM Disk Fasteners. In the area of the connecting pipes, fit the Clay Panels as close as one centimetre or even less. Close the remaining gaps with WEM Universal Clay Plaster.

Further processing for all mounting variants:

Filling, flushing, 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 as specified in the Pressure Test Protocol and document it.

Levelling the surface with Clay Panels D:

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). Otherwise, scribe the textile covers on both sides of the panels with a knife and break the panels off at the cutting edges (III. 18 and 19).



III. 19

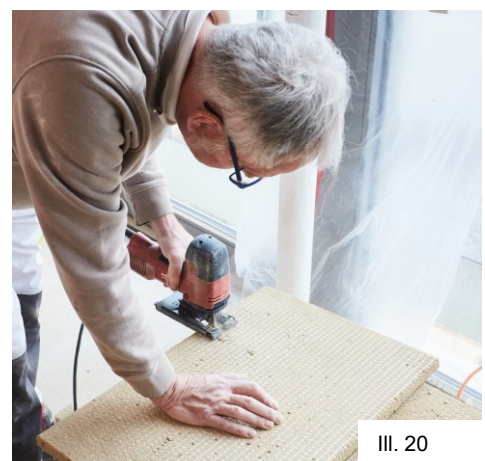


III. 18

Cut-outs and smaller pieces can be created best with a jig saw (III. 20). Hole cutting drill bits are suitable for drilling socket openings (III. 21).



III. 21



III. 20

Smoothing and reinforcing

Seal the entire ceiling surface with WEM Universal Plaster, apply a coat of 5 mm thickness maximum over the total surface, moisten the surface 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).



III. 22

A single plaster coat must not exceed a thickness of 5 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

Finish the entire ceiling surface including heating and raised surfaces as desired.

To preserve the beneficial properties of the clay we recommend WEM FarbTon Clay Paint (III. 23) or a coloured Design Clay Plaster for finishing.



III. 23