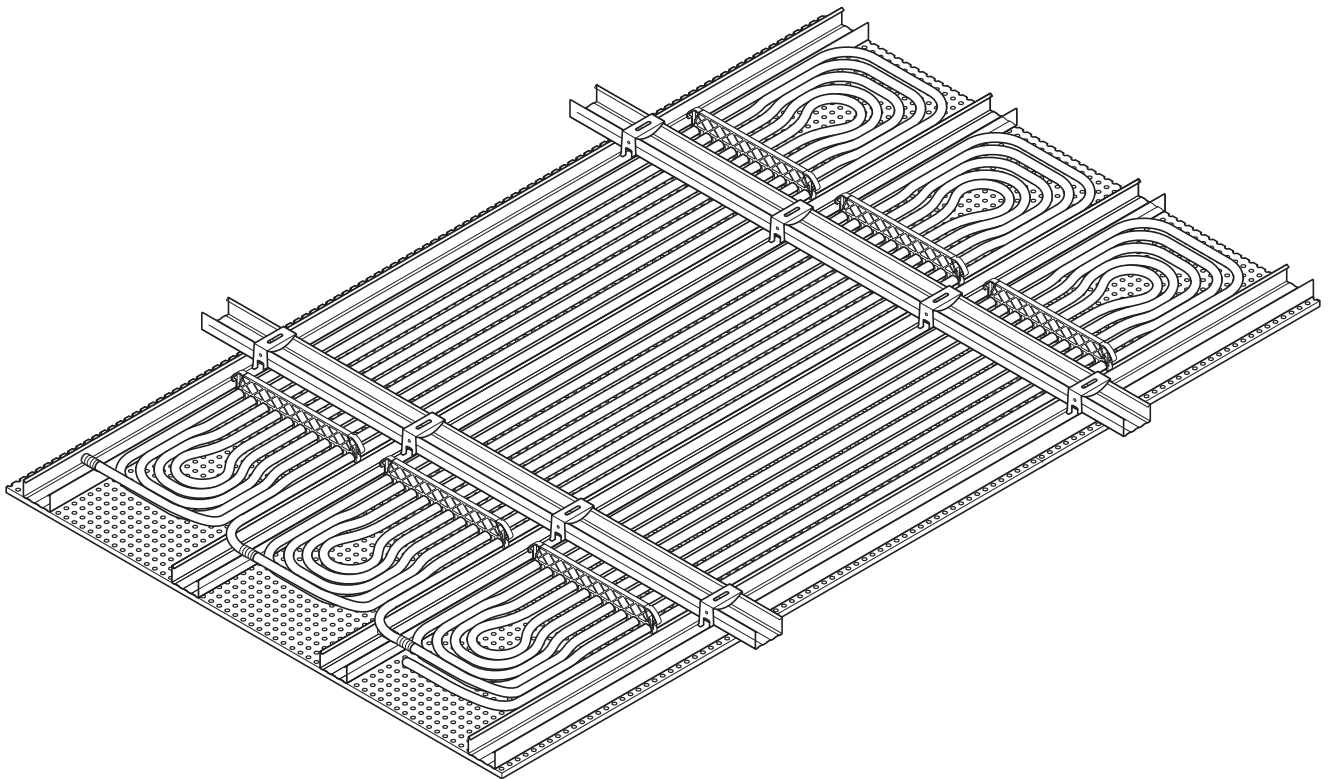


# Uponor Thermatop M

EN Installation manual






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# 1 Safety instructions and disclaimer


## 1.1 System overview

### Safety messages used in this document

	<b>Warning!</b> Risk of injury and damage. Ignoring warnings can cause personal injury and/or damage to products and other property.
	<b>Caution!</b> Risk of malfunctions. Ignoring cautions can cause the product to not operate as intended.
	<b>Note</b> Important information to the section in the manual.

Uponor uses safety messages in the document to indicate special precautions required for the installation and operation of any Uponor product.

### Safety measures


	<b>Note</b> For safe and proper use, obey the instructions given in this document. Keep them for future reference.
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The installer and operator agree to comply with following measures regarding Uponor products:


- Read and obey the instructions and processes in the document.
- The installation must be performed by a qualified installer in accordance with local regulations.
- Uponor is not liable for modifications not specified in this document.
- Switch off all connected power supplies before starting any wiring work.
- Do not expose the Uponor components to flammable vapours or gases.
- Do not use water to clean electrical Uponor products/ components.

Uponor is not liable for damage caused by ignoring the instructions in this document or the applicable building code.

### Power

	<b>Warning!</b> Uponor system power supply: 230 V AC, 50 Hz. In case of emergency, immediately disconnect the power.
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### Technical constraints

	<b>Caution!</b> To avoid interference, keep data cables away from components bearing power of more than 50 V.
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## 1.2 Limitations for radio transmission

Wireless Uponor products use radio transmission for communication. The used frequency is reserved for similar applications, and the risk of interference with other radio sources is very low.

However, in some rare cases, radio communication can be faulty. The transmission range is sufficient for most applications, but certain surroundings affect the radio communication and maximum transmission distance.

If communication disturbances occur, uponor recommends to relocate the antenna to a better position. Preferably, install Uponor radio sources **at least 40 cm** apart to prevent exceptional disturbances.

## 1.3 Correct disposal of this product (Waste Electrical and Electronic Equipment)

	<b>Note</b> Applicable in the European Union and other European countries with waste separation systems.
---	---



This icon on the product, or in the related documents indicates that it should not be disposed with household waste. Please, recycle responsibly to support the sustainable use of resources and prevent possible harm to human health and/or the environment.

Household users should contact the retailer where they purchased this product, or their local government office, for details on where and how they can take it for recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. Do not dispose this product with other commercial waste.

## 1.4 Copyright and disclaimer

This is a generic, european-wide document version. The document may show products that are not available in your location for technical, legal, commercial, or other reasons.

For any questions or queries, please visit the local Uponor website or speak to your Uponor representative.

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Uponor has prepared this document solely for information purposes, images are only representations of the products. The content (text and images) of the document is protected by worldwide copyright laws and treaty provisions. You agree to comply with these when using the document. Modification or use of any of the content for any other purpose is a violation of Uponor’s copyright, trademark, and other proprietary rights.

This disclaimer applies to, but is not limited to, the accuracy, reliability, or correctness of the document.

The presumption for the document is that the product related safety instructions are fully obeyed. The following requirements apply to the

Uponor product (including any components) as covered by the document.

- The system (combination of products) is selected and designed by a competent planner. It is installed and put into operation by a licensed and/or competent installer in compliance with the instructions provided by Uponor. Locally applicable building and plumbing codes/regulations have been obeyed.
- Temperatures, pressure and/or voltage limits according to product and design information have not been exceeded.
- The product remains in its originally installed location and is not repaired, replaced, or interfered with, without prior written consent of Uponor.
- The product is connected to potable water supplies or compatible plumbing, heating and/or cooling systems approved or specified by Uponor.
- The product is not connected to or used with third-party products, parts, or components except for those approved or specified by Uponor.
- The product does not show evidence of tampering, mishandling, insufficient maintenance, improper storage, neglect, or accidental damage before installation and being put into operation.

While Uponor has made all effort to ensure that the document is accurate, the company does not guarantee or warrant the accuracy of the information. Uponor reserves the right to change the product portfolio and the related documentation without prior notification, in line with its policy of continuous improvement and development.

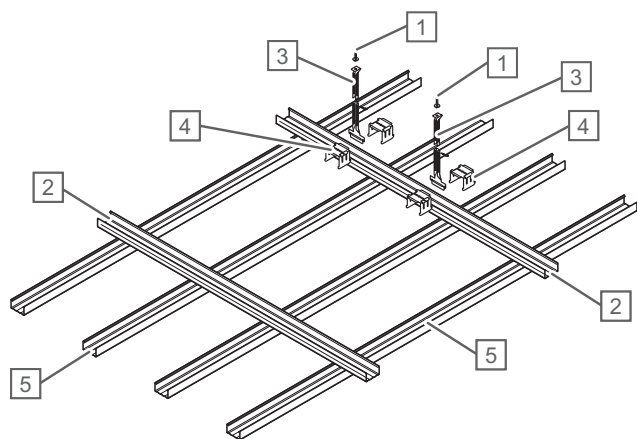
**Always make sure that the system or product complies with current local standards and regulations. Uponor cannot guarantee the full compliance of the product portfolio and related documents with all local regulations, standards, or working methods.**

**Uponor disclaims all warranties related to the content of this document, expressed or implied, to the fullest extent permissible unless otherwise agreed or statutory.**

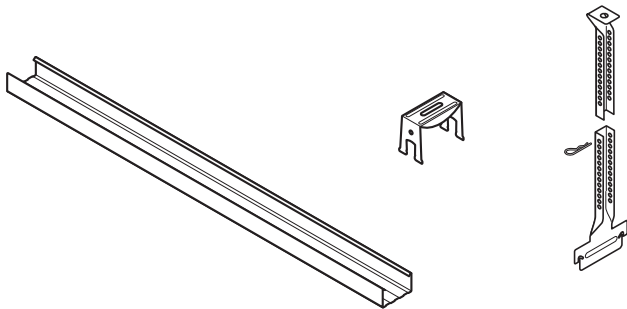
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# 2 Components



Pos.	Description
1	Fastening means
2	CD profile (base structure)
3	Complete Nonius suspender
4	Quick intersection connector
5	CD profile (furring structure)



## 2.1 Substructure (on site)

Only components fulfilling DIN 18182 and DIN EN 14195 are approved for the substructure.

The suspension must be carried out rigid to compression.

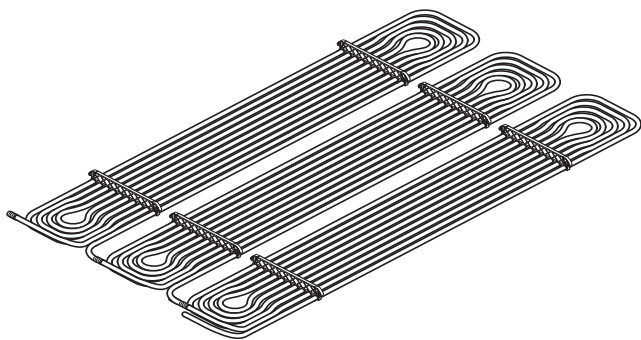
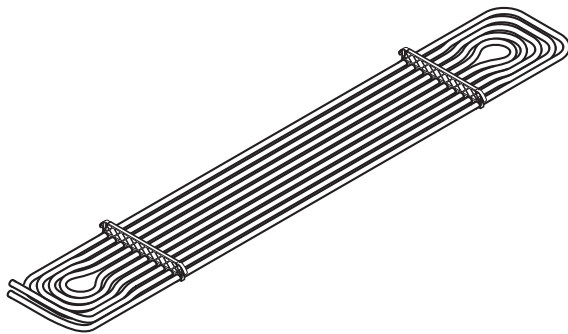
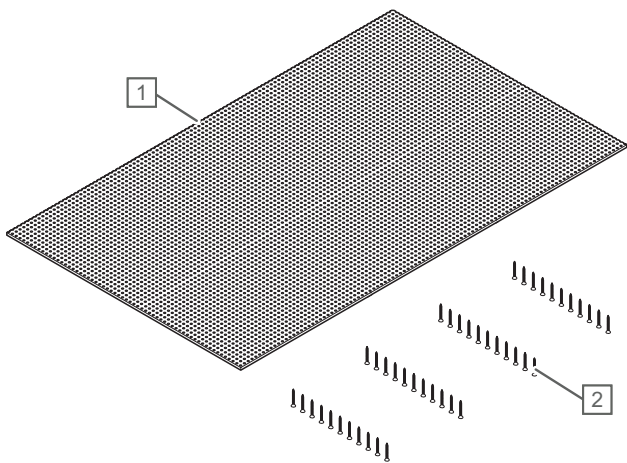


Fig. Thermatop M cooling register

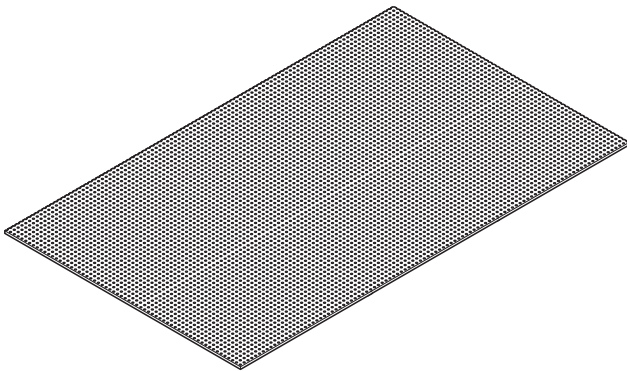


## 2.2 Cooling register

The cooling registers are factory-made meanders made from Ø16 x 2,0 mm multilayer composite pipes. The meanders consist of 10 rows of pipes with an average distance between pipes of 27,7 mm. For fixing the pipes, and to aid installation and ensure safety in transit, the cooling registers are fitted with fixing rails.



Pos.	Description
1	Plasterboards as thermal boards without/with graphite content, perforated or non-perforated
2	Dry wall screws



## 2.3 Plasterboards (on site)

Only plasterboards that comply with DIN EN 520 and DIN EN 14190 must be used.

The following versions are particularly suitable:

- Knauf Thermoboard
- Knauf Thermoboard Plus
- Rigips Vario 10
- Rigips Climafit 10
- Vogl Thermotec

Screwing must be done using only the screws listed below.

Panelling	Screw
Thermoboard/Rigips Vario 10/Vogl non-perforated	XTN 3,9 x 23 mm (manufactured by Knauf) Item No. 00216603 TN Gold without/with 3,5 x 23 drill bit (manufactured by Rigips)
Thermoboard/Rigips Vario 10/Vogl perforated	TB 3,9 x 23 mm (manufactured by Knauf) Item No. 46839 TN Gold without/with 3,5 x 23 drill bit (manufactured by Rigips)
Thermoboard Plus perforated/non-perforated (graphite content)	XTN 3,9 x 23 mm (manufactured by Knauf) Item No. 00216603 TN Gold with 3,5 x 23 drill bit (manufactured by Rigips)
Rigips Climafit perforated/non-perforated	TN Gold with 3,5 x 23 drill bit (manufactured by Rigips)

# 3 Installation

## 3.1 Basics



### Note

Planning is the basis for the installation of the Thermatop M ceiling system. This is done by a specialist planner or Uponor GmbH. In the planning phase, the positioning of the substructure and register, the installation direction and the hydraulic connections are determined.

## Storage



### Warning!

- The registers must be stored flat in their boxes.
- Improper storage (e.g. upended) will lead to deformations, which will affect the proper installation and functioning of the Varicool Eco S register.
- The register and accessories must be protected from humidity.
- Plaster products must always be stored in a dry place.
- Perforated plasterboards must be stored on site at least 24 hours before installation.

## Building climate conditions



### Warning!

- Only carry out installation work in the range of 35-70% relative humidity.
- After installation, the plasterboard systems must be protected from humidity.
- Sufficient ventilation must be ensured within buildings also after mounting work has been completed.
- Filling work may not be carried out until no greater changes are to be expected in the length of the gypsum boards resulting from changes in the humidity and/or temperature.
- The room temperature may not lie below +10 °C for the filling work (DIN 18181).

## 3.2 Preparation



### Note

Anchors must have building-authority approval for anchoring mounted ceilings to DIN EN 13964 for the found surface and must be dimensioned sufficiently.

The substrate must be checked. Only suitable fixings and anchors may be used. For the substructure, only materials conforming to DIN 18182 may be used.

The materials must be stored on the building site in locations where they cannot be damaged.

## 3.3 Installation of suspenders



### Note

Anchoring of the substructure is effected with screws or anchors with building-authority approval on the raw ceiling. The raw ceiling must have sufficient load-bearing capacity. Only pressure-resistant suspenders such as Nonius or direct suspenders may be used. The max. suspender space amounts to  $\leq 800$  mm. The layout of the profiles is determined by the planning. The mounting direction of the overall structure results from the layout of the profiles.

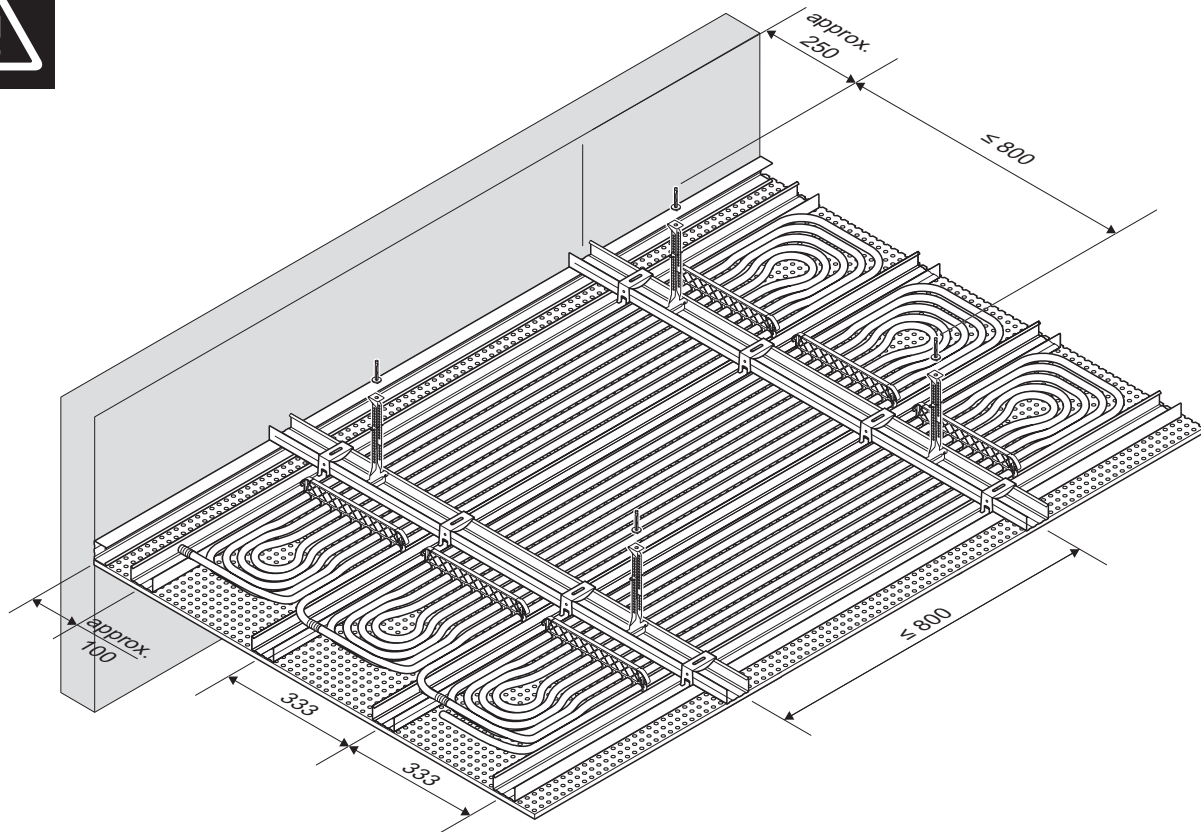
The maximum space from the first suspender to the wall may not exceed 250 mm.



### 3.4 Installation of substructure

The substructure is made from CD 60/27 ceiling profiles according to DIN 18182 and DIN EN 14195. Connection of the base profiles with the bearing profiles is effected by means of quick intersection connectors. The maximum distance of the base profile is  $\leq 800$  mm. Replacements for fittings are possible while considering the profile distances.

The maximum overhang of the base profile to the last hanger must not exceed 250 mm. The centre distance of the furring profile is a maximum of 333 mm for Varicool Eco S. The construction of the substructure essentially corresponds with that of standard plasterboard ceilings. An example structure is shown in the figure below.



### 3.5 Installation of the Thermatop M register

The register are hang in into the CD profile of the furring construction. Because of the flexible spring clips on the fixing rail, the registers can just be slid (Fig no. 1) and snapped (Fig no. 2) between the two CD profiles. Moving the on-site substructure is not necessary. The mounted register can now be slid into the exact position. By pushing apart the spring clip, the registers can be slid along the CD profile again, and repositioned. The location and positioning of the registers is determined at the planning phase.

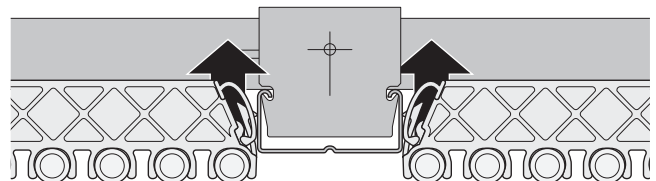


Fig no. 1

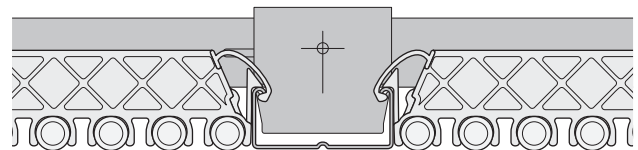


Fig no. 2



## 3.6 Connecting the registers

The registers can be hydraulically connected using push-in connectors or press connectors. Care must be taken here to ensure that sufficient pipe length is available for the formation of an open bend (if necessary), as otherwise the pipe will be kinked at the connections and destroyed. Attention must also be paid here to ensure that the Thermatop M is not misshapen when the pipe bend is formed. Under no circumstances must the connection be warped or kinked. The connection must not be subjected to any external tensile or compressive stresses, either during installation or during operation.

When under pressure or when heated, there may be slight changes in length. Connections laid in a straight line must be installed such that any changes in length can be absorbed.

Generally, the installer is responsible for ensuring the connections do not leak.

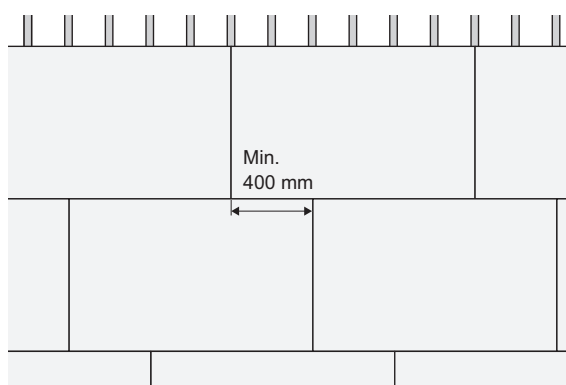
The nominal width should be selected so as to ensure that no sound insulation or hydraulic problems occur.

It is recommended that the registers and pipe network are filled in the room before panelling.

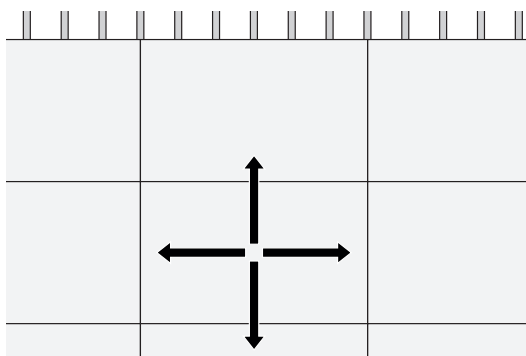
## 3.7 Panelling

Only thermal plasterboards that comply with DIN EN 520 and DIN EN 14190 must be used. The regulations in accordance with BVG guidelines must be observed. When panelling, the specifications of the plasterboard industry (expansion joints, edging, screw spacing, etc.) must be observed.

The filling of the joints between the panels is governed by the current dry wall construction guidelines. The maximum plasterboard projection must not exceed 100 mm.



Positioning of non-perforated plasterboard (according to dry wall regulations)



Positioning of perforated plasterboard (according to dry wall regulations)

## Screwing

The specifications of the plasterboard industry apply for screw spacing. The boards must be screwed in the direction of the furring profile, with a maximum distance of 170 mm.

When using perforated plasterboard, the first row of screws in the first profile must be positioned after the first row of perforations.

Screws must be screwed in with a dry wall limit stop. The special processing guidelines and Mounting instructions of the plasterboard industry must be observed.

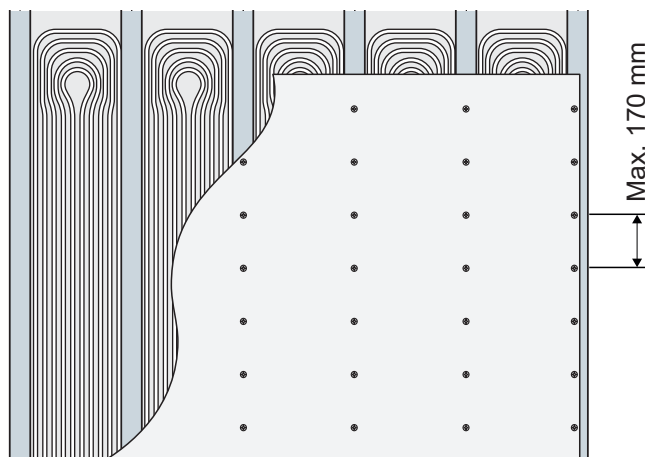


Fig. Screw spacing

## Expansion joints

Expansion joints must be provided according to DIN 18181 after a maximum field length of 15 m, as well as in the area of the shell construction expansion joints. In addition, they must also be provided in constricted areas, which are often found in hallways, for example. For cooling ceilings of max. 100 m<sup>2</sup>, length per side 15 m, heating max. 75 m<sup>2</sup>, length per side 7,5 m.

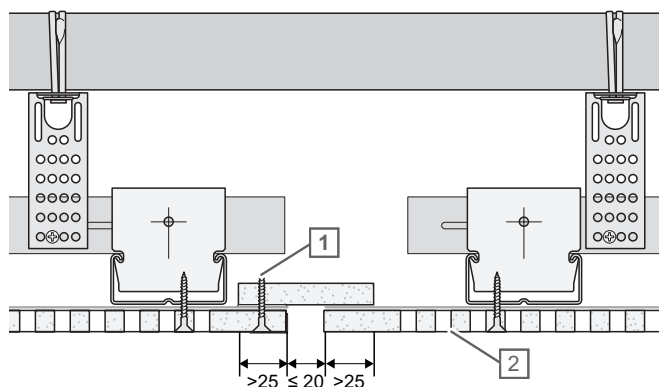


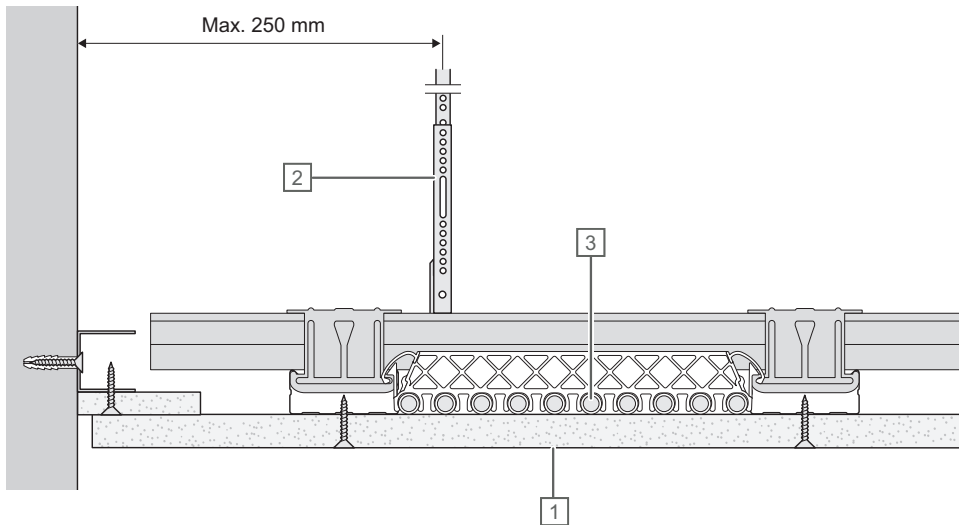
Fig. Expansion joints

Pos.	Description
1	Simply glue the panel strips on one side with joint filler, or screw in
2	Furring profile CD 60x27 perforated acoustic thermal board with non-perforated edge and V-milling

## Wall connections

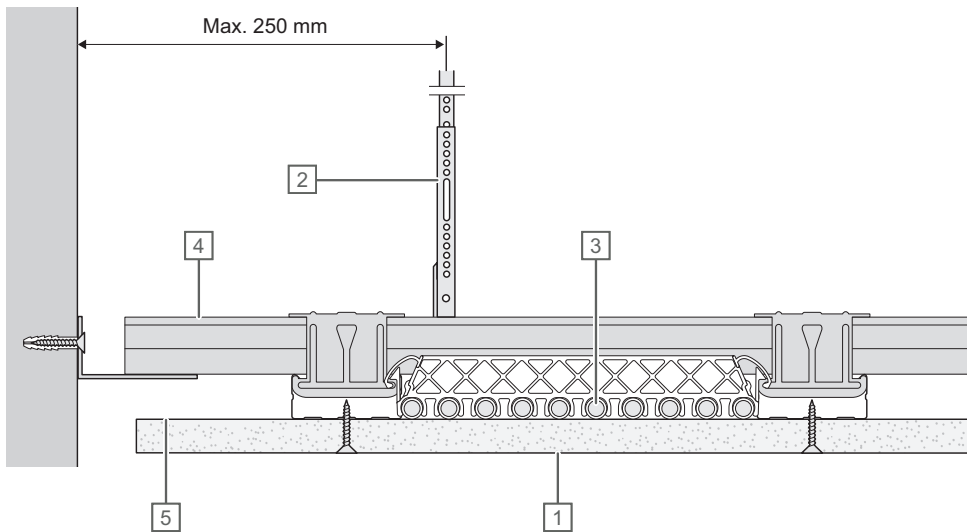
Wall connections must be installed in accordance with the valid specifications of the plasterboard manufacturer.

The projection after the last screwing point may amount to a maximum of 100 mm.



Gypsumboard wall connection, dull regulations)

Pos.	Description
1	Gypsum plasterboard
2	Nonius suspender
3	Thermatop M



Pos.	Description
1	Gypsum board ceiling
2	Nonius suspender
3	Thermatop M
4	CD profile
5	Aluminium edge protector

## Supplementary loads



### Warning!

Supplementary loads may not be connected to the Thertatop M elements.

Mounted parts such as lamps or ventilation outlets must be placed in the gypsum board areas. The guidelines of the plasterboard manufacturer and the profile manufacturer must also be observed here. For fixtures which are larger than the clear profile distances, the openings in the ceiling surfaces must be supplemented by replacing the substructure.

## 3.8 Filling - principles



### Note

In order to avoid cracks later on the building site conditions in accordance with the BVG Instruction sheet 1 are to be observed, meaning mainly that filling work may not be carried out until no greater changes are to be expected in the length of the gypsum boards resulting from changes in the humidity and/or temperature.

DIN 18181 additionally specifies a room and substructure temperature of more than 10° C for filling work.

With regard to the filling of plasterboard, different quality levels must be differentiated according to BVG Information

Sheet 2, "Joining of plasterboard surface finishes".

- Quality level 1 (Q1)
- Quality level 2 (Q2)
- Quality level 3 (Q3)
- Quality level 4 (Q4)

If special lighting conditions – for example side lighting as natural light or artificial illumination – are to be used for the assessment or the inspection and approval of the filled surface, the customer has to ensure that comparable lighting conditions already exist during the execution of the filling work.

Since the lighting conditions are not constant as a rule, a clear assessment of the drywall construction work can only be carried out for a light situation defined before filling work begins. The light situation must therefore be agreed contractually.

## Filling - principles



### Note

The regulations and Mounting instructions of the plasterboard manufacturer and the filler manufacturer must be observed and complied with.

The general dry wall construction guidelines must also be observed.

## Filling - vogl joint



### Note

The regulations and Mounting instructions of the plasterboard manufacturer and the filler manufacturer must be observed and complied with.

The general dry wall construction guidelines must also be observed.

For finishing a joint following the VoglFuge® (Vogl join) principle, a System Kit is required, comprising the necessary materials, the tools required and the detailed Mounting instructions.

## 4 Pressure test

### 4.1 Pressure test record

Project number

<b>Building project:</b>	Name	<input type="text"/>		
	Street	<input type="text"/>		
	ZIP/Post code	<input type="text"/>	City	<input type="text"/>
	Unit	<input type="text"/>		
	Floor	<input type="text"/>		
	Construction section/phase	<input type="text"/>		
	Customer	<input type="text"/>		
	Date of test	<input type="text"/>		
	Max. permissible operating pressure	<input type="text"/>		

#### Test medium

- ☐ Air  
☐ Drinking water  
☐ Water to VDI

All the lines have to be closed through metal plugs, covers, gaskets or blind flanges.

Apparatuses, pressure vessels or water heaters have to be disconnected from the piping.

A visual inspection of all pipe connections for correct implementation was carried out.

In the case of drinking water being used the system is to be drained completely after the pressure test and subsequently to be flushed and filled with conditioned water to VDI 2035.

#### Leak test

Test pressure

Test period  (to manufacturer specification or ZVHSK instruction sheet)

The temperature compensation and steady states must have been reached. This can take up to 30 minutes depending on the temperature difference (>10 K) between the ambient temperature and the filling medium.

Then the test begins.

The valves have been set to their setpoints	<input type="checkbox"/> Set <input type="checkbox"/> Not set
---	--

The shut-off valves at the transfer points are	<input type="checkbox"/> Open <input type="checkbox"/> Closed
--	--

## COPY TEMPLATE

Room/ circuit number	Date	Test pressure [bar]	Beginning	End	Remark
-------------------------	------	------------------------	-----------	-----	--------

[illegible]

☐ No leak was found during the test period

☐ No pressure drop was found during the test period

Client/Customer

Date/Stamp/Signature

Construction management/Architect  
Date/Stamp/Signature

Installation company  
Date/Stamp/Signature

## Notes

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