

JOINTLESS DRYWALL CEILING

with capillary tube mat ORIMAT S 10 applied on site



System description



SYSTEM DESCRIPTION

Design

The capillary tube mats and insulation are placed on a suspended drywall ceiling. On the visible side, there is a closed, jointless ceiling for the removal or supply of sensitive heat loads. The water circulates noiselessly in the capillary tube mats and regulates the room temperature to a large extent via radiation, partly also by convection.

Capillary tube mat

The Clina capillary tube mat ORIMAT S 10 is recommended for this design.

Length & width

The capillary tube mats are custom-made in terms of length and width. At the construction site, the mat distributor pipes are connected to one another by heating element socket welding.

This is a secure, non-detachable connection.

Hydraulic connection

The capillary tube mats, connected to a hydraulic circuit, are connected to the supply and return lines, which are located in the void of the suspended ceiling, by heating element socket welding. Alternatively, the connection can be made using a proven push-lock system with flexible hoses.

The ceiling void can of course be used for further installations.

Mounting

The capillary tube mats are fixed between the profiles of a suspended drywall ceiling with retaining brackets or retaining clips.

Drywall panels

Any type of drywall panels can be used - whether unperforated or perforated ceiling. The installation height, ceiling design and heating and cooling capacities vary accordingly.

Lamps & Ventilation

Larger openings must be taken into account in the planning phase.

Up to approx. 100 mm, openings can also be made during the construction phase by simply pulling the capillary tubes apart.

Regulation

The system can be regulated room-by-room.

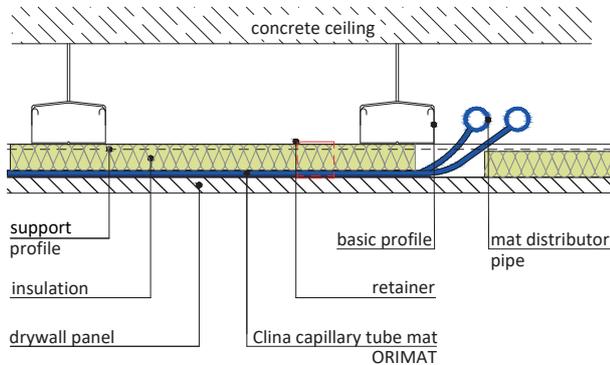
Fields of application

Suitable for all types of buildings, such as office buildings, residential buildings, hotels, etc., whether new construction or renovation.

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STRUCTURE



View of a ceiling section: jointless drywall ceiling with capillary tube mat

The mat distributor pipes of the capillary tube mats are connected to each other by heating element socket welding.

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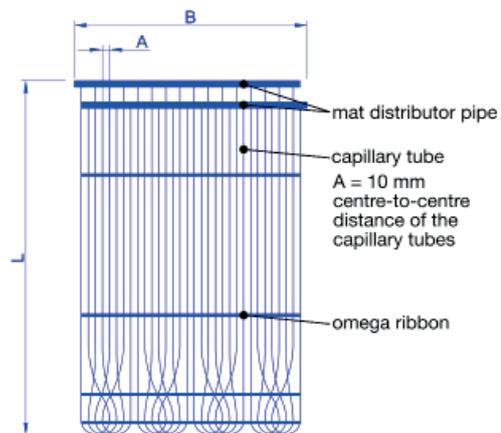
Mat distributor pipes and supply lines are located in the hollow space of the suspended ceiling.

To close the ceiling, the capillary tube mats are rolled out step by step, insulation boards are placed on top and drywall panels are screwed on from below.

RECOMMENDED CAPILLARY TUBE MAT

The ORIMAT S 10 consists of 2 round mat distributor pipes (20 x 2,0 mm) and capillary tubes (3,4 x 0,55 mm).

The constant distance between the capillary tubes (centre-to-centre distance) is 10 mm and is guaranteed by the omega ribbons.



GENERAL INFORMATION ON CAPILLARY TUBE SYSTEMS

Clina capillary tube mats are used very successfully worldwide for heating and cooling various buildings.

The capillary tube system is extremely **comfortable**:

- noiseless temperature control
- draught-free
- even when heating, the surface temperature of the ceiling is always below the body temperature of the user (high thermal comfort)
- fast reaction

Advantages compared to classic single-pipe systems:

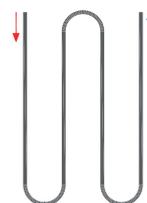
- low pressure loss
- very even temperature distribution and transmission
- larger exchange surface
- ideal for the use of environmental energy due to very small temperature differences between system and room temperature
- in combination with the heat pump, best COP values can be achieved

Capillary tube mats are **safe & durable**

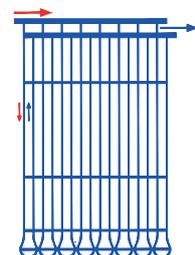
Each individual Clina capillary tube mat is subjected to a leak test before dispatch. The test pressure is 20 bar - which corresponds to approximately 10 times the operating pressure.

A 15-year extended warranty applies to all Clina mats. The expected service life is more than 50 years under normal conditions of use. All Clina capillary tube mats are produced with high-tech machines & equipment in our manufacturing plant in Berlin-Brandenburg.

Single-pipe system



Capillary tube system



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ADVANTAGES

Cooling and heating with one system

In most buildings, the heat requirement to be covered is so low due to the well-insulated building envelope, that capillary tube mats invisibly integrated into the ceiling not only provide excellent cooling in the summer, but can also be used to heat very comfortably and energy-efficient in the cold season.

Unrestricted acoustics

The acoustic properties of the perforated drywall panels are retained in accordance with the manufacturer's specifications.

Good price/performance ratio

An existing or already planned drywall ceiling can be activated without additional expenses.

Low installation height

To install Clina capillary tube mats and the supply lines, the ceiling only has to be suspended approx. **10 cm**.

Easy installation

Simple, fast and clean mounting, with the works being decoupled, which allows for an unproblematic contractual and temporal separation of the sub-works of heating/cooling and dry construction. The capillary tube mats can be connected very easily to the supply line in the ceiling void.

Individual room control

The system can be regulated room-by-room.

VALUES



HEATING CAPACITY

according to DIN EN 14037/2

up to **85,8 W/m²**

(unperforated Thermoboard 10 mm)

$\Delta T = 15$ K, active mat surface

up to **85,8 W/m²**

(perforated

gypsum board panel 12,5 mm)

$\Delta T = 15$ K, active mat surface



COOLING CAPACITY

according to DIN EN 14240

up to **66,9 W/m²**

(unperforated Thermoboard 10 mm)

$\Delta T = 10$ K, active mat surface

up to **64,9 W/m²**

(perforated

gypsum board panel 12,5 mm)

$\Delta T = 10$ K, active mat surface



ACOUSTICS

(only applies to perforated version)

weighted sound absorption coefficient

depending on type of design

up to **$\alpha_w = 0,7$** (Class C)

INSTALLATION HEIGHT:

depending on the kind of substructure & on the drywall material suspension height of the drywall ceiling > **10 cm**

SYSTEM WEIGHT (filled with water):

740 g/m² plus drywall ceiling

PRESSURE STAGE:

PN 10

REFERENCES

Please note the following documents for further information:

- Jointless drywall ceiling with CTM applied on site System data sheet
- ORIMAT S 10 Product data sheet
- Jointless drywall ceilings Performance values
- Jointless drywall ceiling with CTM applied on site Installation guidelines
- Jointless drywall ceiling with CTM applied on site Video: www.clina.de/en/jointless-drywall-ceiling or
- Website: www.clina.de



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