PLASTER ON
GYPSUM BOARD|BRICKWORK|CONCRETE - WALL

with capillary tube mat OPTIMAT SB 20.00

System description

SYSTEM DESCRIPTION

Design

The capillary tube mats are fixed directly to a wall (gypsum board, brickwork, concrete) with a load-bearing substrate and plastered in. On the visible side, there is a closed, jointless plaster wall for the dissipation or supply of sensitive heat loads. The water circulates noiselessly in the capillary tube mats and regulates the room temperature largely by radiation, partly by convection.

Capillary tube mat

The Clina capillary tube mat OPTIMAT SB 20.00 is recommended for this design.

Length & width

The capillary tube mats are custom-made in length and width for each project. On the construction site the mat distributor pipes are connected to each other by heating element socket welding.

This is a secure, non-detachable connection.

Hydraulic connection

Depending on the situation, mat distributor pipes and supply lines are located in the floor, in the void of the suspended ceiling or in an appropriate skirting board or casing. The capillary tube mats welded together to a hydraulic circuit are connected to the supply and return lines.

Mounting

The capillary tube mats are fastened, depending on the nature of the subsurface, either with stainless steel clips or galvanized staples, with double-sided adhesive tape, with plastic nails or insulation anchors.

Openings for sockets etc.

Larger openings must be considered in the planning phase. Up to approx. 100 mm, openings can also be realised during the construction phase by simply pulling the capillary tubes apart.

Plaster

All commercially available plasters such as gypsum, lime, cement or acoustic plaster are suitable. For example, they are applied using the spraying method up to a plaster layer thickness of 15 mm.

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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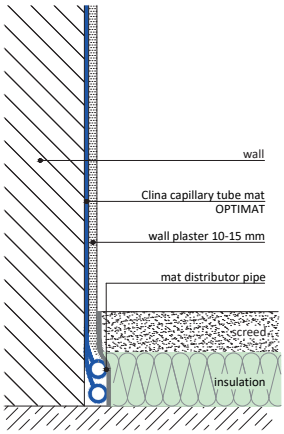
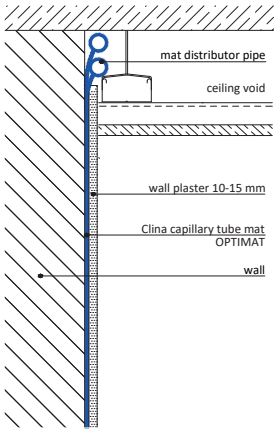
STRUCTURE



View of a wall section:
mat distributor pipes in the screed



View of a wall section:
mat distributor pipes in the ceiling void

The capillary tube mats are fixed directly to a wall (gypsum board, brickwork, concrete) with a load-bearing substrate and plastered in.

Mat distributor pipes and supply lines are located in the floor, in the void of the suspended ceiling or in an appropriate skirting board or casing.

The capillary tube mats are fastened, depending on the nature of the subsurface, either with stainless steel clips or galvanized staples, with double-sided adhesive tape, with plastic nails or insulation anchors.

Plaster, for example, is applied using the spraying method up to a layer thickness of 15 mm.

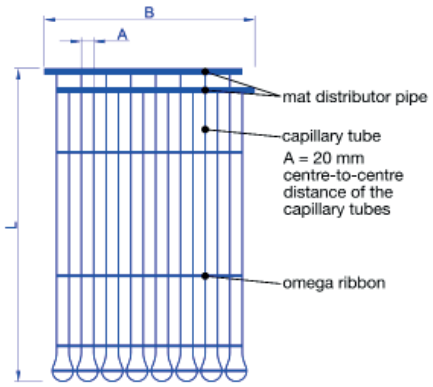
RECOMMENDED CAPILLARY TUBE MAT

The OPTIMAT SB 20.00 consists of 2 round mat distributor pipes (20 x 2,0 mm) and capillary tubes (4,3 x 0,8 mm).

The constant distance between the capillary tubes (centre-to-centre distance) is 20 mm and is guaranteed by the omega ribbons.

Special features

- high mechanical resilience
- low pressure loss
- good venting



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 wall is always below the body temperature of the user (high thermal comfort)
- fast reaction

Advantages compared to classic single-pipe systems:

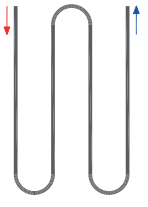
- low pressure loss
- very even temperature distribution and transmission
- larger exchange surface
- ideal for the use of environmental energy due to very small temperature differences between system and room temperature
- in combination with the heat pump, best COP values can be achieved

Capillary tube mats are **safe & durable**

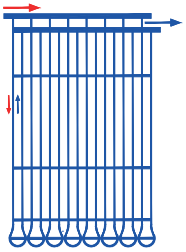
Each individual Clina capillary tube mat is subjected to a leak test before dispatch. The test pressure is 20 bar - which corresponds to approximately 10 times the operating pressure.

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 wall not only provide excellent cooling in the summer, but can also be used to heat very comfortably and energy-efficient in the cold season.

High performance and dynamics

Due to the capillary tubes completely enclosed by the plaster, a large-area heat conduction is achieved. The near-surface layer with a low plaster coverage ensures a fast response. This design allows a maximum degree of activation of the wall.

Good price/performance ratio

The use of large-sized capillary tube mats reduces the installation effort. The usual plaster layer thickness is not affected by the capillary tube mat. There are no additional costs for material.

Very low installation height

A complete embedding of the capillary tubes is achieved with a plaster layer thickness of **10-15 mm**. Depending on the situation, mat distributor pipes and supply lines can be accommodated in the screed, in the ceiling void or in an appropriate skirting board or casing.

Very flexible

This design can be adapted to all spatial conditions, e.g. also to spaces with vaults and archs.

Individual room control

The system can be regulated room-by-room.

Heating and cooling with only one system

The wall heating/wall cooling convinces with significantly high dynamics, performance and surface quality.

VALUES

HEATING CAPACITY

108,5 W/m² (MP 75)
123,0 W/m² (lime plaster)
ΔT = 15 K, active mat surface

COOLING CAPACITY

70,0 W/m² (MP 75)
79,0 W/m² (lime plaster)
ΔT = 10 K, active mat surface

ACOUSTICS

weighted sound absorption coefficient according to plaster manufacturer's specifications

INSTALLATION HEIGHT:
(without mat distributor pipes and supply lines)
10-15 mm in the plaster

SYSTEM WEIGHT (filled with water)**:**
750 g/m² plus plaster

PRESSURE STAGE:
PN 10

REFERENCES

Please note the following documents for further information:

- Plaster on GB|brickwork|concrete - wall System data sheet
- OPTIMAT SB 20 Product data sheet
- Plaster wall Performance values
- Website: www.clina.de

CONTACT

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