

FLOOR HEATING IN SCREED

with capillary tube mat OPTIMAT SB 20.00



System description



SYSTEM DESCRIPTION

Design

The capillary tube mats are integrated into the screed. First of all, an insulation is laid on the unfinished floor. A system insulation with moisture barrier is recommended. The capillary tube mats are laid and fixed on the insulation. The screed is then applied. The desired floor covering, such as parquet, tiles or carpet, is applied to the finished screed. This flooring material should be suitable for floor heating systems.

The small distance between the capillaries (20 mm), ensures a homogeneous heat distribution across the floor. At low excess temperature, the heat is emitted to a large extent via radiation, partly also via 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 room at Clina. On site, the mat distributor pipes are connected by means of heating element socket welding.

This is a secure, non-detachable connection.

Hydraulic connection

Mat distributor pipes and supply lines are placed in the floor, i.e. in the screed or in the insulation (in recesses/slots). The capillary tube mats, welded together to a hydraulic circuit, are connected to the supply and return lines and to a centrally located manifold.

Mounting

The capillary tube mats are rolled out on the insulation and fixed with suitable fixing material, such as plastic nails or U-clips.

Screed

All customary screeds are suitable. They are applied using the pumping method, for example. The corresponding minimum layer thickness of the respective screed must be respected.

Regulation

The system can be regulated room-by-room.

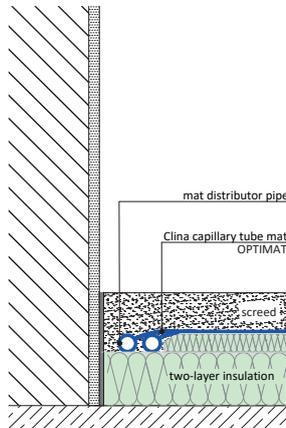
Fields of application

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

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STRUCTURE



View of a floor section: capillary tube mat in screed

The capillary tube mats are placed directly on an insulation layer.

Mat distributor pipes and supply lines are placed in the screed or in the insulation.

The capillary tube mats are fixed on the insulation layer with suitable fixing material, such as plastic nails or U-clips.

A screed of the appropriate minimum layer thickness is laid on the capillary tube mats.

The desired floor covering, such as parquet, tiles or carpet, is applied to the finished screed. This flooring material should be suitable for floor heating systems.

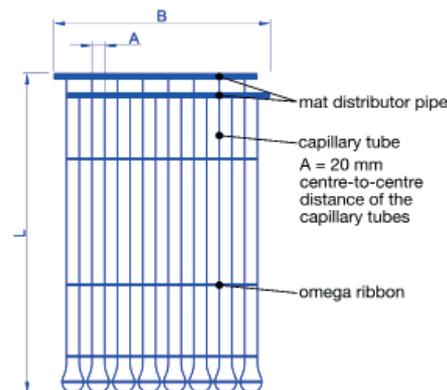
RECOMMENDED CAPILLARY TUBE MAT

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 world-wide for heating and cooling various buildings.

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

- low system temperature
- homogeneous heating of the floor (uniform surface temperature across the entire floor)
- suitable for people with asthma or dust allergies, due to the low level of convection no dust is stirred up
- fast reaction, i.e. short warm-up time

Advantages compared to classic single-pipe systems:

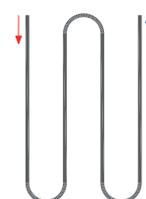
- low pressure loss
- very even temperature distribution and transmission
- larger exchange surface
- ideal for the use of environmental energy due to very small temperature differences between system and room temperature
- in combination with the heat pump, best COP values can be achieved

Capillary tube mats are **safe & durable**

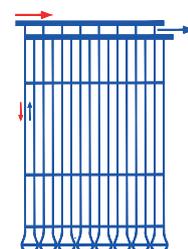
Each individual Clina capillary tube mat is subjected to a leak test before dispatch. The test pressure is 20 bar - which corresponds to approximately 10 times the operating pressure.

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

High performance - high dynamics

Thanks to the small distance of the capillary tubes of 20 mm, the floor is heated homogeneously. As a result of this and due to the position of the capillary tube mats close to the surface a high heat output at low system temperatures can be achieved. This results in extremely short warm-up times. Compared to conventional underfloor heating systems (e.g. single-pipe systems), Clina underfloor heating only requires approx. 1/4 of the warm-up time.

Environmentally friendly and energy efficient

Very low system temperatures and extremely short warm-up times save money and protect the environment.

Ideal for renovations

If mat distributor pipes and supply lines can be accommodated in recesses or slots in the insulation layer, the application of the screed minimum thickness is sufficient.

Invisible

No bulky radiators, therefore more architectural design options, such as floor-to-ceiling windows. You also have more options when it comes to the interior design.

Ideal for people with asthma or dust allergies

Due to the low level of convection you have no stirring up of dust.

Smooth, energy-efficient temperature control

Due to the homogeneous heat distribution it is possible to work with a low system temperature. This has a positive impact on the feeling of comfort and reduces heating energy consumption. The perceived temperature is around approx. 2–3 °C higher than the actual room temperature.

VALUES



HEATING CAPACITY

max. 100 W/m²
according to characteristic curve
for underfloor heating



COOLING CAPACITY

max. 30 W/m² recommended



ACOUSTICS

depending on floor covering

INSTALLATION HEIGHT

(insulation layer + screed):

mat distributor pipes in screed:
pipe size plus screed minimum thickness

mat distributor pipes in insulation:
screed minimum thickness

SYSTEM WEIGHT (filled with water):

750 g/m² plus screed and floor
covering

PRESSURE STAGE:

PN 10

REFERENCES

Please note the following documents for further information:

- Floor heating in screed with OPTIMAT System data sheet
- OPTIMAT SB 20 Product data sheet
- Floor heating Performance values
- Floor heating in screed with OPTIMAT Installation guideline
- Website: www.clina.de

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