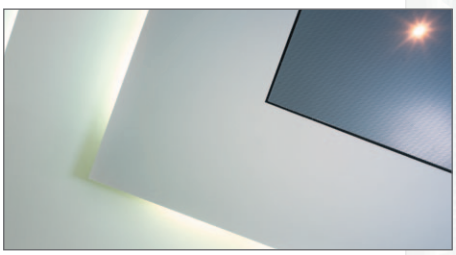
*clima***PLAN®** *cu acoustic fine*

high performance acoustic cooling ceiling with copper meanders the finest acoustic plaster finish



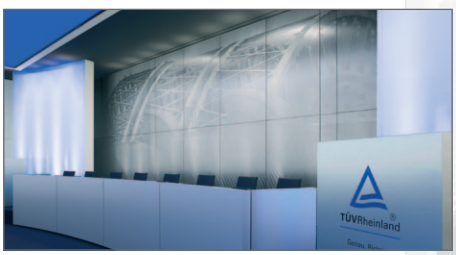


Photo credit: Christian Günther, Stephan Pusch

*clima***PLAN**® *cu acoustic fine*

The System

The product **clima**PLAN® *cu acoustic fine* is a high performance cooling ceiling system with a closed, seamless finish. Heat load removal takes place by means of approximately 70 % radiation and 30 % convection. The average sound absorption rate is a=0.65 (L) in accordance with DIN EN 11654. The surface of this ceiling is a layer of acoustic fleece which receives its sound transparent, fine grain acoustic plaster finish on site. It is also possible to personalize your colour scheme.

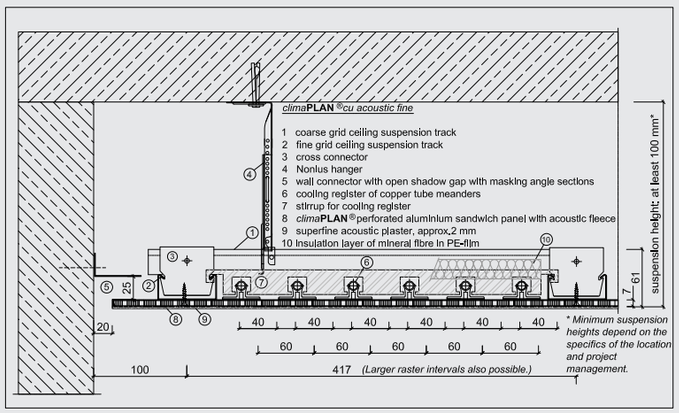
The cooling system is comprised of water-bearing copper tubing (10 x 0.6 mm), made of a single meander-shaped piece. The length and width of the copper tube meander are made to fit the measurements of the covering board. The tube intervals and number of tube rows are selected depending on the cooling capacity and pressure loss requirements. Water for the meanders is supplied by diffused oxygen-tight connecting tubes in an internal network of tubes. Intelligent plug and solder connections at the ends of the calibrated tubes of each meander perfectly secures the connection to the entire system. The use of mounted special spacers maintain a secure connection between the cooling battery and plating. Aluminium heat-conducting profiles (WLP) ensure that temperatures are effectively maintained and distributed throughout the room. A layer of insulation made of mineral fibres increases the sound absorption.

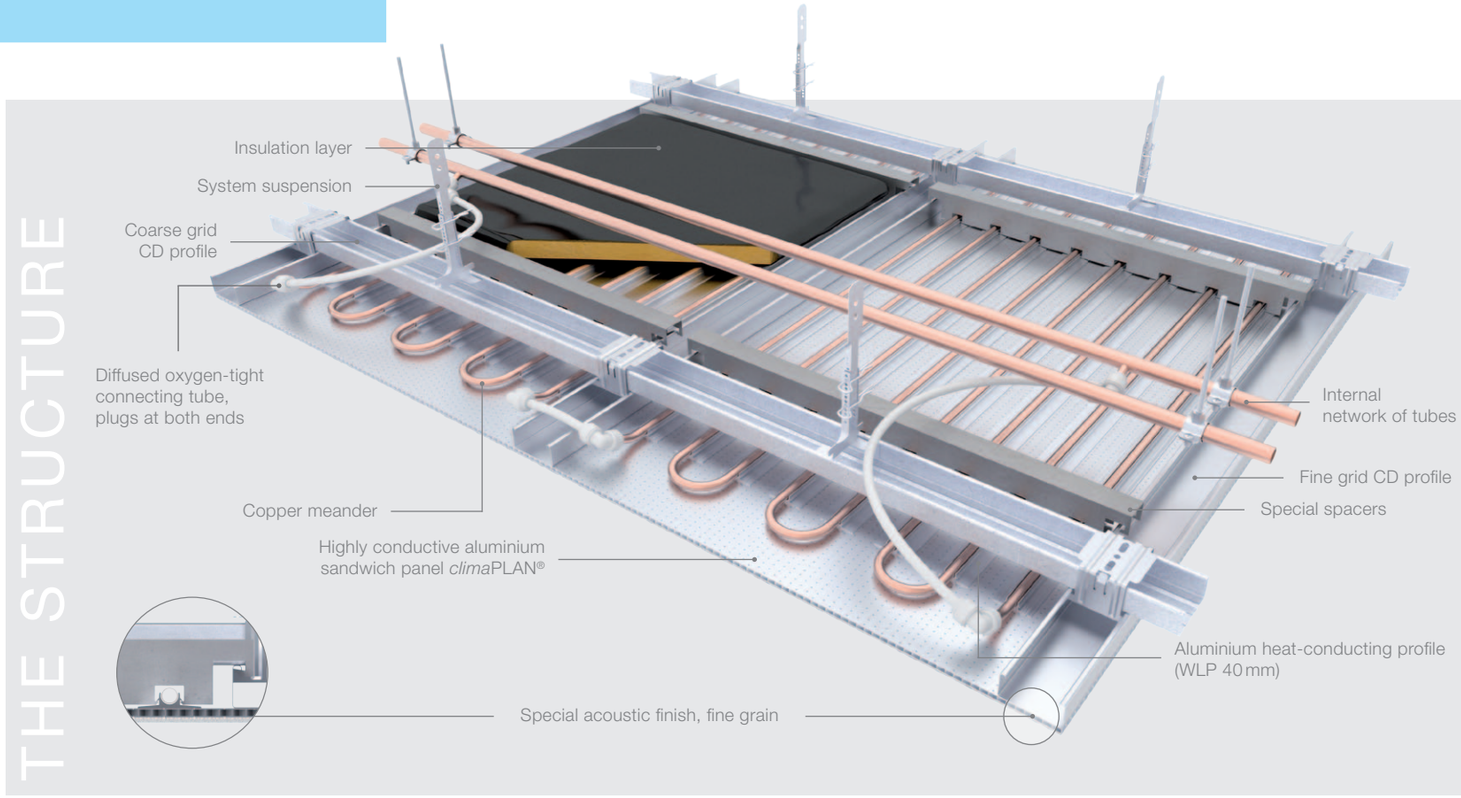
The substructure has a coarse grid with CD profiles (60/27) and from here the system can be suspended onto a raw concrete ceiling. Below that, at a 90° angle, the fine grid is mounted, resulting in a draft and pressure-proof substructure onto which active components and plasterboard plates can be secured.

The surface layer consists of highly conductive aluminium sandwich panels with aluminium honeycomb-shaped lattices, which are specially fastened to the metal substructure in intervals of a maximum of 80 mm. Joints and screws are plastered over for a seamless appearance. A layer of acoustic fleece which has been glued into place increases the sound absorption.

To clean and maintain the cooling ceiling, dust that has accumulated can be carefully removed with a soft brush. Depending on how wipe resistant the finish is, dust and dirt can be washed off.

THE SYSTEM





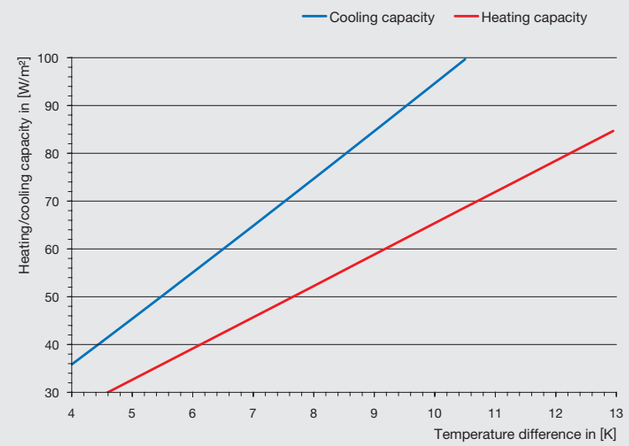
Cooling capacity

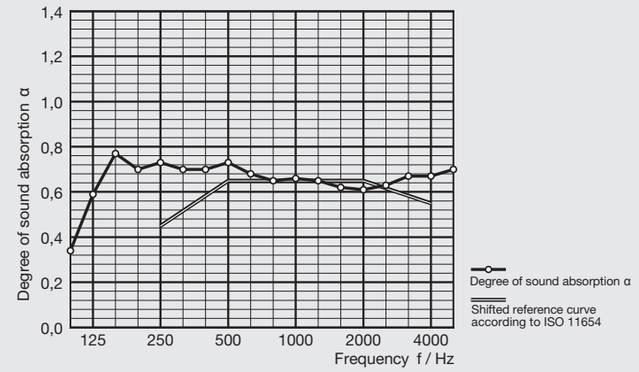
The given cooling and heating capacities have been test certified by accredited institutions in accordance with DIN EN 14240.

Acoustics

The given sound absorption values have been determined using active ceiling elements (including cooling batteries) and have been test certified by accredited institutions in accordance with DIN EN 11654.

PERFORMANCE





TECHNICAL DETAILS

General

Product:	*clima***PLAN**® *cu acoustic fine*
Model:	6 tube rows, 40 mm heat-conducting profile 60 mm tube interval
Cooling capacity as per DIN EN 14240*:	94.6 W/m²
Audit report:	KF2070
Insulation:	30 mm mineral fibre insulation in PE film
Substructure:	construction of CD profiles
Suspension:	minimum 100 mm
Weight:	about 14.5 kg/m²

Surface

Material:	aluminium sandwich panel (4–10 mm)
Perforation type:	specially made perforation
Free cross-section:	about 25 %

Surface Finish

Type:	acoustic fine acoustic plaster
Surface:	very fine (grain: 0.5–0.7 mm)
Surface thickness:	about 1,5 mm
Colour:	natural white (standard), RAL colours also available

Cooling System

Material:	copper meanders with aluminium heat-conducting profile
Modul width:	416 mm
Modul length:	500–4100 mm
Tube diameter:	cu DN 8 (10 × 0.6 mm)
Connection:	PEX-tube with plug coupling
Test pressure:	10 bar

* Details regarding the cooling capacity are based on system temperatures with a flow line at 15° C, return flow at 17° C, and an operating room temperature of 26° C

Recommended Uses: We recommend using *clima***PLAN**® *cu acoustic fine* in spaces with high-level sound absorption requirements as well as high-performance cooling requirements.
As the assessment of both the cooling capacity and acoustics depends on a number of factors and is likely to vary, we advise receiving a quotation specific to your project. We collaborate with a building physicist to determine the most feasible solution for your project's acoustic requirements. In addition, we are able to perform an assessment of your individual acoustic needs in cooperation with our partner MÜLLER BBM in Planegg / Munich. We also offer reference and test measuring services under DIN conditions in our own testing and development laboratory.

Service and maintenance of the cooling ceiling and its components should take place once a year according to the general maintenance guidelines. Renovation or repair of damage to the system may only be performed by trained specialists (see Technical Requirements and FAQ for further information).