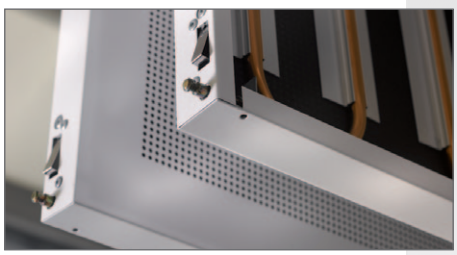
*clima***TILE**® *cu*

Acoustic metal cassette cooling ceiling
with copper meanders with or without perforation



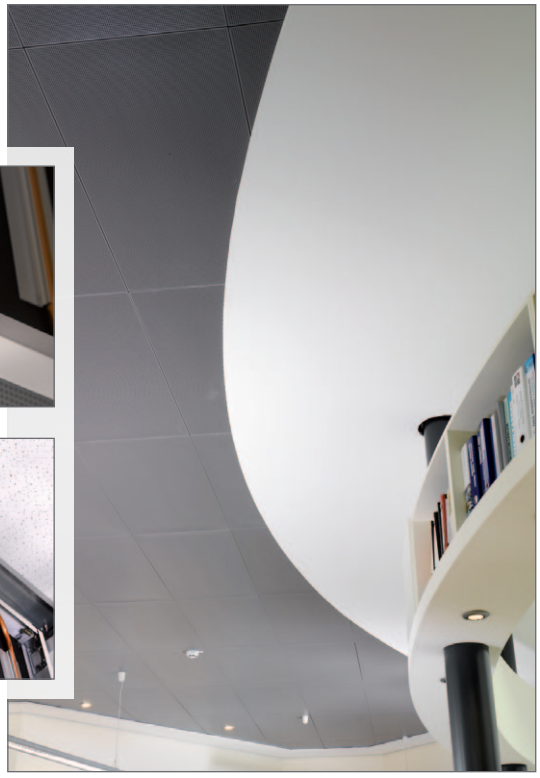


Photo credit: Christian Günther

*clima***TILE**® *cu*

The System

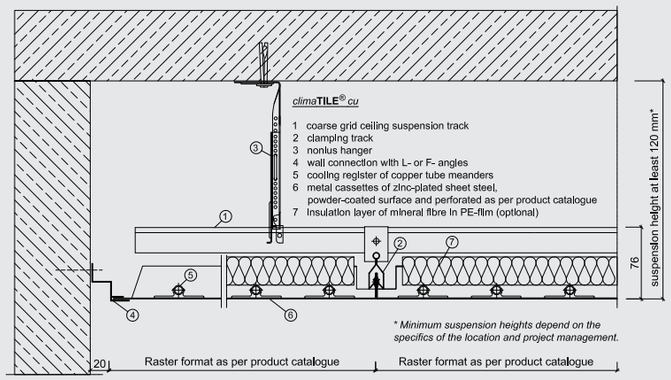
The product *clima***TILE**® *cu* is an acoustic cooling ceiling of metal cassettes which removes sensitive heat loads. Heat load removal takes place by means of approximately 70 % radiation and 30 % convection. The average sound absorption rate is aw=0.65 (L) in accordance with DIN EN 11654. The surface of this ceiling is available with either a smooth or perforated finish, depending on your requirements.

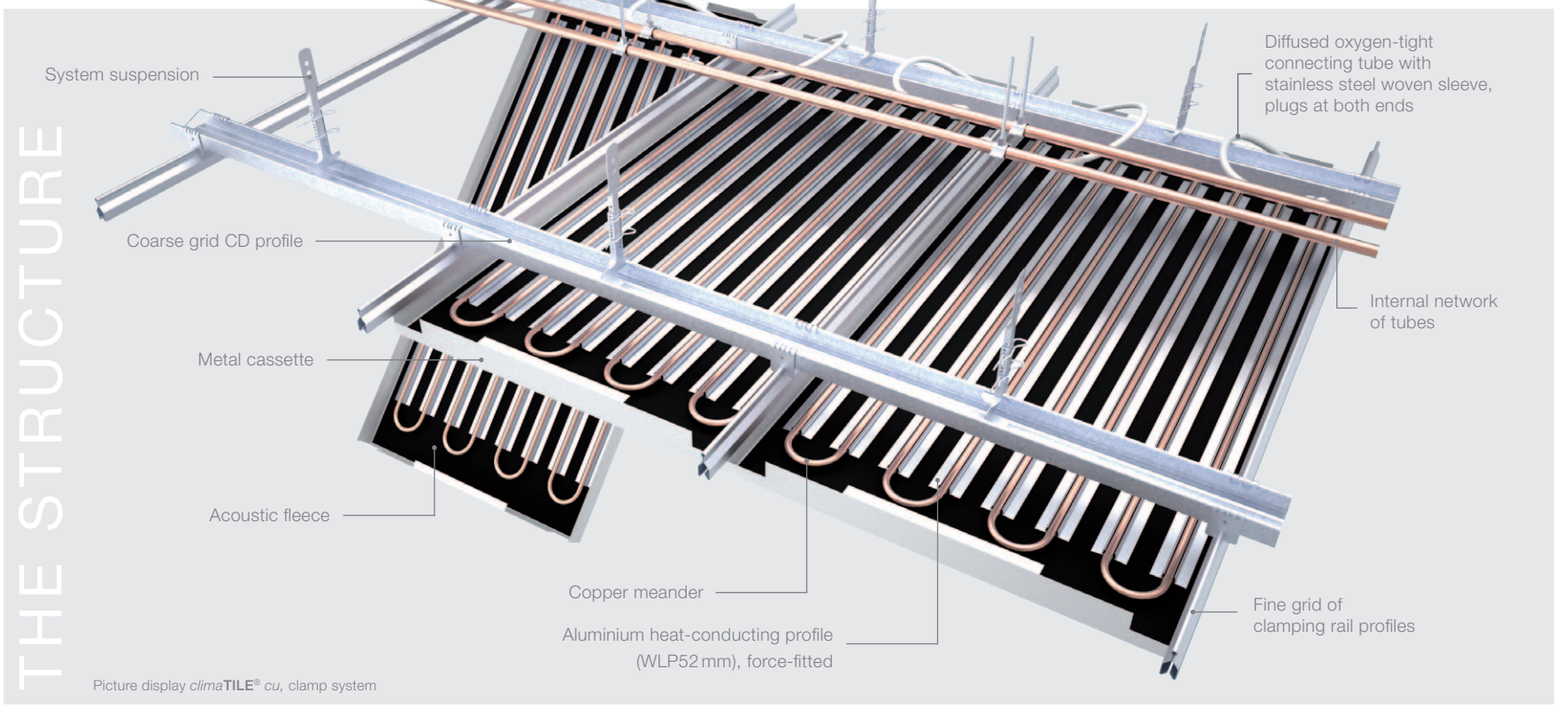
The cooling system is comprised of water-bearing copper tubing (10 x 0,6 mm), made of a single meander-shaped piece, and pressed into the aluminium heat-conducting profile (WLP). The length and width of the copper tube meander are made to fit the measurements of the metal cassette. The copper meanders and the contact surfaces of the heat conducting profiles are glued to the metal cassettes using high pressure. The tube intervals and number of rows of tubes are selected depending on the cooling capacity and pressure loss requirements. Intelligent plug and solder connections at the ends of the calibrated tubes of each meander perfectly secures the connection to the entire system. Generally, diffused oxygen-tight connecting tubes with a stainless steel woven sleeve and plug couplings are used here. Water for the meanders is supplied by an internal network of tubes.

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 the metal cassettes can be secured. The substructure is created based on the requirements specific to the project and therefore may vary in appearance, function, and size.

The surface layer consists of steel sheet cassettes, electrolytically plated with zinc, that have been powder-coated in the colour of your choice. For acoustic and aesthetic purposes, the metal cassettes are perforated. Depending on the type of perforation, both appearance and acoustic properties can be changed. A layer of acoustic fleece pressed into place blocks the view of the raw ceiling. The cassettes can have a length of 300 to 1800 mm and a width ranging from 300 to 625 mm. Further sizes are available on request. The metal cassettes can be hinged in an alternating pattern in the pre-assembly phase prior to delivery.

THE SYSTEM





Picture display *clima***TILE**® *cu*, clamp system

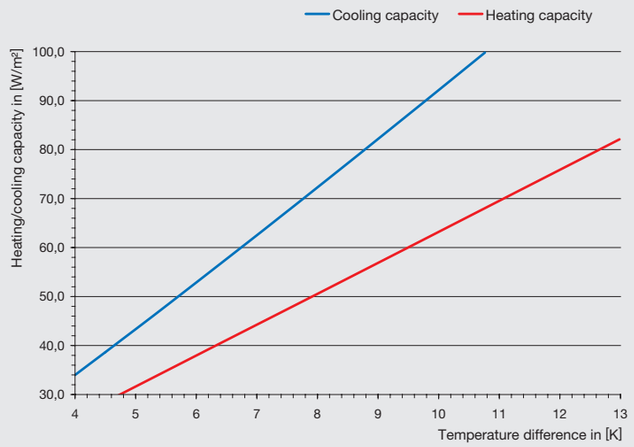
THE STRUCTURE

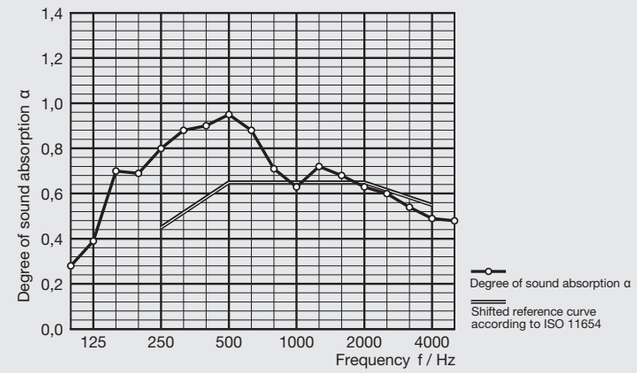
Cooling capacity

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***TILE**® *cu*
Model:	6 tube rows, 52 mm heat-conducting profile, 100 mm tube interval
Cooling capacity as per DIN EN 14240*:	92.1 W/m²
Audit report:	KF2058
Insulation:	optional, 30 mm mineral fibre insulation in PE film
Substructure:	construction of CD profiles and clamping rails
Suspension:	minimum 100–140 mm
Weight:	about 15.6 kg/m²
Sound absorption:	about 65 %

Surface

Material:	steel sheet (0.6–1.0 mm)
Perforation type:	various
Free cross-section:	about 16 %

Surface Finish

Type:	powder paint
Surface grain:	smooth or perforated
Colour:	various

Cooling System

Material:	copper meanders with aluminium heat-conducting profile
Modul width:	individually selected according to the cassette and requirements
Modul length:	individually selected according to the cassette and requirements
Tube diameter:	cu DN 8 (10 × 0.6 mm)
Connection:	flexible textile tube and 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***TILE**® *cu* in spaces with sound absorption requirements as well as high-performance cooling requirements. This ceiling is highly versatile and can be tailored to suit nearly any space!

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).

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.