A11-C

Radiant metal ceiling

QUICK FACTS

- Thermal comfort according to EN ISO 7730
- High heating and cooling capacity: heating up to 116 w/m² (15 K), cooling up to 82 w/m² (8 K)
- Advanced acoustic properties: α_w up to 0,85
- Integration of various components possible
- Functions
  - Cooling
  - Heating
  - Acoustics
  - Supply and exhaust air
  - Integral components

BARCOL-AIR by Swegon

zent-frenger by Swegon

Technical description

General

The closed radiant metal ceiling A11 achieves a high level of thermal comfort in rooms with large heat loads, with no draught at the same time. The climate ceiling system also has advanced acoustic properties. All assembly options and individual solutions used in conventional metal ceiling construction are possible, such as c-channel, lay-in, hook-on or clip-in systems.

Activation

Water system: The radiant ceiling is a passive system that in the case of cooling absorbs heat from the room via the ceiling surface, transfers it to the water, which is conducted in activation registers, and dissipates it, respectively emits heat in the case of heating.

The activation of the radiant metal ceiling system A11 consists of meandering copper pipes (outside diameter 12 mm) and aluminum heat-conducting rails (width 80 mm), which are connected by laser spot welding and glued into the ceiling panels.

Functions

The radiant metal ceiling A11 is multifunctional. In addition to the thermal functions of cooling/heating, there is the possibility of further integration: acoustically effective inserts or baffles (Archisonic®), use of special supply air elements (Aquilo, Ventamic), various built-in components (e.g. smoke detectors, lighting).

Combinations

- Radiant Metal Ceiling System A11 + Archisonic®
- Radiant Metal Ceiling A11 + Aquilo
- Radiant Metal Ceiling A11 + Ventamic

Technical data

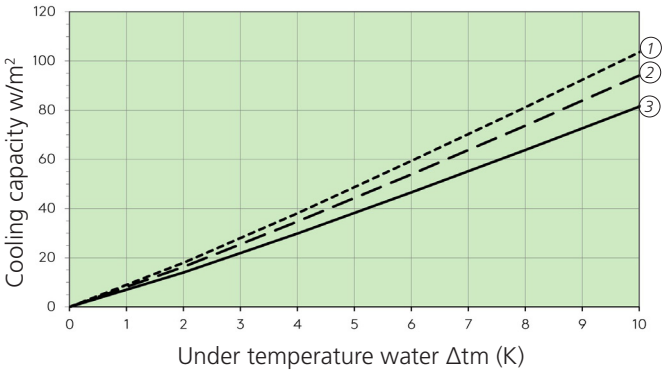
Capacity

Initial data is presented below.

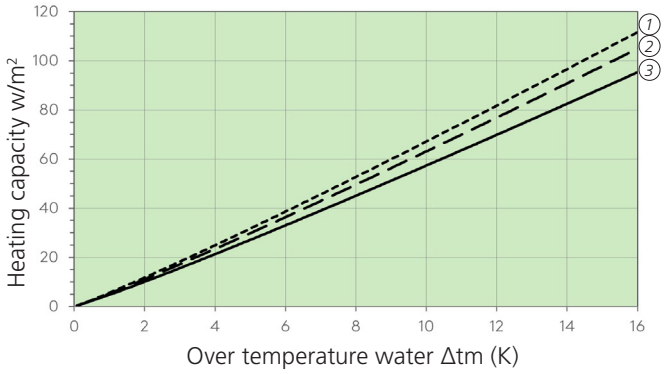
Material ceiling panel	Aluminium	Steel
Perforation	Rg 1,5 – 11 %	Rg 1,5 – 11 %
Distance heat conducting rails (hcr)	100 mm - - - - ① 150 mm — —②	150 mm ——③
Activation method	on fleece	on fleece

(Capacity information without project-specific performance-influencing factors.)

EN 14240:2004



EN 14037:2016



Version	Cooling 8 K	Cooling 10 K	Heating 15 K
① Aluminium 100 mm	up to 82 w/m²	up to 103 w/m²	up to 116 w/m²
② Aluminium 150 mm	up to 74 w/m²	up to 94 w/m²	up to 98 w/m²
③ Steel 150 mm	up to 64 w/m²	up to 81 w/m²	up to 89 w/m²

Notice

- SN EN 14240: The cooling capacity is related to the active area according to SN EN 14240:2004. The active area is calculated according to SN EN 14240 from the number of heat-conducting rails x length of heat-conducting rail x distance between heat-conducting rails.
- SN EN 14037: The heating capacity is related to the active area according to SN EN 14037:2016. The active area is calculated according to SN EN 14037 from the length of the ceiling panel x the width of the ceiling panel.

Recommendations for operation

Water

- Temperature
  - Cooling 16 – 18 °C
  - Heating 28 – 37 °C
- Temperature distance Δt (VL-RL): 2 – 3 K
- Pressure drop: 20 – 25 kPa
- Water flow: 80 – 150 l/h
- Max. operating pressure up to 9 bar
- Water quality according to: SWKI BT 102-01, BTGA 3.003, VDI 2035

Surrounding

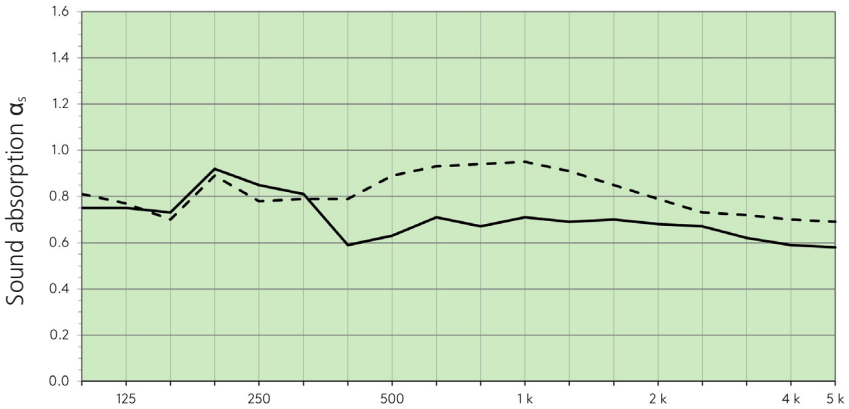
- Ambient temperatures: +5 – 50 °C
- Humidity: up to 90 % relative humidity

Acoustics

Initial data is presented below.

Perforation	Rg 1,5 – 11 %	Rg 1,5 – 11 %
Distance heat conducting rails (hcr)	150 mm	150 mm
Installation height	200 mm	200 mm
Acoustic inlay	Fleece	Fleece
Additional inlay (mineral wool)	without ———	with - - - -
Sound absorption α_p	250: 0,85 500: 0,65 1k: 0,70 2k: 0,70 4k: 0,60	250: 0,80 500: 0,85 1k: 0,95 2k: 0,80 4k: 0,70
Sound absorption α_w	α_w: 0,70 (L)	α_w: 0,85
Sound absorption class (EN ISO 11654)	C	B

EN ISO 11654



without additional inlay ——— with additional inlay - - - -

System

Ceiling system

- Closed ceiling
  - Square and rectangular panels
  - Special solutions on request

Installation systems

- Installation height: min. 75 mm
  - Lay-in system
  - Hook-on system
  - Clip-in system
  - C-channel systems

Materials, weight and dimensions

Materials and weight

Material	Weight (incl. activation, water)
Aluminium 1,00 mm	3,5 – 6,0 kg/m²
Steel 0,70 mm	6,26 – 8,58 kg/m²

Building material class: A2-s1, d0, EN 13501-1 (depending on the acoustic solution).

Dimensions

Length	Width	Height
min. 400 mm	min. 200 mm	min. 30 mm
max. 2500 mm	max. 1200 mm	max. 120 mm

Special dimensions on request.

Surface

Versions

- Powder coating
- Digital printing on request

Colors

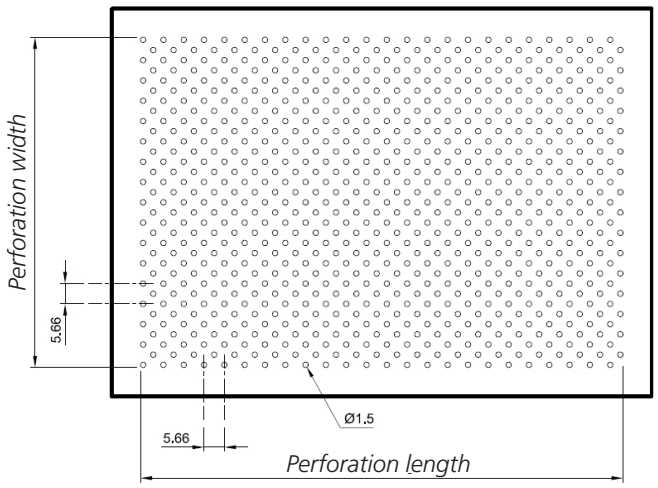
- Standard RAL 9010
- Other RAL / NCS colors on request

Perforations

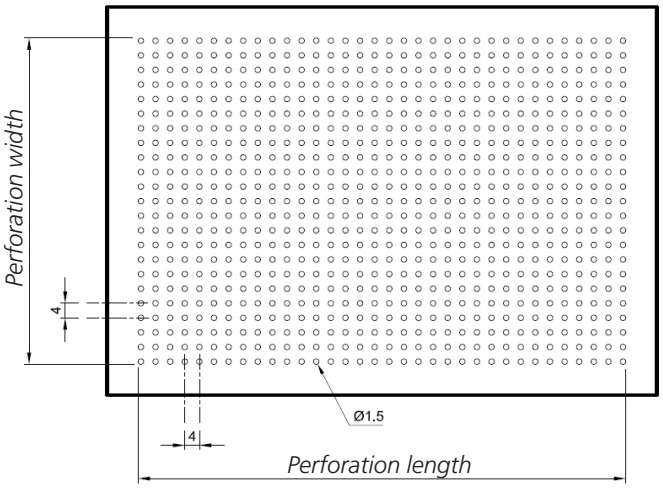
- Standard perforations
- Other perforations on request

Standard perforations:

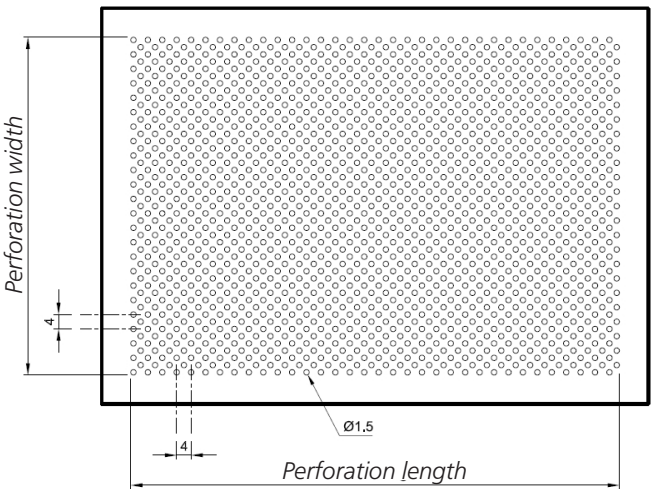
Rd 1,5 – 11 %



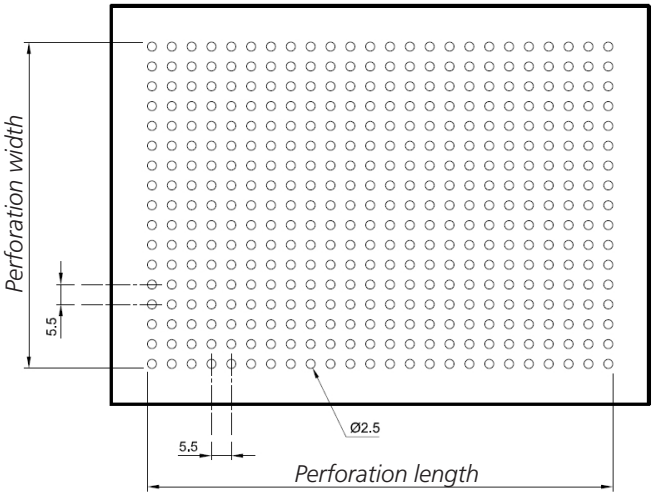
Rg 1,5 – 11 %



Rd 1,5 – 22 %



Rg 2,5 – 16 %



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