VARICOOL AP

Radiant ceiling jointless

BARCOL-AIR by Swegon

zent-frenger by Swegon

Extremely versatile

The jointless radiant ceiling is visually indistinguishable from a normal drywall ceiling. Fixtures and an individual ceiling design with 3D elements are possible. The activation profile for jointless ceilings is adapted to the standard substructure and replaces parts of it. It is suitable for use with plasterboard, expanded glass granulate and aluminum honeycomb panels. The system can also be used as a sail.

- Heating and cooling effect with high radiation component
- Installation height min. 120 mm
- Easy installation of the activation profile in the standard substructure
- Occupancy rate up to 100% possible

Private villa, Ascona, CH – aluminum honeycomb panel with acoustic plaster

Ceiling system
closed

Operating principle
Radiation

Air supply
visible

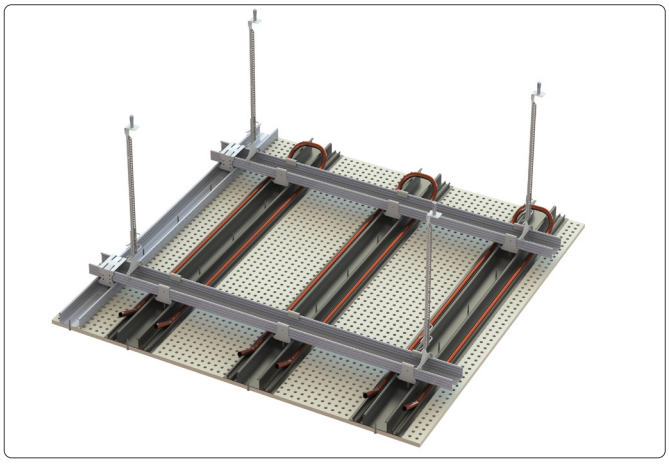
Capacity (water)
Cooling: up to 80 w/m² (8 K), EN 14240:2004
Heating: up to 120 w/m² (15 K), EN 14037:2016

Acoustics
α_w: up to 0,70
Sound absorption class C, EN ISO 11654

Room comfort
Thermal comfort according to EN ISO 7730, SIA 382/1

Activation

Water system
- Activation profil: copper tube meander pressed into aluminum profile, compatible with CD profiles 50 x 27 mm and 60 x 27 mm, copper tube outer Ø 12 mm
- Axis distances: 166 – 417 mm



Functions

Cooling | Acoustics | Supply and extract air

Heating | Integral components | Compensation for cold air drop

References

Architecture theater, Mendrisio, CH – plasterboard perforated
(Cover: Financial institut, Milano, IT – plasterboard non-perforated)

Van Graaf, Spreitenbach, CH – plasterboard non-perforated

Capacity

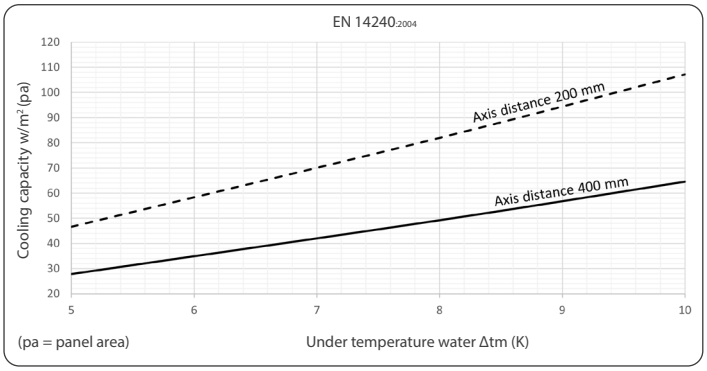
Initial data of the illustration example

Ceiling system	closed
Edge joint	with
Installation height	400 mm
Acoustic inlay	without

– Implemented as a ceiling sail, the result is an approximately 9 % higher capacity.
– Expanded glass granulate panels achieve the same cooling / heating capacity as high-density plasterboard with graphite, under the condition of a λ value of 0,52 w/m*K.
– System-specific factors can increase capacity by up to 12 %.

Cooling (8 K)

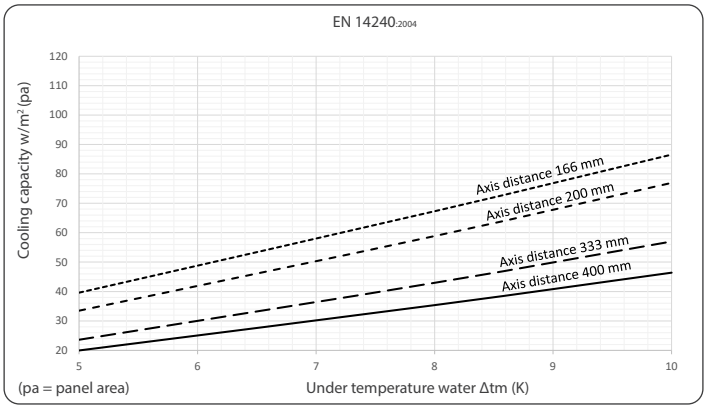
Aluminum honeycomb panel with acoustic plaster
- 400 mm axis distance: 50 w/m² pa
- 200 mm axis distance: 80 w/m² pa



Cooling (8 K)

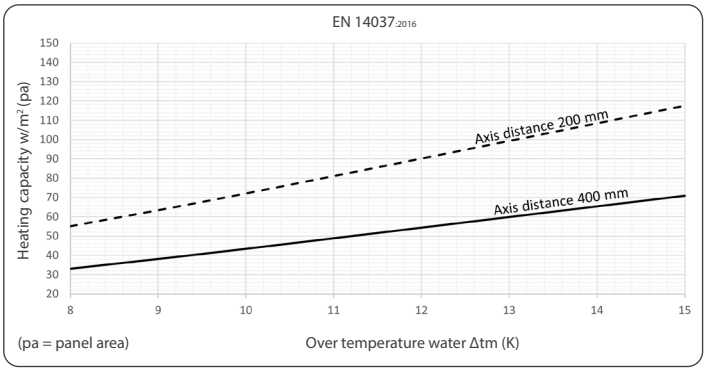
High density plasterboard with graphite
or expanded glass granulate panels perforated:
- 333 mm axis distance: 45 w/m² pa
- 166 mm axis distance: 70 w/m² pa

non-perforated:
- 417 mm axis distance 35 w/m² pa
- 208 mm axis distance: 60 w/m² pa



Heating (15 K)

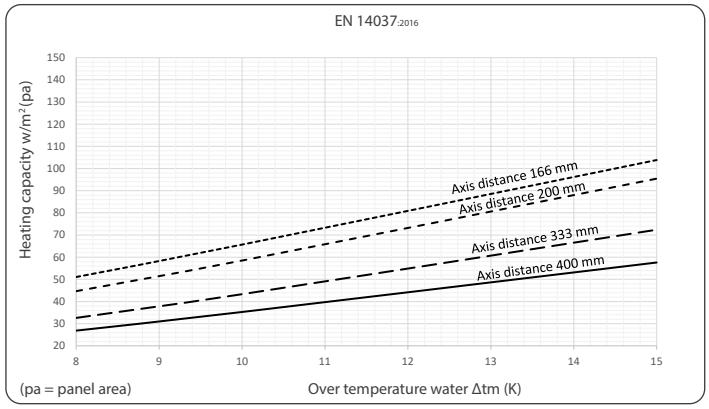
Aluminum honeycomb panel with acoustic plaster
- 400 mm axis distance: 70 w/m² pa
- 200 mm axis distance: 120 w/m² pa



Heating (15 K)

High density plasterboard with graphite
or expanded glass granulate panels perforated:
- 333 mm axis distance: 75 w/m² pa
- 166 mm axis distance: 105 w/m² pa

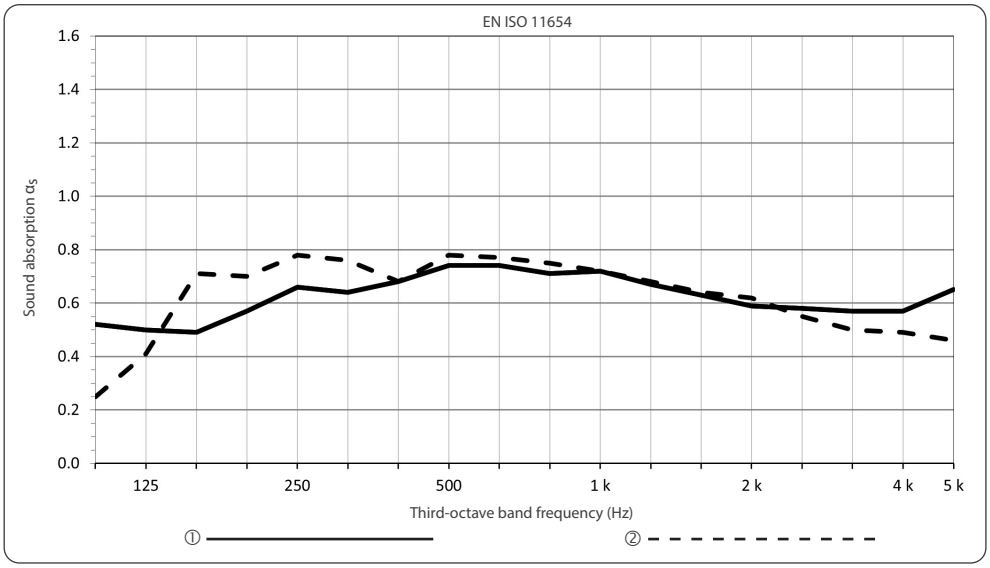
non-perforated:
- 417 mm axis distance: 60 w/m² pa
- 208 mm axis distance: 95 w/m² pa



Acoustics

Initial data of the illustration example

Axis distance activation profile	333 mm	333 mm
Ceiling system	closed	closed
Ceiling underside	High density plasterboard with graphite ①	Alu honeycomb panel with acoustic plaster ②
Perforation plasterboard	with (8/18 R)	with (not visible from below)
Edge joint	with	with
Acoustic inlay	fleece	fleece
Additional inlay (30 mm, 25 kg/m³)	mineral wool	mineral wool
Sound absorption α_p	250: 0,60 500: 0,70 1k: 0,70 2k: 0,60 4k: 0,60	250: 0,75 500: 0,75 1k: 0,70 2k: 0,60 4k: 0,50
Sound absorption α_w	α_w: 0,70	α_w: 0,65 (L)
Sound absorption class	C	C



Operation

Water
Recommended:
- Temperature
  - Cooling 16 – 18 °C
  - Heating 30 – 37 °C
- Temperature distance Δt (in-out): 2 – 3 K
- Pressure drop: 20 – 25 kPa
- Water flow: 80 – 150 l/h
- Max. operating pressure: up to 9 bar
- Water quality: SWKI BT 102-01 / BTGA 3.003 / VDI 2035

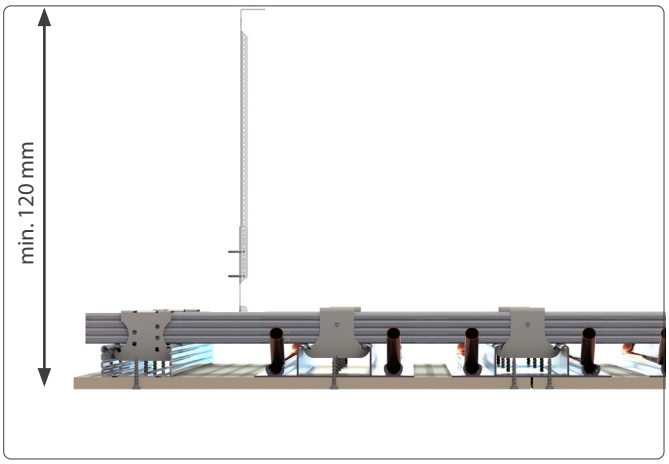
Surrounding
- Ambient temperatures: +5 – 50 °C
- Humidity: up to 90 % relative humidity

Fire Protection

- Building material class A2-s1, d0, EN 13501-1 (without sound absorber)

Technical Specifications

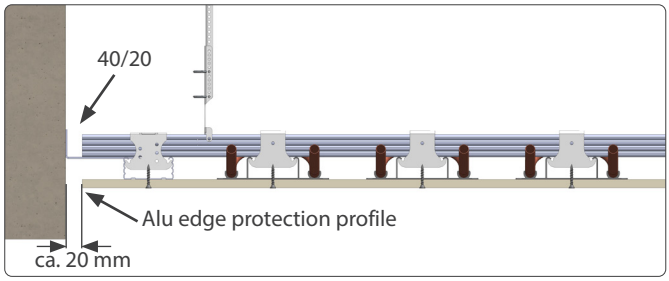
Construction
The activation profile is an extruded profile 135 mm wide and 1 to 3 m long with a pressed-in copper tube meander. The dimensions of the suspension correspond to the CD profiles 60 x 27 mm and 50 x 27 mm. This means that the activation profile can be used as a fine grid in combination with the CD profile.



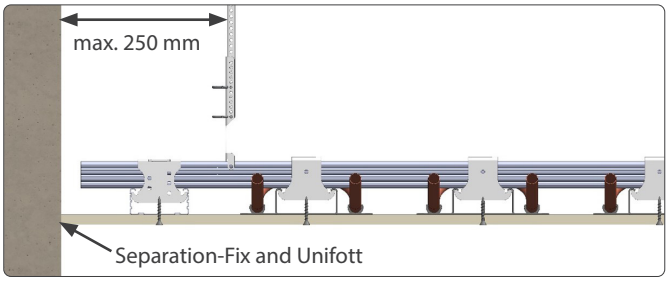
Wall connection installation situation
Wall connections are to be installed in accordance with the applicable specifications of the panel manufacturer.

The overhang after the last screw point may be a maximum of 100 mm.

- with edge joint



- without edge joint



Material variants ceiling underside

- Plasterboard
  Only plasterboards in accordance with DIN EN 520 and DIN EN 14190 are to be used. Primarily suitable are:
  – Rigips Climafit 10 or equivalent
  – Rigips Vario 10 or equivalent
- Aluminum honeycomb panel with Sto acoustic plaster
  Versions:
  – Acoustic white plaster (standard)
  – Acoustic colored plaster on request
- Expanded glass granulate panel with Sto acoustic plaster
  Versions:
  – Acoustic white plaster (standard)
  – Acoustic colored plaster on request

Dimensions and weight

Version ceiling underside	Axis distances	Panel lenghts	Panel widths	Weight (incl. water)
Plasterboard perforated	166 / 333 mm	1875 – 2001 mm	1188 – 1200 mm	17,0 kg/m²
Plasterboard non-perforated	208 / 417 mm	2000 mm	1250 mm	18,2 kg/m²
Alu honeycomb panel Sto acoustic plaster	200 / 400mm	project-specific	project-specific	14,0 – 16,0 kg/m²
Expanded glass granulate panel Sto acoustic plaster	max. 417 mm	625 / 1250 / 1875 / 2500 mm	415 / 625 / 1250 mm	12,5 – 13,5 kg/m²

Certification

- ISO 9001

Swegon Klimadecken GmbH
Scharzwaldstrasse 2
64646 Heppenheim

T: +49 6252 7907-0
F: +49 6252 7907-31
klimadecken@swegon.de
swegon.de/klimadecken

BARCOL-AIR by Swegon

zent-frenger by Swegon