Energy Solutions

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VARICOOL Softline 4

HIGHEST COOLING CAPACITY THROUGH THE COMBININATION OF RADIATION AND CONVECTION

Our experience, your added value

Uponor Energy Solutions offer integrated concepts for energy solutions and support non-residential construction projects in all project phases starting with initial design up to building utilisation.

The solutions for building temperature control, energy supply and energy distribution ensure the most comfortable climate in living and work areas. They also optimise costs and contribute to reducing energy consumption and CO_2 emissions for sustaining a comfortable living environment.

You will receive an energy-efficient building tailored to your needs with virtually no maintenance and low operating costs – a building that offers its users an optimum and comfortable working environment all year round.

Solutions from Uponor Energy Solutions stand for excellent quality and ensure easy integration into the construction process.

We provide safe and efficient installation technologies for heating/cooling and for the installation of potable water which guarantee the long-term, sustainable and trouble free operation of your building – all at low maintenance costs.

- Energy-efficient and sustainable solutions
- High comfort for an optimum working environment
- Easy integration of the systems into the building process
- High reliability and low maintenance costs
- Technical support starting with the initial design up to installation and building utilisation

1. Feasibility analysis

Based on the customer's individual requirements in terms of efficiency, sustainability and energy efficiency, we provide targeted advice with respect to the most appropriate solutions for a building.

2. Solutions and concepts

Using advanced engineering software, we develop design proposals according to customer needs, taking into account the specific circumstances.

3. Technical planning

We transform ideas into technical implementation, taking into account all relevant data and the applicable standards. Our Uponor planning experts, who manage your specific project, have many years of experience.

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4. Installation and project management

We support your project team in planning, organization and in the management of resources. In close cooperation with neighbouring trades we provide for an optimum flow of materials and efficient and trouble-free installation.

5. Commissioning and handover

The systems undergo extensive testing and are commissioned by us before they are handed over to you.

6. Customer services

To ensure long-term system availability, we offer professional inspections and maintenance along with quality control using modern testing techniques, such as thermographs, flow measurements and water quality analysis.

VARICOOL Softline 4

VARICOOL Softline 4 — Highest cooling capacity through the combination of radiation and convection

System description and applications

The heating/cooling ceiling VARICOOL Softline 4 is visually a very attractive aluminium panel ceiling with a standard capacity of 146 W/m² in cooling mode and 142 W/m² in heating mode. It is designed for applications with high thermal loads.

The exceptional performance of the chilled ceiling is partly due to the excellent thermal conductivity of aluminium profiles, which ensure the low temperature of the ceiling base, and the resulting high exchange of radiant heat. Not to mention the relatively high proportion of joint space that favors the natural circulation of the air between the profiles and also enhances the overall convective cooling effect.

VARICOOL Softline 4 is suitable as a design element for the interior, thus eliminating the need for separate ceiling panels. The visible profiles can be powder coated or anodised for meeting the highest demands. All RAL-colours are possible.

Glare-free illumination of the room is possible due to the high light reflecting properties of the profiles, especially in combination with metallic anodised colours.

Your benefits

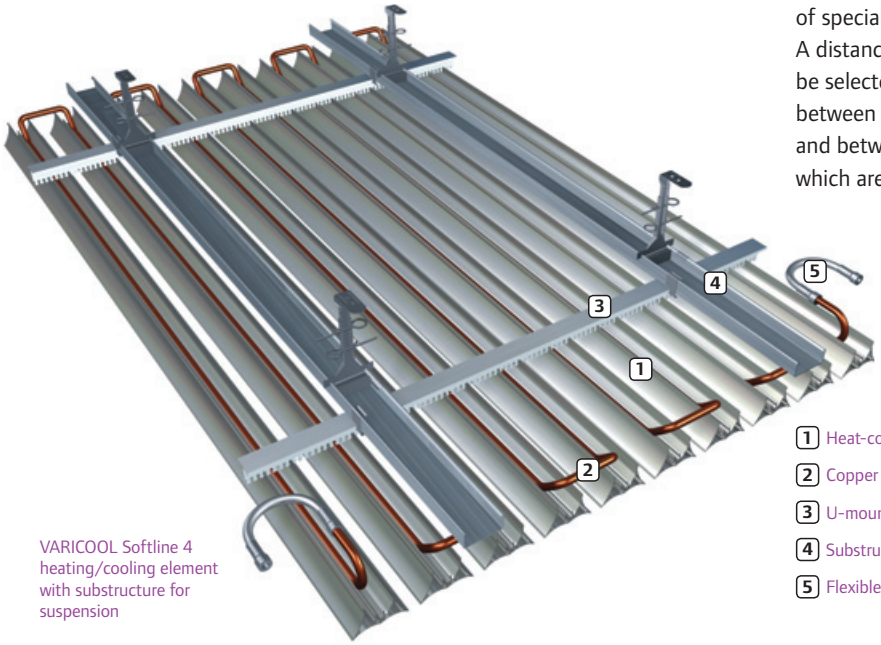
- Attractive ceiling from an architectural perspective
- Combinable with CCTC
- Very high cooling and heating capacities
- Combinable with different lighting and ventilation concepts
- Acoustically advantageous due to arched profile construction and joints between the profiles
- Optional anodised or painted profile surfaces for the highest aesthetic standards.

VARICOOL Softline 4 heating/cooling ceiling in panel construction with ceiling fixtures and pendant lighting.

Design

The VARICOOL Softline 4 heating/cooling ceiling consists of 83 mm wide aluminum intrusions into which a copper serpentine pipework is pressed. Cold water flows through the copper pipe as a heat transfer medium for room cooling with hot water flowing for room heating.

The profiles in lengths up to 4 m are factory connected using a special mounting rail to form complete heat exchanger coils of up to 1.20 m in width. These coils can be suspended from a standard ceiling substructure with the help of special stainless steel clips. A distance of 7, 17 or 27 mm can be selected as a joint width between the individual profiles and between the suspended coils which are arranged side by side.



VARICOOL Softline 4 heating/cooling element with substructure for suspension

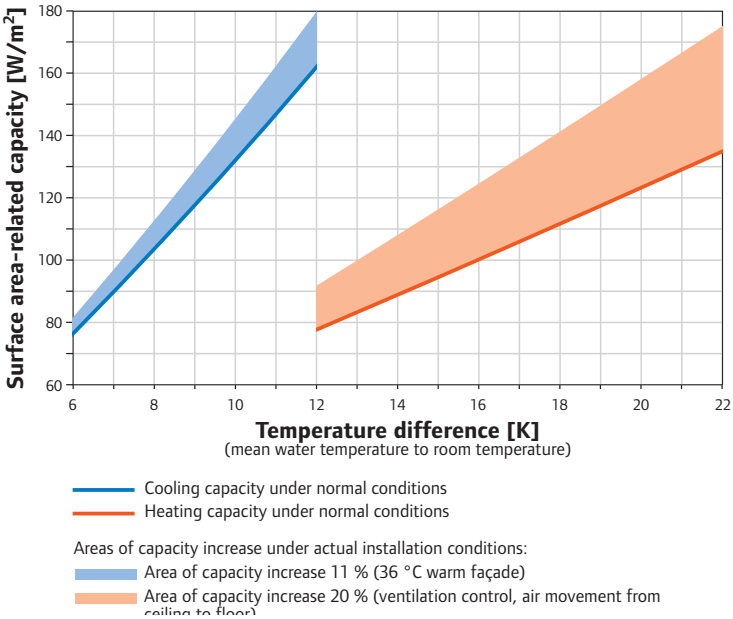
1 Heat-conducting profile
2 Copper serpentine pipework
3 U-mounting rail
4 Substructure
5 Flexible hoses

Planning and dimensioning

The Softline VARICOOL 4 heating/cooling ceiling can be used for both cooling and heating. The heating and cooling capacity of the system is carried out through thermal radiation and air movement (convection) at approximately equal levels.

The cooling and heating capacities of VARICOOL Softline 4 ceiling system can be read from the diagram below. The values refer to coils with 100 mm pipe spacing and 17 mm joints.

Cooling and heating capacity for system VARICOOL Softline 4
Pipe spacing RA = 100 mm



Technical features

Length	unlimited through a series of individual elements (element length up to 4,000 mm)
Width	unlimited through a series of individual elements (element width up to approx. 1,500 mm)
Heating/cooling lamellae	aluminium extrusions, height 50 mm, width 83 mm
Copper serpentine pipework	Outer diameter d_a = 12 mm
Pipe spacing RA	RA = 90 up to 110 mm, in 10 mm stages
Surface profiles	RAL-colours or anodised
Surface of the Supporting structure	optional wet painted, jet black (similar RAL 9005)
Installation height	77 mm
Nominal cooling water flow at $\Delta\vartheta$ = 10 K | 3 K spread	38 l/h·m²
Hydraulic connection	flexible oxygen-diffusion-resistant hoses with plug-in connection or solder tail, optional threaded bushing
Mounting clearance	min. 100 mm distance between concrete ceiling and element

Building temperature control, energy supply and power generation with Uponor Energy Solutions everything under one-roof

Building temperature control

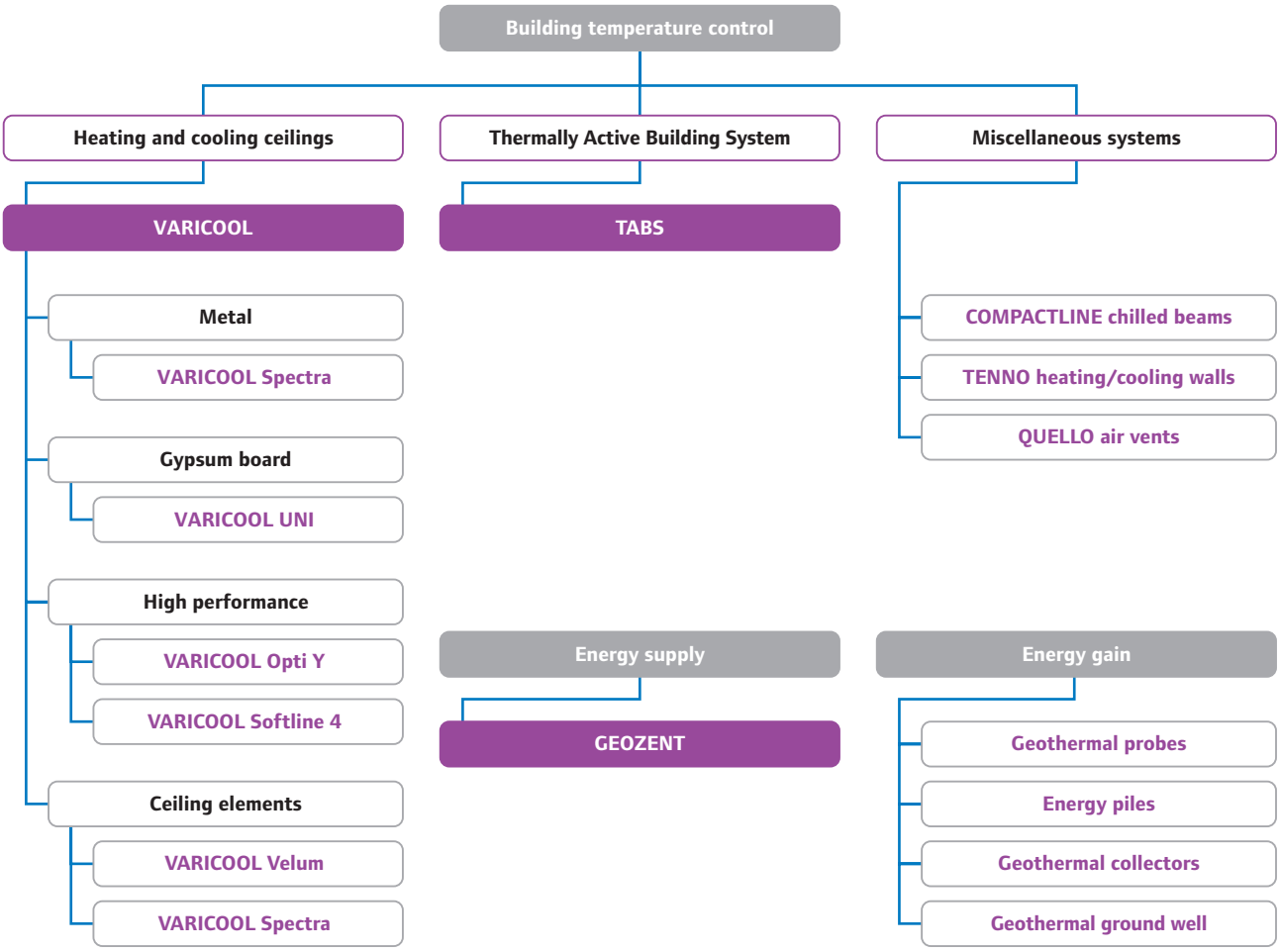
Uponor Energy Solutions surface systems, such as heating and cooling ceilings and concrete core temperature control are established technologies for regulating room temperature and have been a market leader for more than 50 years. The numerous technical developments have made us a pioneer in the field of advanced building system technology.

Energy supply

For commercial buildings, we have developed a large geothermal heat pump, as a ready for connection power station with its own integrated hydraulic system: The multifunctional heat pump simultaneously produces heating and cooling energy as needed and is manufactured according to individual requirements in modular design ready for connection.

Power generation

As an ideal basis for the sustainable, ecological and highly economical supply of commercial real estate with thermal energy, Uponor Energy Solutions have many years of know-how in the use of geothermal probes, energy piles, ground heat collectors and geothermal groundwater wells.



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