References

Messehalle 11



Uponor involvement

23000

Messehalle 11, Frankfurt am Main

Hall air conditioning suitable for every event. There is a generous feeling of space and pleasant room temperature control all the year round.

Project Facts:

Location
Frankfurt a.M., Germany

Completion
2009

Vrsta objekta
Commercial Applications

Product systems
Površinsko grejanje i hlađenje

Address
Ludwig-Erhard-Anlage 1

Project Type
New building

Partners

enduser
Messe Frankfurt GmbH

architect
HASCHER JEHLE Architektur

installer
Karl Lausser, Heizungsbau- und
Sanitär GmbH

Architecturally, the new exhibition hall with its generous proportions and openness, together with the also newly built portal house, provides a further upgrading of the western part of the exhibition ground and thereby sets new standards. Together, Hall 11 and the portal house offer exhibition visitors 79,500 m² of useful new floor space and a high level of comfort. Unlike massive concrete structures and monotonous exhibition architecture, the new exhibition ensemble of the Frankfurt/Main exhibition ground has a light architecture, which, thanks to the apparently floating roof of Hall 11 for example, is perceived as inviting, open and timeless.

A core concept of the new exhibition hall is that of the building automation system. Here the focus is on the exhibition hall all year round temperature control using the underfloor heating and cooling system supplied by Uponor. All in all, the building automation concept is designed for ecological and economic operation and is therefore particularly future-orientated and sustainable.

Underfloor heating and cooling for special demands

High visitor numbers and demands, which are not of an everyday nature for loading the hall floors of the new exhibition hall, e.g. using facility management vehicles or exhibition stand construction, represent important selection criteria for suitable underfloor heating and cooling systems for the new build of Hall 11. The Uponor pipes are directly installed on steel mesh. A cement screed with a covering of only 65 mm over pipe at a required traffic load of 7.5 kN/m² has been used. Thanks to the limited cement screed, covering the underfloor heating and cooling system produces a fast reaction for heating or cooling in the individual hall zones. A decisive advantage using this system is the sturdy reinforcement of the support element system, which ensures that the required loading for the later use of the hall floor is accommodated. This system is therefore particularly suited to areas of use where there are increased traffic loads, as in exhibition halls for example. This is down to the separation of heating level and insulation layer in combination with high loadability insulation materials. This allows the free selection of insulation layers and insulation materials according to the applicable insulation requirements, when the Uponor underfloor heating and cooling system is used.

Flexibility with precision

Flexible in use with variable floor structures, the layout of the underfloor heating and cooling is so precise when using the fixation of Uponor pipes with clips on steel mesh. “The factory prescribed matting grid allows us to align the heating pipe intervals precisely when laying out,” explains Udo Jahn, the Project Manager from the building automation planning company Lausser. They have observed some projects at Messe Frankfurt and know what requirements are needed in particular. “Where there is tandem usage of the system for heating and cooling, as here, the correct layout has to be observed so that the possibility for silent and draught free hall cooling can be employed,” Jahn explains further. Using the Engel process, high pressure cross linked polyethylene pipes (PE-Xa pipes) for the new build hall of around 11,500 m², the laying directly on steel mesh was selected with an outside pipe diameter of 17 mm at a layout interval of 10 and 15 cm. This means that cooling can reach a maximum performance level. To avoid a temperature shortfall with a small temperature difference of 5K or less, it is

recommended to select the 17 mm dimension of the PE-Xa pipes as used here. This combination of flexibility and precision means that the Uponor system achieved the criteria required, which makes the difference in its application in the

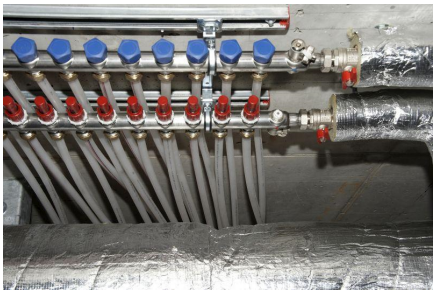
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