



Uponor

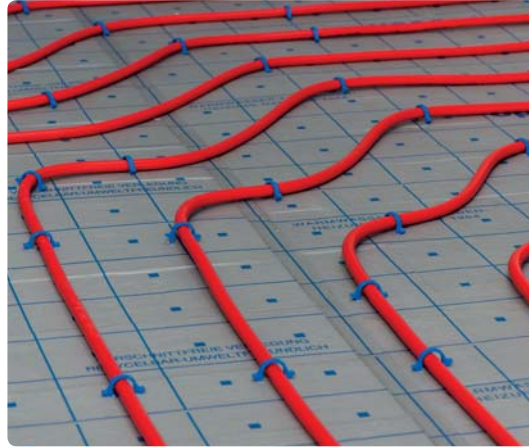
Uponor Tacker Technical guideline

UNDERFLOOR HEATING
AND COOLING

The Uponor Tacker product line

Uponor Tacker system - the universal fastening solution for heating pipes in residential buildings

All components of Uponor Tacker are designed to perfectly match each other. The Tacker panels with thermal and sound insulation are equipped with a tearproof surface and a printed installation grid for easy installation of the system pipes. These and all other components are designed to ensure optimum safety and reliable operation of the system. As the pipes can be installed in the most flexible manner, our Tacker system is the ideal solution for rooms of any shape, providing uniform and comfortable heat across the entire floor space.



Uniform and clear pipe-laying pattern thanks to printed installation grid and sturdy fastening Tacker clips.



Self-adhesive strip along the roll panels for quick panels butt joint. Connection creates a tight foil layer below the wet screed - just remove the safety tape and connect panels along.

Applicable pipe types

The following pipes can be installed with Uponor Tacker:

- **Uponor Comfort Pipe**
 - 14 x 2.0 mm
 - 16 x 1.8 mm
 - 17, 20 x 2.0 mm
- **Uponor MLCP RED**
 - 14 x 1.6 mm
 - 16 x 2.0 mm



Two different pipe types in different dimensions available.

Tacker components

Just four product components

- Tacker panel
- Tacker clip stapler
- Tacker pipe clips
- Mounting instruction



Tacker clip stapler with blue pipe clips.

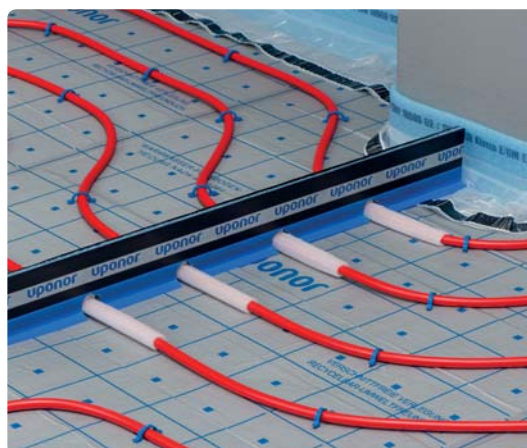


One tool for two different Tacker pipe clips.



Tacker clip stapler with grey pipe clip for larger pipe dimensions.

All line components match for a proper floor construction-joint profile with self-adhesive underneath surface can be easily applied on the system panels onto an individual design of floor covering layers.

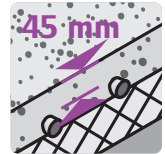


New Uponor Multi construction-joint profile.

Design data

Design diagrams for Uponor Tacker

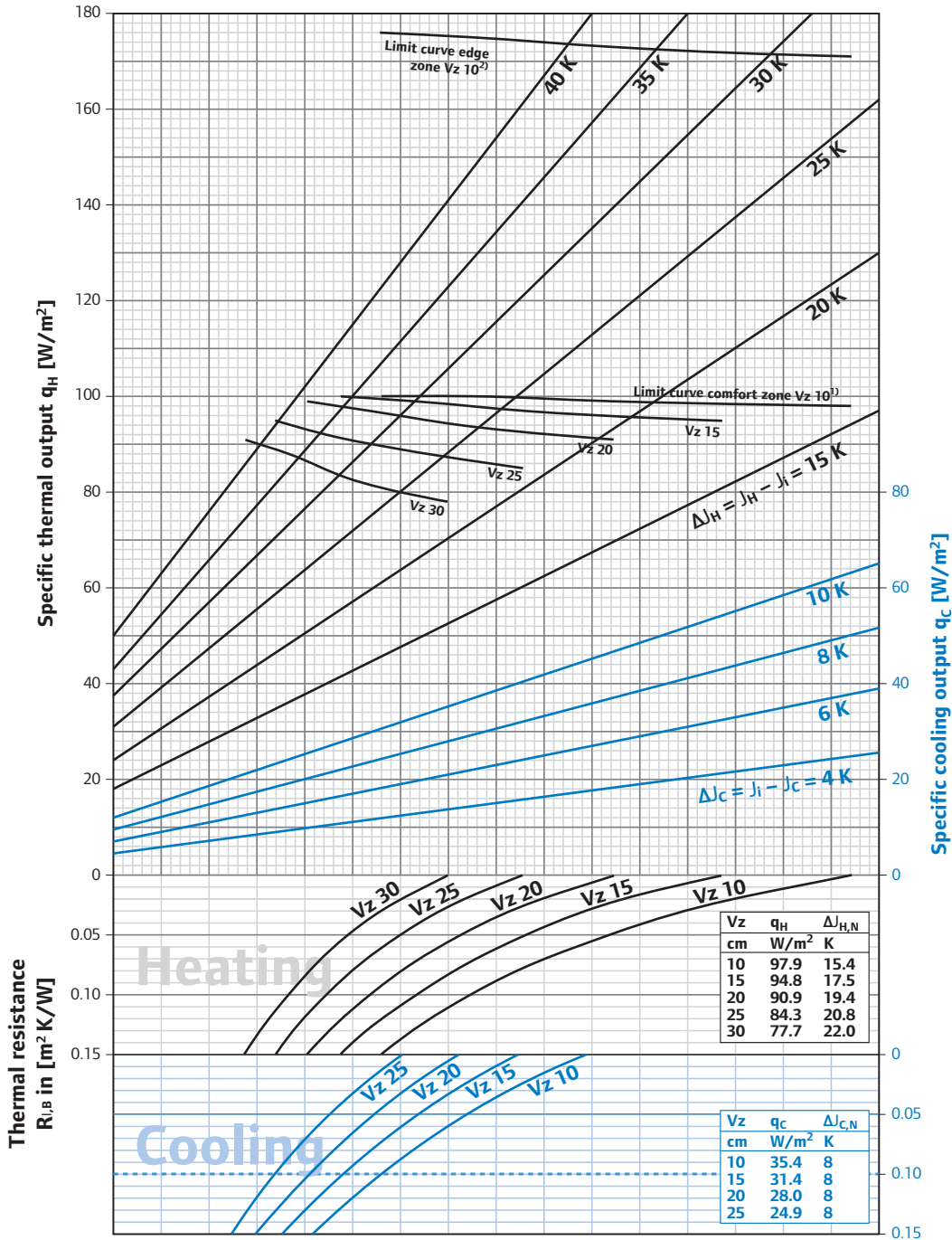
Design diagram heating/cooling for Uponor Tacker and Uponor Comfort Pipe 14 x 2 mm with cement screed load distribution layer ($s_u = 45 \text{ mm}$ with $\lambda_u = 1.2 \text{ W/mK}$)



14 x 2 PE-Xa



7F 185 -F



¹⁾ Limit curve valid for J₂₀ °C and J_{F, max} 29 °C or J_i 24 °C and J_{F, max} 33 °C

²⁾ Limit curve valid for J_i 20 °C and J_{F, max} 35 °C

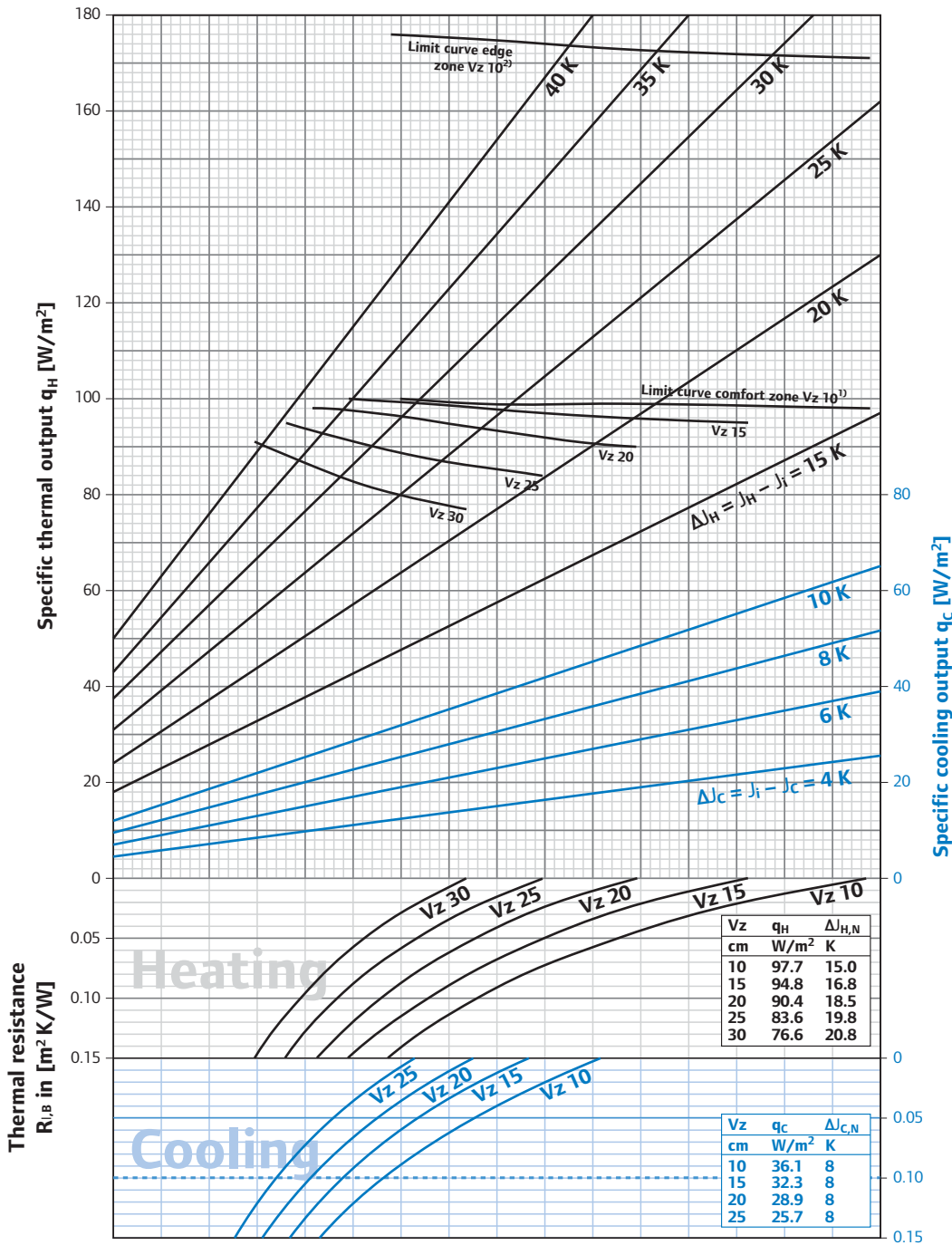
Note: According to DIN EN 1264 are baths, showers and toilets not included. The limit curves must not be exceeded.

The design supply water temperature must maximum be: $J_{V, des} = \Delta J_{H, g} + J_i + 2.5 \text{ K}$

$\Delta J_{H, g}$ is found by the limit curve for the occupied zone with the smallest pipe spacing.

At cooling the supply temperature to be controlled by dew point temperature, humidity sensor to be included.

Design diagram heating/cooling for Uponor Tacker and Uponor Comfort Pipe 16 x 1.8 mm with cement screed load distribution layer ($s_u = 45$ mm with $\lambda_u = 1.2$ W/mK)



¹⁾ Limit curve valid for $J_i \geq 20$ °C and $J_{F,max} \geq 29$ °C or $J_i \geq 24$ °C and $J_{F,max} \geq 33$ °C

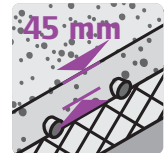
²⁾ Limit curve valid for $J_i \geq 20$ °C and $J_{F,max} \geq 35$ °C

Note: According to DIN EN 1264 are baths, showers and toilets not included. The limit curves must not be exceeded.

The design supply water temperature must maximum be: $J_{V,des} = \Delta J_{H,g} + J_i + 2.5$ K

$\Delta J_{H,g}$ is found by the limit curve for the occupied zone with the smallest pipe spacing.

At cooling the supply temperature to be controlled by dew point temperature, humidity sensor to be included.

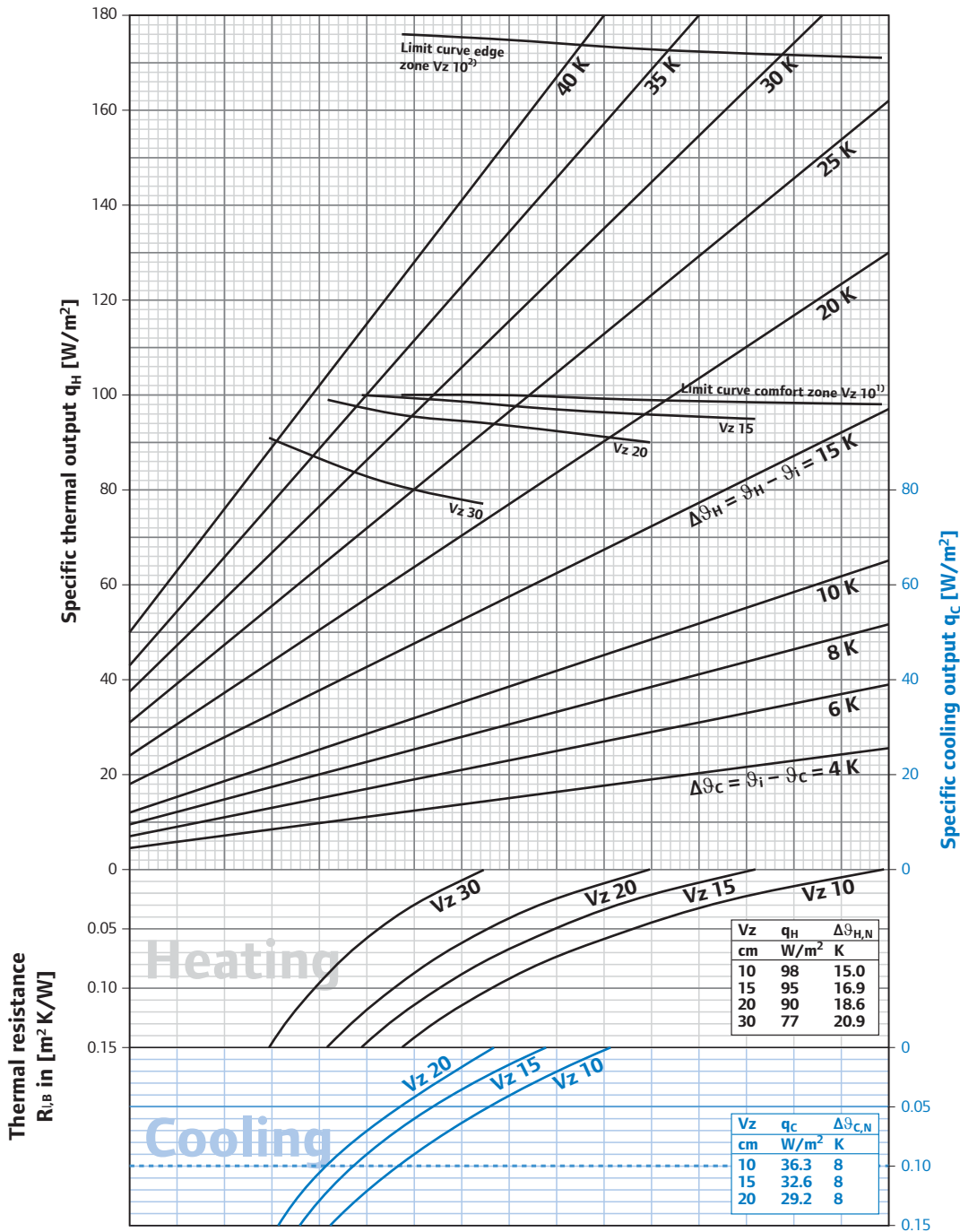


16 x 1.8 PE-Xa



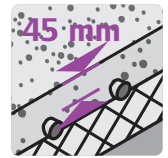
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Design diagram heating/cooling for Uponor Tacker and Uponor MLCP RED 14 x 1.6 mm
with cement screed load distribution layer
($s_u = 45 \text{ mm}$ with $\lambda_u = 1.2 \text{ W/mK}$)



¹⁾Limit curve valid for θ_i 20 °C and $\theta_{F,max}$ 29 °C or θ_i 24 °C and $\theta_{F,max}$ 33 °C
²⁾Limit curve valid for θ_i 20 °C and $\theta_{F,max}$ 35 °C

Note: According to DIN EN 1264 are baths, showers and toilets not included.
The limit curves must not be exceeded.
The design supply water temperature must maximum be: $\theta_{V,des} = \Delta\theta_{H,g} + \theta_i + 2,5 \text{ K}$
 $\Delta\theta_{H,g}$ is found by the limit curve for the occupied zone with the smallest pipe spacing.
At cooling the supply temperature to be controlled by dew point temperature, humidity sensor to be included.

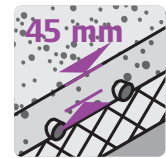


14 x 1.6 MLCP



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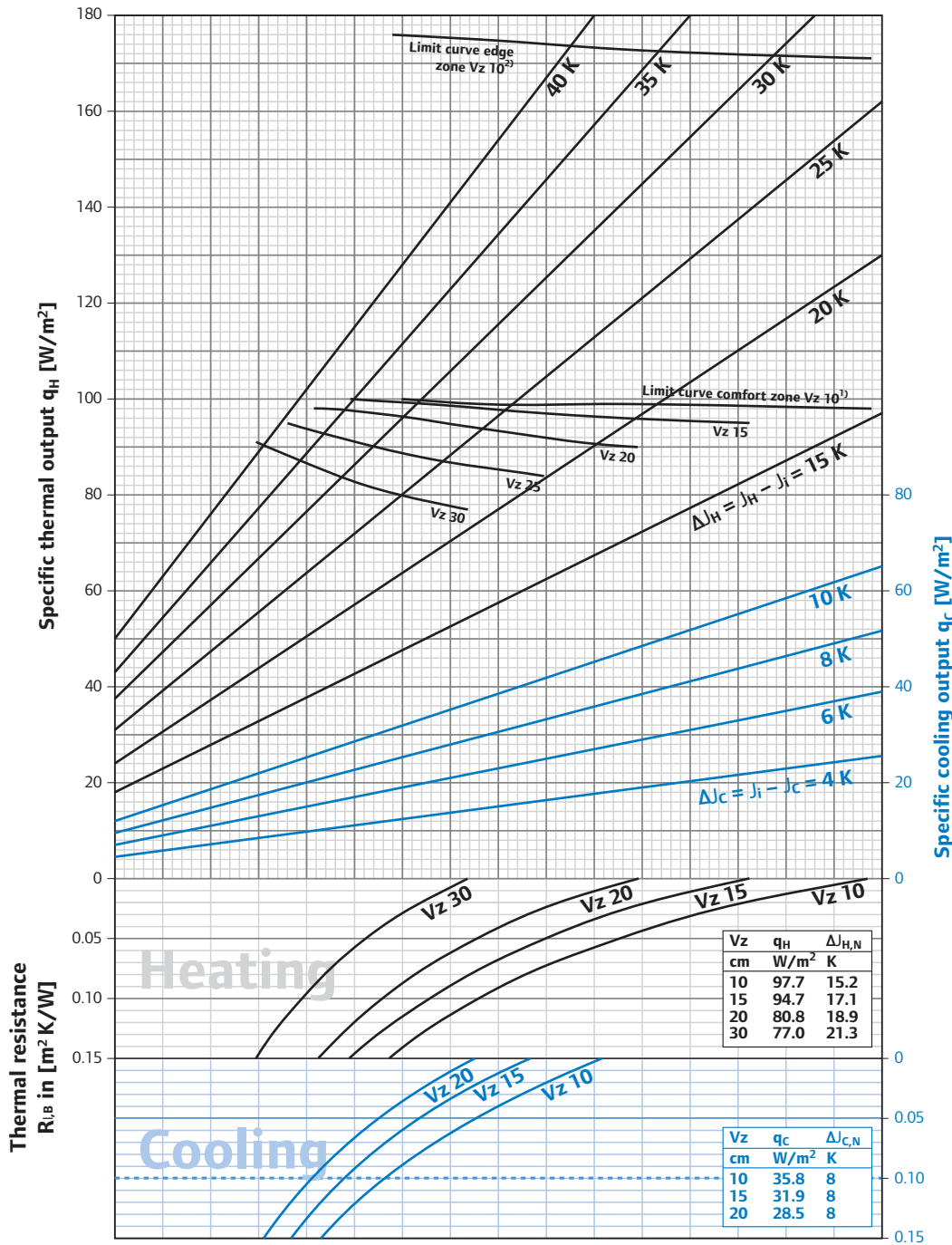
Design diagram heating/cooling for Uponor Tacker and MLCP RED 16 x 2 mm with cement screed load distribution layer
 ($s_u = 45$ mm with $\lambda_u = 1.2$ W/mK)



16 x 2 MLCP



7F 278 -F



¹⁾ Limit curve valid for J₂₀ °C and J_{F,max} 29 °C or J_i 24 °C and J_{F,max} 33 °C

²⁾ Limit curve valid for J_i 20 °C and J_{F,max} 35 °C

Note: According to DIN EN 1264 are baths, showers and toilets not included.

The limit curves must not be exceeded.

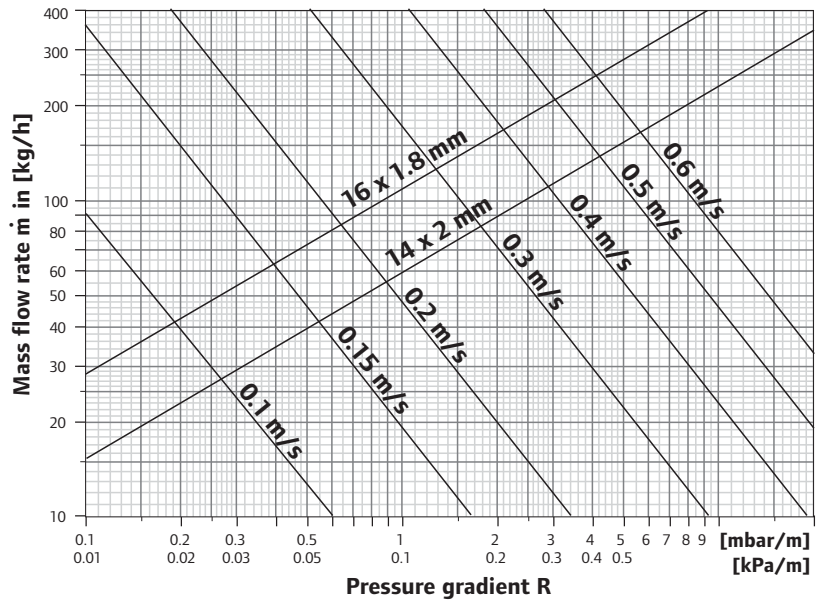
The design supply water temperature must maximum be: $J_{v,des} = \Delta J_{H,g} + J_i + 2.5$ K

$\Delta J_{H,g}$ is found by the limit curve for the occupied zone with the smallest pipe spacing.

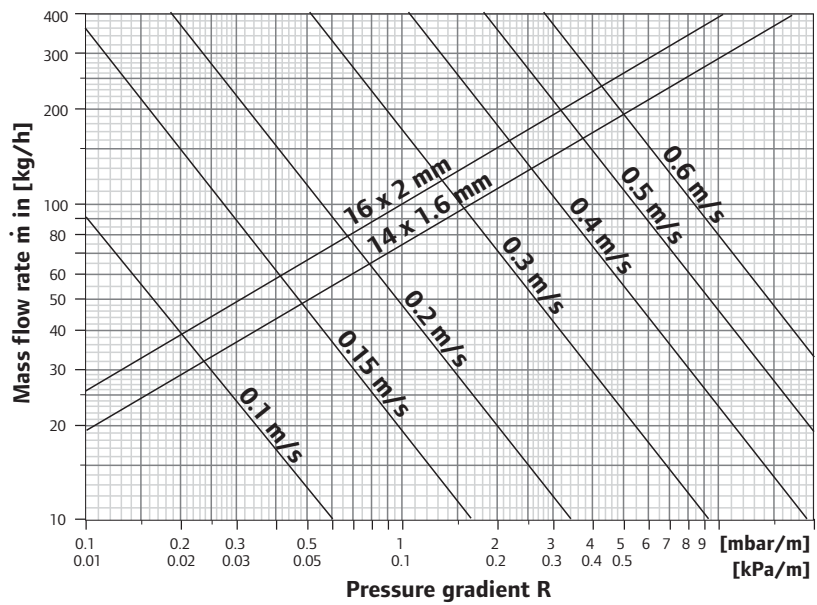
At cooling the supply temperature to be controlled by dew point temperature, humidity sensor to be included.

Pressure drop diagrams

The pressure losses in the Uponor PE-Xa pipes can be determined with the aid of the diagram.



The pressure losses in the Uponor MLCP RED can be determined with the aid of the diagram.



Installation

Edging strip

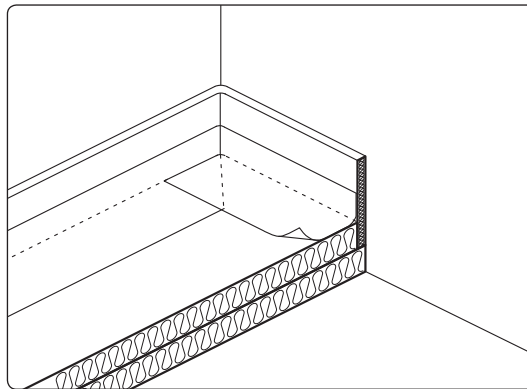
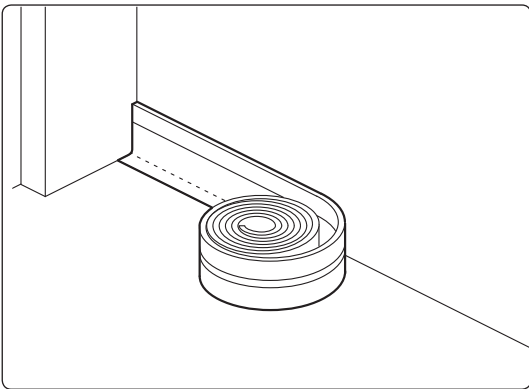
Fix the edging strip with the self-adhesive strip on the backside so that the integrated breaking points show upwards. The edging strip is continuously fixed on the wall and reaches from the concrete floor up along the complete floor structure. The strip must be unbrokenly installed along the walls, door frames, pillars or steps.

The PE foil of the edging strip is laid on top of the insulation.

In case of multi-layered insulation, the edging strip has to be installed prior to the topmost insulation layer.

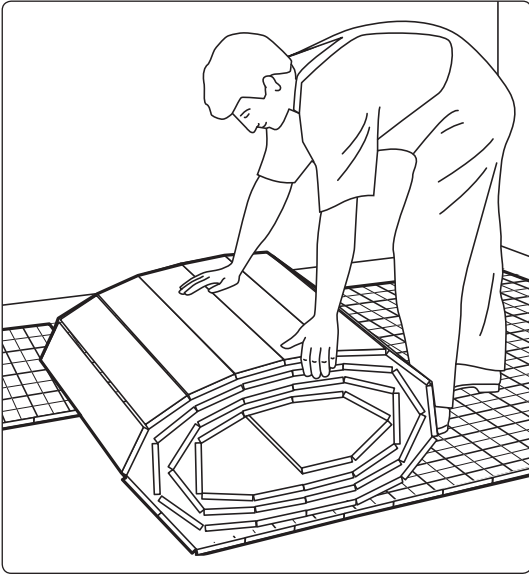
Heat and sound impact insulation

A suitable insulation which meets the requirements for heat and impact sound insulation has to be installed. Only such insulation materials are to be used which meet the standards as well as the specific construction and quality assurance regulations. When using conventional insulation materials, one has to pay attention that with multi-layer insulations a maximum of two layers consists of impact sound insulation materials. The compressibility of all insulation materials must not exceed 5 mm. When combining heat and impact sound insulation boards, the insulation with the lesser compressibility must be installed on top.



Installation of Uponor Tacker

The edging strip is to be fitted before the Uponor Insulation board is laid.

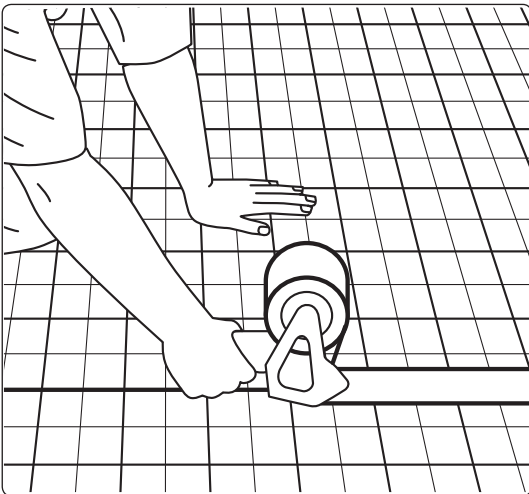


Laying the Uponor Insulation roll/pipe fixing foil

The Uponor Insulation roll is to be laid in preferably continuous lengths in the longitudinal direction of the room. For an easier division of the heating loops the marking frame is to concur with the side-by-side insulating lengths. Left-over surfaces in recesses, at the door passages and strips remaining on the walls are to be subsequently filled in with left-over pieces. Always place "free-hand" cut sides of the boards up against the perimeter strip to stop gaps appearing in the board laminate.

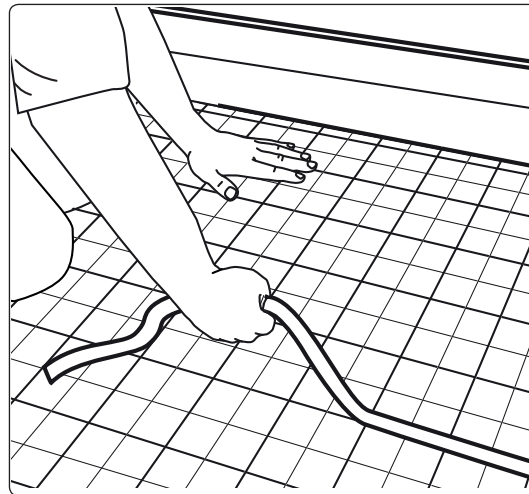
Additional insulation

An additional heat insulation may be needed in keeping with the DIN EN 1264-4, EnEV or local requirements.

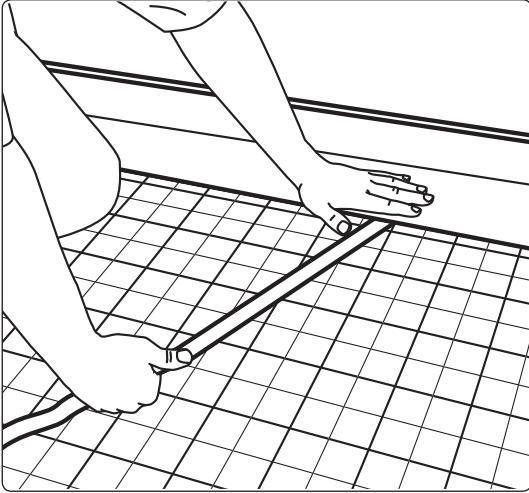


Sticking the joints of the insulation roll/pipe fixing foil

Sticking all joined insulating lengths (together with the glued-on perimeter strip apron) creates a seal-tight trough for taking up the heating screed. Precise bonding stops both any screed or screed water from penetrating the insulation and also stops acoustical bridges from being formed.

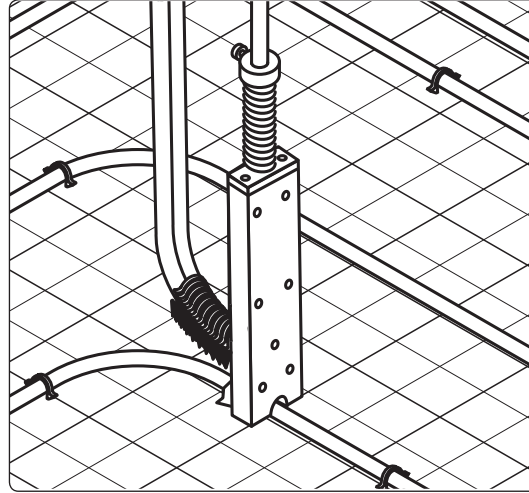


Connect roll panels along with the self-adhesive strip



Sealing the perimeter strip

The perimeter strip foil apron must be bonded with the insulationboards to the exclusion of any gaps or cavities. This is to stop the foil ripping and the resultant ingress of screed or screed water.



Pipe laying

The pipes can be fix with the Uponor Tacker pipe clips and the Uponor Tacker clip stapler in the right distance on the insulation panel. Please use 2 Tacker pipe clips per meter pipe. A meander or bifilar shape of designed loop is possible. It could be helpful to mark supply and return of the heating loops to ensure the correct manifold connection.

Uponor Corporation
www.uponor.com

Uponor
simply more

Uponor reserves the right to make changes, without prior notification, to the specification of incorporated components in line with its policy of continuous improvement and development.