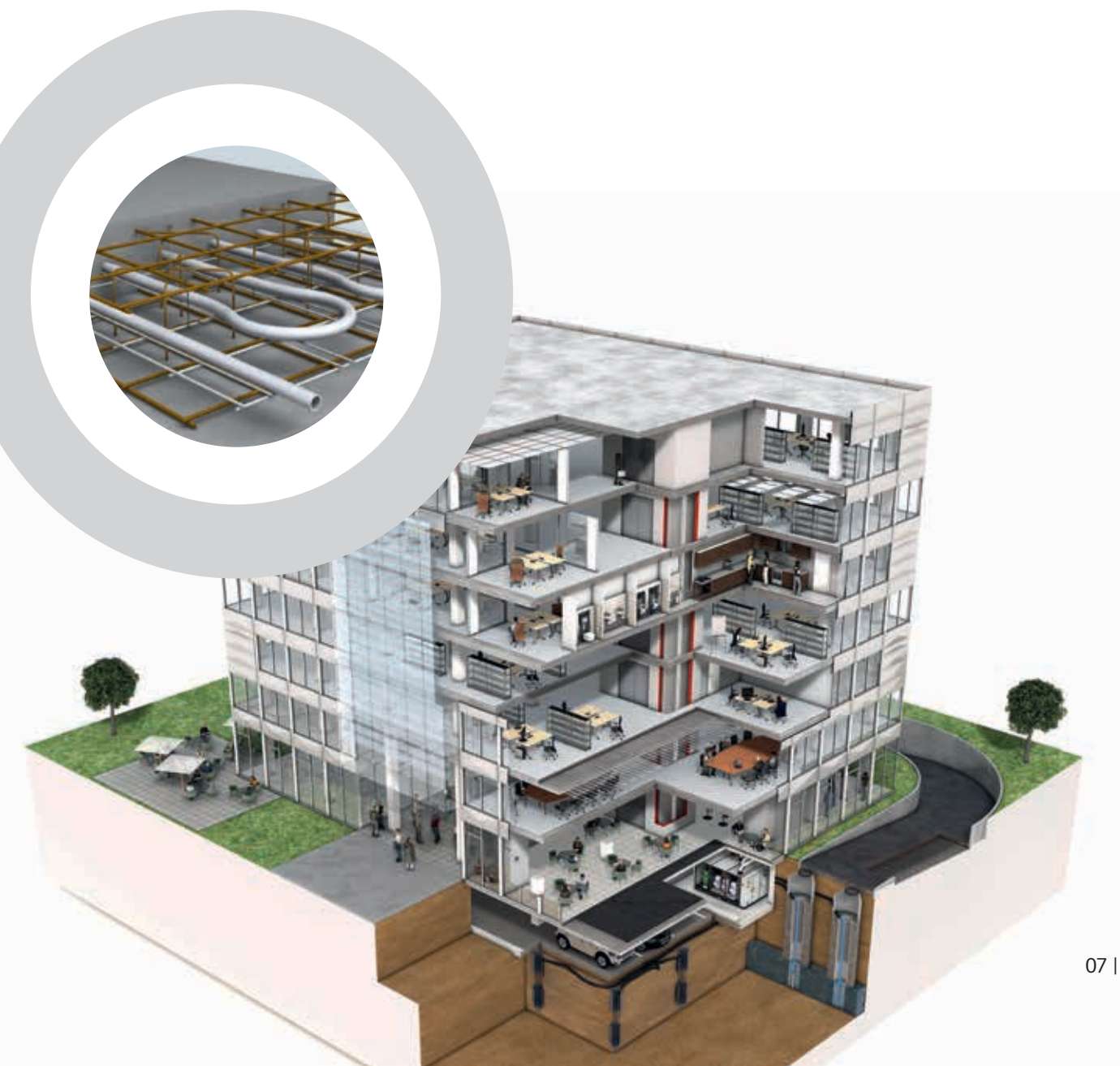


Uponor Contec Tender texts

THERMALLY ACTIVE BUILDING SYSTEMS



BIC system

Preface and system description

Preface

Uponor Contec BIC is a system for thermal activation of concrete slabs by means of water flowing through pipe registers. The thermal mass of the concrete slab is utilised by positioning the pipes directly in this structural component. The system may also be used for covering a heating base load.

System description

Pipe registers in the form of prefabricated Contec modules with integrated connection pipes of individual length for installation between site-installed lower and upper reinforcement, consisting of:

- Pipe 20 mm PE-Xa made from high-pressure cross-linked polyethylene according to EN 15875, with 5-layer, diffusion barrier and additional PEX outer layer for protection against mechanical stress, oxygen proof according to DIN 4726
- Special pipe carrier mat, Uponor Contec BIC, with integrated pipe support elements (EP 09757317/DGBM 298 08 792.8)
- Ceiling pipe lead-through element (EP 0962710/DGBM 298 08 793.6)

With Uponor liability declaration:

10-year product liability (non-lapsable) for personal and subsequent damage, irrespective of run-time of the insurance contract, provided all specified Uponor system components are used.

Construction sequence

1. Shuttering construction (building shell).
2. Position and fix ceiling pipe lead-through elements with pipe inlet and outlet opening on the shuttering to carry out pressure tests without damage to the shuttering (concrete core activation).
3. Laying of the lower reinforcement and the associated spacers (building shell).
4. Laying and alignment of the modules on the lower reinforcement according to installation plan (concrete core activation).
5. Connect Uponor Contec modules and perhaps longer connection pipes with the cooling/heating loops via couplings.
6. Lay and fix connection pipes and feed through ceiling pipe lead-through elements (concrete core activation).
7. Laying of the upper reinforcement with associated spacers (four or six legs) sitting on the shuttering (building shell).
8. Lifting of the modules into the neutral zone via the Uponor Contec Hook element method (concrete core activation).
9. Pressure test of all installed pipe registers (concrete core activation).

Installation training is provided by a member of staff from Uponor.

Transport (crane required) and intermediate storage of the Contec modules

The Uponor Contec modules are delivered upright on module transport frames for the different construction phases. A crane is required for unloading the modules from the lorry and for transporting them from intermediate storage (if applicable) to the installation level (component/floor level). Space for intermediate storage of the Contec modules delivered to the site should be made available if necessary.

Article description	Quantity	Unit	Price/unit, €	Total price, €
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Load system Contec BIC, Uponor Contec Hook method

For thermal activation of concrete slabs, for application in residential or non-residential buildings via Uponor Contec Hook method consisting of:

- Prefabricated, project-specific module
- Pipe 20 mm PE-Xa made from high-pressure cross-linked polyethylene according to EN 15875, with 5-layer, diffusion barrier and additional PEX outer layer for protection against mechanical stress, oxygen proof according to DIN 4726
- Special pipe carrier mat made of smooth wire with integrated pipe support elements and safety edge (EP 0957 317/DGBM 298 08 792.8), without burrs or sharp edges
- Ceiling pipe lead-through element incl. 1 m protective tube with pipe entry and exit opening for:
 - 1) carrying out module pressure tests without damaging the shuttering (EP 0962710 B1/DGBM 298 08 793.6),
 - 2) precisely defined pipe runs out of the slab construction layer,
 - 3) connecting the modules to the distribution pipe. Several units can be connected in series
- Individual connection pipes positioned on the module with Uponor Multi cable ties
- Contec Hooks for lifting, precise height adjustment and stabilising the pipe level relative to the upper reinforcement (4/m²) (DGBM 298 08 790 U1) for bar thicknesses up to 15 mm

Note: Calculation per m² based on outside rectangular area of the special Uponor Contec carrier mat

Number of Contec modules:	approx units
Max. module size:	13.5 x 2.40 m
Pipe distance:	150 mm
Weight of Contec module per m ² :	2.5 kg/m ²
Connection pipes (flow + return) per module: m
Make:	Uponor
Type:	Contec

m²

Article description	Quantity	Unit	Price/unit, €	Total price, €
<p>Connection pipe</p> <p>For individual connection of the Contec modules to the heating circuit manifold or a distribution pipe (if not already integrated in the module), consisting of:</p> <ul style="list-style-type: none"> ■ Pipe 20 mm PE-Xa made from high-pressure cross-linked polyethylene according to EN 15875, oxygen proof according to DIN 4726 ■ Proportional, Uponor Multi cable ties for fixing the pipes to the customer reinforcement mats Dimensions: 20 mm Make: Uponor 		m		
<p>Connection pipe "A" alternative position</p> <p>For individual connection of the Contec modules to the heating circuit manifold (if not already integrated in the module), consisting of:</p> <ul style="list-style-type: none"> ■ Pipe 20 mm PE-Xa made from high-pressure cross-linked polyethylene according to EN 15875, with 5-layer, diffusion barrier and additional PEX outer layer for protection against mechanical stress, oxygen proof according to DIN 4726 ■ Proportional, Uponor Multi cable ties for fixing the pipes to the customer reinforcement mats ■ Special pipe carrier mat made of smooth wire with integrated pipe support elements and safety edge (EP 0957 317/DGBM 298 08 792.8), without burrs or sharp edges ■ Contec Hooks for lifting, precise height adjustment and stabilising the pipe level relative to the upper reinforcement (4/m²) (DGBM 298 08 790 U1) for bar thicknesses up to 15 mm Dimensions: 20 mm Make: Uponor 		m		

Article description	Quantity	Unit	Price/unit, €	Total price, €
<p>Leak test</p> <p>Before the concrete for the slab is poured, the pipe registers should be subjected to a water pressure leak test according to ISO 11855. The test pressure must be twice the operating pressure or at least 6 bar.</p> <p>The tightness and the test pressure of all pipe registers must be checked before and during concrete pouring, and documented. Spot checks are not sufficient.</p> <p>A specialised heating system fitter must be present during concrete pouring so that any damage can be rectified immediately.</p> <p>If there is a risk of freezing, either an antifreeze agent should be used or the leak test should be carried out with air or inert gas.</p> <p>Prior to commissioning, the system must be subjected to a final leakage test according to the official contract procedure for building works (DIN 18380) with operating medium and a minimum test pressure of 1.3 times the operating pressure at any point of the system, or at least 1 bar.</p>		unit		
<p>Final inspection and interim monitoring</p> <p>Final inspection of the Uponor Contec BIC system takes place to check the position of the pipes and connections before the concrete is poured.</p> <p>Interim monitoring takes place during concreting to prevent damage through external influence.</p>		unit		

Q System

Preface/System description

Preface

Uponor Contec Q is a system for thermal activation of concrete slabs by means of water flowing through pipe registers. The thermal mass of the concrete slab is utilised by positioning the pipes directly in this structural component. The system may also be used for covering a heating base load.

System description

Pipe registers in the form of prefabricated Contec modules with integrated connection pipes of individual length for installation between site-installed lower reinforcement and upper reinforcement, consisting of:

- Pipe 20 mm PE-Xa made from high-pressure cross-linked polyethylene according to EN 15875, with 5-layer, diffusion barrier and additional PEX outer layer for protection against mechanical stress, oxygen proof according to DIN 4726
- Steel mesh. Mesh grid size 150x150 mm
- Ceiling pipe lead-through element (EP 0962710/DGBM 298 08 793.6)

With Uponor liability declaration:

10-year product liability (non-lapsable) for personal and subsequent damage, irrespective of run-time of the insurance contract, provided all specified Uponor system components are used.

Construction sequence

1. Shuttering construction (building shell)
2. Position and fix ceiling pipe lead-through elements with pipe inlet and outlet opening on the shuttering to carry out pressure tests without damage to the shuttering (concrete core activation).
3. Laying of the lower reinforcement and the associated spacers (building shell).
4. Laying and alignment of the modules on the lower reinforcement according to installation plan (concrete core activation).
5. Connect Uponor Contec modules and perhaps longer connection pipes with the cooling/heating loops via couplings.
6. Lay and fix connection pipes and feed through ceiling pipe lead-through elements (concrete core activation).
7. Laying of the upper reinforcement with associated spacers (four or six legs) sitting on the shuttering (building shell)
8. Lifting of the modules into the neutral zone via the Uponor Contec Hook element method (concrete core activation).
9. Pressure test of all installed pipe registers (concrete core activation).

Installation training is provided by a member of staff from Uponor.

Transport (crane required) and intermediate storage of the Contec modules

The Uponor Contec modules are delivered upright on module transport frames for the different construction phases. A crane is required for unloading the modules from the lorry and for transporting them from intermediate storage (if applicable) to the installation level (component/floor level). Space for intermediate storage of the Contec modules delivered to the site should be made available if necessary.

Article description	Quantity	Unit	Price/unit, €	Total price, €
<p>Load system Contec Q, Uponor Contec Hook method</p> <p>For thermal activation of concrete slabs, for application in residential or non-residential buildings via steel mesh consisting of:</p> <ul style="list-style-type: none"> ■ Prefabricated, project-specific module ■ Pipe 20 mm PE-Xa made from high-pressure cross-linked polyethylene according to EN 15875, with 5-layer, diffusion barrier and additional PEX outer layer for protection against mechanical stress, oxygen proof according to DIN 4726 ■ Steel mesh, grid size 150 x 150 mm ■ Ceiling pipe lead-through element incl. 1 m protective tube with pipe entry and exit opening for: <ul style="list-style-type: none"> 1) carrying out module pressure tests without damaging the shuttering (EP 0962710 B1/DGBM 298 08 793.6), 2) precisely defined pipe runs out of the slab construction layer, 3) connecting the modules to the distribution pipe. Several units can be connected in series ■ Individual connection pipes positioned on the module with Uponor Multi cable ties ■ Contec Hooks for lifting, precise height adjustment and stabilising the pipe level relative to the upper reinforcement (4/m²) (DGBM 298 08 790 U1) for bar thicknesses up to 15 mm <p>Note: Calculation per m² based on outside rectangular area of the special Uponor Contec support mat</p> <p>Max. module size: 5.0 x 2.15 m Pipe distance: 150 mm Weight of Contec module per m²: 2.5 kg/m² Connection pipes (flow + return) per module: m Make: Uponor Type: Contec Q</p>		m ²		

Article description	Quantity	Unit	Price/unit, €	Total price, €
<p>Connection pipe</p> <p>For individual connection of the Contec modules to the heating circuit manifold or a distribution pipe (if not already integrated in the module), consisting of:</p> <ul style="list-style-type: none"> ■ Pipe 20 mm PE-Xa made from high-pressure cross-linked polyethylene according to EN 15875, with 5-layer, diffusion barrier and additional PEX outer layer for protection against mechanical stress, oxygen proof according to DIN 4726 ■ Proportional, Uponor Multi cable ties for fixing the pipes to the customer reinforcement mats Dimensions: 20 mm Make: Uponor 		m		
<p>Connection pipe "A" alternative position</p> <p>For individual connection of the Contec modules to the heating circuit manifold (if not already integrated in the module), consisting of:</p> <ul style="list-style-type: none"> ■ Pipe 20 mm PE-Xa with an oxygen diffusion layer of EVOH (ethylene vinyl alcohol). Compliant with EN ISO 15875 "Plastic piping systems for hot and cold water installation cross-linked polyethylene" and fulfils the requirement for oxygen diffusion resistance as per DIN 4726 ■ Proportional, Uponor Multi cable ties for fixing the pipes to the customer reinforcement mats ■ Steel mesh, grid size 150 x 150 mm ■ Contec Hooks for lifting, precise height adjustment and stabilising the pipe level relative to the upper reinforcement (4/m²) (DGBM 298 08 790 U1) for bar thicknesses up to 15 mm Dimensions: 20 mm Make: Uponor 		m		

Article description	Quantity	Unit	Price/unit, €	Total price, €
<p>Leak test</p> <p>Before the concrete for the slab is poured, the pipe registers should be subjected to a water pressure leak test according to EN 1264-4. The test pressure must be twice the operating pressure or at least 6 bar.</p> <p>The tightness and the test pressure of all pipe registers must be checked before and during concrete pouring, and documented. Spot checks are not sufficient.</p> <p>A specialised heating system fitter must be present during concrete pouring so that any damage can be rectified immediately.</p> <p>If there is a risk of freezing, either an antifreeze agent should be used or the leak test should be carried out with air or inert gas.</p> <p>Prior to commissioning, the system must be subjected to a final leakage test according to the official contract procedure for building works (DIN 18380) with operating medium and a minimum test pressure of 1.3 times the operating pressure at any point of the system, or at least 1 bar.</p>		unit		
<p>Final inspection and interim monitoring</p> <p>Final inspection of the Uponor Contec Q system takes place to check the position of the pipes and connections before the concrete is poured.</p> <p>Interim monitoring takes place during concreting to prevent damage through external influence.</p>		unit		