Marketing Claim Report Holder

Uponor, Inc.
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Apple Valley, Minnesota 55124
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Product Type:
Pre-Sleeved PEX Piping System

Model:
Pre-Sleeved Uponor AquaPEX – ½” or ¾” tubing sizes in coils

Product Description:

Pre-Sleeved Uponor AquaPEX features high-density polyethylene (HDPE) corrugated sleeves over crosslinked polyethylene (PEX-a) tubing for use in hot and cold water distribution. Uponor AquaPEX is listed to ASTM F876 and CSA B137.5 (See ICC-ES Report PMG-1006 for complete compliance information). The sleeve provides a shield for installations embedded in concrete slabs, in soil or below and outside of slabs.

ICC-ES Verification Criteria:

ICC-ES Verification Criteria VC-01

Less Energy Consumption for Pre-Sleeved Uponor® AquaPEX Installed In-slab versus Overhead Insulated Copper Pipe in Optimized Conditions
Verification Synopsis:

The purpose of this report is to verify that the overall energy consumption (heat and pressure losses) of a Pre-Sleeved UPONOR AquaPEX piping in-slab installation is less overall than the overall energy consumption of an overhead insulated copper pipe in optimized conditions.

The parameters that have high impact on the Pre-Sleeved UPONOR AquaPEX overall energy consumption are:

• PEX/Cu length ratio
• Concrete slab thermal conductivity
• Air gap thickness of the pre-sleeved UPONOR AquaPEX configuration

This table presents the parameters for the thermal and pressure analysis using TRNSYS software for a one-year simulation.

<table>
<thead>
<tr>
<th>Parameters Simulated for the Acceptable Configuration UPONOR PEX and Reference Overhead Insulated Copper</th>
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<tbody>
<tr>
<td>Pipe Diameter (inch)</td>
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<tr>
<td>----------------------</td>
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<tr>
<td>UPONOR PEX</td>
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<tr>
<td>Overhead Insulated Copper</td>
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*Note: Thickness of insulation based on IECC and BEES requirements*

![Graph](image)

Consumption for a year in kBTU for UPONOR PEX and Overhead Insulated Copper Case

Optimized Condition:

• PEX/Cu length ratio equal or lower than 0.5
• Light concrete slab with thermal conductivity lower than 0.173 (BTU/hr.ft.°F)
• Maximum air gap thickness of 0.110 in.

Results show that for these optimized conditions, the overall energy consumption of a Pre-Sleeved UPONOR AquaPEX piping in-slab installation is less overall than the overall energy consumption of an overhead insulated copper pipe.