



## Evaluation Report CCMC 13529-R AquaPEX/hePEX

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### 1. Opinion

It is the opinion of the Canadian Construction Materials Centre (CCMC) that “AquaPEX/hePEX,” when used as an alternative solution for sprinkler, potable water and reclaimed water piping and piping for heating and cooling systems in accordance with the conditions and limitations stated in Section 3 of this Report, complies with the following Codes:

#### 1.1 National Building Code (NBC) of Canada 2015

- Clause 1.2.1.1.(1)(a), Division A, using the following acceptable solutions from Division B:
  - Article 6.5.1.1., Insulation and Coverings
  - Article 6.7.1.1., Piping Materials and Installation
- Clause 1.2.1.1.(1)(b), Division A, as an alternative solution that achieves at least the minimum level of performance required by Division B in the areas defined by the objectives and functional statements attributed to the following applicable acceptable solutions:
  - Article 3.1.5.19., Combustible Piping Materials
  - Article 3.1.9.1., Fire Stops
  - Article 3.1.9.2., Combustibility of Service Penetrations
  - Article 3.1.9.5., Combustible Piping Penetrations
  - Article 3.1.12.1., Determination of Ratings
  - Article 3.2.5.13., Combustible Sprinkler Piping
  - Article 3.6.4.3., Plenum Requirements

#### 1.2 National Plumbing Code (NPC) of Canada 2015

- Clause 1.2.1.1.(1)(a), Division A, using the following acceptable solutions from Division B:
  - Article 2.2.5.6., Crosslinked Polyethylene Pipe and Fittings
- Clause 1.2.1.1.(1)(b), Division A, as an alternative solution that achieves at least the minimum level of performance required by Division B in the areas defined by the objectives and functional statements attributed to the following applicable acceptable solutions:
  - Table 2.3.4.5., Support for Horizontal Piping
  - Section 2.6., Potable Water Systems

This opinion is based on the CCMC evaluation of the technical evidence in Section 4 provided by the Report Holder.

### 2. Description

The pipe is made of cross-linked polyethylene and includes various accessories such as fittings, valves, supports, fasteners, clips, clamps and brackets. Pipes that are greater than 50 mm and up to 75 mm in diameter are wrapped with a rated pipe insulation covering. Pipes with a diameter of 6.35 mm to 50 mm are not wrapped with insulation.

The product is intended to be used as a fire-rated product in noncombustible buildings and assemblies conforming to Part 3 of Division B of the NBC 2015.

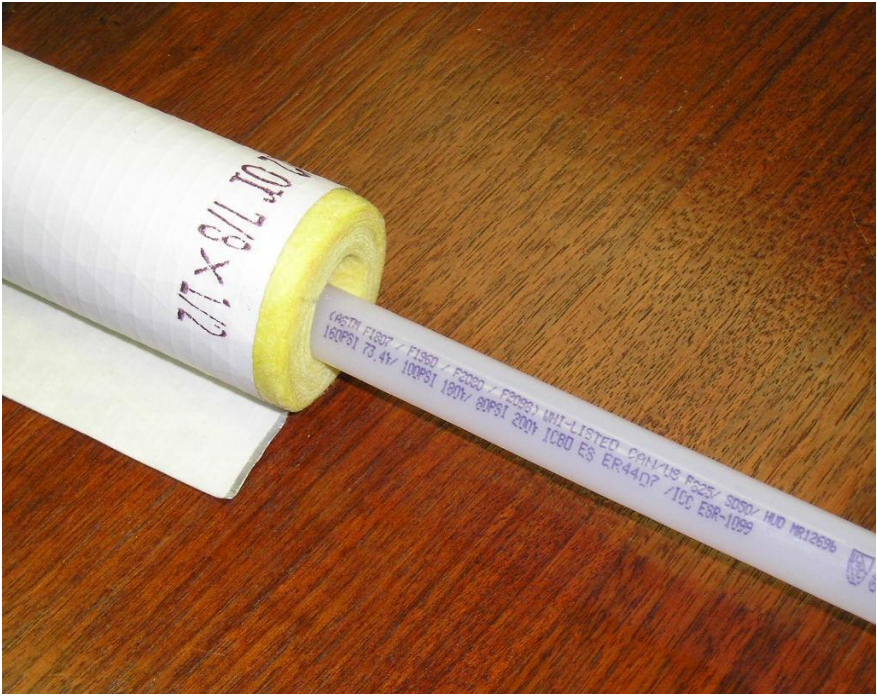


Figure 1. Typical image of “AquaPEX/hePEX” with rated pipe insulation

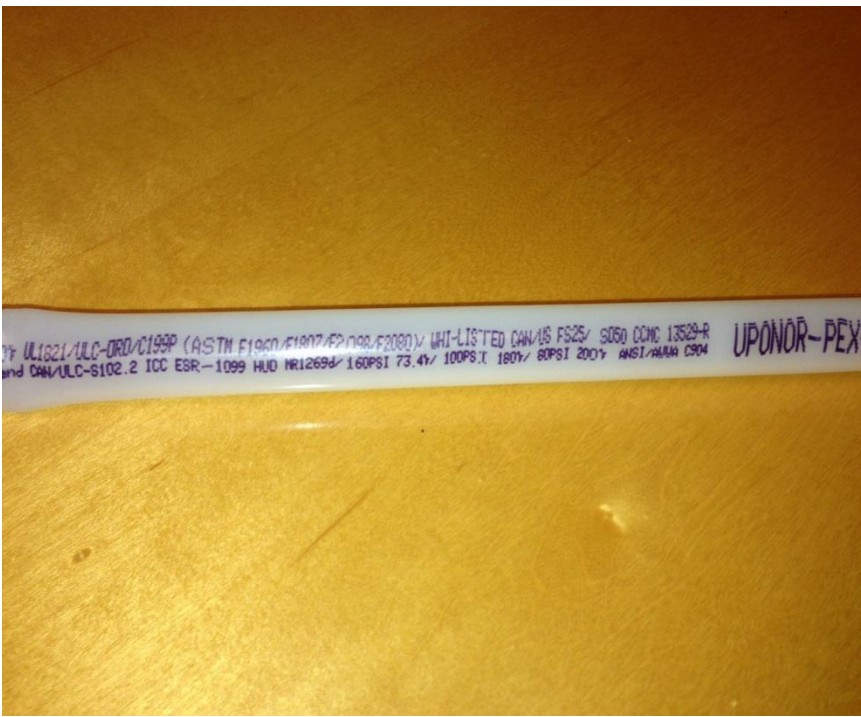


Figure 2. Typical image of “AquaPEX/hePEX” without pipe insulation

### 3. Conditions and Limitations

The CCMC compliance opinion in Section 1 is bound by the “AquaPEX/hePEX” being used in accordance with the conditions and limitations set out below:

- The product must be installed as per Uponor Plumbing Systems Canadian Reference Guide 2015 or newer.
- For up to 12.7-mm pipes, the product was rated based on no spacing restriction.

- For greater than 12.7 mm and up to 25.4-mm pipes, the product was rated based on a minimum spacing of 457.2 mm between piping runs.
- For up to 50-mm pipes, the product was rated based on the pipes being filled with water during testing.
- The supports and anchors for piping must be designed and installed to ensure that undue stress is not placed on the supporting structure. Please refer to PEX-a Pipe Support Instruction Sheet for horizontal support spacing requirements.
- The product has the following temperature/pressure rating requirements:
  - 23°C at 1 105 kPa,
  - 82°C at 690 kPa, and
  - 93°C at 550 kPa.
- The manufacturer recommends that the Uponor ProPEX cold flare expansion-type fitting system be used. The Uponor PEX piping system meets Water Quality Assurance (WQA) ORD 1502 – Protocols for freeze and thaw resistance as approved. All other accessories are to be approved by the manufacturer for use with the Uponor pipe and fitting system.
- The phrase “CCMC 13529-R” must be clearly identified on the product’s label and/or packaging.

## 4. Technical Evidence

The Report Holder has submitted technical documentation for the CCMC evaluation. Testing was conducted at laboratories recognized by CCMC. The corresponding technical evidence for this product is summarized below.

### 4.1 Material Requirements

The proponent submitted documentation from CCMC recognized laboratories, which showed that the material and/or accessories of the components used in the product met the specified standards as referenced in Table 4.1.1.

**Table 4.1.1 Results of Testing the Material Requirements of the Product**

Component	Requirement
Piping and fittings (for use in potable water and hydronic heating and cooling systems)	Meets CAN/CSA-B137.5
Piping and fittings (for use in sprinkler systems)	Meets ULC/ORD-C199P
12.7-mm-thick pipe insulation	Meets ASTM C547. Products must be tested and approved by QAI Laboratories Inc. Consult Uponor Ltd. for a list of acceptable pipe insulations.
Cover jacketing	Meets ASTM C1136

### 4.2 Performance Requirements

In accordance with Article 3.1.5.19. of Division B of the NBC 2015, combustible piping and tubing are permitted to be used in a building required to be of noncombustible construction provided that, except when concealed in a wall or concrete floor slab, they have a flame-spread rating of not more than 25, and if used in a building described in Subsection 3.2.6., Additional Requirements for High Buildings, of Division B of the NBC 2015, they have a smoke-developed classification of not more than 50.

Tests to determine the flame-spread rating and smoke-developed classification were conducted in conformance with CAN/ULC-S102.2.

**Table 4.2.1 Results of Testing the Performance Requirements of the Product**

Property	Requirement	Result
Flame-spread rating	≤ 25	Pass
Smoke-developed classification	≤ 50	Pass
Firestop system rating	Certified to CAN/ULC-S115	F rating <sup>(1)</sup>

**Note to Table 4.2.1:**

- (1) Piping that penetrates a fire separation or a membrane forming part of an assembly required to have a fire-resistance rating must be sealed by a firestop system with an F rating of not less than the fire-protection rating required for closures in the fire separation in conformance with Table 3.1.8.4. of Division B of the NBC 2015. Firestop systems are listed with ULC and specify the corresponding F rating in accordance with CAN/ULC-S115.

## Report Holder

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## Plant(s)

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*It is the responsibility of the local AHJs, design professionals, and specifiers to confirm that the evaluation is current and has not been withdrawn or superseded by a later issue. Please refer to <http://www.nrc-cnrc.gc.ca/ccmc> or contact the Canadian Construction Materials Centre, Construction Research Centre, National Research Council of Canada, 1200 Montreal Road, Ottawa, Ontario, K1A 0R6. Telephone: 613-993-6189. Fax: 613-952-0268.*

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