CCMC CANADIAN CODE COMPLIANCE EVALUATION

CCMC EVALUATION

CCMC 14006-R

CCMC Canadian code compliance evaluation

CCMC number:	14006-R
Status:	Active
Issue date:	2015-01-06
Modified date:	2023-11-08
Evaluation holder:	**Aquatherm** 800 W 600 N Lindon UT 84042 United States Website: www.aquatherm.com Telephone: 801-805-6657 Email: technical@aquatherm.com
Product names:	• Aquatherm Blue Pipe®MF RP (RCT) • Aquatherm Green Pipe® • Aquatherm Green Pipe® MF
Compliance:	NBC 2015, NPC 2015
Criteria:	CCMC-TG-221116-15A, "CCMC Technical Guide for Domestic Water Piping"

In most jurisdictions this document is sufficient evidence for approval by Canadian authorities.
Learn more about CCMC recognition Look for the trusted CCMC mark on products to verify compliance.

Compliance opinion

It is the opinion of the Canadian Construction Materials Centre that the evaluated products, when used as an alternative solution for potable water and reclaimed water piping and piping for heating and cooling systems in accordance with the conditions and limitations stated in this evaluation, comply with the following codes:

National Building Code of Canada 2015

Code provision	Solution type
3.1.5.19. Combustible Piping Materials	Acceptable
3.1.9.1. Fire Stops	Acceptable
3.1.9.5. Combustible Piping Penetrations	Acceptable
3.1.12.1. Determination of Ratings	Acceptable
3.6.4.3. Plenum Requirements	Acceptable
6.5.1.1. Insulation and Coverings	Acceptable
6.7.1.1. Piping Materials and Installation	Acceptable

National Plumbing Code of Canada 2015

Code provision	Solution type
2.2.5.13 Polypropylene Pipe and Fittings	Acceptable
2.6 Potable Water Systems	Acceptable

The above opinion(s) is/are based on the evaluation by the CCMC of technical evidence provided by the evaluation holder, and is bound by the stated conditions and limitations. For the benefit of the user, a summary of the technical information that forms the basis of this evaluation has been included.

Product information

Product names

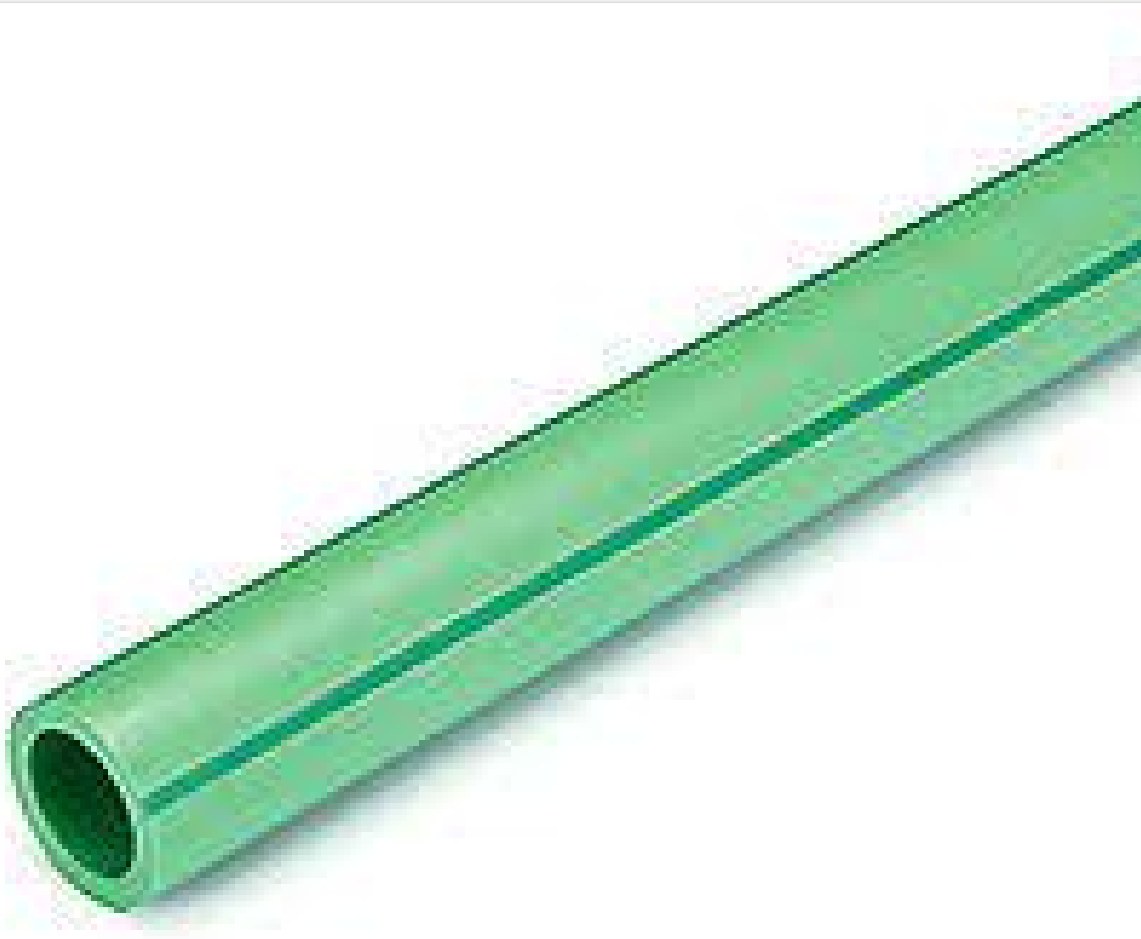
- Aquatherm Blue Pipe®MF RP (RCT)
- Aquatherm Green Pipe®
- Aquatherm Green Pipe® MF

Product description

The products are pipes made of random molecular length copolymer polypropylene PP-R or PP-RCT with a nominal diameter of between 20 mm and 630 mm (NPS-1/2 and NPS-24), as follows:

Table 1. Illustrations and applications of the products

Product name	Product image
Aquatherm Green Pipe®	 Figure 1. Aquatherm Green Pipe®

Product name	Product image
Aquatherm Green Pipe® MF [(1)]	 Figure 2. Aquatherm Green Pipe® MF

Product name	Product image
Aquatherm Blue Pipe®MF RP (RCT) [(1)]	 Figure 3. Aquatherm Blue Pipe®MF RP (RCT)

Notes:

1 The Aquatherm Green Pipe® MF and Aquatherm Blue Pipe®MF RP (RCT) products have a layer of glass fibre reinforcement. This layer of glass fibre-reinforced PP-R or PP-RCT (called the faser layer) minimizes the effects of expansion and contraction, and provides additional structural reinforcement. The illustrations of the different pipes and their applications are given in the following table.

Aquatherm Advanced is a system that must be insulated with a minimum 25.4 mm (1 in.) layer of mineral wool or glass fibre insulation to comply with the requirements of CAN/ULC-S102.2, “Test for Surface Burning Characteristics of Flooring, Floor Coverings, and Miscellaneous Materials and Assemblies.”

The insulation is approximately 25.4 mm (1 in.) thick with an all-service jacket that has a self-sealing adhesive strip on the inside edge. The insulation is applied by wrapping it longitudinally around the pipe. The single longitudinal seam is then taped on the outside using the self- sealing lap and quick-release butt strips provided as specified by the insulation manufacturer. The pipe may be wrapped on site or be supplied pre-wrapped. The finished pipe/insulation system is referred to as Aquatherm Advanced.

Figure 4. Aquatherm Blue Pipe®MF RP (RCT) with insulation for fire protection

Manufacturing plant

This evaluation is valid only for products produced at the following plant:

Product names	Manufacturing plant
	Attendorn, Germany
Aquatherm Blue Pipe®MF RP (RCT)	⊘
Aquatherm Green Pipe®	⊘
Aquatherm Green Pipe® MF	⊘

⊘ Indicates that the product from this manufacturing facility has been evaluated by the CCMC

Conditions and limitations

The CCMC's compliance opinion is bound by this product being used in accordance with the conditions and limitations set out below.

- The products must be installed in accordance with the current edition of the "Aquatherm Installer Manual."
- The supports and anchors for pipes in a heating or air conditioning system must be designed and installed to ensure that undue stress is not placed on the supporting structure.
- The products must have minimum temperature/pressure ratings that conform to CAN/CSA-B137.11.
- All accessories must be approved by the manufacturer for use with the Aquatherm Advanced pipe and fittings system.
- The products' labels and/or packaging must be clearly marked with the phrase "CCMC 14006-R."

Technical information

This evaluation is based on demonstrated conformance with the following criteria:

Criteria number	Criteria name
CCMC-TG-221116-15A	CCMC Technical Guide for Domestic Water Piping

The evaluation holder has submitted technical documentation for the CCMC evaluation. Testing was conducted at laboratories recognized by the CCMC. The corresponding technical evidence for the products is summarized below.

Material requirements

Table 2. Results of testing the material requirements of the products

Property	Requirement	Result
Pipe and fittings (for use in potable water and hydronic heating and cooling systems)	Meet requirements of CAN/CSA-B137.11	Pass
Glass fibre pipe insulation	Meet requirements of ASTM C 547 Insulation products must be tested and approved by a certification agency recognized by the CCMC. Consult with Aquatherm for a list of acceptable pipe insulations.	Pass

Performance requirements

In accordance with Article 3.1.5.19., Combustible Piping Materials, of Division B of the NBC 2015, combustible piping and tubing are permitted in a building required to be of noncombustible construction provided that, except when concealed in a wall or concrete floor slab, the products 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.

Table 3. Results of testing the material requirements of the products

Property	Requirement	Result
Pipe and fittings (for use in potable water and hydronic heating and cooling systems)	≤ 25	Pass
Glass fibre pipe insulation	≤ 50	Pass
Fire-stop system rating [(1)]	Certified to CAN/ULC-S115	F-rating

	Note
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 fire-stop 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., Fire Protection Rating of Closures, of Division B of the NBC 2015. Fire-stop systems are listed with ULC, UL and ITS, and specify the corresponding F-rating and pipe size in accordance with CAN/ULC-S115, "Fire Tests of Firestop Systems."

Administrative information

Use of Canadian Construction Materials Centre (CCMC) assessments

This assessment must be read in the context of the entire CCMC Registry of Product Assessments, any applicable building code or by-law requirements, and/or any other regulatory requirements (for example, the Canada Consumer Product Safety Act, the Canadian Environmental Protection Act, etc.).

It is the responsibility of the user to confirm that the assessment they are using is current and has not been withdrawn or superseded by a later version on the CCMC Registry of Product Assessments.

Disclaimer

The National Research Council of Canada (NRC) has evaluated only the characteristics of the specific product described herein. The information and opinions in this evaluation are directed to those who have the appropriate degree of experience to use and apply its contents (such as authorities having jurisdiction, design professionals and specifiers). This evaluation is valid when the product is used as part of permitted construction, respecting all conditions and limitations stated in the evaluation, and in accordance with applicable building codes and by-laws.

This evaluation is provided without representation, warranty or guarantee of any kind, expressed or implied, and the NRC provides no endorsement for any evaluated product. The NRC accepts no responsibility whatsoever arising in any way from any and all use of or reliance on the information contained herein or the use of any evaluated product. The NRC is not undertaking to render professional or other services on behalf of any person or entity nor to perform any duty owed by any person or entity to another person or entity.

Language

Une version française de ce document est disponible.
In the case of any discrepancy between the English and French version of this document, the English version shall prevail.

Copyright

CCMC recognition

The Canadian Construction Materials Centre (CCMC) assesses compliance with Canadian building, energy and safety codes. We are the only construction code compliance service supported and operated by the Government of Canada. Trusted by over 6,000 regulators across Canada.

> Most Canadian authorities having jurisdiction (AHJs) consider CCMC product assessments acceptable as evidence for product approval.

CCMC assessments are recognized by construction authorities across Canada:

Alliance of Canadian Building Official Associations (ACBOA)	(Alliance of Canadian Building Official Associations (ACBOA))
First Nations National Building Officers Association (FNNBOA)	(First Nations National Building Officers Association (FNNBOA))
Canadian Home Builders' Association (CHBA)	(Canadian Home Builders' Association (CHBA))
Alberta Building Officials Association (ABOA)	(Alberta Building Officials Associations (ABOA))
Saskatchewan Building Officials Association (SBOA)	(Saskatchewan Building Officials Association (SBOA))
Manitoba Building Officials Association (MBOA)	(Manitoba Building Officials Association (MBOA))
Ontario Building Officials Association (OBOA)	(Ontario Building Officials Association (OBOA))
New Brunswick Building Officials Association (NBBOA)	(New Brunswick Building Officials Association (NBBOA))
Nova Scotia Building Officials Association (NSBOA)	(Nova Scotia Building Officials Association (NSBOA))

> The CCMC provides code compliance assessments to Canadian code requirements, consulting nationwide with construction regulators to elicit regional variations in code requirements as well as provincial and local interpretations. Users are advised to review the technical information presented in CCMC assessments when making approval decisions. Learn more about how the CCMC provides a unique service for Canada.

For more information, contact the CCMC by phone at (613) 993-6189 or by email at ccmc@nrc-cnrc.gc.ca

NOTICE

The information presented on this webpage (in HTML format) is the most up-to-date information available from the CCMC about this assessment.

By downloading this PDF you acknowledge that:

- this PDF is intended for record-keeping purposes only,
- it represents the information as it was available at the time of downloading, and
- it may not reflect the latest available information at some future date.

References to this CCMC assessment (in product literature, on websites, etc.) must be made by linking to the evaluation webpage. **This PDF must not be used as a means of distributing this assessment to an audience.**

View PDF (Portable document format)

Code compliance as an acceptable solution

Code Compliance via Acceptable Solutions

> If a building design (e.g. material, component, assembly or system) can be shown to meet all provisions of the applicable **acceptable solutions** in Division B (e.g. it complies with the applicable provisions of a referenced standard), it is deemed to have satisfied the objectives and functional statements linked to those provisions and thus to have complied with that part of the Code.
>
> — **National Building Code of Canada, Sentence A-1.2.1.1.(1)(a)**

The CCMC has determined that compliance with this provision of the Code has been demonstrated as an **Acceptable Solution**. The evaluation report provides a summary of the basis of CCMC's compliance opinion.

CCMC's code compliance opinions

All CCMC evaluation reports are opinions of code compliance established in accordance with the National Building Code of Canada, Subsection 1.2.1. "Compliance with this Code," which requires compliance to be achieved by:

- complying with the applicable acceptable solutions in Division B, or
- using an alternative solution that will achieve at least the minimum level of performance required by Division B in the areas defined by the objective and functional statements attributed to the applicable acceptable solutions.

The CCMC assesses compliance with Canadian building, energy and safety codes, and is trusted by over 6,000 regulators across Canada.

Code compliance as an alternative solution

Code Compliance via Alternative Solutions

> Where a design differs from the acceptable solutions in Division B, then it should be treated as an "**alternative solution**." A proponent of an alternative solution must demonstrate that the alternative solution addresses the same issues as the applicable acceptable solutions in Division B and their attributed objectives and functional statements. However, because the objectives and functional statements are entirely qualitative, demonstrating compliance with them in isolation is not possible. Therefore, Clause 1.2.1.1.(1)(b) identifies the principle that Division B establishes the quantitative performance targets that alternative solutions must meet. In many cases, these targets are not defined very precisely by the acceptable solutions [...] Nevertheless, Clause 1.2.1.1.(1)(b) makes it clear that an effort must be made to demonstrate that an alternative solution will perform as well as a design that would satisfy the applicable acceptable solutions in Division B—not “well enough” but “as well as.”
>
> — **National Building Code of Canada, Sentence A-1.2.1.1.(1)(b)**

The CCMC has determined that compliance with this provision of the Code has been demonstrated as an **Alternative Solution**. The evaluation report provides a summary of the basis of CCMC's compliance opinion.

CCMC's code compliance opinions

All CCMC evaluation reports are opinions of code compliance established in accordance with the National Building Code of Canada, Subsection 1.2.1. "Compliance with this Code," which requires compliance to be achieved by:

- complying with the applicable acceptable solutions in Division B, or
- using an alternative solution that will achieve at least the minimum level of performance required by Division B in the areas defined by the objective and functional statements attributed to the applicable acceptable solutions.

The CCMC assesses compliance with Canadian building, energy and safety codes, and is trusted by over 6,000 regulators across Canada.