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Ontario

**Building Materials Evaluation
Commission**

**Commission d'évaluation des
matériaux de construction**

BMEC AUTHORIZATION: 15-01-375 CuraFlo Engineering Flow Lining System®

Date of Authorization: July 30, 2015

Date of Expiry¹: July 30, 2020

1. Applicant

CuraFlo Technologies LLC.
4035 E. Oasis Street
Mesa, Arizona USA 85215

Tel: 480 981-8495
Fax: 480 832-2125
Web: www.curaflo.com

2. Manufacturing Facility

CuraFlo Technologies LLC.
4035 E. Oasis Street
Mesa, Arizona USA 85215

Epoxy Manufacturer
Raven Linings Inc.
13105 E. 61st Unit A
Broken Arrow, Oklahoma USA 74012

3. Authorization

The CuraFlo Engineering Flow Lining System® is a non-destructive pipe restoration process using “CuraPoxy or CuraPoxy LS” epoxies that allow for the repair of copper, galvanized steel, and stainless steel potable water pipes.

The CuraFlo Engineering Flow Lining System® can repair pipes 12.7 mm (1/2”) to 100 mm (4”) in diameter.

The CuraFlo Engineering Flow Lining System® uses the CuraPoxy® and CuraPoxy LS® epoxies to coat the interior of existing, cleaned copper, stainless steel, and galvanized steel water supply systems. The existing pipes, which may be corroded, leaking or experiencing poor water flow, are first dried with pressurized hot air and thoroughly cleaned using a sandblasting technique that cleans away the debris and corrosion build up.

¹ This Authorization expires on the date shown. It is the responsibility of Authorization holders to make a complete application considering the time for review and complexity of the new application.

Reports and assessments provided by the Applicant demonstrate that if the CuraFlo Engineering Flow Lining System® is manufactured, designed, constructed, installed, and maintained in accordance with the manufacturer's instructions and limitations, and the specific terms and conditions stated in this authorization, the use of CuraFlo Engineering Flow Lining System® shall be deemed to not be a contravention Division B, Section 7.2. "Materials and Equipment" and Article 11.3.4.1. "Extension, Material Alteration or Repair" of Division B of the Building Code.

All other requirements pertaining to the construction and installation are subject to the requirements of the Building Code, and subject to the following terms and conditions contained below:

4. Specific Terms and Conditions

1. This authorization is valid only for CuraFlo Technologies LLC.'s CuraFlo Engineering Flow Lining System®;
2. The CuraFlo Engineering Flow Lining System® shall be installed by a minimum of two installers who are trained and approved by CuraFlo Technologies LLC.;
3. CuraFlo Engineering Flow Lining System® shall be installed in accordance with CuraFlo Technologies LLC's installation manuals:
 - a. "Commercial Technical Manual – Instructions for Structures Up to three (3) Stories" Version 2.0 0708, and
 - b. Commercial Technical Manual – Supplemental Instructions for Structures Up to Forty (40) Stories" Version 1.0 0307;
4. The CuraFlo Engineering Flow Lining System® shall use either CuraPoxy® or CuraPoxy LS®;
5. Certification to the standard ANSI/NSF-61 "Drinking Water System Components – Health Effects" for the CuraPoxy® and CuraPoxy LS® shall be maintained;
6. The CuraFlo Engineering Flow Lining System® shall only be used in copper, stainless steel or galvanized steel potable water pipes of sizes from 12.7 mm (1/2") in diameter to 100 mm (4") in diameter;
7. The CuraFlo Engineering Flow Lining System® shall not be used in hot water systems where the maximum water temperature may exceed 78°C;
8. Expansion compensators and / or expansion tanks shall be installed on the those hot piping systems lined, to prevent cracking of the CuraFlo Engineering Flow Lining System®;
9. The CuraFlo Engineering Flow Lining System® shall not be used in fire protection systems, such as standpipe and sprinkler systems;

10. Valves and reducers in the plumbing system shall not be lined CuraFlo Engineering Flow Lining System®;
11. Upon completion of the work or a segment of the work, the CuraFlo Engineering Flow Lining System® installation shall be tested in accordance with the provisions of Division B, Subsection 7.3.7. "Testing of Potable Water Systems" of Division B of Ontario's 2012 Building Code;
12. Non-removable stickers recording the following information shall be applied near the water shut off valve on each riser treated and at 6 m (20'-0") intervals of exposed piping;
 - (a) a name and telephone label - identifying CuraFlo Technologies LLC. as having treated the pipe and including the phone number to call for information,
 - (b) warning - that the pipe has been lined with an epoxy, and
 - (c) warning - not to solder and to use pressure fittings only; and
13. In addition to further documentation that may be requested, CuraFlo Technologies LLC shall provide completed copies of the following reports to the chief building official and the building owner for each installation:
 - (a) Flow test,
 - (b) Material Safety Data Sheet,
 - (c) Warranty certificate, and
 - (d) CuraPoxy® or CuraPoxy LS up-to-date certifications to ANSI/NSF-61.

5. General Conditions

1. The use of the CuraFlo Engineering Flow Lining System® as described in Section 3. and the Specific Terms and Conditions set out in Section 4 must comply with:
 - (a) the *Building Code Act, 1992*, (the "Act") as amended or re-enacted,
 - (b) except as specifically authorized herein, the Building Code as amended or remade, and
 - (c) all other applicable legislation.
2. A copy of this Authorization shall accompany each application for a building permit and shall be maintained on the site of the construction with the building permit.
3. The Applicant specified in Section 1. shall promptly notify the BMEC of:
 - (a) the failure of the Applicant to comply with any of the Specific Terms and Conditions set out in Section 4,
 - (b) the failure of the material, system or building design that is the subject matter of this Authorization to
 - (i) comply with any of the Specific Terms and Conditions set out in Section 4, or
 - (ii) provide a satisfactory level of performance in situ, or
 - (c) the occurrence of any of the events described in General Conditions 5.4.(a), (b), (e) or (f).

4. The BMEC may amend or revoke this Authorization at any time on its own initiative, or at the request of the Applicant specified in Section 1. Without restricting the foregoing, the BMEC may amend or revoke this Authorization where it determines that:
 - (a) any change has been made to:
 - (i) the name of the Applicant specified in Section 1,
 - (ii) the address or other contact name information of the Applicant specified in Section 1,
 - (iii) the ownership of the Applicant specified in Section 2,
 - (iv) the manufacturing facilities specified in Section 2,
 - (v) the material, system, or building design that is the subject matter of this Authorization, or
 - (vi) a test method relevant to this Authorization,
 - (b) the Applicant has failed to comply with any of the terms and conditions set out in this Authorization,
 - (c) in the opinion of the BMEC, the use of the material, system or building design authorized herein provides an unsatisfactory level of performance in situ,
 - (d) in the opinion of the BMEC, amendment or revocation of the Authorization is appropriate on the basis of potential danger to public health and safety,
 - (e) the *Act* or Building Code has been amended, re-enacted or remade in a manner relevant to this Authorization,
 - (f) this Authorization was issued on mistaken, false or incorrect information, or
 - (g) a revision of an editorial nature is appropriate.

Dated at Toronto this 30th day of July 2015

BUILDING MATERIALS EVALUATION COMMISSION

Edward Link, P.Eng
Chair, Building Materials Evaluation Commission

ATTACHED – “APPENDIX A - SUPPORTING INFORMATION”

Appendix A – Supporting Information

The following is a list of the documents that were submitted and reviewed, but were not limited to:

1. Report, LRI, “Curaflo Engineering Flow Lining Systems® “ Utilizing Curapox and Curapox LR®” Epoxy Pipe Lining for Non-Destructive Restoration of Domestic Water Supply Lines”, dated April 20, 2015;
2. Manufacturer’s Literature, Curaflo, “Curaflo Engineering Flow Lining System® - Products”, series CFSS0801004 © 2010 CuraFlo Inc.;
3. Manufacturer’s Literature, Curaflo, “Curaflo Company Profile – Fact Sheet”, series CFSS0801005 © 2010 CuraFlo Inc.;
4. Manufacturer’s Literature, Curaflo, “Curaflo Epoxy Product Line – Products”, series CFSS0801036 ©2010 CuraFlo Inc.;
5. Manufacturer’s Literature, Curaflo, “Curaflo’s Commitment to Quality and Safety - Fact Sheet”, series CFSS0801001 ©2010 CuraFlo Inc.;
6. Manufacturer’s Literature, Curaflo, “Curapoxy®”, undated, two pages;
7. Manufacturer’s Literature, Curaflo, “Epoxy Pipe Lining: Safe for Drinking Water - Fact Sheet”, series CFFS0801007 ©2010 CuraFlo Inc.;
8. Manufacturer’s Literature, Curaflo, “Moody Towers, University of Houston – Case Study”, series CFCS0801006 ©2010 CuraFlo Inc.;
9. Manufacturer’s Literature, Curaflo, “Radisson® Hotel Grand Rapids Riverfront Case Study”, series CFCS0801009 ©2010 CuraFlo Inc.;
10. Certificate of Listing, IAPMO Research and Testing, Inc., “Internal Pipe Epoxy Coating”, Void after date August 2015, File No. 4491, 3 pages;
11. Certificate of Listing, IAPMO Research and Testing, Inc., “Drinking Water System Components – Health Effects”, Void after March 2015, File No. N-4917, 2 pages;
12. Letter Approval, City of Los Angeles, “Research Report RR 5679” dated November 18, 2013;
13. Approval, NSF International, “ASTM F2831-13”, date August 14, 2012
14. List, ICC Evaluation Services, “ICC-ES PMG Listing: PMG-1057”, Effective Date February 1, 2014;
15. Test Report, Sherry Laboratories, “Laboratory Report: 2004100148 – Compression Test (ASTM D 695-02a)”, date reported 10/07/2004;
16. Test Report, Sherry Laboratories, “Laboratory Report: 2004100148 – Flexural Test (ASTM D 790-03)”, date reported 10/07/2004/;
17. Test Report, Sherry Laboratories, “Laboratory Report: 2004100148 – Tensile Test (ASTM D 638-03)”, date reported 10/07/2004;
18. Letter, Raven Lining Systems, dated April 6, 2015;
19. Test Report, CRT Laboratories, Inc. “IAMPO IGC 189-2003”, LWR No, 15851-R1, date July 9, 2004;
20. Test Report, NSF International, “QQ – Qualification Testing”, August 26, 2010;
21. MSDS Sheets, “CurafloPoxy® LS – Part A”, dated April 2015;
22. MSDS Sheets, “CurafloPoxy® LS – Part B”, dated July 1, 2007;
23. MSDS Sheets, “CurafloPoxy® – Part A”, dated April 2015;
24. MSDS Sheets, “CurafloPoxy® – Part B”, dated April 2015;
25. Manual, Curaflo®, “Commercial Technical Manual – Instructions for Structures Up to three (3) Stories” Version 2.0 0708;

26. Manual, Ridgid®, “Pipe Thawing Units: KT-190, K-200 Operator’s Manual”, edition 999-998-752.10 rev. A;
27. Certificate, IAPMO R&T, “ISO 9001:2008” Certificate Expiry 05/29/2017;
28. Warranty, CuraFlo®, “Warranty: Polo Club Condominiums”, March 30, 2015;
29. Letter Report, LRI, BMEC application No A 2015: Curaflo Response to BMEC questions dated June 4, 2015, LRU File 16453”, dated June 10, 2015, 3 pages;
30. Certificate of Listing, IAPMO Research and Testing, Inc., “Drinking Water System Components – Health Effects”, Void after date March 2016, 2 pages; and
31. Article, Forbes Magazine, “Majestically Scientific” Federal Study on BPA has Stunning Findings: So why in the Media Ignoring it”, dates July 2011, 3 pages.
32. Letter Report, LRI, BMEC application No A 2015: Curaflo Response to BMEC questions dated 02/07/15, LRU File 16453”, dated June 13, 2015, 2 pages;
33. Manual, Curaflo®, “Commercial Technical Manual – Instructions for Structures Up to Forty (40) Stories” Version 1.0 0307;