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TEST REPORT # **T1029-1**

DATE: August 18, 2015

CLIENT: **Hilti**
2360 Meadowpine Blvd.
Mississauga, ON
L5N 8C2
Contact: Larry Gartley

SAMPLE DESCRIPTION: 4 in. opening with nominal 1 in. steel penetrant fire blocked using Hilti CF-I XTW insulating foam sealant. See page 3 for full description.

SAMPLING PROCEDURES: See page 2 for the sampling procedure.

DATE OF RECEIPT: August 12, 2015

DATE OF TESTING: August 14, 2015

TESTING REQUESTED: **Testing to the requirements of the following criteria: Sentence 3.1.11.7 of the National Building Code of Canada (2010).**

TESTED RATING: 30-Minute Fire Resistance

TEST RESULTS: See Page 6 for the test results.

CONTENTS: Test Report Pages 1 through 7, Appendix A1 through A6

TESTING PERFORMED AT: QAI Laboratories Ltd., Coquitlam

Reported By

Scott Leduc, EIT
Project Manager

Reviewed By

Kevin Saito, P.Eng
Division Manager

Introduction:

This report documents the fire testing conducted by QAI Laboratories Ltd. for Hilti of a 4 in. opening with nominal 1 in. steel penetrant fire blocked using Hilti CF-I XTW insulating foam sealant. Testing was performed in accordance with Sentence 3.1.11.7 of the National Building Code of Canada (2010). The floor/ceiling assembly was evaluated for a 30-Minute Fire Resistance rating on August 14, 2015.

The CF-I XTW insulating foam sealant was submitted directly by the client. Samples were not independently selected for testing. The samples contained the ULC mark with certification number R13081 and lot number '21 4 2 632 7 5, 15:23:01'. The samples were received on August 12, 2015.

Sample Description:

Table 1: Assembly Description

Type:	Floor / ceiling penetration with fire blocking foam sealant.
Fire Blocking:	Hilti Extreme Weather CF-I XTW insulating foam sealant. The sealant was tooled flush with top and bottom surface of the floor / ceiling after the application. When the sealant had dried the expansion above and below the floor / ceiling surface was 5/8 in. to 3/4 in.
Floor / Ceiling:	Two nominal 2 in. x 12 in. SPF blocks cut to 14-1/2 in. The remainder of the assembly protecting the furnace opening consisted of a nominal 2 in. x 4 in. SPF stud frame, 5/8 in. plywood and 5/8 in. type X gypsum board.
Opening:	4 in. opening cut through both 2 in. x 12 in. wood blocks using a hole saw.
Penetrant:	Nominal 1 in. steel pipe with 0.133 in. wall thickness and an OD of 1.3 in. The pipe extended 12 in. below the surface of the floor / ceiling and 48 in. above. The bottom of the pipe with plugged using ceramic fiber insulation.
Maximum Annular Spacing:	2 in.

Test Results:

Flaming and Penetration

The Hilti CF-I XTW insulating foam sealant remained in place for entire 30 minute duration of the fire test. No flaming occurred on the unexposed face of the Hilti CF-I XTW insulating foam sealant, and no through penetrations or openings were observed during the fire test.

Conclusion:

QAI Laboratories Ltd., with lab facilities located in Coquitlam, British Columbia, performed testing in accordance with Sentence 3.1.11.7 of the National Building Code of Canada (2010), on a test assembly consisting of a 4 in. opening with nominal 1 in. steel penetrant fire blocked using Hilti CF-I XTW insulating foam sealant.

Test results relate only to those products tested under the test conditions specified in this test report. See Table 1 for a summary of the product description. The Hilti CF-I XTW insulating foam sealant successfully met the requirements outlined in sentence 3.1.11.7 of the National Building Code of Canada (2010) to be classified as a fire blocking material when installed as described in table 1.