



Western Fire Center, Inc.

2204 Parrott Way, Kelso, Washington 98626
Phone: 360-423-1400 | Fax: 360-423-5003 | Toll Free: 877-423-1401

**Testing of an Exterior Soffit
Assembly in Accordance with SFM
Standard 12-7A-3:
*Under Eave Test***

Soffited Eave Construction: LP[®] FlameBlock[™] Fire-Rated
OSB Sheathing with Cedar Cladding

WFCi Report No. 10085

Rendered to:

LP Corporation

TESTING COMPLETED ON: JULY 20, 2010

REPORT ISSUED ON: JULY 21, 2010

TABLE OF CONTENTS

INTRODUCTION.....	3
TEST METHOD	4
SAMPLE DESCRIPTION.....	5
TESTING	6
TEST CONCLUSION AND EXTENSION OF DATA.....	7
SIGNATURE.....	7
APPENDIX A: CONSTRUCTION AND TEST PICTURES	8

INTRODUCTION

This report documents the CSFM 12-7A-3 testing of a representative exterior soffit eave assembly constructed with LP[®] FlameBlock[™] fire-rated OSB sheathing and cedar cladding.

Wayne Beres of WFCi conducted the tests with the assistance of Mike White.

The purpose of this test was to evaluate the fire test performance characteristics of the client's FlameBlock fire-rated OSB sheathing covered with cedar cladding when subjected to the SFM 12-7A-3 standard fire exposure conditions in order to demonstrate conformity with Chapter 7A, Paragraph 704A.2.3 of the 2007 California Building Code.

This testing was designed to cover what is deemed to be an example of a 'severe-case' eave assembly condition employing the use of cedar ceiling cladding over the LP FlameBlock OSB sheathing product. The cladding selected for inclusion in this assembly was selected as representative of the most vulnerable solid wood cladding thickness and width in order to produce a testing condition covering a variety of cedar and redwood claddings. The test results reported herein are judged to be applicable to cedar and redwood solid wood ceiling product patterns of greater widths and thicknesses.

TEST METHOD

Testing was performed in accordance with SFM Standard 12-7A-3. The test assembly setup is depicted in Figure 1 below.

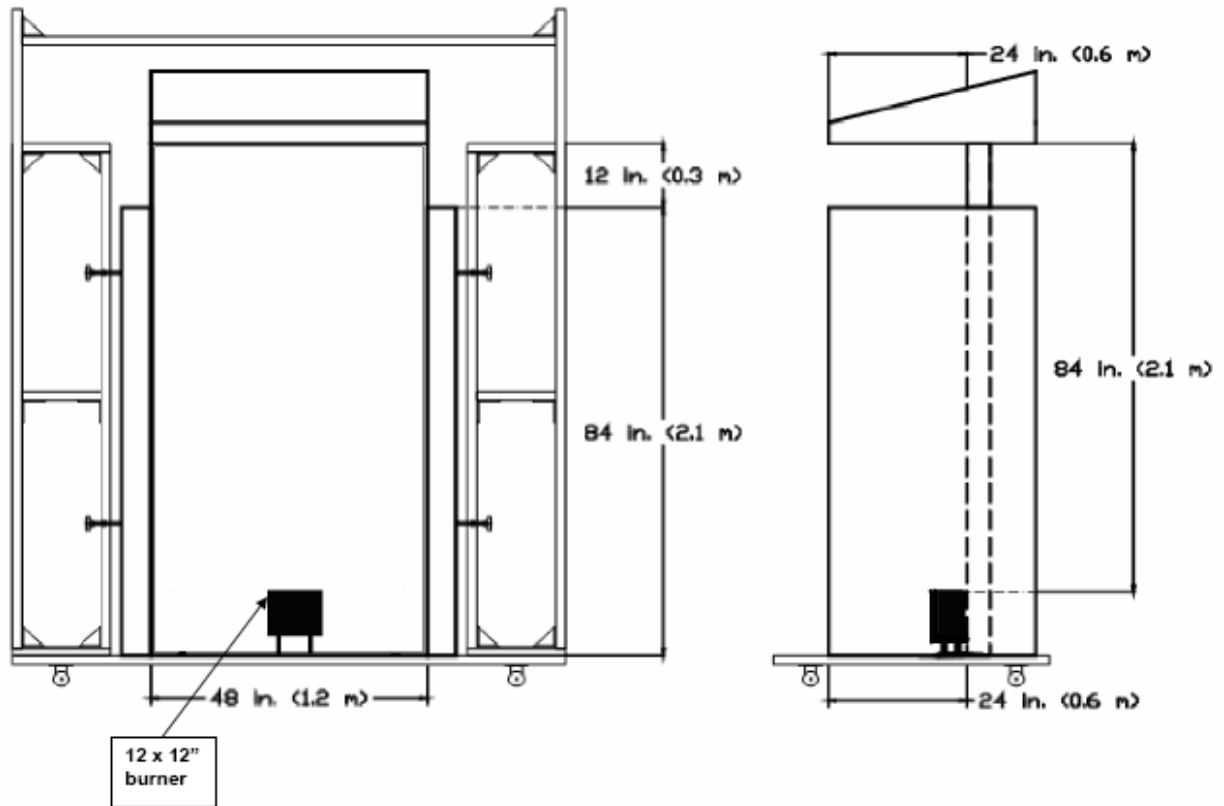


Figure 1. Under Eaves Test Assembly

1. **Eaves fabrication.** The 4-ft wide x 2-ft. (1.2-m x 0.6 m) test specimen shall be constructed to fit into a 4-ft (1.2 m) wide space at the top of the test fixture described in SFM 12-7A-1. Normal eave framing, joints in soffit material, and other typical features present in the constructed assembly were present in the test specimen.

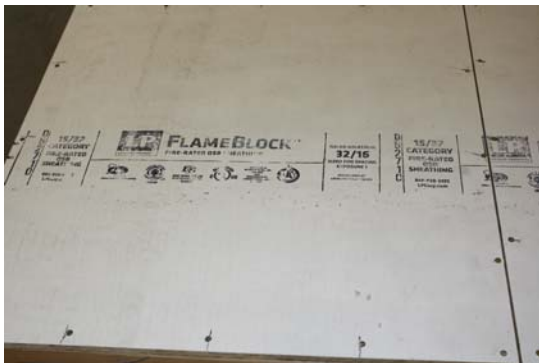
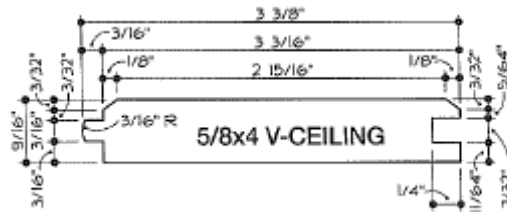
2. **Test Fixture.** The test fixture shall be as described in SFM 12-7A-1, with the exception that the top soffit projection of the fixture is modified to facilitate installation and removal of eave assemblies. Gypsum board (or equivalent) is used to create a noncombustible wall surface in the 4 x 8 ft. opening in the wall test fixture.

3. **Eaves assembly.** Fit the eave assembly into the test module so that the horizontal surface of the assembly is 84 in. (2.1 m) from the top of the burner.

SAMPLE DESCRIPTION

The 2' x 4' eave assemblies with FlameBlock base sheathing and clear cedar 5/8x4 v-ceiling T&G soffit cladding were constructed at the WFCi laboratory in the manner shown in the photographs below and Appendix A, and were prepared in accordance with the test method and industry practice.

- **Soffited eave base layer: Labeled LP FlameBlock™ Fire-Rated OSB sheathing, 15/32" minimum nominal thickness (reference ICC ESR-1365)**
 - Pyrotite applied to one face of OSB sheathing [exposed (fire) side]
 - 1/8" gap at joist nailer
- **Soffit Cladding: Cedar 5/8x4 v-ceiling**
 - Blind nailed
 - The 5/8x4 v-ceiling pattern (reference WPA G16 Standard Patterns booklet) represents the narrowest and thinnest dimension solid wood ceiling cladding pattern typically available, and was selected (based on previous test experience) as representative of a potential 'severe case' solid wood cladding application.



Assembly photographs

TEST RESULTS

Testing was commenced and completed on July 20, 2010. Prior to testing and without the eaves assembly in place, the output of the 12x12" burner was adjusted to the 300kW heat output at a gas flow of 1000 scfm. The moisture content of the wood framing and cladding was determined to be 8 to 9% at the time of testing.

Test	Result	Notes
Test 1	Pass- no signs of flame-through or glow on unexposed side	Surface flaming out at 13 minutes, all glowing combustion (surface) ceases at 15 minutes, test terminated at 40 minutes, no signs of charring on unexposed side
Test 2	Pass- no signs of flame-through or glow on unexposed side	Surface flaming out at 13 minutes, all glowing combustion (surface) ceases at 32 minutes, test terminated at 40 minutes, no signs of charring on unexposed side
Test 3	Pass- no signs of flame-through or glow on unexposed side	Surface flaming out at 15minutes, all glowing combustion (surface) ceases at 21 minutes, test terminated at 40 minutes, no signs of charring on unexposed side

Evidence of structural failure was not observed in any of the three test replicates

TEST CONCLUSION AND EXTENSION OF DATA

CSFM 12-7A-3 Conditions of Acceptance:

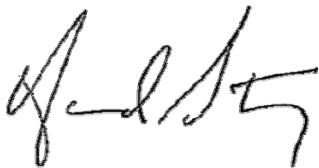
1. *Absence of flame penetration of the eaves at any time.*
2. *Absence of structural failure of the eaves subassembly at any time.*
3. *Absence of sustained combustion of any kind at the conclusion of the 40-min test.*

The exterior eave assembly construction described in this report successfully met the conditions of acceptance specified in SFM 12-7A-3, and therefore conforms to the requirements of Section 704A, Paragraph 704A.3.1 of the 2007 California Building Code.

- The test results presented in this report are judged to be applicable to clear cedar and redwood ceiling cladding products of equal or greater thickness and width.

SIGNATURE

Reviewed and approved,



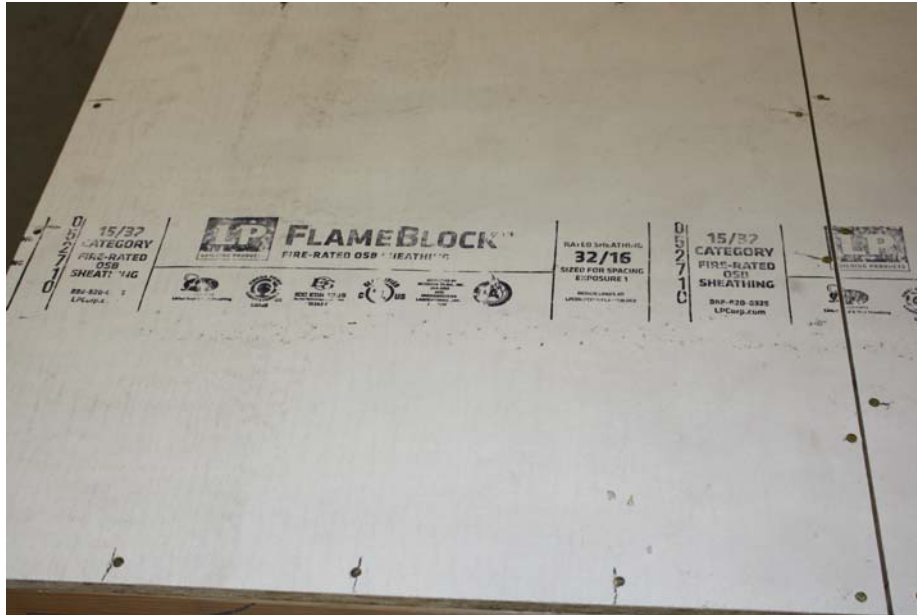
Howard Stacy, VP
Director, Testing Services

**WESTERN FIRE CENTER AUTHORIZES THE CLIENT NAMED HEREIN TO
REPRODUCE THIS REPORT ONLY IF REPRODUCED IN ITS ENTIRETY**

The test specimen identification is as provided by the client and WFCi accepts no responsibilities for any inaccuracies therein. WFCi did not select the specimen and has not verified the composition, manufacturing techniques or quality assurance procedures.

APPENDIX A: CONSTRUCTION AND TEST PICTURES from a Representative Test

FlameBlock Exterior Soffit Testing
WFCi PN# 10087



FlameBlock Exterior Soffit Testing
WFCi PN# 10087



FlameBlock Exterior Soffit Testing
WFCi PN# 10087



FlameBlock Exterior Soffit Testing
WFCi PN# 10087



FlameBlock Exterior Soffit Testing
WFCi PN# 10087

