

INCHCAPE TESTING SERVICES
Warnock Hersey

TEST REPORT

CLIENT

B.C. Shake & Shingle Association
9414A - 288 St.
Maple Ridge, B.C.
Canada V2X 8Y6

PRODUCT TESTED

CERTI-SPLIT
Handsplit Red Cedar Shakes

TESTING CONDUCTED

DADE COUNTY BUILDING CODE COMPLIANCE OFFICE
Test Procedure For Wind And Wind Driven Rain Resistance of Discontinuous Roofing Systems
(Protocol PA 100-95)

REPORTED BY

INCHCAPE TESTING SERVICES NA LTD.
WARNOCK HERSEY PROFESSIONAL SERVICES LTD.
211 SCHOOLHOUSE STREET
COQUITLAM, B.C.
V3K 4X9

REPORT NO: 488-5013-B

REPORT DATE: March 27, 1996

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INTRODUCTION

At the request of the B.C. Shake & Shingle Association, Inchcape Testing Services, NA Ltd. Has conducted Wind Driven Rain testing on CERTI-SPLIT Handsplit Red Cedar Shakes in accordance with the **DADE COUNTY BUILDING CODE COMPLIANCE OFFICE** **PROTOCOL PA 100-95** *Test Procedure for Wind and Wind Driven Rain Resistance of Discontinuous Roof Systems.*

Samples used for testing were submitted by the client on March 26, 1996.

The Wind Driven Rain test was conducted on March 27, 1996 at Inchcape Testing Services NA, Coquitlam.

The test project was supervised by Mr. Stephen J. Emerman (P.E. Florida) a Professional Engineer who resides in Vancouver, British Columbia. (See credentials in Appendix A).

CONCLUSION

The "CERTI-SPLIT" roof system endured the PA-100 test method for the full test duration without loss of any shakes or any shakes blowing upward without reseating.

No water infiltrated through the sheathing and the test sample remained in sound structural condition throughout and after testing.

Product Description:

Manufacturer: S & W Forest Products Ltd.
9486 288th Street
Maple Ridge, B.C.
Canada V2X 8Y6

Product Name: CERTI-SPLIT

Description: Handsplit red cedar shakes

Dimensions: Length:.....24 ½ inches
Width:.....from 11¼ inches to 4 inches

Thickness: Butt end¾ inches
Thin end.....3/16 inches

Underlayment Description:

Manufacturer: Hal Industries, Inc.
9681 - 187th Street
Surrey, B.C.
Canada V3T 4W2

Product Name: # 30 Asphalt Felt

Description: Asphalt saturation felt for roofing underlayment

Dimensions: Width.....36 inches
Length.....72 feet
Area.....216 ft²

Thickness: 0.05 inches

Weight/sq. 19.2 lbs/sq.

Edge metal: 1 ½ inch x 1 ½ inch edge metal
Thickness.....0.0125 inches
Material:Galvanized sheet metal

Valley Flashing: 28 gauge galvanized steel sheet metal
Width.....22-inch

Fasteners: Two 6d hot dipped galvanized common nails were used per shake. The nails were spaced within ¾" to 1" from the edges of each shake, and placed 1 ½" to 2" above the butt line of the next course (which will overlay it).

TEST DECK CONSTRUCTION DETAILS

The test deck was constructed in compliance with the specifications of the PA 100-95 test protocol.

Test Deck Description:

The test deck was constructed by Inchcape Testing Services NA Ltd. On March 25 and March 26, 1996.

The deck frame was constructed using 2x6 Douglas Fir lumber and nailed together using 3¼-inch galvanized nails. Spacing of roof joists was 24 inch on center.

Application of the roof system was conducted by Mr. Martin L. Obando, the director of Application Specifications for the Cedar Shake & Shingle Bureau, on March 26 and March 27, 1996, under the supervision of Inchcape Testing Services NA personnel responsible for conducting the testing.

Sheathing used for the test was APA 32/16 span rated sheathing (thickness 15/32 inches). The sheathing was attached with 8d common nails at 6 inches on center for panel edges and at 12 inches on center for intermediate supports. One valley was constructed into the test deck as prescribed by the PA 100-95 Protocol.

Underlayment:

Underlayment was installed in compliance with the manufacturer's published installation instructions and in compliance with the South Florida Building Code 3403.5(b)(I). The underlayment was nailed through "tin caps" in a 12-inch grid with 6 inch spacing at the overlap.

Slope of test deck:

The test deck was set at a slope of 4 in 12 with the exposed edge downwind from the wind generator.

Apparatus used:

The wind was generated using a specially constructed apparatus with the wind directly through a series of grids to create a laminar flow wind. The apparatus was set up to produce winds varying from 35 mph to 110 mph in predetermined intervals as prescribed in the PA 100-95 test protocol.

CONDITIONING

The system tested is a mechanically attached, rigid, discontinuous system, and therefore does not require conditioning, as specified in paragraph 8 of the PA 100-95 test protocol.

TESTS AND TEST RESULTS

Test conditions:

Rainfall: 8.8 inches per hour

Roof Pitch: 4 in 12

Ambient Temperature: 58 degrees F

Wind speed intervals

Interval #	Wind Speed (mph)	Time (min)	Observations
1	35	15	No observable damage or loosening of shakes
2	0	10	No leaking or observable structural damage
3	70	15	No observable damage or loosening of shakes
4	0	10	No leaking or observable structural damage
5	90	15	No observable damage or loosening of shakes
6	0	10	No leaking or observable structural damage
7	110	5	No observable damage or loosening of shakes
8	0	10	No leaking or observable structural damage

Water flow was introduced in conjunction to the windstream simultaneously with the windspeed intervals.

POST TEST OBSERVATIONS

The test deck was inspected immediately after the test for any signs of damage to the panels. The underside of the deck was photographed. The test deck was dismantled, and a posttest inspection conducted.

Tested by: Michael Hayton, Testing Technician, Building Services

Supervised by: Lawrence Gibson, Branch Manager

Reviewed by: Steven J. Emerman (P.E. Florida)