

# SOUTHWEST RESEARCH INSTITUTE

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DEPARTMENT OF FIRE TECHNOLOGY

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## BURNING BRAND TEST ANSI/ASTM E108-78 FIRE TESTS OF ROOF COVERINGS

Project No.: 01-5849-272c  
Sponsor: AmDal Chemical Corporation P.O.  
Box 31707  
Dallas, Texas, 75231

Report Date: October 3, 1980 Date  
Material Received:  
May 22, 1980  
Date of Test: September 23, 1980

### TEST PROCEDURE

A test deck was mounted on the framework and the blower adjusted to produce an air current of 12 mph. The test deck was located 60 inches (1.52 m) from the air outlet duct. The gas burner was removed. The air current was maintained throughout the test.

The Class C test brands consisted of lumber 1-1/2 x 1-1/2 in. (38.1 x 38.1 mm) square and approximately 25/32 in. (19.85 mm) thick made of dry OOL,;glas fir lumber, free of knots and pitch pockets. Twenty-five nominal 1-1/2 x 1-1/2 x 25/32-in. pieces were used for the test. Each brand had a 1.8-in. (3-mm) kerf sawed to one-half depth at the center with the kerf on each flat side rotated 90° from the opposite side kerf. The dry weight of the finished brands was 50 ± 5 g.

The test brands were exposed to a burner flame for 2 minutes, during which time they were rotated' so as to present each 1-1/2 x 1-1/2-in. (38 x 38-mm) surface to the flame for 1:00 minute.

A brand was placed on the surface of the test deck 12 in. from the bottom edge of the deck and 6 in. from the side. The brands were placed so that the kerf in contact with the test deck was parallel to the direction of air flow. Each consecutive brand was applied 1:00 minute after placement of the preceeding brand and was symmetrically located until all 25 brands were placed onto the test deck. The brands were secured in place by an 18-gauge wire stretched across the shingle course and secured on the sides.

Each test was continued until the brand was totally consumed and all evidence of flame, glow, and smoke disappeared from both the exposed surface of the material being tested and the underside of the test deck.

### TEST SPECIMENS

The test decks were 3-1/3 ft (1.0 m) wide x 4-1/4 ft (1.30 m) long. Nominal 1 x 4-in. No. 2 white pine planks, 3-1/3 ft (1.0 m) long, spaced 2 in. (50.8 mm) apart were securely nailed to two nominal 2 x 4-in. No.2 construction grade wood battens located under and flush with the outer edges of the deck. The wood shingles were nailed to the wood substrate. A 6-1/2-in. (16.51-cm) length of exposed shingle surface was used in constructing the test decks.



FILE REPORT FOR THE MONTH OF JANUARY 1981. THE REPORT IS AVAILABLE FROM THE NATIONAL BUREAU OF STANDARDS, 400 MICHIGAN AVENUE, WASHINGTON, D.C. 20540. THE REPORT IS AVAILABLE FROM THE NATIONAL BUREAU OF STANDARDS, 400 MICHIGAN AVENUE, WASHINGTON, D.C. 20540. THE REPORT IS AVAILABLE FROM THE NATIONAL BUREAU OF STANDARDS, 400 MICHIGAN AVENUE, WASHINGTON, D.C. 20540.

SAN ANTONIO, HOUSTON, TEXAS, AND WASHINGTON, D. C.

OCT 9 1980

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ACCEPTANCE REQUIREMENTS

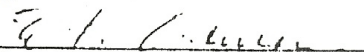
In the spread of flame test, no flying, flaming brands, nor particles that continue to glow after reaching the floor may be produced. Flaming shall not have spread to the top of the test deck. There shall be no significant lateral spread of flame from the path exposed to the flame.

ACCEPTANCE LEVEL

Class A \_\_\_\_\_  
Class C  X

ClassB  
Unacceptable

Reported by:

  
Eugene L. Anderson  
Senior Research Engineer  
Special Projects

FLAME SAFE CHEMICAL CORPORATION