

SOUTHWEST RESEARCH INSTITUTE

6220 CULEBRA ROAD • POST OFFICE DRAWER 28510 • SAN ANTONIO, TEXAS, USA 78228-0510 • (512) 684-5111 • TELEX 244846

CHEMISTRY AND CHEMICAL ENGINEERING DIVISION
DEPARTMENT OF FIRE TECHNOLOGY FAX (512)
522-3377

September 15, 1992

Weyerhaeuser Paper Company
P.O. Box 8690
Jackson, Mississippi 39204

Attn: Mr. Sidney Jamshed

Re: SwRI Project No. 01-4510-629 FINAL REPORT
"Test for Surface Flammability of Materials Using a Radiant Energy
Source (ASTM E162-90)"

Gentlemen:

This letter constitutes our final report on your fire-retardant treated cardboard submitted for evaluation by the referenced test method.

The results apply specifically to the specimens tested, in the manner tested, and not to the entire production of these or similar materials, nor to the performance when used in combination with other materials. All test data are on file and are available for review by authorized persons.

TEST OBJECTIVE AND PROCEDURE

The procedures followed in this test cover the Surface Flammability of Materials as outlined in the standard test procedure. They shall be used solely to define the properties of materials in response to heat and flames under controlled laboratory conditions. The results shall not be used as measures of fire hazards under actual fire conditions, but only for research and development purposes. The test defines the ignition properties and the rate of heat release which are combined to provide a Flame Spread Index.

Test specimens are preconditioned at 140°F (60°C) for 24 hours followed by stabilization at 70°F (21°C) and 50-percent relative humidity. The 6 x 18in. (0.15 x 0.46-m) specimen is affixed in a metal frame and the assembly is placed in front of the 12 x 19-in. (0.31 x 0.48-m) radiant panel at an inclined angle (30°)--being closer, 4.75 in. (0.12 m), at top. A 2- to 3-in. pilot flame impinges on the uppermost area of the specimen and flame propagation advances downward on the specimen. Observations such as dripping, cracking, delamination and distortion are noted and recorded. The Flame Propagation Factor (Fs), Heat Release Factor (Q) and Flame Spread Index (Is) are calculated using incremental flame front propagation rates and predetermined radiant panel characterization formulae ($Is = Fs \times Q$).



This report is for the information of the client and may be used in its entirety for the purpose of securing product acceptance from duly constituted approval authorities. Neither this report nor the name of the Institute shall be used in publicity or advertising.

SAN ANTONIO, TEXAS

HOUSTON, TEXAS • DETROIT, MICHIGAN •

WASHINGTON, DC

Weyerhaeuser Paper Company
SwRI Project No. 01-4510-629
September 15, 1992
Page 2

ASTM E162-90 Test Method

MATERIAL DESCRIPTION

Date Received: August 27, 1992
Trade Name*: Not available
Identification*: None
Color*: Brown
Treatment*: The Client provided the following information:

42-lb Liner: Papersafe 7030 P108 at 12 lbs;
36-lb Medium: Papersafe 7030 108 at 7 lbs

* From Client's Material Description Sheet

PREPARATION AND CONDITIONING

Preparation: None other than conditioning required
Conditioning Time: 24 hours at 140°F, followed by 2 days at 70°F and 50% relative humidity

TEST DATA

Date of Test: September 11, 1992
Mounting Procedure: the specimen was removed from the conditioning chamber and mounted in the specimen holder with either side exposed. A 6 x 18-in. sheet of 1-in. hexagonal steel wire mesh, 20 to 22 AVG, was placed against the exposed face of the specimen. A sheet of 0.25-in. thick inorganic cement board, wrapped around the back and edges with aluminum foil with the bright side facing the specimen, was used to back the specimen. A retaining rod was used to secure the specimen in place.

Specimens Tested: 4
Exposure Time: 15 minutes

All data remains on file and is available to authorized personnel.

CALIBRATION CONSTANTS

Maximum stack temperature, of (°C) C	453.2
(arbitrary constant)	(234.0) 5.7
Beta Factor (°C/kV)	27.15

Weyerhaeuser Paper Company
SWRI Project No. 01-4510-629
September 15, 1992
Page 3

ASTM E162-90 Test Method

TEST RESULTS

Fs = Flame Spread Factor
Q = Heat Evolution Factor
Is = Flame Spread Index

	<u>Run 1</u>	<u>Run 2</u>	<u>Run 3</u>	<u>Run 4</u>	<u>Average</u>
Fs	6.16	2.75	4.03	6.71	4.91
Q	2.52	1.68	1.68	2.94	2.21
Is	15.52	4.62	6.77	19.73	11.66

OBSERVATIONS

Ignition occurred approximately 5 seconds into each run, with long flames reaching up into the stack. No flaming drip or running was observed.

Sincerely,

Hladys M. Finley
Project Leader
Fire Testing Services
GMF/rr

Alex B. Wenzel

*Alex B. Wenzel
Director
Department of Fire Technology