



FIRE Retardants Inc.TM

The Decision You Make May Save A Life!

123 Columbia Court North • Suite 201 • Chaska, MN 55318

952-448-7377 • FAX: 952-448-2613

Fire Retardant "HOT LINE" 1-800-913-9385

e-mail: info@fireretardantsinc.com

Visit Our Web Site at www.fireretardantsinc.com

SOUTHWEST RESEARCH INSTITUTE

POST OFFICE DRAWER 28510

8220 CULEBRA ROAD

SAN ANTONIO, TEXAS 78284

(512) 884-8111

DEPARTMENT OF
FIRE TECHNOLOGY

TWX: 910-871-1084

IEEE-383 STANDARD FOR THE TYPE OF CLASS IE
ELECTRIC CABLES, FIELD SPLICES, AND CONNECTIONS
FOR NUCLEAR POWER GENERATING STATIONS FIRE
EVALUATIONS OF ELECTRICAL CABLES COATED WITH
BURN BARRIERTM MASTIC NO. 70 AND NO. 77

FINAL REPORT

SwRI PROJECT NO. 01-8303-413-a

AUGUST 1985

Prepared for:

Fire Retardants Inc.
123 Columbia Court North, Suite 201
Chaska, MN 55318

By:

Eugene I. Anderson
Senior Research Engineer
Fire Performance

Reviewed by:

Jesse J. Beitel
Manager
Fire Performance
Evaluations and Fire
Protection Systems

Approved by:

Dr. Gordon E. Hartzell
Director, Fire Technology
for
Dr. Robert E. Lyle
Vice President, Chemistry
and Chemical Engineering



This report is for the information of the Sponsor. It may be used unit, entirety for the purpose of securing product acceptance, from duly constituted approval authorities; however, this report or the name of the Institute shall not be used in publicity or advertising.

SAN ANTONIO, TEXAS

WITH OFFICES IN HOUSTON TEXAS, AND WASHINGTON, D.C.

3 in. from the burner face and 1-1/2 in. above the centerline of the burner varied from 1500° to 1750°F, averaging 1600° to 1650°F.

TEST RESULTS

The results from the tests are summarized in Table 1. As shown in this summary, all cable samples exhibited flame retardant properties. No flaming of the cable outside the flame contact zone was observed. All cable samples self-extinguished prior to the end of the test. There was no after flame above the flame contact zone in either test.

TABLE I. SUMMARY OF TEST RESULTS

Sample No.	Test No.	Afterburn Time, min:s	Distance of Jacket Damage Above Burner	Distance of Conductor Damage Above Burner
77	1	None	24 in.	24 in.
70	2	None	24 In.	24 in.

The cables as tested meet the criteria for acceptance as specified in paragraph 2.5.2 and 2.5.5 of “IEEE Standard for Type Tests of Class IE Electrical Cables, Field Splices, and Connections for Nuclear Power Generating Stations,” April 15, 1974.

Observations on the progress of the burn are given in Appendix B.

Fire Retardants Inc.
SwRI Project No. 01-8303-413-a
Test Material: No 77 Mastic
Test No. 1
Test Date: August 8, 1985

TIME
(min:s)

OBSERVATIONS

0:00	Ignition of the burner
1:00	Flames up 4 ft.
3:00	Very little smoke Flames flashing up to 4 ft.
8:00	No change
9:00	Flames flashing to 4 ft. above the floor
13:30	flames receding to 3 ft above the floor
17:00	The material exposed the flame is not contributing to the fire
20:00	Burner off END OF TEST

DAMAGE ASSESSMENT

Jacket and wire damaged 24 in. above flame contact zone. No damage to jacket, coating or wire above 4 ft from the base of the cable tray.

Fire Retardants Inc.
SwRI Project No. 01-8303-413-a
Test Material: No 70 Mastic
Test No. 2
Test Date: August 8, 1985

TIME
(min:s)

OBSERVATIONS

0:00	Ignition of the burner
1:00	Flames up 4-1/2 ft above the floor
5:30	Flames flashing up 4 to 4-1/2 ft. Light smoke
12:00	Flames flashing up 4 ft. No smoke
17:00	Flames receded slightly The insulation on the cables does not appear to be contributing to the fire
20:00	Burner off END OF TEST

DAMAGE ASSESSMENT

Jacket and wire damaged 24 in above flame contact zone. No damage to jacket, coating or wire above 4 ft from the base of the cable tray.