

Surface Burning Characteristics

FLAME SPREAD INDEX

0

FSI

SMOKE-DEVELOPED INDEX

100

SDI

RATING OUTCOME

Class A

Interior finish category

TEST REQUESTED

To determine the flame spread index (FSI) and smoke-developed index (SDI) of the sample’s surface burning characteristics when it is subjected to the conditions of specified ASTM E84-15a “Standard Test Method for Surface Burning Characteristics of Building Materials”.

SAMPLE DETAILS AND MOUNTING METHODS

Sample description	FRP MOLDED GRATING
Color / Density	Grey
Exposed face	The front surface
Mounting methods	The specimen was self-supporting and placed directly on the inner ledges of the tunnel.
Specimen assembly	4 pieces of 550 mm wide × 1800 mm long × 38 mm thickness; sections joined end-to-end.

TEST RESULT

Indicator	Reported result
FSI	0
SDI	100

CLASSIFICATION

Since the tested sample received a Flame Spread Index of 0 and a Smoke Developed Index of 100, it would meet the requirement of Class A interior wall and ceiling finish category.

Test Method and Observations

TEST CONDUCTED AND INTRODUCTION

This test was conducted in accordance with ASTM E84-15a Standard Test Method for Surface Burning Characteristics of Building Materials.

The method is designed to determine the relative surface burning characteristics of materials under specific test conditions. Results are expressed in terms of flame spread index (FSI) and smoke developed index (SDI). The purpose of this method is to determine relative burning behavior by observing flame spread along the specimen. Flame spread and smoke developed index are reported; however, there is not necessarily a relationship between these two measurements.

TEST PROCEDURE

The tunnel is preheated to 150°F, as measured by the floor-embedded thermocouple located 23.25 feet downstream of the burner ports, and allowed to cool to 105°F, as measured by the floor-embedded thermocouple located 13 feet from the burners. The tunnel lid is then raised and the test sample is placed along the ledges of the tunnel to form a continuous ceiling 24 feet long, 12 inches above the floor. Upon ignition of the gas burners, the flame spread distance is observed and recorded every 15 seconds. Flame spread distance versus time is plotted ignoring any flame front recessions.

CONDITIONING AND CLASSIFICATION BANDS

Prior to testing, the sample was conditioned to a constant weight at a temperature of 73.4±5°F (23±2.8°C) and at a relative humidity of 50±5%.

Classification	Class A	Class B	Class C
Flame Spread Index	0–25	26–75	76–200
Smoke-developed Index	0–450	0–450	0–450

Observation	Reported value
Time to ignition (sec)	---
Time to Max. FS (sec)	---
Maximum FS (feet)	0

Graphical Results and Photo Appendix

GRAPHICAL RESULTS

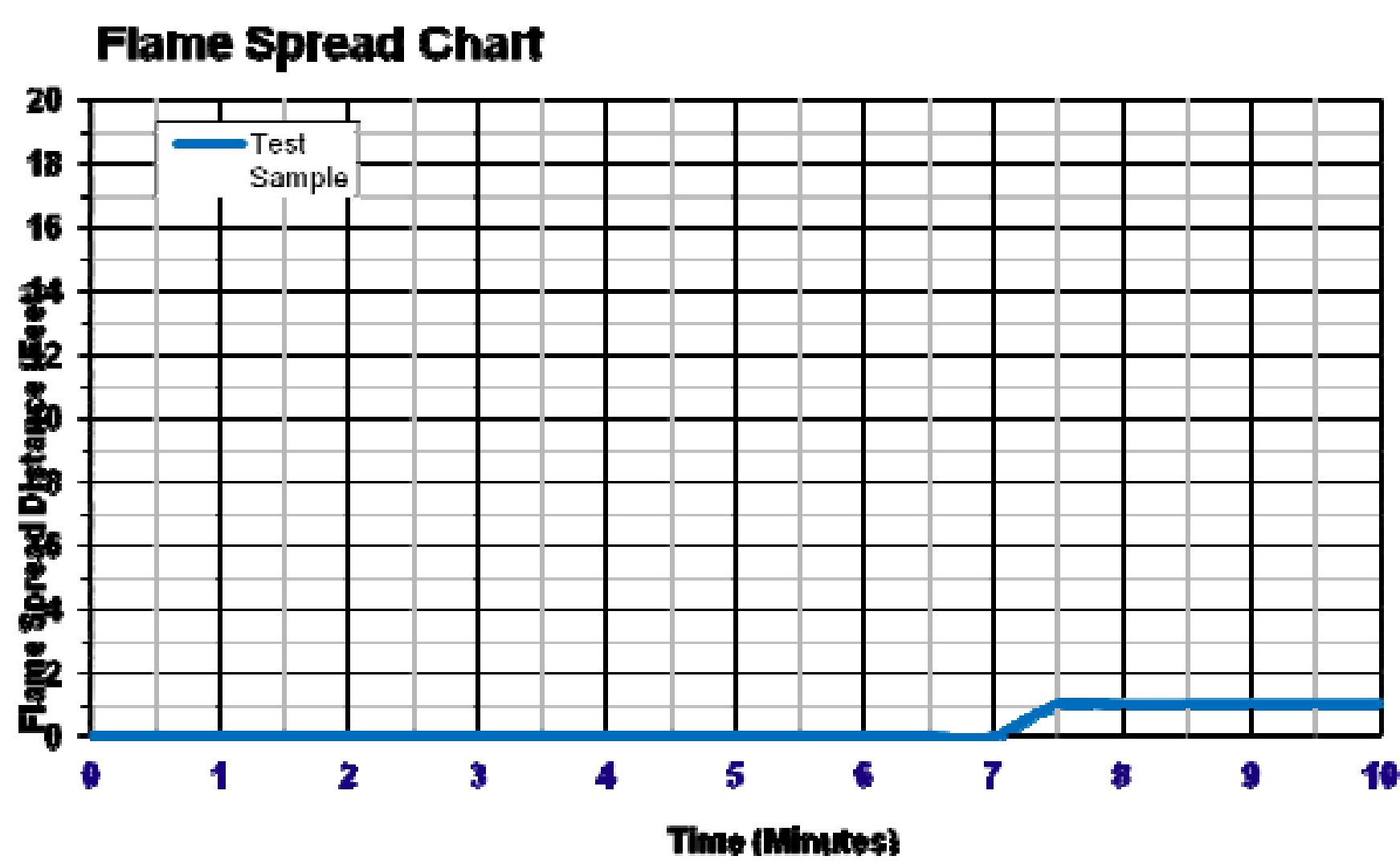


Figure 1 Flame Spread Chart

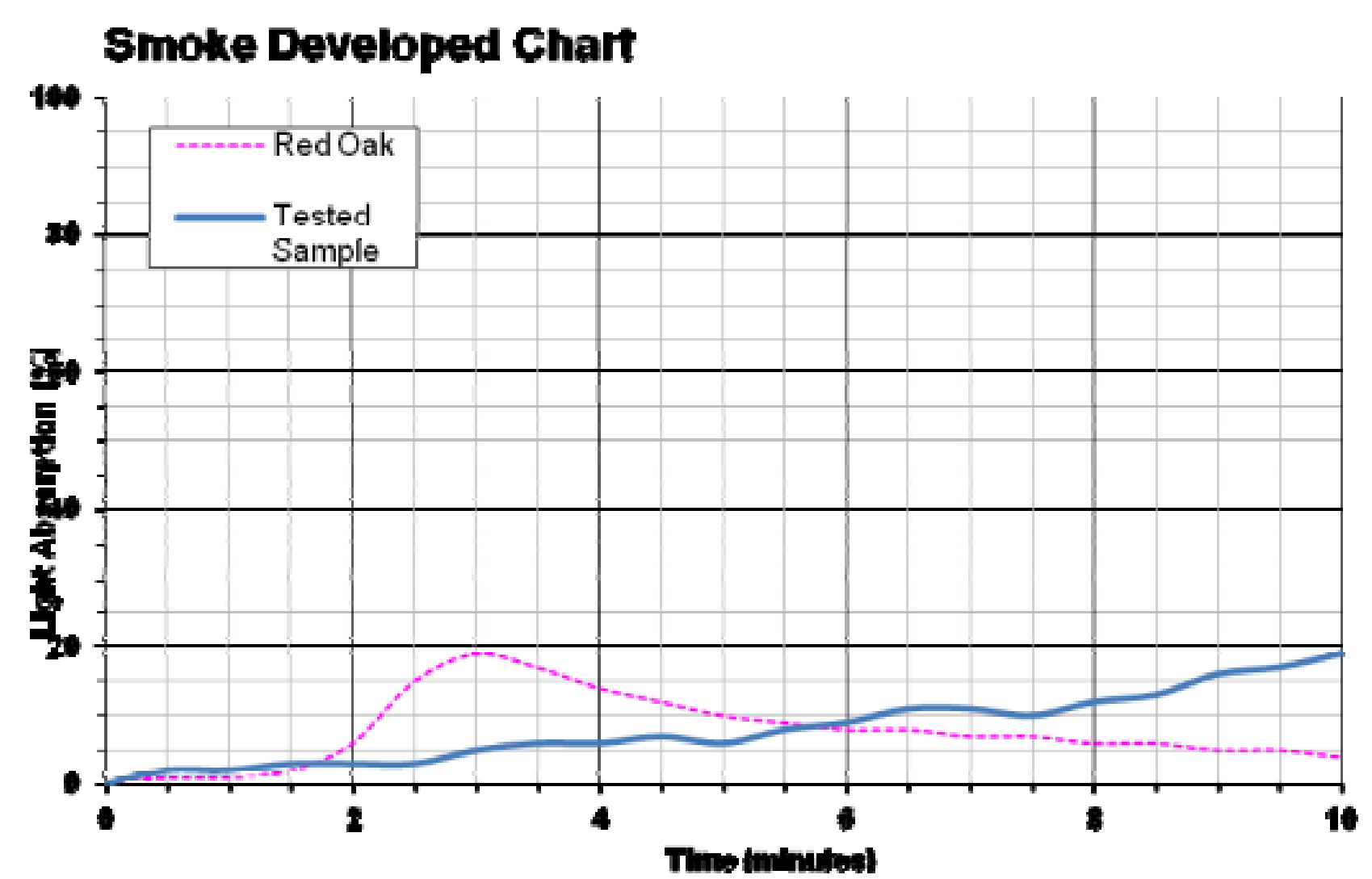


Figure 2 Smoke Developed Chart

PHOTO APPENDIX



FRP molded grating sample photograph

WARNING

The use of supporting materials on the underside of the test specimen has the ability to lower the flame spread index from those which might be obtained if the specimen could be tested without such support. These test results do not necessarily relate to indices obtained by testing materials without such support. The test results relate only to the specimens of the product in the form in which they were tested.