



# COMMERCIAL TESTING COMPANY

1215 South Hamilton Street • Dalton, Georgia 30720  
Telephone (706) 278-3935 • Facsimile (706) 278-3936

Standard Method of Test for  
Critical Radiant Flux of Floor-Covering Systems  
Using a Radiant Heat Energy Source

ASTM International E648-15e1

**The Bordeaux Collection ½-inch Thick Oak Flooring**

Report Number 19-03133

Test Number 4908-0728-0319R

December 8, 2016

Rhone  
Santa Fe Springs, California

Commercial Testing Company

(Authorized Signature)

*This report is provided for the exclusive use of the client to whom it is addressed. It may be used in its entirety to gain product acceptance from duly constituted authorities. The test results presented in this report apply only to the samples tested and are not necessarily indicative of apparent identical or similar materials. Sample selection and identification were provided by the client. A sampling plan, if described in the referenced test procedure, was not necessarily followed. This report, or the name of Commercial Testing Company, shall not be used under any circumstance in advertising to the general public.*

**TESTED TO BE SURE®**  
Since 1974

## INTRODUCTION

This test report is a presentation of results of a flammability test on a material submitted by Rhone, Santa Fe Springs, California. The test was conducted in accordance with the ASTM International fire test response standard E648-15e1, *Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source*. This method is sometimes referred to as the flooring radiant panel.

This test method, which has been approved for use by agencies of the Department of Defense and for listing in the DoD *Index of Specifications and Standards*, is technically identical to the method described in NFPA Number 253. It measures the critical radiant flux at flame-out of horizontally mounted complete flooring-covering systems that duplicate or simulate accepted installation practices. Tests on individual components are of limited value and are not valid for certification purposes.

This standard is used to measure and describe the response of materials, products, or assemblies to heat and flame under controlled conditions, but does not by itself incorporate all factors required for fire-hazard or fire-risk assessment of materials, products, or assemblies under actual fire conditions.

## PURPOSE

The flooring radiant panel test measures the level of incident radiant heat energy at flame-out of a floor-covering system. It provides a basis for estimating one aspect of fire behavior of systems installed in corridors or exitways. Imposed radiant flux simulates thermal radiation levels likely to impinge on the floors of a building whose upper surfaces are heated by flames or hot gases, or both, from a fully developed fire in an adjacent room or compartment.

## TEST PROCEDURE

A gas and air fueled radiant heat energy panel is mounted in the test chamber at a 30° angle to the horizontal plane of the specimen. The panel generates an energy flux distribution ranging along the length of the test specimen from a nominal maximum of 1.0 W/cm<sup>2</sup> to a minimum of 0.1 W/cm<sup>2</sup>. Air flow through the chamber is controlled at a velocity of 250 feet per minute. The test is initiated using a gas pilot burner brought into contact with the specimen and extinguished after a specified time.

The floor-covering system, fully described in Table I, is tested in triplicate, each specimen measuring 20 cm wide by 100 cm long. Prepared specimens are conditioned a minimum of 96 hours in an atmosphere maintained at 71 ± 2°F and 50 ± 3% relative humidity. Chamber operating conditions are verified on the day of the test by measuring the flux level at the 40 cm mark. An incident flux level of 0.50 ± 0.02 W/cm<sup>2</sup> indicates proper operation and calibration of the test chamber.

Specimens are placed in the chamber and allowed to preheat for 5.0 minutes followed by a 5.0-minute application of the pilot burner. The specimens are allowed to burn until they self-extinguish, at which time they are removed from the test chamber and the farthest point of flame propagation measured. The critical radiant flux is determined from the flux profile determined during calibration of the test instrument.

## TEST RESULT

The test result is presented as the average value of the three specimens tested expressed in terms of Critical Radiant Flux in units of W/cm<sup>2</sup>. All pertinent individual specimen data are presented in Table II. The flux profile shown in the figure is typical of that determined during calibration of the flooring radiant panel instrument used for this test.

**TABLE I. FLOOR COVERING SYSTEM**

Floor Covering:

Identification: The Bordeaux Collection ½-inch Thick Oak Flooring  
 Type Material: Tongue & Grooved Engineered Flooring  
 Width: 5-inch

Floor Covering System:

Installation: Free Lay  
 Subfloor: Simulated Concrete (Reinforced Cement Board)

**TABLE II. TEST RESULT**

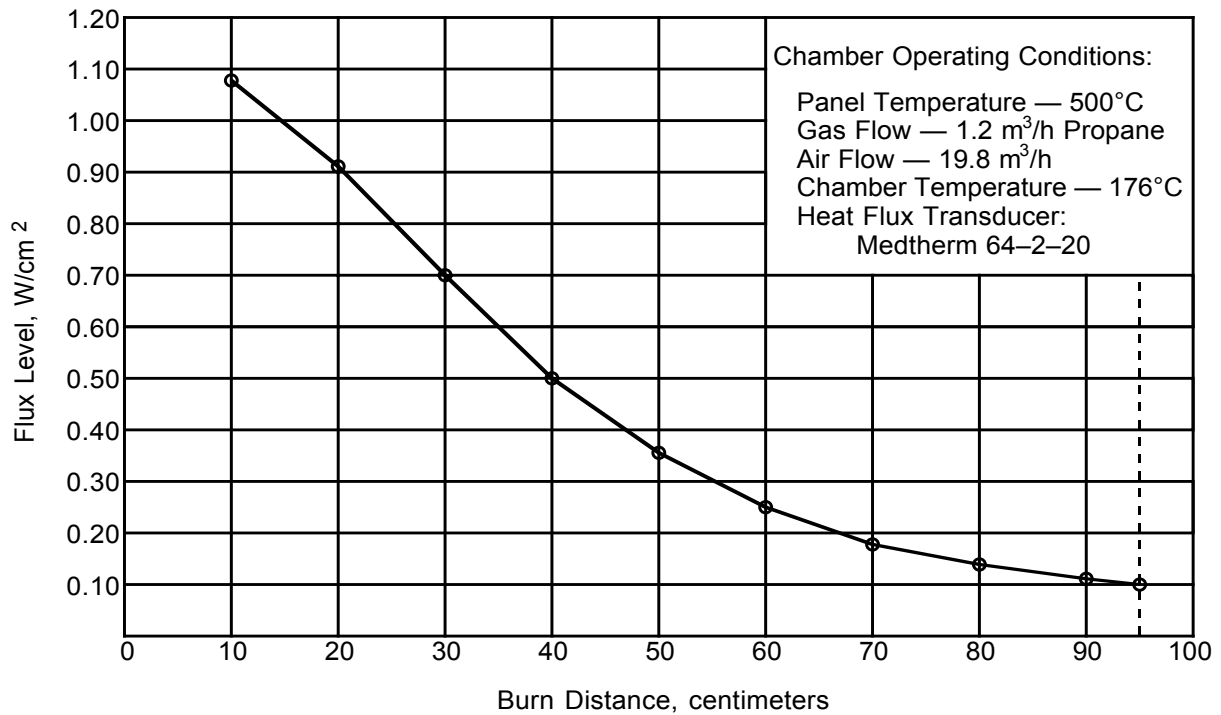
Test Data	#1	#2	#3
Maximum Burn Distance (cm)	46.0	41.5	39.5
Time to Flame Out (min)	58.4	34.1	39.6
Critical Radiant Flux (W/cm <sup>2</sup> )	0.40	0.47	0.51
Standard Deviation = 0.06			

**Average Critical Radiant Flux** **0.46 W/cm<sup>2</sup>**

The NFPA 101 *Life Safety Code* states in Section 10.2.7.2 that floor coverings other than carpets shall have a minimum critical radiant flux of 0.1 W/cm<sup>2</sup>.

NFPA 101 Classification Class I

**TYPICAL FLUX PROFILE**





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Standard Method of Test for  
Critical Radiant Flux of Floor-Covering Systems  
Using a Radiant Heat Energy Source

ASTM International E648-17

**Medoc Collection 5/8 Multi-ply**

Report Number 19-03129

Test Number 5054-4079-0319R  
July 18, 2017

Rhone  
Santa Fe Springs, California

Commercial Testing Company

(Authorized Signature)

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Since 1974

## INTRODUCTION

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This test method, which has been approved for use by agencies of the Department of Defense and for listing in the DoD *Index of Specifications and Standards*, is technically identical to the method described in NFPA Number 253. It measures the critical radiant flux at flame-out of horizontally mounted complete flooring-covering systems that duplicate or simulate accepted installation practices. Tests on individual components are of limited value and are not valid for certification purposes.

This standard is used to measure and describe the response of materials, products, or assemblies to heat and flame under controlled conditions, but does not by itself incorporate all factors required for fire-hazard or fire-risk assessment of materials, products, or assemblies under actual fire conditions.

## PURPOSE

The flooring radiant panel test measures the level of incident radiant heat energy at flame-out of a floor-covering system. It provides a basis for estimating one aspect of fire behavior of systems installed in corridors or exitways. Imposed radiant flux simulates thermal radiation levels likely to impinge on the floors of a building whose upper surfaces are heated by flames or hot gases, or both, from a fully developed fire in an adjacent room or compartment.

## TEST PROCEDURE

A gas and air fueled radiant heat energy panel is mounted in the test chamber at a 30° angle to the horizontal plane of the specimen. The panel generates an energy flux distribution ranging along the length of the test specimen from a nominal maximum of 1.0 W/cm<sup>2</sup> to a minimum of 0.1 W/cm<sup>2</sup>. Air flow through the chamber is controlled at a velocity of 250 feet per minute. The test is initiated using a gas pilot burner brought into contact with the specimen and extinguished after a specified time.

The floor-covering system, fully described in Table I, is tested in triplicate, each specimen measuring 20 cm wide by 100 cm long. Prepared specimens are conditioned a minimum of 96 hours in an atmosphere maintained at 71 ± 2°F and 50 ± 3% relative humidity. Chamber operating conditions are verified on the day of the test by measuring the flux level at the 40 cm mark. An incident flux level of 0.50 ± 0.02 W/cm<sup>2</sup> indicates proper operation and calibration of the test chamber.

Specimens are placed in the chamber and allowed to preheat for 5.0 minutes followed by a 5.0-minute application of the pilot burner. The specimens are allowed to burn until they self-extinguish, at which time they are removed from the test chamber and the farthest point of flame propagation measured. The critical radiant flux is determined from the flux profile determined during calibration of the test instrument.

## TEST RESULT

The test result is presented as the average value of the three specimens tested expressed in terms of Critical Radiant Flux in units of W/cm<sup>2</sup>. All pertinent individual specimen data are presented in Table II. The flux profile shown in the figure is typical of that determined during calibration of the flooring radiant panel instrument used for this test.

**TABLE I. FLOOR COVERING SYSTEM**

Floor Covering:

Identification: Medoc Collection 5/8 Multi-ply  
 Type Material: T&G Flooring Planks  
 Thickness: 5/8-inch  
 Size: 7 inches x 86.6 inches

Floor Covering System:

Installation: Free Lay  
 Subfloor: Simulated Concrete (Reinforced Cement Board)

**TABLE II. TEST RESULT**

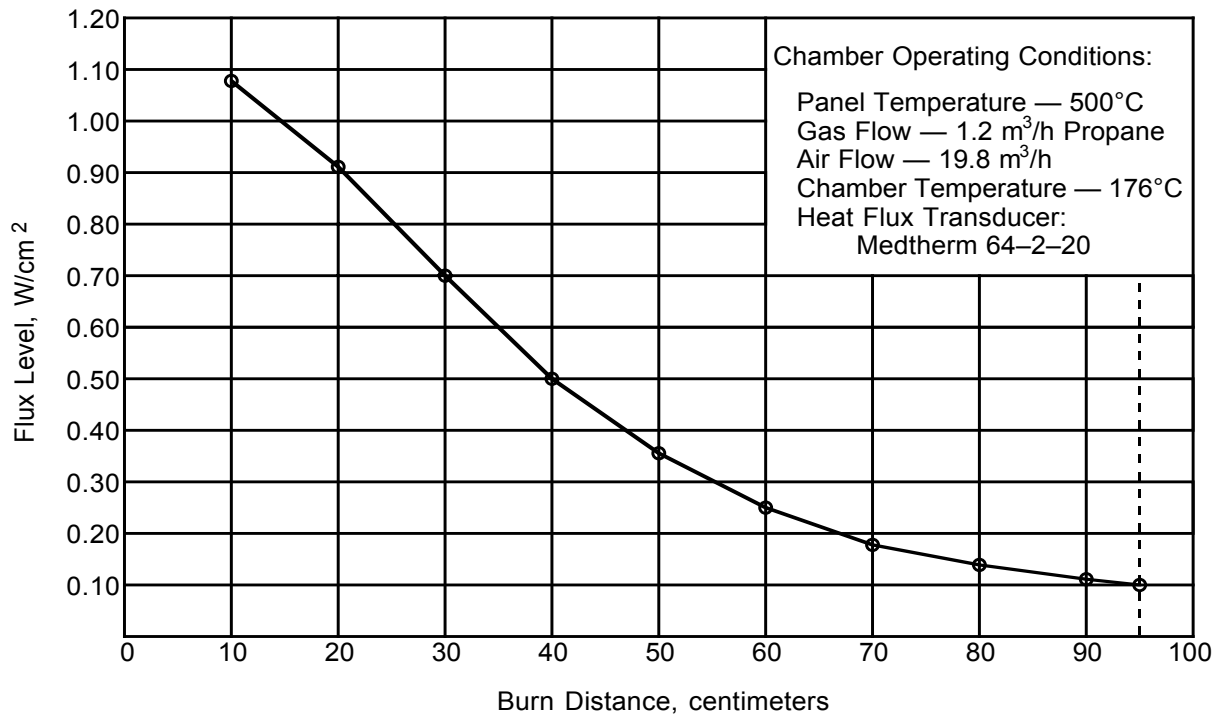
Test Data	#1	#2	#3
Maximum Burn Distance (cm)	42.2	35.1	42.5
Time to Flame Out (min)	23.4	22.9	22.9
Critical Radiant Flux (W/cm <sup>2</sup> )	0.46	0.59	0.46
Standard Deviation = 0.08			

**Average Critical Radiant Flux** **0.50 W/cm<sup>2</sup>**

The NFPA 101 *Life Safety Code* states in Section 10.2.7.2 that floor coverings other than carpets shall have a minimum critical radiant flux of 0.1 W/cm<sup>2</sup>.

NFPA 101 Classification Class I

**TYPICAL FLUX PROFILE**



**SCS Global Services** does hereby certify that an independent assessment has been conducted on behalf of:

# Rhone

14418 Best Ave., Santa Fe Springs, CA, United States

For the following product(s):

## Engineered Hardwood:

1/2"-3/4": Bordeaux Collection, Pomerol Collection, Burgundy Collection, Provence Collection, Alsace Collection, Medoc Collection, Visan Collection, Laudun Collection, St. Peray Collection, Sablet Collection

The product(s) meet(s) all of the necessary qualifications to be certified for the following claim(s):

## FloorScore®

Indoor Air Quality Certified to SCS-EC10.3-2014 v4.0

Conforms to the CDPH/EHLB Standard Method v1.2-2017 (California Section 01350), effective April 1, 2017, for the school classroom and private office parameters when modeled as Flooring.

Measured Concentration of Total Volatile Organic Compounds (TVOC): Less than/equal to 0.5 mg/m<sup>3</sup> (in compliance with CDPH/EHLB Standard Method v1.2-2017)

Registration # SCS-FS-05640

Valid from: August 1, 2019 to April 30, 2020

SCS Global Services is currently the only certification body approved by the Resilient Floor Covering Institute (RFCI) to provide FloorScore® product certification; certified products are only listed on the SCS Green Products Guide, <http://www.scsglobalservices.com/certified-green-products-guide>.



A handwritten signature in black ink that reads "Stanley Mathuram".

Stanley Mathuram, PE, Vice President

SCS Global Services

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