



Floorscore

FloorScore is the most recognized indoor air quality (IAQ) certification standard for hard surface flooring materials, adhesives, and underlayments. FloorScore is an independent certification program that tests and certifies hard surface flooring and the materials they're made with to ensure they are in compliance with stringent indoor air quality emissions. The FloorScore certification leads to healthier, cleaner air.

Fire Radiant Test—ASTM 648

ASTM E648 (the same test as NFPA 253) is ASTM's Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source. This test is designed to simulate thermal radiation levels from an adjacent fire, and to rate different materials for use in different occupancies.

Coefficient Friction Test—ASTM C1028

ASTM C1028 is a standard test method for determining the static coefficient of friction of ceramic tile and other like surfaces by the horizontal dynamometer pull-meter method. Consequently, a COF close to "0" refers to slippery surfaces whereas a COF near "1" refers to high friction surfaces.

Surface Burning—ASTM E84

ASTM E84: Standard Test Method for Surface Burning Characteristics of Building Materials (often referred to as "E84") is one of the most frequently specified standard test methods for assessing the surface burning characteristics of building products.



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

Artistry Hardwood Floor

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

For the following product(s):

Engineered Hardwood:

1/2"-3/4": Windsor Collection, Loft Collection, Heritage Collection, Norwood Collection, Sedona Collection, Santa Fe Collection, Orleans Collection, Islands Collection, Vistas Collection, Manhattan Collection, Charleston Collection, Madison Collection, Hartford 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/m³ (in compliance with CDPH/EHLB Standard Method v1.2-2017)

Registration # SCS-FS-04011

Valid from: August 2, 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

2000 Powell Street, Ste. 600, Emeryville, CA 94608 USA



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 Norwood Collection
(Artistry Hardwood Flooring 1/2-inch Thick Oak Flooring)

Report Number 16-12171

Test Number 4908-0728
December 8, 2016

Catalina Home
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 Catalina Home, 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/cm² to a minimum of 0.1 W/cm². 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/cm² 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/cm². 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 Norwood Collection–Artistry Hardwood Flooring 1/2-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 ²)	0.40	0.47	0.51
Standard Deviation = 0.06			

Average Critical Radiant Flux

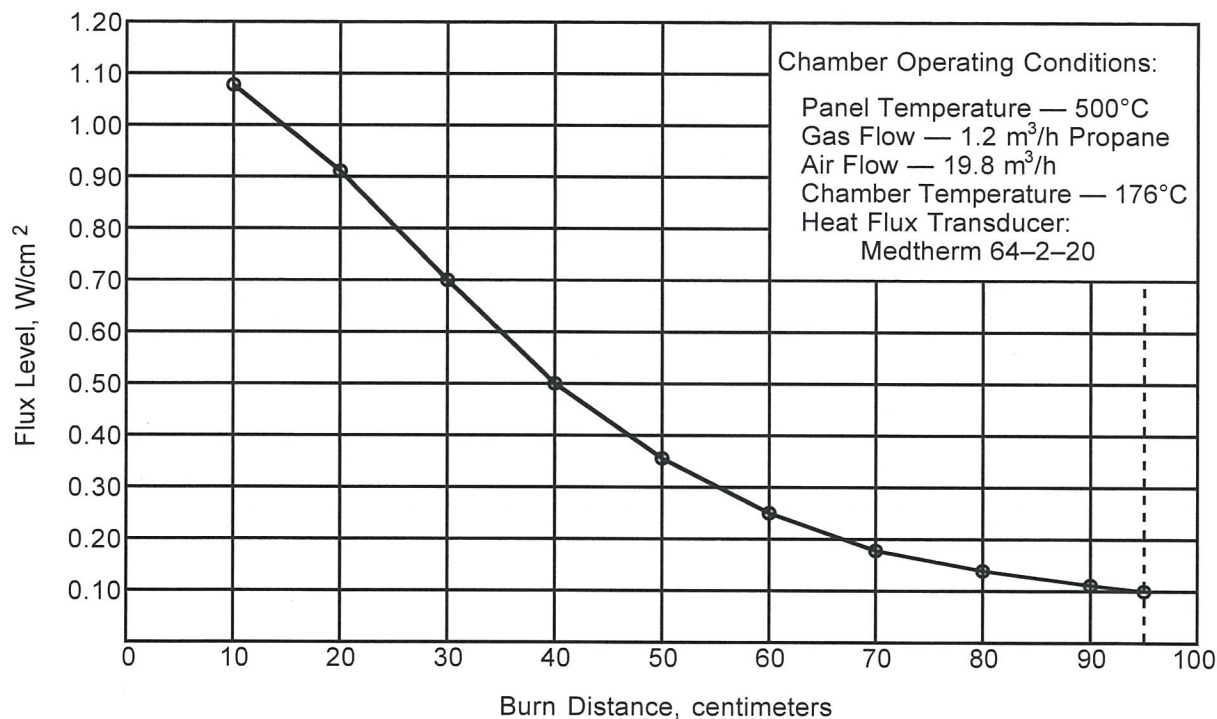
0.46 W/cm²

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/cm².

NFPA 101 Classification

Class I

TYPICAL FLUX PROFILE





COMMERCIAL TESTING COMPANY

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

Report Number 19-04150

Artistry Hardwood
Santa Fe Springs, California

Test Number 5394-1986-A
April 10, 2019

Coefficient of Friction

Test Method: The test was conducted in accordance with the ASTM International Test Method C1028, *Determining the Static Coefficient of Friction of Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull-Meter Method*. This test measures the static coefficient of friction, defined as the ratio of horizontal force applied to a body that just overcomes the friction or resistance to slipping, to the vertical component of the weight of the object or force applied to it. Static coefficient of friction is one important factor relative to slip resistance. While other factors can affect slip resistance, this method is used to determine the property of a flooring surface under controlled laboratory conditions. It should not be used to determine slip resistance under field conditions unless those conditions are fully defined. The test is conducted using a 22 kilogram weight in combination with a standard heel assembly. The weight with the heel assembly attached is placed on the flooring surface and pulled with a Chatillon Model DFG-100 dynamometer which measures the force required to set the test assembly into motion. The test result is calculated using the highest reading recorded. The standard Neolite® heel assembly is calibrated prior to each test using Standard Tile #8425, Lot Number 56H, Mexican Sand, under both dry and wet conditions. Three specimens are tested dry and three tested wet. An initial measurement is made on each specimen with the force applied parallel to the manufacturing direction. Three additional measurements are made with the force applied perpendicular to the previous measurement.

Material Tested:

Identification: Sedona/Santa Fe/Norwood Collections Oak Floor
Type Material: Engineered Flooring

Test Result:

	Dry Test Conditions			Wet Test Conditions		
	1	2	3	1	2	3
1	0.73	0.67	0.78	0.67	0.68	0.63
2	0.68	0.69	0.68	0.63	0.67	0.67
3	0.65	0.66	0.73	0.65	0.64	0.68
4	0.78	0.77	0.78	0.74	0.78	0.80
Specimen Average	0.71	0.70	0.75	0.67	0.69	0.70
Overall Average	0.72			0.69		

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(Authorized Signature)

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Standard Method of Test for
Surface Burning Characteristics of Building Materials

ASTM E84-16

The Norwood Collection
(Artistry Hardwood Flooring 1/2-inch Thick Oak Flooring)

Report Number 16-12344

Test Number 4908-0727
December 19, 2016

Catalina Home
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 report is a presentation of results of a surface flammability test on a material submitted by Catalina Home, Santa Fe Springs, California.

The test was conducted in accordance with the ASTM International fire-test-response standard E84-16, *Surface Burning Characteristics of Building Materials*, sometimes referred to as the Steiner tunnel test. ASTM E84 is an American National Standard (ANSI) and has been approved for use by agencies of the Department of Defense. The ASTM E84 test method is the technical equivalent of UL No. 723. The test is applicable to exposed interior surfaces such as walls and ceilings. The test is conducted with the specimen in the ceiling position with the surface to be evaluated face down toward the ignition source. Thus, specimens shall either be self-supporting by its own structural quality, held in place by added supports along the test surface, or secured from the back side.

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 the materials, products, or assemblies under actual fire conditions.

PURPOSE

The purpose of the test is to provide only the comparative measurements of surface flame spread and smoke development of materials with that of select grade red oak and fiber-reinforced cement board, Grade II, under specific fire exposure conditions. The test exposes a nominal 24-foot long by 20-inch wide test specimen to a controlled air flow and flaming fire adjusted to spread the flame along the entire length of a red oak specimen in 5½ minutes. During the 10-minute test duration, flamespread over the specimen surface and density of the resulting smoke are measured and recorded. Test results are calculated relative to red oak, which has an arbitrary rating of 100, and fiber-reinforced cement board, Grade II, which has a rating of 0.

The test results are expressed as Flame Spread Index and Smoke Developed Index. The Flame Spread Index is defined in ASTM E176 as “a number or classification indicating a comparative measure derived from observations made during the progress of the boundary of a zone of flame under defined test conditions.” The Smoke Developed Index, a term specific to ASTM E84, is defined as “a number or classification indicating a comparative measure derived from smoke obscuration data collected during the test for surface burning characteristics.” There is not necessarily a relationship between the two measurements.

The method does not provide for measurement of heat transmission through the surface tested, the effect of aggravated flame spread behavior of an assembly resulting from the proximity of combustible walls and ceilings, or classifying a material as noncombustible solely by means of a Flame Spread Index.

The zero reference and other parameters critical to furnace operation are verified on the day of the test by conducting a 10-minute test using 1/4-inch fiber-reinforced cement board, Grade II. Periodic tests using NOFMA certified 23/32-inch select grade red oak flooring provide data for the 100 reference.

TEST SAMPLE

The test sample, selected by the client, was identified as **The Norwood Collection (Artistry Hardwood Flooring 1/2-inch Thick Oak Flooring)**, tongue & grooved engineered flooring (plank size: 5" x 70.87"). Three test panels, each measuring two feet wide by eight feet in length, were prepared by adhering the material to 5/8-inch thick Type X gypsum board complying with ASTM Specification C1396 using Liquid Nails Heavy Duty Adhesive. The adhesive was applied to the back of the planks, placed onto the face of the gypsum board and rolled with a segmented wallcovering roller using heavy pressure. This method of sample preparation is described in ASTM E2404-15a, *Standard Practice for Specimen Preparation and Mounting of Textile, Paper or Polymeric (Including Vinyl) and Wood Wall or Ceiling Coverings, Facings and Veneers, to Assess Surface Burning Characteristics*, Section 8.3, Wall or Ceiling Coverings Intended to be Applied over Gypsum Board. After dead-stacking overnight, the prepared panels were transferred to storage racks and conditioned to equilibrium in an atmosphere with the temperature maintained at 71 ±

2°F and the relative humidity at 50 ± 5 percent. For testing, the panels were placed end-to-end on the ledges of the tunnel furnace and the test conducted with no auxiliary support mechanism.

TEST RESULTS

The test results, calculated on the basis of observed flame propagation and the integrated area under the recorded smoke density curve, are presented below. The Flame Spread Index obtained in E84 is rounded to the nearest number divisible by five. Smoke Developed Indices are rounded to the nearest number divisible by five unless the Index is greater than 200. In that case, the Smoke Developed Index is rounded to the nearest 50 points. The flame spread and smoke development data are presented graphically at the end of this report.

Test Specimen	Flame Spread Index	Smoke Developed Index
Fiber-Reinforced Cement Board, Grade II	0	0
Red Oak Flooring	100	100
The Norwood Collection (Artistry Hardwood Flooring 1/2-inch Thick Oak Flooring)	85	60

OBSERVATIONS

Specimen ignition over the burners occurred at 0.85 minute. Surface flame spread was observed to a maximum distance of 19.50 feet beyond the zero point at 5.98 minutes. The maximum temperature recorded during the test was 1,102°F. For information purposes, the actual (unrounded) Flame Spread and Smoke Developed Indices were 85.5 and 62.3 respectively.

CLASSIFICATION

The Flame Spread Index and Smoke Developed Index values obtained by ASTM E84 tests are frequently used by code officials and regulatory agencies in the acceptance of interior finish materials for various applications. The most widely accepted classification system is described in the National Fire Protection Association publication NFPA 101 *Life Safety Code*, where:

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

Class A, B, and C correspond to Type I, II, and III respectively in other codes. They do not preclude a material being otherwise classified by the authority of jurisdiction.

ASTM E 84 TEST DATA

Client: Catalina Home

Test Number: 4908-0727

Material Tested: The Norwood Collection (Artistry Hardwood Flooring 1/2-inch Thick Oak Flooring)

Date: December 19, 2016

Test Results:

Time to Ignition = 00.85 minutes
Maximum Flamespread Distance = 19.50 feet
Time to Maximum Spread = 05.98 minutes

Flame Spread Index = 85
Smoke Developed Index = 60

