



TESTING SERVICES

LABORATORY TEST REPORT

Report # 90867A
Lab Test Number: 3352-3130
Report Date: February 8, 2023

ASTM E648 Critical Radiant Flux (Radiant Panel)

www.testingservices.us • (706)226-1400

office@testingservices.us

CLIENT:

Company:	Royal Thai
Address:	a division of Brumlow Carpet Mills
	734 South River Street
	Calhoun, GA 30701

TEST MATERIAL:

Date Material Received:	January 23, 2023
Material Type:	Carpet
Material Condition:	Excellent, New
Style:	Infinity 32oz

TESTING METHODS REQUESTED:

Testing Services Inc. was instructed by the client to test for the following...			
Standard:	ASTM E648, NFPA 253 FTM Standard 372	Test Method:	Standard Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source

SAMPLING PLAN:

Sampling Date:	1/23/2023
- Specimen sampling is performed in the sampling department at TSI. - The sampling size of specimens is determined by the test method requirements. - In the event a specific sampling size is not called for, a determination will be made based on previous testing experience, and approved for use by an authorized manager. - All samples are subjected to the outside environmental conditions of temperature and relative humidity. - Sample requiring pre-determined exposure to specified environmental conditions based on a specific test method, take place in the departments in which they are tested	

DEVIATION FROM TEST METHOD:

State reason for any Deviation from, Additions to, or Exclusions From Test Method.
None

TEST SCOPE:

This test method measures the critical radiant flux of horizontally mounted floor-covering systems exposed to a flaming ignition source positioned on a graded radiant heat energy environment within an enclosed chamber. The results are designed to provide a basis for estimating one aspect of fire behavior of a flooring system.

TEST SUMMARY:

TEST METHOD	TEST DESCRIPTION	TEST RESULT			
		Burn Distance		Time to Flame Out	Critical Radiant Flux
ASTM E648-19ae1	Critical Radiant Flux	Specimen #1	35.6 cm	40:51 min	0.61 W/cm²
		Specimen #2	44.2 cm	01:04:32 min	0.46 W/cm²
		Specimen #3	35.4 cm	01:06:05 min	0.51 W/cm²
		Average	0.56 W/cm²		
		NFPA Classification	Class I		
		STDEV	0.09		
		COF of Variation	15.58 %		

Mounting Board: Calcium Silicate Board
Conditioning: 96 hours @ 70°F 50% RH

Adhesive: Multi-Purpose
Calibration Curve: 373L

Trowel: 1/8"x1/8"x1/8"
Radiometer #: 5356

Uncertainty:

We undertake all assignments for our clients on a best effort basis. Our findings and judgments are based on the information to us using the latest test methods available.

TSI can only ensure the test results for the specific items tested.

Unless otherwise noted in the deviations sections of this report, all tests are performed in compliance with stated test method.

Test Report Approval:

Erle Miles, III, Lab Director Testing Services (TSI) LLC

TSI Accreditation:

Our laboratory is accredited by the US Dept. of Commerce, National Institute of Standards and Technology: ISO/IEC 17025:2005. Our code # is: NVLAP 100108-0.
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100108-0



Testing Services (TSI) LLC
817 Showalter Avenue
PO Box 1343
Dalton, GA 30721



TESTING SERVICES

LABORATORY TEST REPORT

Report # 90867A1
Lab Test Number: 3352-3130
Report Date: February 8, 2023

ASTM E648 Critical Radiant Flux- NY (Radiant Panel)

www.testingservices.us • (706)226-1400

office@testingservices.us

CLIENT:

Company:	Royal Thai
Address:	a division of Brumlow Carpet Mills
	734 South River Street
	Calhoun, GA 30701

TEST MATERIAL:

Date Material Received:	January 23, 2023
Material Type:	Carpet
Material Condition:	Excellent, New
Style:	Infinity 32oz

TESTING METHODS REQUESTED:

Testing Services Inc. was instructed by the client to test for the following...			
Standard:	ASTM E648, NFPA 253 FTM Standard 372 NYC 16	Test Method:	Standard Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source Local Law of the City of New York

SAMPLING PLAN:

Sampling Date:	1/23/2023
- Specimen sampling is performed in the sampling department at TSI beside the ground level dock door. - The sampling size of specimens is determined by the test method requirements. - In the event a specific sampling size is not called for, a determination will be made based on previous testing experience, and approved for use by an authorized manager. - All samples are subjected to the outside environmental conditions of temperature and relative humidity. - Sample requiring pre-determined exposure to specified environmental conditions based on a specific test method, take place in the departments in which they are tested	

DEVIATION FROM TEST METHOD:

State reason for any Deviation from, Additions to, or Exclusions From Test Method.
None

TEST SCOPE:

This test method measures the critical radiant flux of horizontally mounted floor-covering systems exposed to a flaming ignition source positioned on a graded radiant heat energy environment within an enclosed chamber. The results are designed to provide a basis for estimating one aspect of fire behavior of a flooring system recorded at the fifteen-minute mark.

TEST SUMMARY:

TEST METHOD	TEST DESCRIPTION	TEST RESULT				
		Specimen #	Burn Distance		Critical Radiant Flux	
ASTM E648-19ae1/NYC Local Law 16	Critical Radiant Flux @ 15 Minutes	Specimen #1	21.0 cm		0.89 W/cm²	
		Specimen #2	21.0 cm		0.89 W/cm²	
		Specimen #3	21.5 cm		0.88 W/cm²	
	Average		0.68 W/cm²			
Classification	Installation on Floors of Corridors: Minimum: 0.50 W/cm²		YES	✓	NO	
	Installation on Floors of General Area: Minimum: 0.40 W/cm²		YES	✓	NO	

Mounting Board: Calcium Silicate Board
Conditioning: 96 hours @ 70°F 50% RH

Adhesive: Multi-Purpose
Calibration Curve: 373L

Trowel: 1/8"x1/8"x1/8"
Radiometer #: 5356

Uncertainty:

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TESTING SERVICES

LABORATORY TEST REPORT

Report # 90867B
Lab Test Number: 3352-3130
Report Date: February 8, 2023

ASTM E662 Specific Optical Smoke Density-Flaming/NF

www.testingservices.us • (706)226-1400

office@testingservices.us

CLIENT:

Company:	Royal Thai
Address:	a division of Brumlow Carpet Mills
	734 South River Street
	Calhoun, GA 30701

TEST MATERIAL:

Date Material Received:	January 23, 2023
Material Type:	Carpet
Material Condition:	Excellent, New
Style:	Infinity 32oz

TESTING METHODS REQUESTED:

Testing Services Inc. was instructed by the client to test for the following...			
Standard:	ASTM E662	Test Method:	Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials

SAMPLING PLAN:

Sampling Date:	1/23/2023
- Specimen sampling is performed in the sampling department at TSI. - The sampling size of specimens is determined by the test method requirements. - In the event a specific sampling size is not called for, a determination will be made based on previous testing experience, and approved for use by an authorized manager. - All samples are subjected to the outside environmental conditions of temperature and relative humidity. - Sample requiring pre-determined exposure to specified environmental conditions based on a specific test method, take place in the departments in which they are tested	

DEVIATION FROM TEST METHOD:

State reason for any Deviation from, Additions to, or Exclusions From Test Method.
None

TEST SUMMARY:

TEST METHOD	TEST DESCRIPTION	AVERAGE FLAMING MODE	AVERAGE NON FLAMING MODE
ASTM E662-21	Time to Attain (Minutes)	6.0	19.8
	Specific Optical Density (DS) @ 1.5 Min	20	1
	Specific Optical Density (DS) @ 4.0 Min	62	23
	Maximum Specific Optical Density (DM)	80	194
	Clear Beam (DC)	9	4
	Corrected (DMC)	71	190

Requirements: ≤ 450 DMC
Radiometer Output: 8.1 mv

Burner Fuel: Propane
Furnace Voltage: 117v

Irradiance: 2.5 W/cm²
Pressure: Positive Under 3" Water

Uncertainty:

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TEST MATERIAL:

Date Material Received:	January 23, 2023
Material Type:	Carpet
Material Condition:	Excellent, New
Style:	Infinity 32oz

TESTING METHODS REQUESTED:

Testing Services Inc. was instructed by the client to test for the following...			
Standard:	ASTM D2859	Test Method:	Standard Test Method for Ignition Characteristics of Finished Textile Pile Yarn Floorcoverings

SAMPLING PLAN:

Sampling Date:	1/23/2023
- Specimen sampling is performed in the sampling department at TSI. - The sampling size of specimens is determined by the test method requirements. - In the event a specific sampling size is not called for, a determination will be made based on previous testing experience, and approved for use by an authorized manager. - All samples are subjected to the outside environmental conditions of temperature and relative humidity. - Sample requiring pre-determined exposure to specified environmental conditions based on a specific test method, take place in the departments in which they are tested	

DEVIATION FROM TEST METHOD:

State reason for any Deviation from, Additions to, or Exclusions From Test Method.
None

TEST SCOPE:

This test method provides a method of determining the flammability characteristics of textile products when exposed to an ignition source in a laboratory environment. Eight specimens were taken from the sample lot, 230mm X 230mm, and preconditioned in an air circulating oven @ 150°C for 2 hours. After removal from the oven, the specimens are placed into a desiccator for 1 hour prior to performing the test. Each specimen was then placed into the test chamber floor with the pile surface up and a steel frame, 230mm X 230mm with 200mm diameter hole, placed on top of the specimen. A methenamine tablet was placed centrally onto the pile surface. The pill was ignited using a lighted match, with the ignition flame and propagated flame allowed to self-extinguish.

CRITERIA:

The specimen passes, if the charred portion of the test specimen, did not extend to within 25mm (1") of the diameter hole of the steel frame. The U.S. Consumer Product Safety Commission requires that at least seven of the eight specimens pass the test for acceptance as meeting the standard.

TEST SUMMARY:

TEST METHOD	TEST DESCRIPTION	TEST RESULT	
ASTM D2859-16(2021)	Ignition Characteristics of Textile Floor Coverings (Pill Test)	8 out of 8 Pass	Passes, U.S. CPSC 16CFR 1630 (FF1-70), Carpets & Rugs

Uncertainty:

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