

DATE:04-21-2021 Page 1 of 1 TEST NUMBER:0275635

| CLIENT | North American Primo Flooring, LLC |
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| | ASTM E648 Standard Test Method for Critical Radiant Flux of Floor |
|-----------------------|--|
| TEST METHOD CONDUCTED | Covering Systems Using A Radiant Heat Energy Source, also referenced |
| | as NFPA 253 and FTM Standard 372 |



| DESCRIPTION OF TEST SAMPLE | |
|----------------------------|-------------------------------------|
| IDENTIFICATION | Waterproof Laminate Flooring Sample |
| CONSTRUCTION | Laminate Flooring |

GENERAL PRINCIPLE

This procedure is designed to measure the critical radiant flux at flame out of horizontally mounted floor covering systems exposed to a flaming ignition in a test chamber which provides a graded radiant heat energy environment. The imposed radiant flux simulates the thermal radiation levels likely to impinge on the floors of a building whose upper surfaces are heated by flames from a fully developed fire in an adjacent room or compartment. The test result is an average critical radiant flux (watts/square cm) which indicates the level of radiant heat energy required to sustain flame propagation in the flooring system once it has been ignited. A minimum of three test specimens are tested and the results are averaged. Theoretically, if a room fire does not impose a radiant flux that exceeds this critical level on a corridor floor covering system, flame spread will not occur.

The NFPA Life Safety Code 101 specifies as Class 1 Critical Radiant Flux of .45 watts/sq cm or higher and Class 2 Critical Radiant Flux as .22 - .44 watts/sq cm.

| FLOORING SYSTEM ASSEMBLY | | | |
|--------------------------|----------------------------|--|------------------------|
| SUBSTRA | Mineral-Fiber/Cement Board | UNDERLAYMENT | Loose Laid |
| | | Minimum of 96 hours at 70 ±5°F and 50 ± 5% relative humidity | |
| | | | 10idii to fictilidii y |

| | Distance Burned | Time To Flame Out | Critical Radiant Flux |
|------------|-----------------|-------------------|-----------------------|
| Specimen 1 | 12 cm | 8 minutes | 1.07 watts/square cm |
| Specimen 2 | 16 cm | 6 minutes | 1.00 watts/square cm |
| Specimen 3 | 15 cm | 9 minutes | 1.02 watts/square cm |

| Average Critical Radiant Flux | 1.03 Watts/Square Cm |
|-------------------------------|----------------------|
| Standard Deviation | 0.03 Watts/Square Cm |
| Coefficient of Variation | 2.86 % |

NOTE: Meets or exceeds Class 1 rating as specified in NFPA Life Safety Code 101.

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APPROVED BY:

NV (A)

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protest@optilink.us



DATE: 04-21-2021 TEST NUMBER: 0275635

CLIENT North American Primo Flooring, LLC

TEST METHOD CONDUCTED NALFA 3.5 Large Ball Impact Resistance

| DESCRIPTION OF TEST SAMPLE | |
|----------------------------|-------------------------------------|
| IDENTIFICATION | Waterproof Laminate Flooring Sample |
| CONSTRUCTION | Laminate Flooring |

GENERAL PRINCIPLE

This test measures the ability of a laminate flooring to resist fracture due to impact by a large diameter ball (224 grams) falling onto the surface of the unrestricted laminate floor sample. Drops are conducted in incremental heights until the surface of the material is fractured. The submitted material was tested according to the NALFA requirements using the proper underlayment.

TEST RESULTS

| MAXIMUM HEIGHT TO ACHIEVE FRACTURE OF SURFACE LAYER | RESULT |
|---|---------------------|
| WITH UNDERLAYMENT | 1400 mm (55.1 inch) |

^{*} Meets NALFA specified criteria for usage Levels 1, 2, 3 and 4.

| Class 1 | Class 2 | Class 3 | Class 4 HEAVY COMMERCIAL |
|----------------------|-----------------------|-----------------------|--------------------------|
| RESIDENTIAL | LIGHT COMMERCIAL | COMMERCIAL | |
| > 800 mm (31.5 inch) | > 1000 mm (39.4 inch) | > 1200 mm (47.3 inch) | > 1400 mm (55.1 inch) |

APPROVED BY:

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714 Glenwood Place Dalton, GA 30721 Phone: 706-226-3283 Fax: 706-226-6787 email: protest@optilink.us



DATE: 04-21-2021 TEST NUMBER: 0275635

| CLIENT | North American Primo Flooring, LLC |
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| TEST METHOD CONDUCTED | NALFA 3.6 Small Ball (Dart) Impact Resistance |
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| DESCRIPTION OF TEST SAMPLE | |
|----------------------------|-------------------------------------|
| IDENTIFICATION | Waterproof Laminate Flooring Sample |
| CONSTRUCTION | Laminate Flooring |

GENERAL PRINCIPLE

This test measures the ability of a laminate flooring to resist fracture due to impact by a small diameter ball/dart (25 grams) falling onto the surface of the unrestricted laminate floor sample. Drops are conducted in incremental heights until the surface of the material is fractured. The submitted material was tested according to the NALFA requirements using the proper underlayment.

TEST RESULTS

| MAXIMUM HEIGHT TO ACHIEVE FRACTURE OF SURFACE LAYER | RESULT |
|---|--------------------|
| WITH UNDERLAYMENT | 500 mm (19.7 inch) |

^{*} Meets NALFA specified criteria for usage Levels 1, 2, 3 and 4.

| Class 1 RESIDENTIAL | Class 2 LIGHT COMMERCIAL | Class 3 COMMERCIAL | Class 4 HEAVY COMMERCIAL |
|---------------------|-----------------------------|-----------------------|--------------------------|
| > 200 mm (7.9 inch) | > 200 mm (7.9 inch) | > 350 mm (13.8 inch) | > 500 mm (19.7 inch) |

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DATE: 09-28-2022 TEST NUMBER: 0290421

| CLIENT | North American Primo Flooring |
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| TEST METHOD CONDUCTED | NALFA 3.2 Thickness Swell |
|-----------------------|---------------------------|
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| DESCRIPTION OF TEST SAMPLE | | |
|----------------------------|------------------------|--|
| IDENTIFICATION | Ivan/BF553VN (SW74) | |
| CONSTRUCTION | Wood Plank | |
| REFERENCE | Waterproof Wood Sample | |

GENERAL PRINCIPLE

This test measures the ability of laminate flooring to resist edge thickness increases after being exposed to distilled water. Two 6" x 6" specimens are cut and the thickness is calculated using a compressometer. The two samples are submerged one inch below the water line in 70° F distilled water for 24 hours and then removed and re-measured. The thickness swell is calculated as a percentage of the original thickness.

TEST RESULTS

| | THICKNESS SWELL | PERCENTAGE SWELL |
|------------|-----------------|------------------|
| SPECIMEN 1 | +0.008 Inch | +1.6% |
| SPECIMEN 2 | +0.006 Inch | +1.2% |

^{*} Meets NALFA specified criteria for usage Levels 1, 2, 3 and 4.

| Class 1 RESIDENTIAL | Class 2 LIGHT COMMERCIAL | Class 3 COMMERCIAL | Class 4 HEAVY COMMERCIAL |
|---------------------|-----------------------------|-----------------------|--------------------------|
| ≤ 18% | ≤ 16% | ≤ 16% | ≤ 12% |

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