

FLOORING RADIANT PANEL TEST (ASTM-E648/NFPA 253)

The Flooring Radiant Panel Test measures a vital ingredient of fire: radiant energy. A Class I rating requires a minimum critical radiant flux of 0.45 watts/cm² in accordance with standard test method, NFPA 253 (or ASTM-E648), for critical radiant flux of floor covering systems using a radiant heat energy source. For general commercial construction, the guideline is a minimum average critical radiant flux (CRF) of 0.22 watts/cm² (Class II).

Typically healthcare applications (hospitals and nursing homes) require Class I flooring at major entry and exit areas as well as corridors, but Class II is allowed in other parts of a healthcare facility. In most any other application, Class II is acceptable.

This procedure is routinely performed by independent testing laboratories such as HPVA Laboratories. In the Flooring Radiant Panel Test, a Class I rating implies a more flame-resistant system than a Class II rating.

<u>Product Species</u>	<u>Average Critical Radiant Flux (CRF)</u>	<u>Class</u>
7/16" (0.430") Maple	0.49 watts/cm ²	I
7/16" (0.430") Red Oak	0.40 watts/cm ²	II
7/16" (0.430") Reclaimed Oak	0.37 watts/cm ²	II
7/16" (0.430") Walnut	0.36 watts/cm ²	II
7/16" (0.430") Ash	0.35 watts/cm ²	II
7/16" (0.430") COR	0.34 watts/cm ²	II
7/16" (0.430") R/Q, Plainsawn White Oak	0.28 watts/cm ²	II

Note: All flooring that was tested had Pedestrian 2.0 Finish and was glued down using Nydree MRA1585 moisture-cured polyurethane adhesive.

WALL & CEILING STEINER TUNNEL TEST (ASTM-E84/UL-723 & CAN/ULC S102)

The Steiner Tunnel Test continues to be the most widely used surface flame spread test for wall and ceiling finishes. Keep in mind that there is no correlation between ASTM-E84 test results and ASTM-E648 test results.

When Nydree Flooring is tested using the ASTM –E84 procedure, the flooring achieves a Class C rating. This makes Nydree flooring acceptable for wall and ceiling use whenever Class C interior finishes are required by local building codes. Many designers think all products used on walls must be Class A or B, but that is simply not the case. Class A or B is typically required only for primary entry and exit areas of a commercial building. Anywhere in the rest of a building that is covered by sprinklers usually allow Class B and Class C.

ASTM E-84/UL-723

<u>Product</u>	<u>Flame Spread Index</u>	<u>Smoke Developed Index</u>	<u>Class Rating</u>
7/16" (0.430") Rift & Quartered White Oak	115	250	C
7/16" (0.430") Plainsawn White Oak	130	170	C
7/16" (0.430") Walnut	165	180	C
7/16" (0.430") Maple	120	250	C
9/16" (0.540") Plainsawn White Oak	130	185	C

CAN/ULC S102

<u>Product</u>	<u>Flame Spread Rating</u>	<u>Smoke Developed Classification</u>
7/16" (0.430") Rift & Quartered White Oak	140	105

Note: All flooring that was tested had Pedestrian 2.0 Finish and was glued down using Nydree MRA1585 moisture-cured polyurethane adhesive.

For more information on the ASTM-E84 test and results, see the document entitled ‘Design for Code Acceptance’ on the Nydree website. Click on Technical and scroll down to the Technical Bulletins section.

<https://nydreeflooring.com/wp-content/uploads/2015/12/dca1.pdf>