

**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/cm<sup>2</sup> 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/cm<sup>2</sup> (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 <sup>2</sup>	I
7/16" (0.430") Red Oak	0.40 watts/cm <sup>2</sup>	II
7/16" (0.430") Reclaimed Oak	0.37 watts/cm <sup>2</sup>	II
7/16" (0.430") Walnut	0.36 watts/cm <sup>2</sup>	II
7/16" (0.430") Ash	0.35 watts/cm <sup>2</sup>	II
7/16" (0.430") COR	0.34 watts/cm <sup>2</sup>	II
7/16" (0.430") R/Q, Plainsawn White Oak	0.28 watts/cm <sup>2</sup>	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") 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") R/Q 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>