



## All Nydree Engineered Flooring Products Test Data Modified Rockwell Hardness & Janka Hardness

The Rockwell Hardness Test (ASTM D-785) is a hardness test developed primarily for metals, but by using a modified penetrator, relative hardness results can be obtained on wood/acrylic composites. For years Nydree Flooring has used this 'Modified' Rockwell Hardness test to compare the hardness of many acrylic impregnated species.

By gathering Modified Rockwell Hardness results and comparing them to actual Janka Hardness (ASTM D-143) results the table on the left was developed to enable comparison of Modified Rockwell Hardness results to Janka Hardness results.

The table on the right comes from Modified Rockwell Hardness data gathered on each species shown. The wide Janka range is due to the varying wood density within a wood species. This varying wood density leads to various degrees of acrylic loading and thus varying wood hardness.

Modified Rockwell Hardness	Approximate Janka Hardness
-20	400
-16	500
-12	600
-7	700
-3	800
1	900
5	1000
9	1100
13	1200
17	1300
21	1400
25	1500
32	2000
39	2500
45	3000
52	3500
59	4000
66	4500
73	5000
80	5500
86	6000
93	6500
100	7000
107	7500
114	8000

Impregnated Species	Average Unimpregnated Janka (Raw)	Modified Rockwell Range	Corresponding Janka Range	% of Wood Surface in this Range
Maple/Rustic	1450	55 to 115	3714 to 8000	100%
Hickory	1820	50 to 105	3357 to 7357	100%
COR (99% Aspen)	350	55 to 105	3714 to 7357	100%
Ash (White)	1320	55 to 105 25 to 35	3714 to 7357 1500 to 2214	85% 15%
Northern Red Oak	1290	36 to 70 5 to 35	2286 to 4786 1000 to 2214	85% 15%
Reclaimed Oak (Red & White)	1290 (Red) 1360 (White)	36 to 80 20 to 35	2286 to 5500 1375 to 2214	90% 10%
R&Q White Oak	1360	71 to 90 36 to 70 15 to 35	4857 to 6286 2286 to 4786 1250 to 2214	25% 50% 25%
Radiata Pine	618	71 to 100 36 to 70 5 to 35	4857 to 7000 2286 to 4786 1000 to 2214	25% 50% 25%
Reclaimed Poplar	432	71 to 106 36 to 70 -20 to 35	4857 to 7428 2286 to 4786 400 to 2214	25% 50% 25%
Cherry/Walnut	950 (Cherry) 1010 (Walnut)	55 to 90 5 to 35	3714 to 6286 1000 to 2214	60% 40%

**Note:**

All Rockwell measurements are performed across the grain and on finished plank.

For porous woods such as Hickory, Ash, Oak and Walnut hardness measurements are taken on the solid area between the open pores.

