

## Brinell Hardness Test Results for Haro Engineered Wooden Flooring

The Brinell hardness test method consists of indenting the test material with a 10 mm diameter hardened steel ball subjected to a load of 3000 kg. For softer materials the load can be reduced to 1500 kg or 500 kg to avoid excessive indentation. The full load is normally applied for 10 to 15 seconds. The diameter of the indentation left in the test material is measured with a low powered microscope. The Brinell hardness number is calculated by dividing the load applied by the surface area of the indentation.

To give you an idea how Haro Engineered floors compare with solid floors a 19mm solid Kiwila/ Merbau flooring has a Brinell rating of 42.

Species	Origin	Density [g/cm <sup>2</sup> ]	Ø H <sub>B</sub> [N/mm <sup>2</sup> ]
Beech	Europe	0,70 - 0,79	42
Oak / Oak Carré	Europe	0,65 - 0,76	42 / 81
Red Oak	North America	0,65 - 0,75	33
Can. Maple	Canada	0,61 - 0,72	42
Sykomore (Europ.	Europe	0,60 - 0,70	30
Ash	Europe	0,68 - 0,76	42
Walnut	North America	0,65 - 0,75	26
Am. Cherry	North America	0,52 - 0,70	37
Birch	Europe	0,65 - 0,73	32
Merbau	S-E Asia	0,60 - 0,82	49
Wenge	East Africa	0,81 - 0,89	54
Iroko (Kambala)	Middle Africa	0,65 - 0,77	37
Jarrah	Australia	0,70 - 1,00	28
Jatoba	S-Central America	0,80 - 0,85	69
Teak	S-E Asia	0,52 - 0,70	67
Doussie	West Africa	0,70 - 0,80	39
Larch / Larch Carré	Sibiria	0,54 - 0,62	23 / 65
Scandinavian Pine	Northern Europe	0,51 - 0,55	22
<b>Rimu</b>	<b>New Zealand</b>	<b>0,43 - 0,47</b>	<b>24</b>