

# THERMOWOOD

||| Powered by Novawood Technology



## Thermowood Ash Data Sheet





<b>Mechanical Properties, Strength Values</b>	<b>Kiln-Dried Ash</b>	<b>Thermowood Ash</b>
Modules of elasticity (MOE), flatwise (MPa-N/mm) DIN EN 408, TS 2478	19.226	12.480 – 14.000
Modules of rupture (MOR), flatwise (MPa) DIN EN 408, TS 2474	131.8	56.6 – 85.7
Impact bending strength (IBS), flatwise (MPa) TS 2477	-	-
Compressive strength (CS), (MPa) TS 2595	-	-

<b>Dimensional Stability 65%Rh 20° C</b>	<b>Kiln-Dried Ash</b>	<b>Thermowood Ash</b>
Maximum swelling ratio, tangential (SW-T) (%) DIN 52184, TS 4083, 4084	10.3	5.3
Maximum swelling ratio, radial (SW-R) (%) TS 4083, 4084	5.8	2.9
Maximum swelling ratio, longitudinal (SW-L) (%) TS 4083, 4084	-	-
Maximum shrinkage ratio, tangential (Sh-T) (%) TS 4083, 4084	7.1	4.6
Maximum shrinkage ratio, radial (Sh-R) (%) TS 4083, 4084	3.9	2.03
Maximum shrinkage ratio, longitudinal (Sh-L) (%) TS 4083, 4084	-	-

**Thermowood Ash has enhanced dimensional stability: Increased Stability | Minimized Deformations | Minimized Expansion and Shrinkage**

<b>Physical Properties, Moisture Content</b>	<b>Kiln-Dried Ash</b>	<b>Thermowood Ash</b>
Equilibrium moisture content at 20/65 (%) EN 13183-1	10.1 (9-11)	4.2 (4-6)
Raw density at 20/65 (kg/m <sup>3</sup> ) DIN 52182	677-738	595-629

<b>Biological Durability Against Wood-Decaying Basidiomycetes</b>	<b>Kiln-Dried Ash</b>	<b>Thermowood Ash</b>
Increased durability to decay	No	Yes
Resins and sugars removed	No	Yes
Median mass loss with Coniophora puteana DSM 3085 (n = 30) (%) CEN/TS 15083-1	-	0.1
Median mass loss with Coriolus versicolor CTB 863A (n = 30) CEN/TS 15083-1	-	0.1
Preliminary durability classification Median mass loss (< 5 %)	-	1 "very durable"

**Thermowood Ash has low moisture content that prevents decay and fungi growth.**

<b>Surface Burning Characteristics of Buildings Material — Fire Resistance</b>	<b>Kiln-Dried Ash</b>	<b>Thermowood Ash</b>
a. Flame Spread Index (FSI) ASTM E84-16	-	a. 40 Class B or II
b. For British fire resistance EN 13501	-	b. Class D
Smoke developed Index (SDI) ASTM E84-16	-	200 Class B or II
By using fire retardancy liquids	-	OK

**Thermowood Ash has improved fire resistance.**

<b>Nail and Screw Holding Strength</b>	<b>Kiln-Dried Ash</b>	<b>Thermowood Ash</b>
a. Stainless steel or galvanized screws and plastic clips are recommended. Hidden and face fixing systems EN 1383, NEN 6562 b. Steel material standard 10088-3	-	Class A2
Surface contaminations from fixation elements	-	Not delicate

**Thermowood Ash has screw withdrawal strength.**

Glueing	Kiln Dried-Ash	Thermowood Ash
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Fingerjoints  
Laminations  
Panel production

-

MUF, Polyurethane

Brinell Hardness	Kiln Dried-Ash	Thermowood Ash
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30.5 N/mm<sup>2</sup>

Thermal conductivity, Insulation	Kiln Dried-Ash	Thermowood Ash
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Heat conductivity W/mK  
TS EN 12667

1.2

0.099

**Emissions**

- The emissions are not harmful in fresh air.
- The scent of thermo products may disappear within a few days, but with the surface treatment or rain, it may return.

**Color**

- The color of the wood changes (Ash color is dark brown).
- The coatings are oil and water based.

**Environment**

- FSC certified
- 100% natural
- 100% recyclable and biodegradable
- Low processing energy demand
- Sustainable development and a low carbon future
- From renewable forests

# THERMOWOOD

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