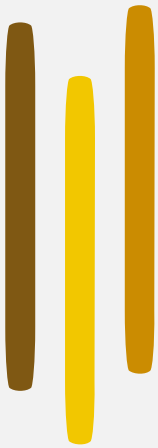
novawood®
INTERIORS & EXTERIORS



NOVA-ASH
THERMO-D DATA SHEET

novathermowood®

NOVA-ASH THERMO-D DATA SHEET

novawood®
INTERIORS & EXTERIORS

Mechanical Properties, Strength values	Ash, Kiln-dried	Ash, Thermowood
Modules of elasticity (MOE), flatwise (MPa-N/mm²) 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	-	-

Dimensional Stability 65%Rh 20°C *(Increased Stability) (Minimized deformations) (Minimized Expansion and Shrinkage)*	Ash, Kiln-dried	Ash, Thermowood
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	-	-

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

Biological durability against wood-decaying basidiomycetes *(Increased durability to decay)* *(Resins and sugars removed)* *(Low moisture content prevents decay and fungi growth)*	Ash, Kiln-dried	Ash, Thermowood
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"*

Surface burning characteristics of buildings material- Fire resistance. *(Improved fire-resistance)*	Ash, Kiln-dried	Ash, Thermowood
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

Nail and screw holding strength *(screw withdrawal strength)*	Ash, Kiln-dried	Ash, Thermowood
a. Stainless steel or galvanised 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

Glueing	Ash, Kiln-dried	Ash, Thermowood
Fingerjoints Laminations Panel production	-	MUF, Polyuretane

Brinell Hardness	Ash, Kiln-dried	Ash, Thermowood
	-	30.5 N/mm^2

Emissions	Ash, Kiln-dried	Ash, Thermowood
The emissions are not harmful in fresh air.	-	OK
The smell of thermowood products may disappear within a few days but with the surface treatment or rain it may raise up again.	-	Short Time

Thermal conductivity, Insulation *(Decreased Thermal Conductivity)*	Ash, Kiln-dried	Ash, Thermowood
Heat conductivity W/mK TS EN 12667	1,2	0,099

Colour	Ash, Kiln-dried	Ash, Thermowood
Colour of the wood changes (Ash colour is dark brown)	-	OK
Oil and water based coatings	-	OK

Environment *(100 % naturel)* *(recycleable)* *(from renewable forests)*	Ash, Kiln-dried	Ash, Thermowood
FSC certified	-	OK
100 % naturel	OK	OK
100 % recyclable and biodegradable	OK	OK
Low processing energy demand	OK	OK
Sustainable development and a low carbon future	OK	OK

Healty and safety	Ash, Kiln-dried	Ash, Thermowood
Definitely naturel and harmless. Free of chemicals.	OK	OK
Completely healthy.	OK	OK
Improving the stability and durability of wood without using any persistent toxic chemicals	OK	OK

Freeze-heat shock treatments	Ash, Kiln-dried	Ash, Thermowood
1 Cycle: Freezing stage: 3 days -40°C as frozen wood and then Heating stage: 30 min 200°C in furnace as thermal shock effects. Novawood R&D test spects and ASTM-D 143-94 standards.	-	OK-5 cycle *(surfacequlity)* *(no cracks)* *(no color change).*