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Wood & Structure

Granville Bois sarl
 SARL au capital de 12000.00€

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Oak Structural Grading

This specification is based on NF B 52 001 annex B (hardwood) dated 1947.

Considered dimensions of the beams are:

Width: 15 to 200mm

Height: 25 to 300mm

Length: up to 6m

OAK structural class		Class 1 / D35	Class 2 / D30
Grain		≥ 7mm	≥ 4mm
Knots diameter		≤ 30mm	≤ 40mm
Shakes, splits		Not considered	
Grain slope	Local	≤ 10%	≤ 20%
	general	≤ 7%	≤ 12%
Wanes	Length	≤ 1/3 beam length or 1m (min of two)	
	Height	≤ 1/3 side width	
Black knot		1 side maximum	
Rot		Excluded	
Volume weight	At 20% MC	≥ 800 kg/m ³	≥ 750 kg/m ³

Note that there is no equivalence between QPx grading and class 1 & 2 in the sense of the NF B 52 001 standard. However, we could consider that QP1 matches with D30 and QPA with D35 class.

Parameters	Unit	D30	D35	D40
σf	N/mm ²	13,2	15,4	17,6
σ	N/mm ²	7,9	9,2	10,5
σt	N/mm ²	0,3	0,3	0,3
σ'	N/mm ²	10,1	11,0	11,4
$\sigma't$	N/mm ²	3,5	3,7	3,9
τ	N/mm ²	1,3	1,5	1,7
E_f	kN/mm ²	9,0	9,5	10,0
E_g	kN/mm ²	0,55	0,60	0,65
ρ average at 15% mc	Kg/m ³	640	670	700