



West Fraser Europe Ltd
 Station Road
 Cowie
 Stirling
 Scotland
 FK7 7BQ

DoP ref: **NP5DoPv8**

EN13986:2004 +A1:2015

2812

04

E1

P5

8mm to 38mm

Structural use in humid conditions

Essential characteristics	>6 to 10	>10 to 13	>13 to 20	>20 to 25	>25 to 32	>32 to 40	18 T&G 400mm centres	22 T&G 600mm centres
¹ Characteristic Strength (N/mm ²)								
- Bending f_m	15.0	15.0	13.3	11.7	10.0	8.3	13.3	11.7
- Compression f_c	12.7	12.7	11.8	10.3	9.8	8.5	11.8	10.3
- Tension f_t	9.4	9.4	8.5	7.4	6.6	5.6	8.5	7.4
- Panel Shear f_v	7.0	7.0	6.5	5.9	5.2	4.8	6.5	5.9
- Planar shear f_r	1.9	1.9	1.7	1.5	1.3	1.2	1.7	1.5
¹ Mean Stiffness (MOE) (N/mm ²)								
- Tension E_t	2000	2000	1900	1800	1500	1400	1900	1800
- Compression E_c	2000	2000	1900	1800	1500	1400	1900	1800
- Bending E_m	3500	3500	3300	3000	2600	2400	3300	3000
- Panel Shear G_v	960	960	930	860	750	690	930	860
Punching Shear Characteristic strength under point load $F_{max,k}$ (kN) <i>(for floors and roofs)</i>	NPD	NPD	NPD	NPD	NPD	NPD	5.4	5.4
Punching Shear Mean stiffness under point load, R_{mean} (N/mm) <i>(for floors and roofs)</i>	NPD	NPD	NPD	NPD	NPD	NPD	840	560
Racking resistance <i>(for walls)</i> Characteristic Strength $F_{Rd,max,k}$ (N)	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD
Racking resistance <i>(for walls)</i> Mean Stiffness R_{mean} (N/mm)	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD
Soft Body Impact resistance Floor/roofs Walls	NPD	NPD	NPD	NPD	NPD	NPD	Impact Class 1 Pass Floor	Impact Class 1 Pass Floor
Embedment strength f_h (N/mm ²)	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD

²Reaction to fire (see notes to table for field of application details and associated documentation references)		Minimum thickness	Class (excluding floorings) ^g	Class (Flooring) ^h
	Without an air gap behind the panel ^{abef}	9	D-s2,d0	D _{fi} ,s1
	With a closed or open air gap ≤ 22mm behind the panel ^{cef}	9	D-s2,d2	-
	Closed air gap behind the panel ^{def}	15	D-s2,d0	D _{fi} ,s1
	With an open air gap behind the panel ^{def}	18	D-s2,d0	D _{fi} ,s1
	Any end use ^{ef}	3	E	E _{fl}
	a -Mounted without an air gap directly against class A1 or A2-s1, d0 products with minimum density 10kg/m ³ or at least class D-s2, d2 products with minimum density 400 kg/m ³ . b -A substrate of cellulose insulation material of at least class E may be included if mounted directly against the wood-based panel, but not for floorings. c -Mounted with an air gap behind. The reverse face of the cavity shall be at least class A2-s1, d0 products with minimum density 10 kg/m ³ . d -Mounted with an air gap behind. The reverse face of the cavity shall be at least class D-s2, d2 products with minimum density 400 kg/m ³ . e -Veneered, phenol- and melamine-faced panels are included for class excl. floorings. f -A vapour barrier with a thickness up to 0,4 mm and a mass up to 200 g/m ² can be mounted in between the wood-based panel and a substrate if there are no air gaps in between. g -Class Provided for in Table 1 of the Annex to decision 2000/147/EC h -Class Provided for in Table 2 of the Annex to decision 2000/147/EC			

	>6 to 10	>10 to 13	>13 to 20	>20 to 25	>25 to 32	>32 to 40	18 T&G 400 centres	22 T&G 600 centres
Water vapour permeability μ	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD
Release of formaldehyde	E1	E1	E1	E1	E1	E1	E1	E1
Release (content) of pentachlorophenol (PCP)	≤5ppm	≤5ppm	≤5ppm	≤5ppm	≤5ppm	≤5ppm	≤5ppm	≤5ppm
Airborne sound insulation (surface mass) R (dB)	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD
³Sound absorption Frequency range 250Hz to 500Hz (α)	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
³Sound absorption Frequency range 1000Hz to 2000Hz (α)	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Thermal conductivity λ (W/m.K)	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD
Air Permeability V₀ (m³/h)	NPD	NPD	NPD	NPD	NPD	NPD	NPD	NPD
Durability								
Internal bond (N/mm²)	0.45	0.45	0.45	0.40	0.35	0.30	0.45	0.40
Swelling in thickness (%)	13	11	10	10	10	9	10	10
Internal bond after cyclic test (N/mm²)	0.25	0.25	0.22	0.20	0.17	0.15	0.22	0.20
Swelling in thickness after cyclic test (%)	12	12	12	11	10	9	12	11
⁴Mechanical (Creep k _{def}) service class 1	2.25	2.25	2.25	2.25	2.25	2.25	2.25	2.25
⁴Mechanical (Creep k _{def}) service class 2	3	3	3	3	3	3	3	3
Mechanical (Duration of Load, k _{mod})	Action Mode							
	Permanent	Long Term		Medium Term		Short Term	Instantaneous	
⁴Service Class 1	0.30	0.45		0.65		0.85	1.10	
⁴Service Class 2	0.20	0.30		0.45		0.60	0.80	
Biological	Use classes 1 & 2							

NOTES TO TABLE

1 Taken from EN 12369-1:2001

2 reaction to fire classes from Table 1 of Commission Decision 2003/43/EC of January 2003 (OJEU L13 of 18.1.2003) corrected by Corrigendum (OJEU L33 of 8.2.2003) and amended by Commission decision 2007/348/EC of May 2007 (OJEU L131 of 23-05-2007); also reproduced in Table three of EN 13986:2004+A1:2015 for wood-based panels installed according to CEN/TR 12872

3 Taken from Table 10 of EN 13986:2004+A1:2015

4 Taken from Eurocode 5 EN 1995-1-1 2004+A2:2014