CE
Norbord Europe Ltd Station Road Cowie Stirling Scotland FK7 7BQ
DoP ref: **NP5DoPv5**
EN13986:2004 +A1:2015
2812
04
E1
P5
8mm to 38mm
Structural use in humid conditions

Essential characteristics	**Performance**									
	Thickness(mm)									
	>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/mm²)										
- **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/mm²)										
- **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) *(for floors and roofs)*	NPD	NPD	NPD	NPD	NPD	NPD		5.4	5.4	
Punching Shear Mean stiffness under point load, R_{mean} (N/mm) *(for floors and roofs)*	NPD	NPD	NPD	NPD	NPD	NPD		840	560	
Racking resistance *(for walls)* **Characteristic Strength $F_{Rd,max,k}$** (N)	NPD	NPD	NPD	NPD	NPD	NPD		NPD	NPD	
Racking resistance *(for walls)* **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/mm2)	NPD	NPD	NPD	NPD	NPD	NPD		NPD	NPD	

[2]Reaction 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_{fl},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_{fl},s1
	With an open air gap behind the panel [def]	18	D-s2,d0	D_{fl},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/m3 or at least class D-s2, d2 products with minimum density 400 kg/m3. 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/m3. 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/m3. 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/m² 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	
[3]Sound absorption Frequency range 250Hz to 500Hz **(α)**	0.1	0.1	0.1	0.1	0.1	0.1		0.1	0.1	
[3]Sound 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 V_0 (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	
[4]Mechanical (Creep k_{def}) **service class 1**	2.25	2.25	2.25	2.25	2.25	2.25		2.25	2.25	

[4]Mechanical (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	
[4]Service Class 1	0.30		0.45		0.65			0.85	1.10	
[4]Service 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