DECLARATION OF PERFORMANCE

NO. MW/PW/411-001/CPR/DOP

1. PRODUCT-TYPE:
Metsä Wood structural birch plywood (PF)
- Uncoated or overlaid (phenol or melamine film)
- Phenol-formaldehyde adhesive (exterior gluing quality)

2. INTENDED USES:
Structural elements in internal or external applications in construction

EN 636-2 S
- for internal structural use in dry conditions
- for internal or protected external structural use in humid conditions

EN 636-3 S
(overlaid and edges protected)
- for internal structural use in dry conditions
- for internal or protected external structural use in humid conditions
- for external structural use

3. MANUFACTURER:
Metsäliitto Cooperative
Metsä Wood
Revontulenpuisto 2 A
FI-02100 Espoo, Finland
Tel. +358 10 4605
www.metsawood.com

5. SYSTEM OF ASSESSMENT AND VERIFICATION OF CONSTANCY OF PERFORMANCE:
AVCP System 2+

6a. HARMONISED STANDARD:
EN 13986:2004+A1:2015

Notified body:
VTT Expert Services Ltd, Notified product certification body No. 0809

Certificate of conformity of the factory production control:
0809 – CPR – 1003

7. DECLARED PERFORMANCES

ESSENTIAL CHARACTERISTICS		PERFORMANCE													
		Sanded Metsä Wood birch plywood													
		Nominal thickness (mm)													
Strength and stiffness for structural use:		4	6,5	9	12	15	18	21	24	27	30	35	40	45	50
		Number of plies													
		3	5	7	9	11	13	15	17	19	21	25	29	32	35
Characteristic bending strength (N/mm²)	II	65,9	50,9	45,6	42,9	41,3	40,2	39,4	38,9	38,4	38,1	37,6	37,2	37,0	36,8
	⊥	10,6	29,0	32,1	33,2	33,8	34,1	34,3	34,4	34,5	34,6	34,7	34,7	34,8	34,8
Mean modulus of elasticity in bending (N/mm²)	II	16471	12737	11395	10719	10316	10048	9858	9717	9607	9519	9389	9296	9243	9198
	⊥	1029	4763	6105	6781	7184	7452	7642	7783	7893	7981	8111	8204	8257	8302
Characteristic compression strength (N/mm²)	II	31,8	29,3	28,3	27,7	27,4	27,2	27,0	26,9	26,8	26,7	26,6	26,5	25,6	26,4
	⊥	20,2	22,8	23,7	24,3	24,6	24,8	25,0	25,1	25,2	25,3	25,4	25,5	26,4	25,6
Characteristic tension strength (N/mm²)	II	45,8	42,2	40,8	40,0	39,5	39,2	39,0	38,8	38,7	38,5	38,4	38,3	37,0	38,1
	⊥	29,2	32,8	34,2	35,0	35,5	35,8	36,0	36,2	36,3	36,5	36,6	36,8	38,0	36,9
Mean modulus of elasticity in comp./tension (N/mm²)	II	10694	9844	9511	9333	9223	9148	9093	9052	9019	8993	8953	8925	8631	8895
	⊥	6806	7656	7989	8167	8277	8352	8407	8448	8481	8507	8547	8575	8869	8605
Characteristic panel shear strength (N/mm²)	II	9,5													
	⊥	9,5													
Mean modulus of rigidity in panel shear (N/mm²)	II	620													
	⊥	620													
Characteristic planar shear strength (N/mm²)	II	2,77	3,20	2,68	2,78	2,62	2,67	2,59	2,62	2,57	2,59	2,57	2,56	2,55	2,54
	⊥	NPD	1,78	2,35	2,22	2,39	2,34	2,41	2,39	2,43	2,41	2,43	2,44	2,47	2,46
Mean modulus of rigidity in planar shear (N/mm²)	II	169	199	206	207	207	206	206	206	205	205	204	204	192	203
	⊥	NPD	123	155	170	178	183	186	189	190	192	193	195	208	196

II = along the face veneer grain direction
⊥ = across the face veneer grain direction
The material values in this DoP are to be used for structural calculations with EN 1995 (Eurocode 5).

ESSENTIAL CHARACTERISTICS	PERFORMANCE			
Bonding quality	Class 3 (exterior)			
Release of formaldehyde	E1			
Reaction to fire	**End use condition** [1]	**Minimum thickness (mm)**	**Class (excluding floorings)**	**Class** [2] **(floorings)**
	- without an air gap behind the panel - mounted directly against class A1 or A2-s1, d0 products with minimum density 10 kg/m^3 or at least class D-s2,d2 products with minimum density 400 kg/m^3 - a substrate of cellulose insulation material of at least class E may be included if mounted directly against the panel, but not for floorings	9	D-s2, d0	D_{fl}-s1
	- with a closed or an open air gap not more than 22mm behind the panel - the reverse face of the cavity shall be at least class A2-s1,d0 products with minimum density 10 kg/m^3	9	D-s2, d2	-
	- with a closed air gap behind the panel - the reverse face of the cavity shall be at least class D2-s2,d2 products with minimum density 400 kg/m^3	15	D-s2, d1	D_{fl}-s1
	- with an open air gap behind the panel - the reverse face of the cavity shall be at least class D2-s2,d2 products with minimum density 400 kg/m^3	18	D-s2, d0	D_{fl}-s1
	- any	3	E	E_{fl}

Water vapour permeability		**Mean density**	**Wet cup**	**Dry cup**
	Uncoated	680 kg/m^3	49 μ	686 μ
Airborne sound insulation	NPD			
Sound absorption	0,10 (250 Hz – 500 Hz) 0,30 (1000 Hz – 2000 Hz)			
Thermal conductivity	0,17 W/(m K)			
Impact resistance	NPD			
Strength and stiffness under point load	NPD			

[1] 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 panel and a substrate if there are no air gaps in between.
[2] Uncoated flooring panels
The material values in this DoP are to be used for structural calculations with EN 1995 (Eurocode 5).

ESSENTIAL CHARACTERISTICS		PERFORMANCE	
Mechanical durability	k_{mod}	According to EN 1995-1-1	
	k_{def}	According to EN 1995-1-1	
Biological durability (EN 335)		**Uncoated or overlaid**	Use class 2
		Overlaid and edges protected	Use class 3
Content of pentachlorophenol (PCP)		< 5 ppm	
Characteristic embedment strength		Calculated according to EN 1995-1-1: - characteristic density (ρ_k) 630 kg/m^3	
Racking resistance		Calculated according to EN 1995-1-1: - panel thickness 4-50 mm - characteristic embedment strength, see above	
Air permeability		NPD	

The material values in this DoP are to be used for structural calculations with EN 1995 (Eurocode 5).

The performance of the product identified above is in conformity with the set of declared performance/s. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by:

At Espoo on 11.7.2018

Henrik Söderström
SVP, Supply Chain Management
Metsä Wood

……

Juha Kasslin
VP, Product Management
Metsä Wood

……