19.3.2014/AMR

CE

Declaration of Performance, DoP

No . KKN-03- 001-CPR / 2412-CPR-1301-01

1. **Product -type**:
   PLYWOOD; Birch, Spruce or Combi structural plywood
   Uncoated or coated
   Exterior gluing quality; Phenol formaldehyde adhesive

2. **Type, batch or serial number or any other identification**
   KOSKISEN Birch, Spruce or Combi structural plywood
   Uncoated or coated
   Exterior gluing quality; Phenol formaldehyde adhesive

3. **Intended use or uses of the construction product, in accordance with the applicable harmonised technical specification, as foreseen by the manufacturer:**

   EN 636-2 unfaced; Birch, Spruce or Combi structural plywood. For internal use as a structural component in humid condition.

   EN 636-3 faced; Birch, Spruce or Combi structural plywood. For internal structural use in dry conditions. For internal or protected external structural use in humid conditions. For external use as a structural component with certain type of coating and edge protection.

4. **Name and address of the manufacturer**

   Koskisen Oy
   Plywoodmill
   Tehdastie 2
   16600 Järvelä
   www.koskisen.com

5. **System or systems of assessment and verification of constancy of performance**
   AVCP system **2+**

6. **Construction product covered by a harmonized standard**:
   Finotrol Oy, notified production control certification body No 2412 performed initial inspection of the manufacturing plants and of factory production control and performs continuous surveillance, assessment and evaluation of factory production control under system 2+ and issued the certificate of conformity of the factory production control:
   2412-CPR-1301-01

7. Declared performance

Harmonized technical spesification EN 13986:2004

II=birch veneer cross grained, **II=spruce veneer cross grained,**
I=birch veneer long grained, **I=spruce veneer long grained**

	Koskisen birch plywood					characteristic strenght						mean modulus of elasticity			
	section propeties					bending		compression		tension		bending		tension and compression	
Lay-up	nominal thickness	no of plies	A mm²/mm	W mm³/mm	I mm⁴/mm	f_{m} II N/mm²	f_{m} I N/mm²	f_{c} II N/mm²	f_{c} I N/mm²	f_{t} II N/mm²	f_{t} I N/mm²	E_{m} II N/mm²	E_{m} I N/mm²	$E_{t/cm}$ II N/mm²	Et/c I N/mm
I-I	4	3	3,6	2,16	3,89	65,9	10,6	31,8	20,2	45,8	29,2	16471	1029	10694	680
I-I-I	6,5	5	6,4	6,83	21,8	50,9	29	29,3	22,8	42,2	32,8	12737	4763	9844	765
I-I-I-I	9	7	9,2	14,1	64,9	45,6	32,1	28,3	23,7	40,8	34,2	11395	6105	9511	798
I-I...I-I	12	9	12	24	144	42,9	33,2	27,7	24,3	40	35	10719	6781	9333	816
I-I...I-I	15	11	14,8	36,5	270	41,3	33,8	27,4	24,6	39,5	35,5	10316	7184	9223	827
I-I...I-I	18	13	17,6	51,6	454	40,2	34,1	27,2	24,8	39,2	35,8	10048	7452	9147	835
I-I...I-I	21	15	20,4	69,4	707	39,4	34,3	27	25	39	36	9858	7642	9093	840
I-I...I-I	24	17	23,2	89,7	1041	38,9	34,4	26,9	25,1	38,8	36,2	9717	7783	9052	844
I-I...I-I	27	19	26	113	1465	38,4	34,5	26,8	25,2	38,7	36,3	9607	7893	9019	848
I-I...I-I	30	21	28,8	138	1991	38,1	34,6	26,7	25,3	38,5	36,5	9519	7981	8993	850
I-I...I-I	35	25	34,4	197	3392	37,6	34,7	26,6	25,4	38,4	36,6	9389	8111	8953	854
I-I...I-I	40	29	40	267	5333	37,2	34,7	26,5	25,5	38,3	36,8	9296	8204	8925	857

	Koskisen combi plywood					characteristic strenght						mean modulus of elasticity			
	section propeties					bending		compression		tension		bending		tension and compression	
Lay-up	nominal thickness	no of plies	A mm²/mm	W mm³/mm	I mm⁴/mm	f_{m} II N/mm²	f_{m} I N/mm²	f_{c} II N/mm²	f_{c} I N/mm²	f_{t} II N/mm²	f_{t} I N/mm²	E_{m} II N/mm²	E_{m} I N/mm²	$E_{t/cm}$ II N/mm²	Et/c I N/mm
I-I-I	6,5	5	6,4	6,83	21,8	50,8	29	24,5	22,8	19,1	32,8	12690	4763	8859	765
I-I-I-I	9	7	9,2	14,1	64,9	43,9	32,1	22,5	23,7	17,5	34,2	10983	6105	8141	798
I-I-I-I	12	9	12	24	144	40	33,2	21,5	24,3	16,7	35	10012	6781	7758	816
I-I-I-I	15	11	14,8	36,5	270	37,5	33,8	20,8	24,6	16,2	35,5	9386	7184	7520	827
I-I-I-I	18	13	17,6	51,6	454	35,8	34,1	20,4	24,8	15,8	35,8	8950	7452	7358	835
I-I-I-I	21	15	20,4	69,4	707	34,5	34,3	20	25	15,6	36	8628	7642	7240	840
I-I-I-I	24	17	23,2	89,7	1041	32,9	34,4	19,8	25,1	15,4	36,2	8381	7783	7151	844
I-I-I-I	27	19	26	113	1465	31,2	34,5	19,6	25,2	16,3	36,3	8185	7893	7081	848
I-I-I-I	30	21	28,8	138	1991	29,9	34,6	19,5	25,3	15,1	36,5	8026	7981	7024	850

	Koskisen conifer plywood, thin veneers					characteristic strenght						mean modulus of elasticity			
	section propeties					bending		compression		tension		bending		tension and compression	
Lay-up	nominal thickness	no of plies	A mm²/mm	W mm³/mm	I mm⁴/mm	f_{m} II N/mm²	f_{m} I N/mm²	f_{c} II N/mm²	f_{c} I N/mm²	f_{t} II N/mm²	f_{t} I N/mm²	E_{m} II N/mm²	E_{m} I N/mm²	$E_{t/cm}$ II N/mm²	Et/c I N/mm
I-I	4	3	3,6	2,16	3,89	37,6	6	22	14	17,1	10,9	12235	765	7944	505
I-I-I	6,5	5	6,4	6,83	21,8	29,1	16,6	20,3	15,8	15,8	12,3	9462	3538	7313	568
I-I-I-I	9	7	9,2	14,1	64,9	26	18,3	19,6	16,4	15,2	12,8	8465	4535	7065	593
I-I...I-I	12	9	12	24	144	24,5	19	19,2	16,8	14,9	13,1	7963	5037	6933	606
I-I...I-I	15	11	14,8	36,5	270	23,6	19,3	19	17	14,8	13,2	7663	5337	6851	614
I-I...I-I	18	13	17,6	51,6	454	23	19,5	18,8	17,2	14,6	13,4	7464	5536	6795	620
I-I...I-I	21	15	20,4	69,4	707	22,5	19,6	18,7	17,3	14,5	13,5	7323	5677	6755	624
I-I...I-I	24	17	23,2	89,7	1041	22,2	19,7	18,6	17,4	14,5	13,5	7218	5782	6724	627
I-I...I-I	27	19	26	113	1465	22	19,7	18,6	17,4	14,4	13,6	7137	5863	6700	630
I-I...I-I	30	21	28,8	138	1991	21,8	19,8	18,5	17,5	14,4	13,6	7072	5928	6681	631

	birch	combi	conifer
Panel share strenght N/mm² II and I (N/mm²)	9,5	7	7
Mean modulus of rigidity in panel share (N/mm²)	620	581	530
Pianar shear strenght N/mm² II and I, **18 mm**	2,67 / 2,34	2,67 / 1,50	7,71 / 1,50

Essential characteristics	Performance
bonding quality	class 3, exterior
release of formaldehyde	E1
water vapour permeability	wet cup dry cup
density ave 680 kg/m3	88 μ 218 μ
thermal conductivity birch W/(m K)	0,17
thermal conductivity combi W/(m K)	0,14
thermal conductivity conifer W/(m K)	0,13
sound absorption	0,10 (250 Hz - 500 Hz) 0,30 (1000 Hz - 2000 Hz)
airbone sound instalation	NPD
impact resistance	NPD
strenght and stiffness under point load	NPD
biological durability EN 335	
uncoated or coated without edge sealing	use calss 2
coated and edges protected	use class 3

Reaction to fire, min density 400 kg/m3, EN 13501-1	end use condition	minimum thickness	Class (excluding floorings)	Class (floorings)
	without air gap behind the panel	9	D-s2, d0	Dfl-s1
	with a closed or an open air gap not more than 22 mm behind the panel	9	D-s2, d2	-
	with a closed air gap behind the panel	15	D-s2, d1	Dfl-s1
	with an open air gap behind the panel	18	D-s2, d0	Dfl-s1
	Any	3	E	Efl

			Load duration class				
		service class	permanent action	long term action	medium term action	short term action	instantaneous action
Mechanical durability (EN 1995-1-1)	Kmod -factors	1	0,6	0,7	0,8	0,9	1,1
		2	0,6	0,7	0,8	0,9	1,1
		3	0,5	0,55	0,8	0,7	0,9
	Kdef -factors	1	0,8	0,5	0,25	0	-
		2	1	0,6	0,3	0	-
		3	2,5	1,8	0,9	0,4	-

8. The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 7. This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4.

Signed for and behalf of the manufacturer by:

In Järvelä 19.3.2014

Juha Jalkanen, Director, Plywood Industry