



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

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7. Declared performance

Harmonized technical specification EN 13986:2004

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

I=birch veneer long grained, I=spruce veneer long grained

| Koskisen birch plywood | | | | | | characteristic strength | | | | | | mean modulus of elasticity | | | |
|-------------------------|-------------------|-------------|-----------------------|-----------------------|-----------------------|-------------------------------------|------------------------------------|-------------------------------------|------------------------------------|-------------------------------------|------------------------------------|-------------------------------------|------------------------------------|---------------------------------------|--------------------------------------|
| section properties | | | | | | bending | | compression | | tension | | bending | | tension and compression | |
| Lay-up | nominal thickness | no of plies | A mm ² /mm | W mm ³ /mm | I mm ⁴ /mm | f _m II N/mm ² | f _m I N/mm ² | f _c II N/mm ² | f _c I N/mm ² | f _t II N/mm ² | f _t I N/mm ² | E _m II N/mm ² | E _m I N/mm ² | E _{vcn} II N/mm ² | E _{vcn} I N/mm ² |
| 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 | 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-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-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-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-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-I-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-I-I-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-I-I-I-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 strength | | | | | | mean modulus of elasticity | | | |
|------------------------|-------------------|-------------|-----------------------|-----------------------|-----------------------|-------------------------------------|------------------------------------|-------------------------------------|------------------------------------|-------------------------------------|------------------------------------|-------------------------------------|------------------------------------|---------------------------------------|--------------------------------------|
| section properties | | | | | | bending | | compression | | tension | | bending | | tension and compression | |
| Lay-up | nominal thickness | no of plies | A mm ² /mm | W mm ³ /mm | I mm ⁴ /mm | f _m II N/mm ² | f _m I N/mm ² | f _c II N/mm ² | f _c I N/mm ² | f _t II N/mm ² | f _t I N/mm ² | E _m II N/mm ² | E _m I N/mm ² | E _{vcn} II N/mm ² | E _{vcn} I N/mm ² |
| 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-I | 12 | 9 | 12 | 24 | 144 | 40 | 33,2 | 21,5 | 24,3 | 16,7 | 35 | 10012 | 6781 | 7758 | 816 |
| I-I-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-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-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-I-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-I-I-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-I-I-I-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 strength | | | | | | mean modulus of elasticity | | | |
|--|-------------------|-------------|-----------------------|-----------------------|-----------------------|-------------------------------------|------------------------------------|-------------------------------------|------------------------------------|-------------------------------------|------------------------------------|-------------------------------------|------------------------------------|---------------------------------------|--------------------------------------|
| section properties | | | | | | bending | | compression | | tension | | bending | | tension and compression | |
| Lay-up | nominal thickness | no of plies | A mm ² /mm | W mm ³ /mm | I mm ⁴ /mm | f _m II N/mm ² | f _m I N/mm ² | f _c II N/mm ² | f _c I N/mm ² | f _t II N/mm ² | f _t I N/mm ² | E _m II N/mm ² | E _m I N/mm ² | E _{vcn} II N/mm ² | E _{vcn} I N/mm ² |
| 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 | 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-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-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-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-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-I-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 strength N/mm ² II and I (N/mm ²) | 9,5 | 7 | 7 |
| Mean modulus of rigidity in panel share (N/mm ²) | 620 | 581 | 530 |
| Planar shear strength N/mm ² II and I, 18 mm | 2,67 / 2,34 | 2,67 / 1,50 | 7,71 / 1,50 |

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Essential characteristics**Performance**

| | | |
|---|--|---------|
| bonding quality | class 3, exterior | |
| release of formaldehyde | E1 | |
| water vapour permeability | wet cup | dry cup |
| density ave 680 kg/m ³ | 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/m ³ , 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 | - |

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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

A handwritten signature in blue ink, consisting of stylized initials and a long horizontal stroke.

Juha Jalkanen, Director, Plywood Industry