

# Whittle Flooring Company Limited

## Technical Data Sheet

**TSWF-PWWF**

### Finnish Birch Plywood with Fire Retardant Phenolic Film on one side to meet **EN 45545-2: 2013 + A1:2015 (R10)** **HL1, HL2, HL3**

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Whittle Flooring Company Limited Plywood specification PWWF is high strength plywood panel coated with a multilayer coating with improved fire safety properties intended mainly for use in the transport industry where a fire rated barrier is required on one face with a high grade Birch veneer on the other face, a strong smooth substrate for bonding floorcoverings, etc. PWWF can also in other special applications.

The plywood is ideal for use in situations, especially train floors, where an **EN 45545-2: 2013 + A1:2015 (R10) HL1, HL2, HL3** fire rating or **BS 476: Part 7; Class 1** surface spread of flame barrier on one face along with low smoke and toxicity is required.

#### **Base board**

Plywood constructed from 1.4mm thick Finnish Birch plies bonded together in a cross banded construction. The Botanical name for Finnish Birch is *Betula Pendula* (Silver Birch).

#### **Bonding**

Phenolic resin cross bonded weather resistant gluing according to **EN 314-2 Class 3** exterior, capable of withstanding exposure to weathering conditions and liquid water over sustained periods of time. (Replacing BS 6566: Part 8, WBP)

#### **Performance Class**

Biological durability; for protected external use as a structural component in humid conditions with **EN 636-2 S**. Full exterior grade class can be achieved once all faces and edges are fully sealed on installation.

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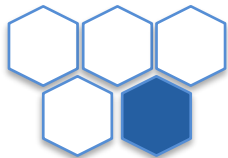
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#### **Formaldehyde Emissions**

Very low Emission class **E1** in accordance with **EN 717-2** (gas analysis method). The Formaldehyde emission from uncoated exterior plywood is under 0.4mg/ (m<sup>2</sup> x h), significantly lower than the Class E1 requirement of 3.5mg/ (m<sup>3</sup> x h).  
Release class **A** in accordance with **EN 1084**.

This plywood does not contain pentachlorophenol (PCP).

#### **Surface**

Face: Birch veneer, S grade compliant with SFS 2413 (EN 635-5)  
Reverse: Birch veneer BB grade (SFS 2413) coated with dark brown phenolic resin based fire rated overlay with wire mesh pattern. Imprinted text: "WISA-WIRE F"

#### **Properties of Wisa-Wire F Coated Surface**

Taber abraser value (DIN 53799); 1100 rounds  
Rolling test (SS923502); 1750 revolutions

#### **Edge Sealant**

All machined edges and rebates are sealed with two coats of preservative treatment and two coats of copolymer paint or intumescent coating as required

#### **Machining**

Full CNC machining service available as well as bonding and assembly work undertaken. CNC machined tolerances to BS EN 22768. Please forward CAD/drawing for quotation

#### **Source**

Plywood and veneer come only from legal sources within Europe and conform to all the relevant standards and regulations including European Union Timber Regulation (**EUTR**). Birch plywood is 70% **PEFC** certified **BMT-PEFC-1510** (Specify requirement on ordering).

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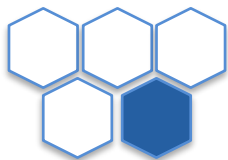
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#### **Thicknesses and Weights**

Thicknesses and weight of standard and scarf-jointed plywood tolerances fulfil the EN 315 (Plywood - Tolerances for dimensions) requirements.

Nom. Thickness  mm	No. of Plies	Min. Thickness  mm	Max Thickness  mm	Weight  Kg/m2
12	9	11.0	12.0	8.63
15	11	13.8	14.8	10.63
18	13	16.6	17.6	12.63

Sizes and thicknesses relating to moisture content 8-12%

#### **Panel Sizes**

Standard: 1200/1220/1250/1500/1525 x 2400/2440/2500/3050 mm

Maxi size: The largest scarf-jointed panel size 12500 x 2750 mm.  
Other sheet sizes are available on request.

#### **Panel Size Tolerances**      Non-machined sheet material only

Size	Tolerance
< 1000mm	+/- 1mm
1000-2000mm	+/- 2mm
2000-6000mm	+/- 3mm
> 6000mm	+/- 5mm

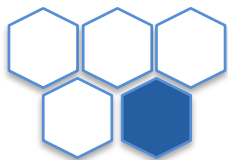
Squareness tolerance +/- 1mm per 1000mm

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#### Strength Characteristics

Finnish Birch Plywood						Characteristic strength		Mean modulus of elasticity	
Section Properties						Bending		Bending	
Nominal thickness	Number of plies	t <sub>mean</sub> mm	A mm <sup>2</sup> /mm	W mm <sup>3</sup> /mm	I mm <sup>4</sup> /mm	f <sub>m  </sub> N/mm <sup>2</sup>	f <sub>m⊥</sub> N/mm <sup>2</sup>	E <sub>m  </sub> N/mm <sup>2</sup>	E <sub>m⊥</sub> N/mm <sup>2</sup>
12	9	11.6	11.6	22.4	130	42.9	33.2	10719	6781
15	11	15.4	15.4	39.5	304	41.3	33.8	10316	7184
18	13	17.8	17.8	52.8	470	40.2	34.1	10048	7452

#### Fire Rating

EN 45545-2: 2013 + A1:2015 (R10) HL1, HL2, HL3

118RII Certified

BS 476 Part 7, 1997; Class 1 Surface Spread of Flame

BS 6853:1999 Annex D.8.6 - 164 Smoke Density Class

BS 6853: 1999 Annex B.2 - R Value 1.76 Toxic Fume Class

EN 13501-1 (SBI-test) Class C-s1 d0 (thickness 15 mm)

FMVSS 302 Approval

95/28/EC Approval (vehicle categories M2 and M3)

DIN 5510T2; Class S4/SR2/ST2 (railway rolling stock)

NF 16-101, 16-102 and NF X 70-100: Class M2 / F1 Thickness 15 mm and over  
(to 12 mm M2/F1 class from special request)

Birch Face BS 476: Part 7; Class 3

#### EN 13986:2004+A1:2015 Performance data

Water vapour permeability  $\mu$  - Wet 90, Dry 220 (uncoated)

Sound absorption  $\alpha$  - 0.10 / 0.30

Thermal conductivity  $\lambda$  - 0.17

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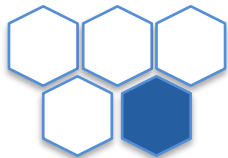
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### Storing Instructions

Store plywood panels in a dry, covered place away from direct sunlight. Panels should be stored horizontally on a level surface in an atmosphere conducive to the environment intended for its end use.

### Other Information

- 1. Embodied energy** - Wood has the lowest embodied energy of any mainstream building material; glass requires six times the amount of energy to produce than wood, Steel 24 times and Aluminium 125 times. In Finland, this is further enhanced by harvesting Biomass energy from the by-products to power the production process.
- 2. Thermal insulation** - Timber has the best thermal insulation properties of any mainstream building material, for example it is 350 times better than Steel.
- 3. Stable supply** - Finnish forests have annual quotas for felling and replanting trees, the ratio of which is controlled by regulatory authorities. This ensures a long-term supply whilst preserving the environment.
- 4. Recyclable** - Plywood and the wood waste from production processes has many recyclable uses, with the latest landfill directives creating even greater demand for such alternative uses.
- 5. Sustainable Forestry** - All our plywood comes from sustainable, managed forests certified by the **PEFC** with a system of Chain of Custody certification allowing traceability from the forest to the end user. The **PEFC** provides an assurance mechanism to purchasers of timber products that they are promoting the sustainable management of the forests.
- 6. Carbon Neutral** - Wood from sustainable forests can actually be better than carbon neutral.

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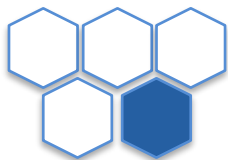
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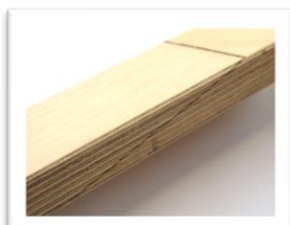
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