



The Biofore Company **UPM**

WISA® ARCHITECTS' GUIDE

Specifying Finnish Plywood



Uniclass L6617	
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UNCOATED PLYWOODS



WISA-Birch



WISA-Spruce, WISA-Spruce Special



WISA-Sprucefloor



WISA-Twin



WISA-Panel, WISA-Decor

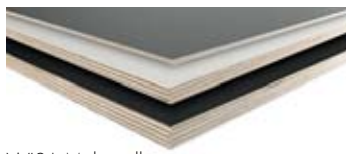
OTHER SPECIAL PLYWOODS



WISA-Birch Premium



WISA-Paintply



WISA-Multiwall

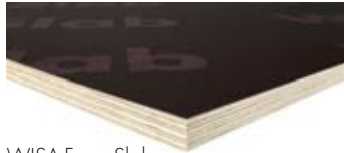
FORMWORK PLYWOODS



WISA-Form Beto



WISA-Form Birch



WISA-Form Slab



WISA-Form MDO

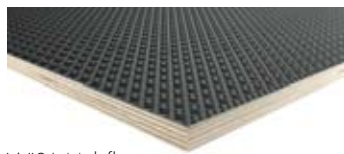


WISA-Form Spruce

COATED FLOORING PLYWOODS



WISA-Hexa Grip



WISA-Multifloor



WISA-Trans



WISA-Truck



WISA-Wire

EXAMPLE 1. TYPE OF APPLICATION

Structural floor in a new build domestic dwelling using platform frame construction

Plywood

Specification

Use class

Thickness

Number of plies

Grain direction

Edge profile

Panel size

Face grade

Glue line

Marking

Installation guidance

EXAMPLE 2. TYPE OF APPLICATION

Non structural decorative wall lining to interior of public building

Plywood

Specification

Use class

Thickness

Number of plies

Grain direction

Edge profile

Panel size

Face grade

Glue line

Marking

Installation guidance

Fire treatment

Plywood to be Finnish conifer plywood thick veneer construction in accordance with in BS EN 1995-1-1 Structural use of Timber
BS EN 636 requirements for plywood for use in humid conditions
BS EN 335 Use class 2 (risk of wetting/humid conditions)
18 mm
7
of face veneers to run parallel to long edges
T & G 2 long edges
2400 x 1220 mm (nominal), 2400 x 1213 mm (laid measure)
Grade II/III to BS EN 635-3
BS EN 314-2 Class 3
Plywood to be CE marked according to BS EN 13986 'marking of wood based panels for use as structural elements'.
Apply to manufacturer for installation/fixing instructions
Plywood to be Finnish birch throughout plywood, veneer construction
BS EN 636 requirements for plywood for use in dry conditions
BS EN 335 Use class 2 (risk of temporary wetting during construction)
12 mm
9
of face veneers to run parallel to short edges
square edged
1200 x 2400 mm
Grade I/IV (B/WG) to BS EN 635-2
to BS EN 314-2 Class 3
Plywood to be CE marked according to BS EN 13986 'marking of wood based panels for use in non-structural elements'.
Apply to manufacturer for installation/fixing instructions
Boards to be treated with pressure impregnation or surface coating to meet Euro Class C and/or B of BS EN 13501-1

CHECK LIST:

For drawing up a specification for plywood

- Use class (BS EN 335)
- Glue line (BS EN 314)
- Plywood specification (BS EN 636)
- Structural requirements (BS EN 1995-1-1)
- Wood species (Birch or Spruce)
- Face Grade (or coatings) (BS EN 635)
- Thickness
- No of plies
- Size
- Grain Direction of face veneers
- Edge profile
- Fire requirements Euro Class C/and or B
(BS EN 13501-1)
- CE Marking (EN 13986)
- PEFC



WISA Architects' Guide For You

The purpose of this guide is to enable Architects unfamiliar with plywood to select the right type and grade of plywood for the application they have in mind, and then specify the plywood in sufficient detail to ensure the specification is not open to interpretation.

The guide is intended for use in connection with permanent structural or decorative uses of plywood. The use of overlaid plywoods for 'temporary' applications, eg concrete formwork, is addressed in a separate guide specifically about concrete finishes and the suitability of different type of formwork plywood.

Included in this guide is information on specifying 'CE marking' of plywood. The adoption by Architects of CE Marking, which is an initiative under the European Construction Products Directive, is a useful tool to ensure products that are specified will be clearly identifiable on the construction site and fit for the intended use.

This guide refers to EN standards – Please use the latest version of the relevant standard in conjunction with local building regulations.





The criteria used to assess the type of plywood needed

CRITERIA

1. Structural or non structural application
2. Exposure – dry, humid or exterior application
3. Glue line – dry interior, covered exterior, non covered exterior conditions
4. Wood species – e.g. birch or spruce
5. Grade (appearance) of face veneers

1. Structural or non structural application

Plywood used in a structural application is required, under UK Building Regulations, to be in accordance with BS EN 1995-1-1 Structural use of Timber. WISA® Plywood Declarations of Performance (DoP), conforming to The Construction Products Regulation EN13986, are available from www.wisaplywood.com and can be used in accordance with BS EN 1995-1-1. Plywood used in non-structural applications are generally specified according to following criteria listed below.

2. Exposure Class

BS EN 636 details the differing requirements for plywoods in respect of exposure to humidity and weather.

3. Glue Line

BS EN 314:Part 2 defines the performance requirements for the glue line which bonds the veneers together.

NOTE: all plywood used in building and construction should be specified with a fully exterior glue line – BS EN 314-2: Class 3, as there is always the risk of temporary wetting on site.

4. Wood species

Finnish plywood manufacturers only use 2 wood species: Birch (*Betula Pendula*) and Spruce (*Picea Abies*) and this is reflected in the 2 different types of plywood manufactured.

“Birch throughout” which as the name suggests is an all birch veneer construction, generally all the veneers are of the same thickness (1.4 mm before sanding).

“Spruce” which is an all spruce veneer construction, commonly using thicker veneers than for “birch throughout” construction.

5. Grade (appearance) of face veneer

BS EN 635 defines “Classification by surface appearance”.

Part 1 of the standard covers general matters common to hardwood and softwood wood species.

Part 2 details permissible defects in different grades of hardwood face veneers.

Part 3 details permissible defects in different grades of softwood veneers.



GRADES OF FINNISH BIRCH FACE VENEERS



Grade B (I)



Grade S (II)



Grade BB (III)



Grade WG (IV)

GRADES OF FINNISH SPRUCE FACE VENEERS



Grade G



Grade II



Grade III

The most commonly used grades:

If the face veneer is to be painted or covered; birch in grade III/III, spruce in grades G or II.

Reverse side and for structural end-uses, where surface appearance is not of primary importance, Spruce grade III.

For decorative work; Birch in grade I/IV or II/III.

SUMMARY OF USE CLASSES, GLUE LINE QUALITIES, REQUIREMENTS FOR PLYWOOD

USE CLASS EN 335	Class 1 Dry conditions (20°C & 65% RH)	Class 2 Risk of wetting/humid conditions (20°C & 90% RH)	Class 3 Exterior conditions (frequently above 20% mc)	Class 4 In contact with ground/ fresh water (permanently above 20% mc)	Class 5 In salt water (permanently above 20% mc)
GENERAL SERVICE SITUATION	Dry, interior	Covered, exterior	Above ground, not covered	In contact with ground or fresh water	In salt water
MOISTURE CONTENT OF PLYWOOD	Dry	Occasionally increased	Frequently above 20%	Permanently above 20%	Permanently above 20%
BONDING CLASSES EN 314 -2	Class 1 Dry	Class 2 Humid	Class 3 Exterior	Class 3 Exterior	Class 3 Exterior
SPECIAL REQUIREMENTS FOR PLYWOOD EN 636	636 – 1 Dry conditions	636 – 2 Humid conditions	636 – 3 Exterior conditions	Not appropriate	Not appropriate

Types of plywoods for structural applications

Type of application	USE CLASS 1/SC1 dry conditions – structural
Type of application	fitting a new floor, which will subsequently be overlaid, in an existing building – excluding kitchens, bathrooms and other potentially 'wet' areas
Generic product	Finnish birch with face grade III/III or conifer plywood with face grade II/III
WISA plywoods	WISA-Birch, WISA-Sprucefloor, WISA-Spruce, WISA-Spruce Special
Standards	<ul style="list-style-type: none"> • Structural plywood as listed in BS EN 1995-1-1. • CE marked to BS EN 13986 Plywood for use in dry/humid conditions EN 636-2 S. • Glue line conforming to BS EN 314-2 Class 3. • Suitable for use in BS EN 335 Use class 1. • Plywood to conform to requirements of BS EN 636. • Birch face grade to BS EN 635-2 or conifer face grade to BS EN 635-3.
Type of application	USE CLASS 2/SC2 semi exposed – structural
Type of application	Flooring, wall sheathing, roof sarking, for domestic housing
Generic product	Finnish conifer plywood, face grade II/III – untreated, or possibly pressure treated for enhanced anti fungal protection
WISA plywoods	WISA-Spruce, WISA-Spruce Special, WISA-Sprucefloor
Standards	<ul style="list-style-type: none"> • Structural plywood as listed in BS EN 1995-1-1. • CE marked to BS EN 13986 Plywood for use in humid conditions EN 636-2 S. • Glue line conforming to BS EN 314-2 Class 3. • Suitable for use in BS EN 335 Use class 2. • Plywood to conform to requirements of BS EN 636. • Face grade II/III to BS EN 635-3.
Type of application	USE CLASS 3/SC3 fully exposed – structural – exterior conditions
Type of application	Exterior claddings, walkways, jetties, bridge decks
Generic product	Finnish birch or conifer plywood, coated, painted or otherwise further treated for full exterior applications
WISA plywoods	WISA-Multifloor, WISA-Multiwall, WISA-Paintply (all sides and edges painted), WISA-Trans, WISA-Truck
Standards	<ul style="list-style-type: none"> • Structural plywood as listed in BS EN 1995-1-1. • CE marked to BS EN 13986 Plywood for use in exterior conditions EN 636-3 S. • Glue line conforming to BS EN 314-2 Class 3. • Suitable for use in BS EN 335 Use class 3. • Plywood to conform to requirements of BS EN 636.



Types of plywoods for non structural applications

Type of application	USE CLASS 1 dry conditions – non structural
Type of application	Decorative wall or ceiling linings for a new or existing building.
Generic product	Finnish Birch plywood with face grade I/IV or II/IV, Finnish conifer plywood with face grade II/III
WISA plywoods	WISA-Birch, WISA-Birch Premium, WISA-Spruce, WISA-Spruce Special, WISA-Panel, WISA-Decor, WISA-Paintply.
Standards	<ul style="list-style-type: none"> • Glue line conforming to BS EN 314-2 Class 3. • Suitable for use in Use class 1 BS EN 335. • Plywood to conform to requirements of BS EN 636. • Birch face grade to BS EN 635-2 or conifer facegrade to BS EN 635-3. • CE marked to BS EN 13986 Plywood for use in dry/humid conditions EN 636-2.
Type of application	USE CLASS 2 semi exposed – non structural
Type of application	Soffit to underside of roof overhang
Generic product	Finnish birch or spruce plywood, coated, painted or otherwise treated to prevent surface discoloration
WISA plywoods	WISA-Birch, WISA-Paintply, WISA-Spruce, WISA-Spruce Special
Standards	<ul style="list-style-type: none"> • Glue line conforming to BS EN 314-2 Class 3. • Suitable for use in Use class 2 BS EN 335. • Plywood to conform to requirements of BS EN 636. • CE marked to BS EN 13986 Plywood for use in humid conditions EN 636-2.
Type of application	USE CLASS 3 fully exposed – non structurals
Type of application	Facia panels, building site and advertising hoardings, signs
Generic product	Finnish birch or conifer plywood, coated, painted or otherwise further treated for full exterior applications
WISA plywoods	WISA-Multiwall, WISA-Paintply (all sides and edges painted)
Standards	<ul style="list-style-type: none"> • Glue line conforming to BS EN 314-2 Class 3. • Suitable for use in Hazard class 3 to BS EN 335. • Plywood to conform to requirements of BS EN 636. • CE marked to BS EN 13986 Plywood for use in exterior conditions EN 636-3.





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