The Biofore Company

UPM

WISA® ARCHITECTS' GUIDE

Specifying Finnish Plywood

Uniclass	EPIC
L6617	F5216
CI/SfB	
Ri4	

20100302 January 2010

riba product selector

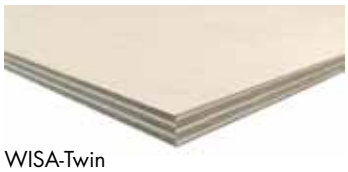
UNCOATED PLYWOODS

WISA-Birch

WISA-Spruce

WISA-Sprucefloor

WISA-Sprucedeck

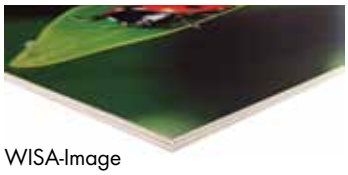


WISA-Twin

WISA-Panel
WISA-Decor

OTHER SPECIAL PLYWOODS

WISA-Birch Premium



WISA-Image

WISA-Paintply

WISA-Multiwall

FORMWORK PLYWOODS

WISA-Form Beto

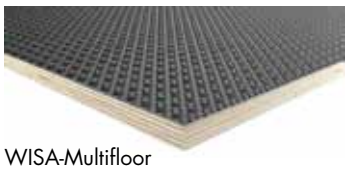
WISA-Form Birch

WISA-Form Slab

WISA-Form MDO

COATED FLOORING PLYWOODS

WISA-Hexa Grip



WISA-Multifloor

WISA-Trans X

WISA-Truck X

WISA-Wire

EXAMPLE 1. TYPE OF APPLICATION

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

Plywood

Specification

Hazard 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

Hazard 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 as listed in BS5268-2:2002

BS EN 636-2 requirements for plywood for use in humid conditions

BS EN 335 - 1:1992 Hazard 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 1220mm (nominal),
2400 x 1213mm (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 13986:2002 table ZA3 'marking of wood based panels for use as structural elements'.

Apply to manufacturer for installation/fixing instructions

Plywood to be Finnish birch throughout plywood, thin veneer construction

BS EN 636-1 requirements for plywood for use in dry conditions

BS EN 335 - 1:1992 Hazard 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 13986:2002 table ZA2 'marking of wood based panels for use in non-structural elements'.

Apply to manufacturer for installation/fixing instructions

Boards to be treated with an intumescent lacquer to BS 476 Class 1 Spread of flame, and BS 476 Part 6 Class O, Ignitability

CHECK LIST:
For drawing up a specification for plywood

- ☐ Hazard class (BS EN 335)
- ☐ Glue line (BS EN 314)
- ☐ Plywood specification (BS EN 636)
- ☐ Structural requirements (BS 5268:Part 2)
- ☐ 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 (BS 476, parts 6 & 7)
- ☐ 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.

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 "as listed in BS 5268-2:2002 Structural use of Timber.." or have an Agrement Certificate relevant to the application. Only certain defined constructions of plywood made from specified wood species from Finland, Canada, USA and Sweden are listed in the standard. Plywood used in non structural applications is generally specified according to the remaining four criteria.

2. Exposure Class

BS EN 636:2003 details the differing requirements for plywoods in respect of exposure to humidity and weather.

3. Glue Line

BS EN 314:Part 2:1993 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 (1.4mm 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 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 grade II/III or III/III.

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

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

HAZARD CLASS EN 335-2	Class 1 Dry conditions (20oC & 65% RH)	Class 2 Risk of wetting/humid conditions (20oC & 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	HAZARD CLASS 1 dry conditions - structural
Typical 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
Standards	• Structural plywood as listed in BS 5268-2:2002. • CE marked to BS EN 13986:2002. Table ZA3. • Glue line conforming to BS EN 314-2 Class 3. • Suitable for use in BS EN 335 Hazard class 1. • Plywood to conform to requirements of BS EN 636-1. • Birch face grade to BS EN 635-2 or conifer face grade to BS EN 635-3.

Type of application	HAZARD CLASS 2 semi exposed - structural
Typical 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-Sprucedeck, WISA-Sprucefloor
Standards	• Structural plywood as listed in BS 5268-2:2002. • CE marked to BS EN 13986:2002. Table ZA3. • Glue line conforming to BS EN 314-2 Class 3. • Suitable for use in BS EN 335-3 Hazard class 2. • Plywood to conform to requirements of BS EN 636-2. • Face grade II/III to BS EN 635-3.

Type of application	HAZARD CLASS 3 fully exposed - structural - exterior conditions
Typical 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, WISA-Trans X, WISA-Truck X
Standards	• Structural plywood as listed in BS 5268-2:2002. • CE marked to BS EN 13986:2002. Table ZA3. • Glue line conforming to BS EN 314-2 Class 3. • Suitable for use in BS EN 335-3 Hazard class 3. • Plywood to conform to requirements of BS EN 636-3.

Types of plywoods for non structural applications

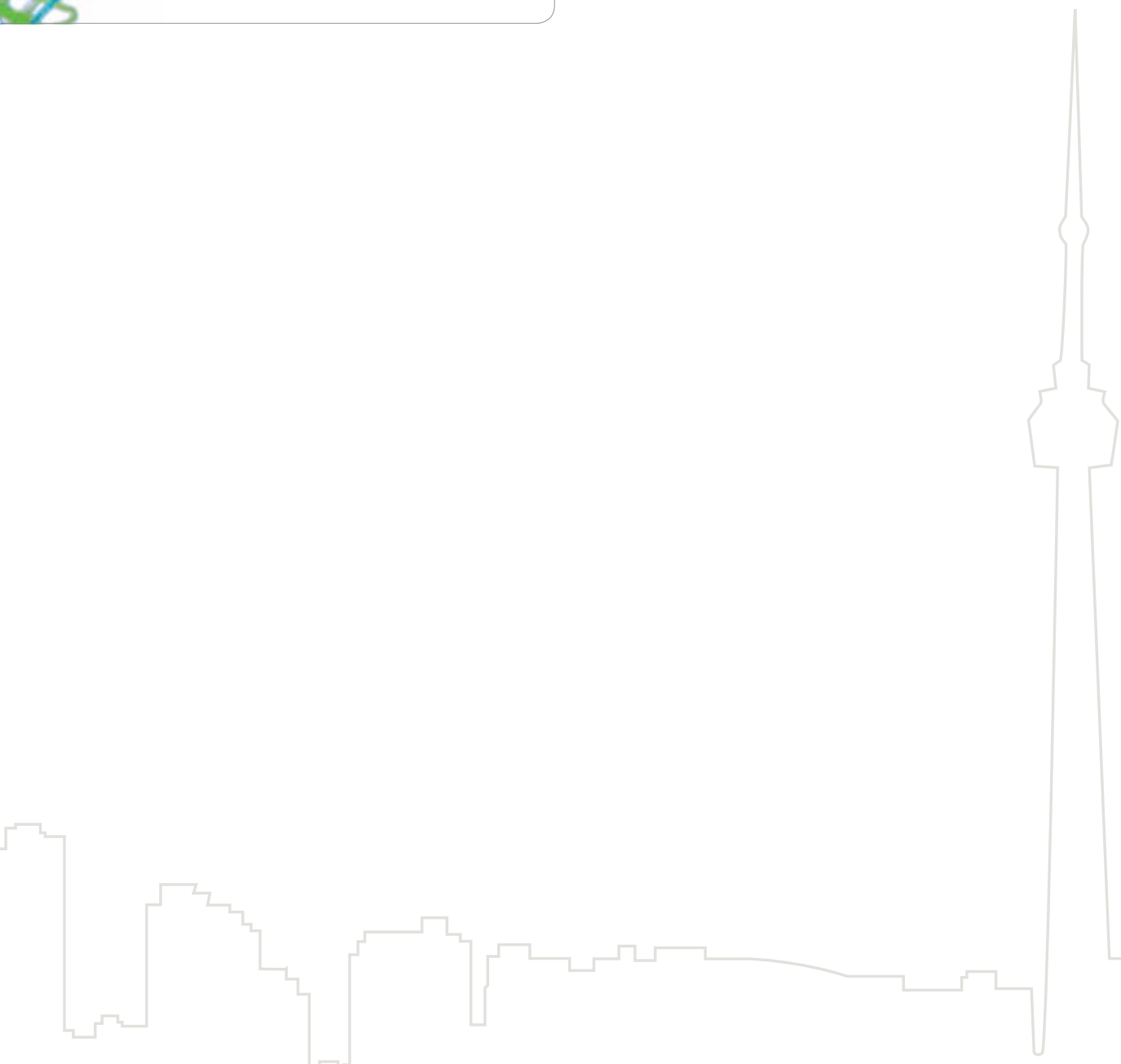
Type of application	HAZARD CLASS 1 dry conditions - non structural
Typical application	Decorative wall or ceiling linings for a new or existing building.
Generic product	Finnish Birch plywood with face grade I/IV or II/IV, Finnish conifer plywood with face grade II/III
WISA plywoods	WISA-Birch, WISA-Birch Premium, WISA-Spruce, WISA-Panel, WISA-Decor, WISA-Paintply.
Standards	• Glue line conforming to BS EN 314-2 Class 3. • Suitable for use in Hazard class 1 BS EN 335. • Plywood to conform to requirements of BS EN 636-1. • Birch face grade to BS EN 635-2 or conifer facegrade to BS EN 635-3. • CE marked to BS EN 13986:2002, table ZA2.

Type of application	HAZARD CLASS 2 semi exposed - non structural
Typical 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
Standards	• Glue line conforming to BS EN 314-2 Class 3. • Suitable for use in Hazard class 2 BS EN 335. • Plywood to conform to requirements of BS EN 636-2. • CE marked to BS EN 13986:2002, table ZA2

Type of application	HAZARD CLASS 3 fully exposed - non structural
Typical 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, WISA-Image
Standards	• 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 636-3. • CE marked to BS EN 13986:2002, table ZA2.

UPM – The Biofore Company

UPM leads the integration of bio and forest industries into a new, sustainable and innovation-driven future.



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