

BSI Standard and Grade

British Standards Institution

1. Defects Of Plywood

Table 1. Defects inherent in wood

Category	Type
1 Pin knots	
2 Sound intergrown knots with a diameter greater than 3mm	
3 Partially intergrown knots, unsound knots and non-adhering knots; also holes due to bores and parasitic plants	1 Partially adhering or intergrown knots 2 Non-adhering knots 3 Knots holes 4 Dog holes
4 Irregularities in the structure of the wood	1 Angle grain 2 Curly grain including burls 3 Interlocked grain 4 Spiral grain 5 Short grain
5 Splits Checks	1 Open 2. Closed
6 Bark pockets, resin pockets and resin streaks	1. Open 2. Closed
7 Defects due to borers, vines and parasitic plants	1 Small worm holes(pinworm holes) 2 Large worm holes and worm channels 3 Marine Borer holes 4 Marks of vines or parasitic plants 5 Chicken track
8 Sound discoloration	1 Blue stain 2 Colored sap stains 3 False heartwood 4 Other discoloration such as chemical stain and color streaks 5 Mould
9 Rot	

NOTE. Defects and characteristics inherent in wood are defined in BS 6566: Part 2.

Table 2. Manufacturing defects

Category	Type
10 Open joints	
11 Overlaps and pleats on the surface	
12 Blisters	
13. Hollows	
Imprints	

Bumps	
14 Roughness	
15 Sanding through	
16 Glue penetration	
17 Inclusion of metal partial (see note 2)	
18 Repairs	1 Patches 2 Shims 3 Synthetic filling
19 Defects at the edges of the panel	1 Sanding defects 2 Sawing defects
20 Other defects	

NOTE. 1. Manufacturing defects are defined in BS 6566: Part 2.

NOTE. 2. It should be noted that 'ferrous' metal particles are prohibited in all grades in plywood.

2 Requirements for tolerances on dimensions of plywood

2.1 Compliance

When tested in accordance with appendix A, the plywood shall comply with 2.2 to 2.6.

2.2 Thickness

The deviation between the mean thickness and the nominal thickness and the maximum difference in thickness measurements within the panel shall be within the tolerance.

2.3 Edge straightness

The deviation in edge straightness shall not exceed +/- 1mm per meter length of the panel being assessed.

2.4 Squareness

The out of squareness of the edge of the panel shall not exceed +/-1.5mm per meter of the edge of the panel being assessed. It shall be permissible to determine this by measurement of diagonals, but these differ by more than 0.25%, where there is doubt about the validity of the diagonal measuring method, e.g. when the shorter edges of the panel incline to or away from the center by a similar amount, and in case of dispute, the try-square method shall be employed.

2.5 Length and width

The tolerances on the nominal length and width of a panel shall be within +0, -4mm for the modular range (see appendix B) and within +/- 4mm for other sizes.

NOTE. Panels for some special end user may have tolerance different from those specified in this clause.

2.6 Flatness

This standard does not specify a requirement for flatness.

NOTE. The amount of distortion that can be tolerated will depend not only on the thickness of the panel, the construction and the species but also on the requirements of the end user.

Table 1. Thickness tolerances for veneer plywood within outer plies of coniferous species

Maximum deviations permitted between the mean thickness of a panel and its nominal thickness.				Maximum permitted difference between thickness measurements of an individual sample panel	
Sanded		Unsanded		Sanded	Unsanded
Nominal thickness	Deviation	Nominal thickness	Deviation		
Up to and including 18mm	+/-0.5mm	Up to and including 20.5mm	+1.0mm -0.5mm	mm	mm
Over 18mm	+/-3% of t*	Above 20.5mm	+/-8% of t* -.05	0.8mm	1.5mm

*t is the nominal thickness (in mm).

NOTE. Tolerances for touch sanded plywood are not covered by this table.

Table 2. Thickness tolerances for veneer plywood with outer plies of broadleaved species and for core plywood

Maximum deviations permitted between the mean thickness of a panel and its nominal thickness.			Maximum permitted difference between thickness measurements of an individual sample panel.		
Nominal thickness	Sanded	Unsanded	Nominal thickness	Sanded	Unsanded
Up to and including 4mm	+0.2mm -0.4mm	+0.8mm	Up to and including 12mm	0.4mm	0.8mm
Over 4	+0.2 -(0.4+3% of t)*	-(0.3+3% of t)*	Over 12	0.6	1.0

*t is the nominal thickness (in mm).

3. Grade Of Plywood

(b) Grades B, BB and C*

No.	Categories of defectst	Grade		
		B (face)	BB	C* (back)
1	Pin Knots	Permitted if tight and not clustered	permitted	permitted
2	Sound intergrown knots exceeding 3 mm in diameter	Four permitted per 3 square metres of the surface of the outer ply, to a maximum individual diameter of 13mm (not closed)	Five permitted per 3 square metres of the surface of the outer ply, to a maximum individual diameter of 25mm	permitted
3	Partially intergrown knots, unsound knots and nonadhering knots; also holes due to borers and parasitic plants	Not permitted	Permitted to a maximum individual diameter of 9mm, provided their cumulative diameter does not exceed 40mm per square metre and they are properly filled	permitted
4	Irregularities in the structure of the wood: sound burls (curely grain) Splits	permitted if smooth	permitted	permitted
5	(a) Open splits (puttied)	Two permitted at each end of a panel, to a maximum individual width of 3mm and a maximum individual length of 6% of the panel length	Two permitted at each end of a panel, to a maximum individual width of 5mm and a maximum individual length of 12.5% of the panel length	Eight permitted at each end of a panel, to a maximum individual width of 15mm and a maximum individual length of 40% of the panel length
	(b) Close splits (hairline)	Three permitted per panel at the ends and to a maximum individual length of 100mm	permitted	permitted
	(c) Compression failure (cross break)	One permitted per outer ply provided hairline and of a length not exceeding 10% of th	One permitted per outer ply provided hairline and of a length not exceeding 10% of the panel width	

		e panel width		
	Bark pockets	Not permitted	Permitted if very slight	permitted
6	Resin pockets	Not permitted	One permitted per square metre of the outer ply, to a maximum individual width of 4mm and to a maximum individual length of 100mm	permitted
	Resin exudation	Not permitted	permitted if slight	permitted
	Defects due to borers, vines and parasitic plants			
	(a) Worm holes and channels	Not permitted	Pinworm holes permitted provided they are occasional, scattered and well puttied. No discoloration permitted. Worm channels not permitted.	permitted
7	(b) Marks of parasite plants and vines	Two permitted per outer ply, to a maximum individual width of 4mm and maximum individual length of 100mm, provided the are smoothly sanded and leveled	permitted if occasional and smoothly sanded and levelled	permitted
	(c) Chicken track	Permitted if isolated and slight	permitted	permitted
8	Sound discoloration (natural), stain/mineral streak	Permitted if very slight	Permitted if not excessive	permitted
9	Rot	Not permitted	Not permitted	Not permitted
	Open joints	Not permitted	Three permitted per outer ply, to a maximum individual width of 3mm and to a maximum individual length of 10% of the panel length, if properly filled	Permitted to a maximum individual width of 15mm and to a maximum individual length of 60% of the panel length
10	Mechanical defects, e.g. chainmarks, machinery stain, sander burns, metal stain, grease, oil or colored chalk on face	Not permitted	Permitted if slight and occasional	permitted
14	Roughness, brashness or torn grain	Permitted if very slight and occasional	Permitted if slight	Permitted if not excessive
17	Inclusion of metal particles	Permitted if non-ferrous and in inner plies or cores only	Permitted if non-ferrous and in inner plies or cores only	Permitted if non-ferrous and in inner plies or cores only
	Sanding	Smooth	Reasonably smooth	No special requirements
18	Repairs, boat or symmetrical patch	Not permitted	Five permitted per outer ply, to a maximum individual width of 100mm and to a maximum individual length of 1	Permitted

			50mm, provided they are well made, are of similar grain and are color matched	
			Permitted to a maximum individual width of 5mm and to a maximum individual length of 300mm, provided they are well made, are of similar grain and are color matched	Permitted
Shims	Not permitted			
Tape or glue residue, putty mark	Not permitted		Permitted if slight and smoothly sanded	Permitted
Knifemark	Not permitted		Permitted to a width of 0.8mm if slight	Permitted
20 Other defects which are not indicated	Not permitted unless they resemble a defect already defined in which case they shall be considered under that category		Not permitted unless they resemble a defect already defined in which case they shall be considered under that category	Not permitted unless they resemble a defect already defined in which case they shall be considered under that category

*It is intended that classification by appearance of tropical hardwood plywood covered by this table will, in a reasonable time, comply with the grading requirements for grades and given to the grade descriptions in table 6(a).

Numbers cross reference, where possible, to those in table 5,6(a) and 7.

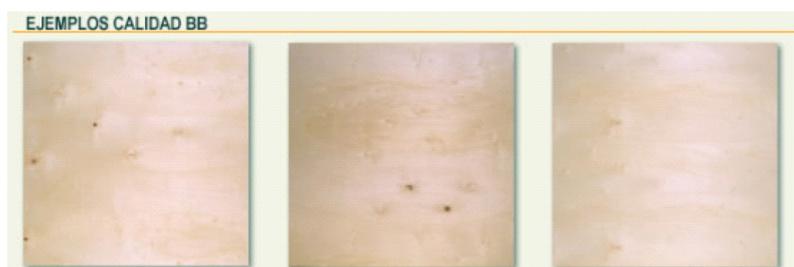
Sometimes designated CC quality.

Grade B: Clean wood with small sound knots.



Grade BB:

Wood with variations in colour and a larger number of sound knots.



Grade C:

Wood with all kinds of variations in colour and larger knots. Possibility of scattered small knots and unimportant splits.



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