

**Plywood for General Purpose**  
**IS 303 : 1989 (BWR)**

Sr. No.	Test	Units	Clause No.	Test Ref.	Standard Value	ASIS Value
1	Type based on classification by appearance	-	5	IS 303:1989	AA/AB/BB	Complies
2	Dimension		8	IS 303:1989		
(a)	Length	mm			(+) 6.0 (-) 0	2140
(b)	Width	mm			(+) 3.0 (-) 0	916
(c)	Thickness	mm			± 5	18.4
(d)	Squareness	%			0.2	0.03
(e)	Edge Straightness	%			0.2	0.02
3	Workmanship & Finish	-	9	Visual	The Plywood board shall be of uniform thickness and the faces of plywood boards shall be reasonably smooth and face venues shall be or reasonably uniform thickness.	Satisfactory
4	Glue Adhesion Test	-	11.2	IS 1734 (Pt-5) :1983		
(a)	Water Resistance Test (At boiling temp. For 8 hours dried at 16 hours at 65 ± 2°C temp. And two more cycles of soaking and drying.) (Min.)				Passes	Satisfactory
(b)	Mycological Test (Min.)	-	11.2.2	IS 1734 (Pt-7) : 1983	Passes	N.A.
5	Moisture Content	%	11.3	IS 1734 (Pt-1) : 1983	15-May	5.2

6	Static bending Strength		11.4	IS 1734 (Pt-11) : 1983		
(a)	Along ( Direction parallel to grain direction of the face veneer)					
(i)	Modulus of Rupture	N/mm <sup>2</sup>				
	Avg. (Min.)				40	50.6
	Ind. (Min.)				30	43.7
(ii)	Modulus of Elastiety	N/mm <sup>2</sup>				
	Avg. (Min.)				5000	7570
	Ind. (Min.)				4500	6979
(b)	Across ( Direction perpendicular to the grain direction of the face veneer)					
(i)	Modulus of Rupture	N/mm <sup>2</sup>				
	Avg. (Min.)				20	59
	Ind. (Min.)				18	54.5
(ii)	Modulus of Elastiety	N/mm <sup>2</sup>				
	Avg.(Min.)				2500	6303
	Ind. (Min.)				2200	6156

## Plywood for General Purpose

### IS 303 : 1989 (MR)

Sr. No.	Test	Units	Clause No.	Test Ref.	Standard Value	ASIS Value
1	Type based on classification by appearance	-	5	IS 303:1989	AA/AB/BB	Complies
2	Dimension		8	IS 303:1989		
(a)	Length	mm			(+) 6.0 (-) 0	Complies
(b)	Width	mm			(+) 3.0 (-) 0	Complies
(c)	Thickness	mm			± 5	
(d)	Squareness	%			0.2	0.09
(e)	Edge Straightness	%			0.2	0.08
3	Workmanship & Finish	-	9	Visual	The Plywood board shall be of uniform thickness and the faces of plywood boards shall be reasonably smooth and face venues shall be or reasonably uniform thickness.	Satisfactory
4	Glue Adhesion Test	-	11.2	IS 1734 (Pt-5) :1983		
(a)	Water Resistance Test (A1 60 ± 2°C Temp for 3 hours dried for 8 hours at 65 ± 2°C temp. And two more cycles of soaking and srying.) (Min.)				Passes	Complies
(b)	Mycological Test (Min.)	-	11.2.2	IS 1734 (Pt-7) : 1983	Passes	Complies
5	Moisture Content	%	11.3	IS 1734 (Pt-1) : 1983	15-May	20-Jun

6	Static bending Strength		11.4	IS 1734 (Pt-11) : 1983		
(a)	Along ( Direction parallel to grain direction of the face veneer)					
(i)	Modulus of Rupture	N/mm <sup>2</sup>				
	Avg. (Min.)				30	33.5
	Ind. (Min.)				27	30
(ii)	Modulus of Elasticity	N/mm <sup>2</sup>				
	Avg. (Min.)				4000	4450
	Ind. (Min.)				3600	3890
(b)	Across ( Direction perpendicular to the grain direction of the face veneer)					
(i)	Modulus of Rupture	N/mm <sup>2</sup>				
	Avg. (Min.)				15	19
	Ind. (Min.)				13	16.5
(ii)	Modulus of Elastiety	N/mm <sup>2</sup>				
	Avg. (Min.)				2000	2310
	Ind. (Min.)				1800	2050

## Marine Plywood

### IS 710 : 2010 (BWP)

Sr. No.	Test	Units	Clause No.	Test Ref.	Standard Value	ASIS Value
1	Dimension		6	IS 710:2010		Complies
(a)	Length	mm			(+) 6.0 (-) 0	Complies
(b)	Width	mm			(+) 3.0 (-) 0	Complies
(e)	Thickness	mm			± 5	Complies
(d)	Squareness	%			0.2	0.06
(e)	Edge Straightness	%			0.2	0.08
2	Workmanship & Finish	-	7	Visual		
	(A)				<p>The face and baci of the finished board shall be free from checks, splits, gaos, blisters, harmful discoloration, any kind of decay, pleats and overlaps, insect holes, dead or loose knots and live knots whose maximum dimensions in any direction exceed 25 mm the plywood shall be free from wrap.</p>	Satisfactory

	(B)				Sound knots of diameter 25 mm and less shall be permitted provided the center to center distance between any two such knots is not less than 300 mm.	Satisfactory
	(C)				The face shall be free from any patches, but on the back patches at distances of not less than 600 mm apart shall be permissible the maximum dimension of any one patch shall be not more than 40 mm.	Satisfactory
	(D)				Splits, gaps and open joints shall not be permitted in core. These may be permitted in face provided the gap or opening does not exceed a width of 0.5 mm. If exceeding 0.5 mm this may be rectified by well fitted veneer inserts of a minimum width of 5.0 mm provided the grain of the veneer does not exceed in deviation by more than 10% from the grain direction of the surrounding veneer.	Satisfactory

	(E)				The finish shall be reasonably smooth and sanding shall be given to both the sides as required by purchaser.	Satisfactory
	(F)				The minimum width of the veneer used in face and back of the boards shall be not less than 75 mm except at the edges where it may be less the edge of the board shall be trimmed square.	Satisfactory
3	Moisture Content	%	9.1.1	IS 1734 (Pt-1) :1983	15-May	5.9
4	Glue Adhesion in Dry State	-	9.1.2	IS 1734 (Pt-4) : 1983		
(a)	Glue Shear Strength	N				
	Avg. (Min.)				1350	1690
	Ind. (Min.)				1100	1135
(b)	Adhesion of Plis (Min.)	-	9.12.2	IS 1734 (Pt-5) : 1983	Passes	Satisfactory
5	Water Resistance Test (Boiling for 72 hours)		9.1.3.1	IS 1734 (Pt-4) : 1983		
(a)	Glue Shear Strength	N				
	Avg. (Min.)				1000	1357
	Ind. (Min.)				800	813
(b)	Adhesion of Plies	-	9.1.3.1.2	IS 1734 (Pt-5) : 1983	Passes	Satisfactory
6	Tensile Strength	N/mm <sup>2</sup>	9.1.4	IS 1734 (Pt-9) : 1983		

(a)	Parallel to Grain Direction (Min.)				42	48.5
(b)	Perpendicular to Grain Direction (Min.)				25	64.9
(c)	Sum of the Tensile Strength (a+b) (Min.)				84.5	103.4
7	Mycological Test		9.1.5	IS 1734 (Pt-7) : 1983		
(a)	Visual				No appreciable signs of separation at edges of veneers.	Satisfactory
(b)	Glue Shear Strength	N	-	IS 1734 (Pt-4) : 1983		
	Avg. (Min.)				1000	1165
	Ind. (Min.)				800	995
(c)	Adhesion of Plies	-	-	IS 1734 (Pt-5) : 1983	Passes	Satisfactory
8	Static Bending Strength		9.1.6	IS 1734 (Pt-11) : 1983		
(a)	Modulus of Elasticity	N/mm <sup>2</sup>				
(i)	Along the Face Grain Direction					
	Avg. (Min.)				7500	8096
	Ind. (Min.)				6700	7112
(ii)	Across the Face Grain					
	Avg. (Min.)				4000	6679
	Ind. (Min.)				3600	7112
(b)	Modulus of Rupture	N/mm <sup>2</sup>				



(i)	Along the Face Grain Direction					
	Avg. (Min.)				50	53.6
	Ind. (Min.)				45	47.5
(ii)	Across the Face Grain Direction					
	Avg. (Min.)				30	62.8
	Ind. (Min.)				27	60.5
9	Wet Bending Strength		9.1.7	IS 1734 (Pt-11) : 1983		
(a)	Modutus of Elasticity	N/mm <sup>2</sup>				
(i)	Along the Face Grain Direction					
	Avg. (Min.)				3750	5361
	Ind. (Min.)				3400	5016
(ii)	Across the Face Grain Direction					
	Avg. (Min.)				2000	8040
	Ind. (Min.)				1800	7020
(b)	Modulus of Rupture	N/mm <sup>2</sup>				
(i)	Along the Face Grain Direction					
	Avg. (Min.)				25	32.4
	Ind. (Min.)				22	26.3
(ii)	Across the Face Grain Direction					
	Avg. (Min.)				15	50.2
	Ind. (Min.)				13	43.3

10	Retention of preservative Chemicals	Kg/m <sup>2</sup>	9.1.8	IS 2753 (Pt-1) : 1991	When tested as specified the plywood shall have a retention of not less than 12 Kg/m <sup>2</sup> in vase of CCA or CCB or ACC composition or 100 kf/m <sup>2</sup> in case of creosote fuel oil composition with a dgrade penetrations.
				IS 2753 (Pt-2) : 2014	