



USSR STATE STANDARD

SOFTWOOD LUMBER

SPECIFICATIONS

GOST 8486-86
(CMEA STANDARD 2369-80)

Official Edition

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USSR STATE STANDARD

SOFTWOOD LUMBER**Specifications****GOST****8486-86**

OKP (All-Union Product Classification Code) 53 3100

(CMEA Standard 2369- 80),

Date of Introduction 01.01.88

This Standard applies to softwood lumber and establishes technical requirements for the lumber designed for use in the national economy and for export.

The Standard does not apply to resonance and aircraft lumber.

(Amended Wording, Amendment No. 3).

1. KEY PARAMETERS AND DIMENSIONS

1.1. The lumber shall be divided into edge-surfaced, edge-unsurfaced, boards, scantling and bars.

The terms and definitions shall comply with GOST 18288-87.

1.2. Nominal sizes of the lumber and limit deviations from them shall comply with GOST 24454-80.

Subject to agreement with the customer the lumber of length and sizes gradation and permissible deviations established by GOST 9302-83 and GOST 26002-83 may be used for the domestic market.

(Amended Wording, Amendment No. 2

1.3. The identification number shall consist of the name of the lumber (board, scantling, bar), a digit standing for the grade, the name of wood (хв. for the coniferous or a particular kind of wood: pine, fir, larch, cedar, silver fir), numbers for cross section (width for edge-unsurfaced lumber) and the number of this Standard.

Example identification numbers:

Доска -2- сосна - 32 × 100 - ГОСТ 8486-86

Доска - 2 хв. - 32 - ГОСТ 8486-86

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Revised Edition with Amendments

2. TECHNICAL REQUIREMENTS

2.1. Lumber shall meet the requirements of this Standard and shall be made of wood of the following kinds: pine, fir, silver fir, larch and cedar.

2.2. According to the quality of wood and processing, boards and scantling shall be subdivided into five grades (select, 1, 2, 3 and 4), while bars shall be subdivided into four grades (1, 2, 3 and 4) and shall meet the requirements specified in the table.

The designation of the lumber of different grades is given in the Appendix (Obligatory)

2.3. The select lumber and grades 1, 2 and 3 shall be produced as dry (moisture content no more than 22%), damp (moisture content over 22%) and damp antiseptized. In the period from 1 May to 1 October is allowed to produce damp antiseptized and damp lumber if agreed with the customer.

The humidity of grade 4 lumber is not standardized.

Antiseptization shall comply with GOST 10950-78.

2.4. The assessment of quality of lumber, except for the deck lumber, shall be made on the worst face or edge of the given board, and on the worse side for square scantling and bars.

2.5. The roughness parameter of the lumber surface Rm_{max} shall not exceed 1 250 μm for the select grade and grades 1, 2 and 3, and 1 600 μm for grade 4 according to GOST 7016-82. 2.4, 2.5.

(Amended Wording, Amendment No. 3).

2.6. The non-parallelism of faces and edges of edge-surfaced lumber, and also of faces of edge-unsurfaced lumber is allowed in the limits of deviations from the nominal sizes established by GOST 24454-80.

2.7. Additional requirements for the lumber designed for special shipbuilding

2.7.1. Lumber for planking of parts and links of sea cutters, sea boats, skimmer crafts, speed lake and river motorboats and sports vessels of class 1 shall meet the requirements of a select grade with the following additions:

the core part in the middle of the lumber length shall be on the internal face: no less than 50 % of the face width in the longitudinal planking, and no less than 25 % of the face width in the diagonal planking;

the sizes of intergrown, partly intergrown and dead knots taken into account shall not exceed 10 mm;

the quantity of intergrown knots taken into account shall not exceed 1 in any one-meter long sector of the lumber length, while the quantity of partly intergrown and dead knots shall not exceed 1 at a 2 m long sector of the lumber length;

the knots taken into account are allowed at a distance no more than 10 mm from the arris of the lumber;

gum pockets on the external face of the lumber are not allowed.

Limiting standards for defects

Defects of wood according to GOST 2140-81	Limiting standards for defects in lumber by grades									
	select	1		2		3		4		
1. Knots 1.1. Sound intergrown, and in bars partly intergrown and sound dead knots as well: face and and arris edge knots : on the lumber up to 40 mm thick 40 mm thick and over	Allowed sizes are given in fractions of the side width, and the quantity at any one-meter long sector of the length on each of the sides shall be no more than:									
	Size	Quantity	Size	Quantity	Size	Quantity	Size	Quantity	Size	Quantity
	1/5	2	1/4	3	1/3	4	1/2	4	Allowed	
	1/3	1	1/2	2	2/3	2	Entire edge	2	Allowed	
1/4, but no more than 15 mm	2	1/3	2	1/2	8	As above	3	Allowed		
Note. In bars the quantity of knots is not standardized.										
1.2. Partly intergrown and dead knots face and arris knots	Allowed in the total number of sound intergrown knots with sizes given in fractions of the side width and the quantity at any one-meter long sector of the length on each of the sides shall be no more than:									
	Size	Quantity	Size	Quantity	Size	Quantity	Size	Quantity	Size	Quantity
	1/8	2	1/5	2	1/4	3	1/3	3	1/2	4

(cont.)

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Defects of wood according to GOST 2140-81	Limiting standards for defects in lumber by grades									
	Select		1		2		3-rd		4-th	
	Size	Quantity	Size	Quantity	Size	Quantity	Size	Quantity	Size	Quantity
edge knots: on the lumber up to 40 mm thick 40 mm thick and over 1.3. Decayed, rotten and snuff-colored knots	1/4	1	1/3	1	1/2	2	Entire edge	2	In all crimp	2
	10 mm	1	1/4	2	1/3	2	2/3	2,	As above	3
	Not allowed		Allowed in the total number of sound partly intergrown and dead knots of the same sizes but no more than half their number.							
	The wood surrounding snuff-colored knots shall have no features of decay									

Notes:

1. The knots with half the size of the permitted maximum are not taken into account.
2. In the lumber 40 mm thick and over (except for select grade), oblong and mule-ear knots with the minor axis size up to 6 mm with the depth of occurrence up to 3 mm are allowed without limitation of the major axis size.
3. The stub is allowed by the standards for dead knots. It is not allowed for select grade.
4. The size of a knot shall be determined by the distance between tangent lines to the outline of a knot drawn in parallel to the longitudinal axis of the lumber. Half the distance between the tangent line drawn in parallel to the longitudinal axis of the lumber shall be taken as the size of an oblong and mule-ear knot on the faces of lumber and on all the sides of scantling and bars.
5. In the lumber over 3 m long one knot with the size stipulated by the standards for the next lower grade, may be present.
- 6 At the sector of lumber with equal length and width, the maximum sum of sizes of the knots lying on the straight line, intersecting the knots in any direction, shall not exceed the limit size of the permitted knots.

(cont.)

Defects of wood according to GOST 2140-81	Limiting standards for defects in lumber by grades					
	Select	1	2	3	4	
2. Cracks 2.1 Face and edge cracks, including those getting to the butt 6.2. Face open cracks, including those getting to the butt 2.3. Butt through cracks (except for the shrinkage cracks)	In the lumber for load carrying structures the sum of the sizes of all the knots located at the sector 200 mm long, shall not exceed the limit size of the permitted knots.					
	1/6	Allowed length given in fractions of the lumber length, no more than: Shallow		Shallow and deep		Allowed provided that the integrity of lumber is maintained
	1/10	1/4	1/3 Deep	1/2		
	100	Allowed length in mm, no more than: 150		200	Allowed overall length given in fractions of the lumber length, no more than: 1/6	
Not allowed	Allowed on one butt with the length given in fractions of the lumber width, no more than: 1/4			1/3	1/2	1/4 Allowed provided that the integrity of lumber is maintained
3. Defects of the wood structure 3.1. Inclination of fibers	Allowed no more than 5 %		Allowed			

Note. The permitted sizes of the cracks are established for the lumber with the wood humidity no more than 22 %, at a bigger humidity these sizes of cracks shall be twice reduced.

(cont.)

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Defects of wood according to GOST 2140-81	Limiting standards for defects in lumber by grades				
	Select	1	2	3	4
3.2. Warping	Not allowed	Allowed on no more than 20% of the area of a face of the lumber		Allowed	
3.3. Gum pockets	One single-sided gum pocket no more than 50 mm long is allowed at any one-meter long sector	Allowed quantity at any one-meter long sector of a the lumber length, no more than 2	4	Allowed	
3.4. Core and double core	Not allowed	Allowed without ring gall and radial cracks only the in the lumber 40 mm thick and over		Allowed	
3.5. Dead streak	Not allowed	A single-sided dead streak is allowed with the width given in fractions of the corresponding side of the lumber, no more than: 1/10 1/5 1/4 and with the length given in fractions of the lumber length, no more than: 1/20 1/10			Allowed

(cont.)

Defects of wood according to GOST 2140-81	Limiting standards for defects in lumber by grades				
	Select	1	2	3	4
3.6. Canker	Not allowed		Allowed extent given in fractions of the lumber length, up to 1/5 1/3 but no more than 1 m		Allowed
4. Fungous defects					
4.11. Fungal stain (strip)	Not allowed	Allowed total area in % of the area of the lumber, no more than: 10 20		Allowed	
4.2. Alburnum fungous coloring and mold	Not allowed	Allowed as superficial in the form of spots and strips. Allowed as deep with the total area in % of the area of the lumber, no more than: 10 20 60			Allowed
4.3. Decays	Not allowed		Not allowed		Only parti-colored sieve core decay as spots and strips of the total area no more than 10 % of the area of the lumber is allowed

(cont.)

Defects of wood according to GOST 2140-81	Limiting standards for defects in lumber by grades				
	Select	1	2	3	4
6.3. Kerf bevel	In the lumber one butt (both butts in the export lumber) shall be sawn perpendicularly to the longitudinal axis of the lumber. The deviation from in perpendicularity of the butt to face and edge up to 5 % of the width and thickness of the lumber accordingly is allowed.				
6.4. Marks, waviness, tear-out	Allowed within the limits of deviations from the nominal sizes established by GOST 24454-80			Allowed depth shall be no more than 3 mm	Allowed
7. Warpings					
7.1. Longitudinal warpage on the face and edge, crook warp	Allowed sag given in fractions of the lumber length in %, no more than:				Allowed
	0.2	0.2	0.2	0.	
Note.	In edge-unsurfaced lumber longitudinal warpage along the edge is not standardized				
7.2. Transversal warpage	Allowed sag given in fractions of the lumber width in %, no more than:				Allowed
	1	1	1	2	

Notes:

1. The warpage standards are established for the lumber with humidity no more than 22 %. At a bigger humidity these standards shall be twice reduced.
2. Defects of wood not mentioned in this Standard, are allowed.

(Amended Wording, Amendments Nos. 1, 3)

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2.7.2. The lumber for decks planking of sea vessels shall correspond to the requirements of the select and first grades for external decks and of the first and the second grades for internal decks with the following additions:

on the best faces of the lumber up to 100 mm wide inclusive designed for external decks, the alburnum part no more than 30 mm wide shall be allowed, while the surfaces of faces shall be rift or near-rift sawn (without wedge cuts of year circlets);

the knots taken into account are allowed as follows: intergrown knots shall be at a distance no more than 10 mm and partly intergrown and dead knots shall be at a distance no more than 15 mm from the arris of the external face;

on the worst face and the lower halves of the arris area of lumber, intergrown knots are allowed without limitation, while partly intergrown and dead knots are allowed up to 1/3 of the face width;

the cracks allowed in the lumber for external decks shall be deep up to 1/4 of the lumber thickness; those for internal decks shall be deep up to 1/3 of the lumber thickness. The length of cracks in the deck lumber is not limited;

dull wane no more than 5 mm is allowed in the deck lumber;

canker on best faces and the upper halves of the arris area and gum pockets on best face of the lumber for external decks are not allowed;

core in the limits of the lower half of the deck lumber is allowed.

Note. The assessment of quality of the deck lumber shall be made on the best face and the upper halves of the arris area.

(Amended Wording, Amendment No. 1)

2.8. The lumber shall be sorted by types of processing into edge-surfaced and edge-unsurfaced, by sizes and grades (each grade separately)

Subject to the customer's request lumber may be sorted by groups of grades according to their designation established by the Appendix (Obligatory) to the Standard.

The lumber for export shall be sorted according to the Order of a Foreign Trade Organization.

2.9. The grade, the type of processing, the sizes and the breed of wood shall be indicated in the customer's specification of.

3. ACCEPTANCE PROCEDURE AND QUALITY MONITORING

3.1. Acceptance procedure and quality monitoring shall comply with GOST 6564-84.

4. MARKING, TRANSPORTATION AND STORAGE

4.1. Marking, packing and transportation of lumber shall be made in accordance with GOST 6564-84 and GOST 19041-85.

The dimensions of transport packages shall comply with GOST 16369-88.

4.2. Storage of lumber shall comply with GOST 3808.1-80 and GOST 19041-85.

Grades (groups of grades) of lumber	Basic designations of lumber
0, 1, 2	Special Shipbuilding - for planking and bonds of sea cutters, sea boats, skimmer crafts, speed lake and river motorboats and sports vessels of class 1, for deck planking of external and internal decks of sea vessels
0, 1, 2	Agricultural Machine Building - for manufacturing of wood parts of agricultural machines
0, 1, 2, 3	Carriage Building - for manufacturing of wood parts of railway cars Shipbuilding Motor Car Construction - for manufacturing of wood part of the motor trucks platforms, trailers and semi-trailers
1,2,3	Bridge (including temporary bridge) Construction, Construction, exploitation and repairs, elements of load-carrying structures, parts of windows and doors, dressed parts, parts of wood houses, etc. Manufacture of different articles of woodworking including furniture, staves for tight casks and slack barrels, special containers
3, 4	Containers and packing
4	Use for minor parts in construction, cutting of small blanks of different purpose

DETAILS

1. **DEVELOPED AND SUBMITTED** by the Ministry for Timber, Cellulose-paper and Wood-working industry of the USSR

DEVELOPERS

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2. **APPROVED AND INTRODUCED** by Decree No. 2933, dated September 30, 1986, of the USSR State Committee for Standards

3. **IN PLACE** of GOST 8486-66

4. **The Standard fully complies with CMEA Standard 2369-80**

5. **REFERENCE SPECIFICATONS AND TECHNICAL DOCUMENTATION**

Number of reference document referred to	Number of clause
GOST 2140-81	2.2
GOST 3808.1-80	4.2
GOST 6564-84	3.1, 4.1
GOST 7016-82	2.5
GOST 9302-83	1.2
GOST 10950-78	2.3
GOST 16369-88	4.1
GOST 18288-87	1.1
GOST 19041-85	4.1, 4.2
GOST 24454-80	1.2, .2.6
GOST 26002-83	1.2

6. **Limitation of validity term is removed by Resolution of the Interstate Council for Standardization, Metrology and Certification (minutes 3-93 dated 17.02.93)**

7. **REVISED EDITION (March, 1994) with Amendments Nos. 1, 2, 3, approved in December 1987, in September 1988, in February, 1990 (IUS (Standards Information Catalog) 3-88, 1-89, 5-90)**

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