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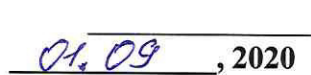
**BIRCH PLYWOOD  
SEGEZHA ECOFLOOR****Technical Specifications  
TS 16.21.12-007-93222532-2020**Date of introduction: 01.09 2020

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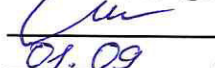
  
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The Vyatka Plywood Mill Ltd is a member of the European Federation of the Parquet Industry (FEP). More information on <http://www.parquet.net/>

Kirov city  
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## **1 SCOPE OF APPLICATION**

These technical specifications shall apply to SEGEZHA ECOFLOOR birch plywood. The technical specifications shall not apply to the faced plywood.

## **2 REGULATORY REFERENCES**

These technical specifications contain regulatory references to the following standards:

- GOST 12.1.044-89 (ISO 4589-84) Occupational safety standards system. Fire and explosion hazard of substances and materials. Nomenclature of indices and methods of their determination
- GOST 427-75 Measuring metal rules. Specifications
- GOST 12.4.011-89 Occupational safety standards system. Means of protection. General requirements and classification
- GN 2.1.6.3492-17 Maximum permissible concentrations (MPC) of pollutants in the atmospheric air within inhabited places;
- GN 2.1.6.2309-07 Reference impact safe levels (RISL) of pollutants in atmospheric air within inhabited places. Hygienic standards
- GOST 427-75 Measuring metal rules. Specifications
- GOST 2140-81 Visible defects of wood. Classification, terms and definitions, methods of measurement
- GOST 3749-77 Checking 90° squares. Specifications
- GOST 3916.1-2018 Plywood for general use with outer layers of deciduous veneer.
- GOST 6507-90 Micrometers. Specifications
- GOST 7016-2013 Products of wood and wood materials. Roughness parameters
- GOST 7502-98 Measuring metal tapes. Specifications
- GOST 8925-68 Flat clearance gauges for machine retaining devices. Design
- GOST 9620-94 Laminated glued wood. Sampling and general requirements in testing
- GOST 9621-72 Laminated glued wood. Methods for determination of physical properties
- GOST 9622-2016 Glued laminated wood. Methods for determination of ultimate strength and modulus of elasticity in tension
- GOST 9624-2009 Laminated glued wood. Method for determination of shear strength
- GOST 9625-2013 Laminated glued wood. Methods for determination of ultimate and modulus of elasticity in static bending
- GOST 11358-89 Dial-type thickness gauges and dial-type wall thickness gauges graduated in 0,01 and 0,1 mm. Specifications
- GOST EN 12086-2011 Thermal insulating products in building applications. Method for determination of water vapour transmission properties
- GOST 14192-96 Marking of cargoes
- GOST 15612-2013 Products from wood and wood materials. Methods for determination of roughness parameters
- GOST 15812-87 Laminated wood. Terms and definitions
- GOST 18321-73 Statistical quality control. Item random sampling methods
- GOST 27678-2014 Wood-based panels and plywood. Perforator method for determination of formaldehyde content
- GOST 30255-2014 Furniture, timber and polymers. The method for determination of formaldehyde and other volatile chemicals in the air of climatic chambers
- GOST 30427-96 Plywood for general use. Classification of veneer surfaces by appearance
- GOST 32155-2013 Wood-based panels and plywood. Determination of formaldehyde release by the gas analysis method
- GOST 34034-2016 Laminated glued wood. Classification

- EN 310:2005 Wood-based panels - Determination of modulus of elasticity in bending and of bending strength
- EN 314-1:2004 Plywood - Bonding quality - Part 1: Test methods
- EN 314-2:1993 Plywood - Bonding quality - Part 2: Requirements
- EN 315:2000 Plywood - Tolerances for dimensions
- DIN EN 319:1993 Particleboards and fibreboards - Determination of tensile strength perpendicular to the plane of the board.
- EN 322:1993 Wood-based panels - Determination of moisture content
- EN 323:1993 Wood-based panels - Determination of density
- EN 324-1:1993 Wood-based panels - Determination of dimensions of boards - Part 1: Determination of thickness, width and length
- EN 324-2:1993 Wood-based panels - Determination of dimensions of boards - Part 2: Determination of squareness and edge straightness
- EN 326-1:2005 Wood-based panels - Sampling, cutting and inspection - Part 1: Sampling and cutting of test pieces and expression of test results
- EN 636:2012+A1:2015 Plywood – Specifications
- EN 326-2:2010+A1:2014 Wood-based panels - Sampling, cutting and inspection - Part 2: Initial type testing and factory production control
- EN 789:2004 Timber structures - Test methods - Determination of mechanical properties of wood based panels
- EN ISO 12460-3: 2015 Wood-based panels - Determination of formaldehyde release - Part 3: Gas analysis method
- EN 13986:2004+A1:2015 Wood-based panels for use in construction - Characteristics, evaluation of conformity and marking
- ASTM D3501-05a (2018) Standard Test Methods for Wood-Based Structural Panels in Compression

### **3 TECHNICAL REQUIREMENTS**

#### **3.1 Classification and dimensions**

**3.1.1** SEGEZHA ECOFLOOR birch plywood stamps FSF is the plywood with adhesive joint of higher water resistance, glued with phenol-formaldehyde adhesives, for internal and external uses.

**3.1.2** Based on its appearance, the SEGEZHA ECOFLOOR birch plywood is subdivided into grades depending on the combination of outer layers grades: BB, CP, C (when designated by latin letters) and II, III, IV (when designated by Roman numerals).

**3.1.3** The SEGEZHA ECOFLOOR birch plywood according to the degree of surface machining shall be manufactured as sanded on both sides – Sh2 (S2).

**3.1.6** The length and width of the SEGEZHA ECOFLOOR birch plywood sheets must correspond to those specified in table 1.

Table 1

<b>Plywood (width) length, mm</b>	<b>Maximum deviation, mm</b>
1220.1250	±2.0
1500, 1525	±3.0
2100, 2135, 2440, 2500	±3.0

Continuation of table 1

3000, 3050, 3900, 3965	±3.5
<p>Note: It is allowed to make plywood of other sizes by agreement of the manufacturer with the consumer.</p>	

**3.1.7** Thickness and ply rating of SEGEZHA ECOFLOOR birch plywood shall correspond to those specified in table 2.

Table 2

Rated thickness of plywood, mm	Ply rating, at least	Maximum deviation, mm	Thickness difference in a sheet, not more than, mm
5;6,0; 6,5	5	± 0,2	0.2
8	6		
9	7		
10	8		
11.1; 11.5; 12	9		
12.5; 13	10		
15; 15.5	11		
15.9; 16	12		
17.5; 18	13		
19	14		
20; 21	15		

Note:  
It is allowed to make plywood of other sizes by agreement of the manufacturer with the consumer.

**3.1.8** Plywood sheets shall be cut at the right angle. The obliquity shall not exceed 2 mm per 1 m of the sheet edge length. The difference in the length of the diagonals shall not exceed 2 mm per 1 m of the the length of the sheet edge.

**3.1.9** The deviation from the straightness of the edges shall not exceed 2 mm per 1 m of the sheet length.

### **3.2 Identification mark**

The identification mark of the SEGEZHA ECOFLOOR birch plywood shall include as follows:

- product name with indication of wood type;
- brand;
- combination of veneer grades for outer layers;
- emission class;
- type of surface treatment;
- dimensions;
- identification of these technical specifications.

Below is given an example of the identification mark for SEGEZHA ECOFLOOR birch plywood, stamps FSF, with a combination of face veneer grades II/III, emission class E 0.5, sanded on both sides, 1250 mm long, 2500 mm wide, 12 mm thick:

*SEGEZHA ECOFLOOR birch plywood, FSF, II/III (BB/CP), E0,5, III2(S2), 1250x2500x12, TU 16.21.12-007-93222532-2020*

### 3.3 Characteristics

3.3.1 A birch veneer is used for the production of inner and outer layers of SEGEZHA ECOFLOOR birch plywood.

The thickness of the veneer used for outer and inner layers of the SEGEZHA ECOFLOOR birch plywood shall not exceed 2,0 mm.

The minimum thickness of the outer layers after sanding shall be at least half of the original thickness of the outer layer.

3.3.2 Wood faults and machining defects exceeding the limits set in Annex A are excluded in the outer layers of the SEGEZHA ECOFLOOR birch plywood.

Terms and definitions of wood faults and machining defects shall be as specified in GOST 30427 and Annex B.

3.3.3 The SEGEZHA ECOFLOOR birch plywood, depending on the quality of the outer layers, shall be made in the following combinations of grades: BB/BB, BB/CP, CP/CP, CP/C.

### 3.4 Plywood physical and mechanical parameters

Physical and mechanical properties of the plywood are shown in tables 3, 4 and 5.

Table 3

Parameter name	Thickness, mm	Value of the physical and mechanical parameter
1	2	3
1 Moisture content, %	6 – 21	6 - 9
2 Ultimate static bending strength: - along the grain of the outer layers, MPa, not less than - across the grain of the outer layers, MPa, not less than	9 – 21	64 45
3 Modulus of elasticity in static bending: - along the grain of the outer layers, MPa, not less than - across the grain of the outer layers, MPa, not less than	9 – 21	8 600 5 000
4 Ultimate tensile strength, MPa, at least: in plane of the plywood	6 – 21	2,0
4.1 Ultimate tensile strength, MPa, at least: along the grain of the outer layer across the grain of the outer layer	6 – 21	65 60
5 Ultimate compressive strength, MPa, at least perpendicular to the bonding plane	9 – 21	10,3
5.1 Ultimate compressive strength, MPa, at least parallel to the bonding plane	9 – 21	31

Table 4

Average value of the shear strength along the glue line, MPa	Wood failure, %
Over 0.2 to 0.4 incl.	Over or equal to 80
Over 0.4 to 0.6 incl.	Over or equal to 60
Over 0.6, but less than 1,0	Over or equal to 40

1,0 and more

-

Notes:

1 Preparation for plywood testing shall be carried out according to one of four options:

- boiling in water for 1 hour (according to GOST 3916.1-2018);
- keeping in water at a temperature of (20±3) °C for 24 hours (according to EN 314-1 p. 5.1.1);
- keeping in boiling water for 4 hours, followed by drying in a drying oven with ventilation for 16-20 hours at a temperature of (60±3) °C, keeping in boiling water for 4 hours and cooling in water at a temperature of (20±3) °C for at least 1 hour (according to EN 314-1 p. 5.1.3);
- keeping in boiling water for (72±1) h, followed by cooling in water at a temperature of (20±3) °C for at least 1 h (according to EN 314-1 p.5.1. 4).

The method of sample preparation is selected by agreement of the manufacturer with the consumer.

2 Wood failure shall be determined visually

3 Shear tests shall be carried out in different adhesive layers as agreed between the manufacturer and the consumer

4 The specified humidity standards must be met when shipping plywood from the manufacturer's warehouse.

### **3.5 Formaldehyde content in plywood and release of formaldehyde from plywood**

The content of formaldehyde in plywood and the release of formaldehyde from plywood into the indoor air, depending on the emission class, must comply with the standards specified in table 5.

Table 5

<b>Emission class</b>	<b>Formaldehyde content per 100 g of oven-dry plywood, mg.</b>	<b>Release of formaldehyde</b>	
		<b>Chamber method, mg/m<sup>3</sup> of air</b>	<b>Gas analysis method, mg/m<sup>2</sup>*hour</b>
E 0,5	Up to 4,0 inclusive	Up to 0,01 inclusive	Up to 1,5 inclusive

### **3.6 Plywood recording**

The SEGEZHA ECOFLOOR birch plywood is measured in cubic meters. The volume of a single sheet is determined with an accuracy of 0.00001 m<sup>3</sup>, the volume of the plywood batch – with an accuracy of 0.01 m<sup>3</sup>. The area of the plywood sheet shall be measured with an accuracy of 0.01 m<sup>2</sup>, the area of the sheets in the batch shall be measured with an accuracy of 0.5 m<sup>2</sup>.

### **3.7 Plywood marking**

**3.7.1** Bundles of SEGEZHA ECOFLOOR birch plywood shall be marked on labels.

**3.7.2** Two labels, located on the left edge of each longitudinal side cover, shall be attached on each bundle

**3.7.3** Labels are marked in Russian and English and must contain the following informations:

- name of the manufacturing country;
- name of the manufacturer and (or) its trademark;
- legal address of the manufacturer;
- name of plywood, identification mark;
- formaldehyde emission class;
- layout of sheets in the bundle;
- plywood brand;
- plywood grade;

- plywood surface type;
- number of sheets in the pack, volume;
- date of manufacture;
- bar code of the nomenclature number of the plywood bundle;
- information about the confirmation of compliance with requirements of certificates;
- manipulation sign "Keep away from moisture";
- additional marking for export and at the customer's request;
- identification of these technical specifications.

It is possible to apply markings on each sheet of plywood.

### **3.8 Packaging and packing**

**3.8.1** SEGEZHA ECOFLOOR birch plywood shall be packed in bundles by brands, species of wood, dimensions, types of surface treatment. Plywood shall be stacked in the bundle with higher grade facing up.

**3.8.2** Bundles of SEGEZHA ECOFLOOR birch plywood shall be packed do as to ensure its integrity and safety during transportation, including using a cover made of polyethylene and stretch film, covers and linings made of thin plywood. Different types of packaging may be used. Bundles shall be strapped with packing tape.

## **4 SAFETY AND ENVIRONMENTAL REQUIREMENTS**

### **4.1 Requirements for environmental protection**

**4.1.1** SEGEZHA ECOFLOOR birch plywood of E0.5 emission class does not have human or environmental impact during its use, transportation and storage.

**4.1.2** The content of harmful chemicals released during the operation of plywood products into the air of residential premises and public buildings must meet the requirements established by national sanitary and epidemiological surveillance authorities.

**4.1.3** Plywood must be manufactured using materials and components approved for use by national sanitary and epidemiological surveillance authorities.

**4.1.4** The composition of plywood does not contain raw materials, substances and components classified as hazardous waste.

**4.1.5** The permissible level of specific activity of caesium-137 radionuclides in plywood (radiation safety parameter) must comply with the standards established by the "Unified Sanitary, Epidemiological, and Hygienic Requirements for Goods Subject to Sanitary and Epidemiological Supervision (Control), approved by Decision No. 299 as of May 28, 2010 of the Commission of the Customs Union of the Eurasian Economic Community.

### **4.2 Fire safety requirements**

**4.2.1** SEGEZHA ECOFLOOR birch plywood relates to general-purpose product.

According to Federal law No. 123-FZ of 22.07.2008 "Technical regulations on fire safety requirements", p.6-8, the development of a fire safety declaration is not required to justify the fire safety of general-purpose products.

**4.2.2** Plywood belongs to the group of building materials – highly flammable (G4), which has a flue gas temperature of more than 450°C.

**4.2.3** Materials used in production of birch plywood are not explosive.

**4.2.4** Industrial premises where plywood is produced and used are classified as category b ny degree of fire hazard.

### **4.3 Labor protection requirements**

**4.3.1** Dangerous volatile chemicals in the production of plywood are phenol and formaldehyde, which are part of the phenol-formaldehyde resins used for plywood bonding.



**4.3.2** Persons over 18 years old without medical contraindications are allowed to produce plywood. Medical examinations shall be carried out in accordance with the current orders of the Ministry of Health of the Russian Federation.

**4.3.3** Persons involved in the production of plywood must be provided with personal protective equipment in accordance with GOST 12.4.011.

**4.3.4** Control of the maximum permissible concentrations of volatile chemicals in the air of the working area in the conditions of production and storage of plywood shall be carried out in accordance with GOST 12.1.005.

## **5 ACCEPTANCE PROCEDURE**

**5.1** SEGEZHA ECOFLOOR birch plywood is presented in batches for acceptance.

**5.2** The quantity of plywood of the same brand and emission class produced during one shift is considered to be a batch.

**5.3** The batch must be issued in the form of a single quality document containing as follows:

- name of the manufacturer's country;
- name and/or trademark of the manufacturer and its address;
- identification mark of the plywood;
- volume of sheets per batch;
- information about the confirmation of compliance.

**5.4** To determine whether the plywood matches its aspect and dimensions, it is necessary to select "blindly" at least two bundles from the batch.

**5.5** The batch is considered compliant with requirements, if the number of sheets in the bundles being checked that do not meet the requirements of paragraphs 3.1.6, 3.1.7, 3.1.8, 3.1.9, 3.3.2 of these technical specifications is less than or equal to 5% and the requirements of paragraphs 3.4, 3.5 are met.

**5.6** If the requirements of paragraph 5.5 are not met, a double amount of plywood shall be taken for inspection. The results of the check shall be applied to whole batch volume. In the event of repeated failure to comply with paragraph 5.5, the all products contained in the batch is considered non-conforming as a whole.

**5.7** Physical and mechanical parameters of plywood in accordance with the paragraph 3.4 (table 3, items 1 – 3) shall be monitored once in 12 hours. At the same time, physical and mechanical parameters shall be monitored at least once a month for each thickness and ply rating of plywood.

Physical and mechanical parameters of plywood in accordance with the paragraph 3.4 (table 3, items 4, 5) shall be monitored for each thickness and ply rating of plywood at least once a month.

**5.8** The formaldehyde release rate shall be controlled 4 times every 7 days by gas analysis method.

## **6 METHODS OF CONTROL**

**6.1** Sampling for physical and mechanical tests shall be carried out in accordance with GOST 9620, EN 326-1. Determination of formaldehyde release shall be carried out by gas analysis in accordance with GOST 30255, GOST 32155, EN ISO 12460-3. Determination of formaldehyde content shall be carried out in accordance with GOST 27678.

**6.2** The length and width of plywood shall be measured at distance of at least 100 mm from the edges with a metal tape measure according to GOST 7502 with an error of 1 mm. The arithmetic mean of the results of two measurements is taken as the actual length (width) of the sheet.

**6.3** The thickness shall be measured at a distance of at least 50 mm from the edges in each corner of the sheet and in the middle of each side, i.e. in total of 8 points. Measurements shall be carried out according to GOST 11358 with a thickness gauge graduated in at least 0.1 mm. The actual thickness is taken as the arithmetic mean of the results of eight measurements with an accuracy of 0,1 mm. Thickness difference in a single sheet of plywood is taken as the difference between the largest and smallest thickness of eight measurements.

**6.4** The obliquity of the plywood sheet shall be measured with a square according to GOST 3749. At a distance (1000±1) mm from the corner of the sheet, deviation between the edge of the sheet and the side of the square shall be measured with a ruler according to GOST 427 with an error of 1 mm – according to GOST 30427, EN 324: part 2.

**6.5** Crook of plywood sheets is determined by the maximum deflection of the sheet relative to a flat horizontal surface, with a measurement error of not more than 0.1 mm.

**6.6** Deviation from the straightness of the edges of the plywood sheet shall be determined by measuring the maximum gap between the edge of the sheet and the edge of the metal ruler with a probe according to GOST 8925 with an error of 0.1 mm – according to EN 324: part 2.

**6.7** Plywood aspect shall be checked visually.

**6.8** Determination of humidity – according to GOST 9621, EN 322.

**6.9** Density determination – according to GOST 9621, EN 323.

**6.10** Shear strength along the glue line shall be as specified in GOST 9624, EN 314 part 1,2.

**6.11** Ultimate strength and modulus of elasticity in static bending shall be in accordance with GOST 9625, EN 310.

**6.12** Ultimate tensile strength in plane of the plywood shall be as specified in DIN EN 319:1993.

**6.13** Ultimate strength in tension along and across the grain of the outer layer shall be as specified in EN 789, GOST 9622.

**6.14** Ultimate strength in compression parallel to the bonding plane shall be as specified in ASTM D 3501-05a.

**6.15** Ultimate strength in compression perpendicular to the bonding plane shall be as specified in internal methodology of the enterprise.

The strength is determined on blocks of three sheets of plywood stacked on top of each other with a size of 50x50 mm. The load is applied perpendicular to the coupling surface.

**6.16** Formaldehyde release shall be as per GOST 32155, EN ISO 12460-3

**6.17** Formaldehyde content shall be as per GOST 27678.

**6.18** Determination of roughness shall be carried out according to GOST 15612.

**6.19** Measurement of wood faults and machining defects shall be as specified in GOST 30427 and GOST 2140.

**6.20** The permissible level of specific activity of caesium-137 radionuclides shall be determined according to the methods approved in accordance with the established procedure.

## **7 TRANSPORTATION AND STORAGE**

**7.1** Plywood is transported in covered vehicles in accordance with the rules of cargo transportation applicable to this type of transport.

**7.2** Plywood shall be stored in the form of packs horizontally stacked on pallets or wooden pads in the closed storage premises at a temperature from -40°C to +50°C and relative air humidity of max. 80%. If the width of plywood is up to 2500 mm, the number of wooden pads must be at least three, if the width of plywood is more than 2500 mm – at least four.

**7.3** Increased moisture and temperature fluctuations can cause thickness swelling, surface damage, and internal stresses leading to plywood delamination.

## **8 MANUFACTURER'S GUARANTEES**

**8.1** The manufacturer guarantees compliance of plywood with these technical specifications subject to the conditions of transportation and storage. The moisture content of plywood in accordance with p. 3.4 is guaranteed at the time of product release from the enterprise.

**8.2** The warranty period of plywood storage is five years from the date of its receipt by the consumer.

Annex A  
(mandatory)

Standards for wood faults and face plywood machining defects limitations

Table A.1

No.	Wood faults and machining defects	Veneer grades		
		II (BB) grade	III (CP) grade	IV (C) grade
1	2	3	4	5
1	<b>Pin knots</b> means a standard live knot with a diameter of not more than 3 mm	Allowed		
2	<b>A standard knot</b> means a knot containing decay-free wood. <b>A live knot</b> means a knot, growth layers of which have intergrown with the surrounding wood for a length of at least 3/4 of the knot cutting perimeter. <b>A light knot</b> means the standard knot which consists of light wood, similar in color to the surrounding wood. <b>A dark knot</b> means the standard knot which consists of much darker wood comparing to the surrounding wood, commonly with uneven coloring.	Allowed with a diameter of not more than 25 mm in an amount of not more than 10 pieces per 1 m <sup>2</sup> with cracks not more than 1 mm wide	Allowed with cracks not more than 1,5 mm wide	Allowed
3	<b>A partially intergrown knot</b> means a knot, growth layers of which have intergrown with the surrounding wood for a length of 1/4 до 3/4 of the knot cutting perimeter.	Allowed among standard knots with a diameter of up to 15 mm, in the amount of not more than 10 pcs per 1 m <sup>2</sup>	Allowed with a diameter of up to 40 mm with the inclusion of bark without quantity limitation	
4	<b>A dead knot</b> means a knot, growth layers of which haven't intergrown with the surrounding wood or have intergrown together with it for a length of less than 1/4 of the knot cutting perimeter. <b>A loose knot</b> means a knot, which haven't intergrown with the surrounding wood and holds to it not tightly. <b>Holes caused by falling-out knots</b> <b>A wood wormhole</b> means holes or ditches made in the wood by insects or their larvae.	Allowed in diameter of not more than 6 mm in the amount of not more than 10 pieces per 1 m <sup>2</sup>	Allowed in diameter of not more than 6 mm in the amount of not more than 10 pieces per 1 m <sup>2</sup>	
5	<b>Close shakes</b> mean shakes with a width of less than 1 mm.	Allowed with a length of not more than 300 mm in the amount of not more than 5 pcs per 1 m of sheet width	Allowed	

6	<b>Open shakes</b> mean shakes with a width of 1 mm and more	Allowed with a length of not more than 200 mm, a width of not more than 2 mm, in the amount of 2 pcs per 1 m of sheet width, subject to applying sealing agents	Allowed with a length of not more than 600 mm, a width of not more than 2 mm in the amount of not more than 2 pcs per 1 m of sheet width	Allowed with a length of not more than 600 mm, a width of not more than 10 mm, without quantity limitation
7	<b>Light barking pocket</b> means (barking pocket means an area of the trunk surface with dead tissue overgrown with wood and a radial crack extending from it) the barking pocket, the wood of which is close in colour with the surrounding wood and does not contain bark inclusions	Allowed		
8	<b>Dark barking pocket</b> - barking pocket the wood of which is significantly darker than the surrounding wood and / or contains bark inclusions	Allowed in total and with on-grade knot rates	Allowed with a diameter of up to 40 mm without quantity limitation	
9	<b>Deviations in the structure of wood: oblique grain</b> - deviations in the direction of grains across and along the sheet. <b>Weavy grain</b> means tortuous or chaotic arrangement of wood fibres. <b>Feather</b> means local curvature of the growth layers, due to the influence of knots or inbarks. <b>Dark burrs</b> - traces of undeveloped buds with a diameter of not more than 5 mm, the wood is much darker than the surrounding wood. <b>Sectional burrs</b>	Allowed		
10	<b>Normal decoloration:</b> - <b>false heart</b> means dark color of the trunk in different shades, intensity and uniformity without reducing the hardness of the wood. Occurs in a growing tree, has a dark brown or red color. <b>Blown sap</b> - growth layers located in the core zone, the color and properties of which are close to the color and properties of the sap. <b>Bluestain</b> - gray color of the sap with bluish and greenish shades.	Allowed of up to 25% of the sheet surface	Allowed of up to 75% of the sheet surface	Allowed
11	<b>Normal decoloration:</b> <b>Medullary spot</b> means spotting in the form of thin yellowish-brown strips of loose tissue located on the border of the growth layers. Overgrown traces of damage to the cambial layer of the tree that are caused by larvae. <b>Block mottle</b> means the color of hardwood sap in the form of spots and stripes	Allowed of up to 30% of the sheet surface	Allowed	

	without reducing the hardness of the wood that occurs in growing trees and is close in color to the stain of the core.		
12	<b>Normal decoloration:</b> <b>Sectional medullary spots</b>	Allowed of up to 30% of the sheet surface	Allowed
	<b>Normal decoloration:</b> <b>Red stain</b> means surface (at depth of up to 5 mm) reddish-brown or bluish-brown color that occurs in wood as a result of oxidation of tannins.	Allowed of max. 200 mm in length in the amount of not more than 4 pcs per 1 m <sup>2</sup>	Allowed
13	<b>Mineral streaks: brown streak</b> means abnormally colored areas of brown sap of different shades, intensity and uniformity that occur in felled wood as a result of its storage. <b>Dark sap stains</b> mean abnormally colored areas of sap without reducing the hardness of wood, staining the wood in dark tones, masking its texture. <b>Light mineral streak</b> means mineral streak, staining wood in pale tones without masking its texture. <b>Colored sap stains</b> mean orange, yellow, pink (to light purple) and brown sap color.	Allowed up to 50% of the sheet surface	Allowed
14	<b>Abnormal decoloration:</b> with signs of the destruction of the wood: fungal spots (stripes), dark sap stains	Not allowed	Allowed
15	<b>Rot</b> means areas of wood that are abnormal in color with a decrease in hardness, arising under the impact of wood-destroying fungi	Not allowed	
16	<b>Scratch</b> means damage to the surface made with a sharp object in the form of a narrow long recess; forestry equipment marks. <b>Dent</b> means local indentation of the outer layer. <b>Ridge</b> means an area of the graded assortment surface in the form of a narrow strip protruding above the treated surface resulting from a defect in the cutting edge of the tool	Allowed within the limits of the maximum deviations in thickness	Allowed
17	<b>Tear-out the grain</b> means recess on the surface of the plywood sheet, formed as a result of local removal of wood during processing (rough peeling)	Not more than 1% of the sheet surface is allowed	Allowed of not more than 15% of the sheet surface Allowed
18	<b>Bark patch</b> - plot of bark and bast preserved on the surface of the veneer	Not allowed	
19	<b>Wooden insert</b>	Allowed in the amount of 8 pcs per 1 m <sup>2</sup>	Allowed
20	<b>Double wood insert</b>	Allowed in the	Allowed in the Allowed

		amount of 1 pc per 1 m <sup>2</sup>	amount of 2 pcs per 1 m <sup>2</sup>	
21	<b>Spread crack repair insert</b>	Allowed with a width of not more than 30 mm and a length of not more than 300 mm in the amount of not more than 2 pcs per 1 m of sheet width.	Allowed with a width of not more than 30 mm and a length of not more than 600 mm in the amount of not more than 2 pcs per 1 m of sheet width.	Allowed
22	<b>Mechanical damage</b>	Allowed in total number subject to compliance with dead knots rates		
23	<b>Spots of a production nature</b> are in the form of water spots, marks of beams, marks of forestry equipment	Allowed up to 10% of the sheet surface	Allowed	
24	<b>Rotary peeling mark</b> means a stripe of a color different from the veneer color without changing the surface structure	Allowed up to 5 mm wide	Allowed	
25	<b>Incision</b> means local damage made with a sharp object	Allowed in total number as per item 3 of this table		
26	<b>Overlap in outer layers</b>	Allowed with a length of not more than 100 mm, a width of not more than 2 mm in the amount of not more than 1 pc per 1 m of sheet width	Allowed with a length of not more than 100 mm not more than 2 mm wide in a number of not more than 2 pcs per 1 m of sheet width	Allowed
27	<b>Glue stain</b>	Allowed up to 2% of the sheet surface	Allowed up to 5% of the sheet surface	Allowed
28	<b>Crook</b>	It is not taken into consideration in a plywood when thickness is up to 6.5 mm, is allowed when thickness is 6.5 mm and more, is allowed for not more than 15 mm per 1 m sheet diagonal length		
29	<b>Bumps, lamination</b>	Not allowed		
30	<b>Veneer shortage, plywood sheet edge defects due to trimming and grinding</b>	Allowed with a width of not more than 5 mm		
31	<b>Rubbing through place</b>	Not allowed	Allowed not more	Allowed

			than 1% of the sheet surface	
32	<b>Waviness (for sanded plywood), hairiness, ripple</b>	Minor ones are allowed	Allowed	
33	<b>Surface roughness</b>	Roughness parameter Rm according to GOST 7016, μm, not more than 100		
34	<b>Glued veneer particles</b>	Not allowed	Allowed with a length of up to 150 mm and a width of u to 30 mm, in the amount of not more than 1 pc per a sheet	Allowed

Notes:

The standard for "veneer shortage" machining defect relates also to the inner layers of plywood.  
 Faults that are not specified in Annex A are not allowed.



**Annex B**  
**(mandatory)**

**Terms and definitions of face plywood machining defects**

**Table B.1**

<b>Name of machining defects</b>	<b>Definition</b>
Glued veneer particles	Presence of glued (pressed) veneer particles on the plywood surface
Peeling is not smooth	The presence on the surface of plywood frequently found small recess formed as a result of local removal of wood during peeling
Pocket	Cavity formed inside the wood or between the growth layers, filled with gums

