



CORPORATE STANDARD

SVEZA LASER BIRCH PLYWOOD Technical Specifications

STO 72199510-001-2017

Uralskiy
2017

Preface

Development purposes and objectives as well as the use of corporate standards in the Russian Federation are stated by Federal Law 184-FZ "On Technical Regulation" as of December 27, 2002 and Federal Law as of June 29, 2015.

No. 162-FZ "Standardization in the Russian Federation".

Development and execution rules are stated by GOST R 1.0-2012 Standardization in the Russian Federation. General provisions and GOST R 1.4-2004 Standardization in the Russian Federation. Corporate Standards. General Provisions", considering GOST R 1.5-2012, "Standardization in the Russian Federation. National standards. Regulations on arrangement, representation, execution, and designation".

Standard Information

- 1 DEVELOPED AND INTRODUCED by SVEZA Uralskiy, a limited liability company
- 2 APPROVED AND PUT INTO EFFECT by order of the Director of the Uralskiy branch of OOO SVEZA dated ____ 2017 No. ____
- 3 FIRST RELEASE
- 4 APPROVED by OOO SVEZA Sales and Marketing Director R.A. Muzyka November 14, 2017
- 5 THE EXPERT CONCLUSION, dated 15.12.2017, HAS BEEN RECEIVED from E.Yu. Tretyakova, Expert in the confirmation of the conformity of woodworking industry products, Head of the FANTEST NP Certification Body, and member of the Interoperability Technical Committee TK 121,

The standard hereby may only be used for work with the written consent of OOO SVEZA Uralskiy

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CORPORATE STANDARD

**SVEZA LASER BIRCH PLYWOOD
Technical Specifications****BIRCH PLYWOOD SVEZA LASER
Technical requirements**

Effective date - January 15, 2018

1 SCOPE OF APPLICATION

This standard applies to SVEZA Laser birch plywood, used as the main material in the manufacture of punching tools and equipment for flat punching. It is also used for manufacture of other products with laser cutting (children's toys and construction kits, etc.).

SVEZA Laser plywood use as general-purpose plywood is also allowable.

SVEZA Laser plywood features improved properties, due to increased requirements to veneers for inner layers and stringent requirements regarding thickness dimensions and warpage.

2 REGULATORY REFERENCES

This standard hereby includes regulatory reference to the following standards:

GOST 12.4.011-89 Occupational safety standards system. Means of protection. General requirements and classification.

GOST 427-75 Measuring metal rulers. Technical Specifications

GOST 2140-81 Visible defects, of wood. Classification, terms and definitions, methods of measurement

GOST 3749-77 Checking 90-degree L-squares. Technical Specifications

GOST 6507-90 Micrometers. Technical Specifications

GOST 7016-2013 Products of wood and wooden materials. Parameters of surface roughness

GOST 7502-98 Measuring metal tapes. Technical Specifications

GOST 8925-68 Flat clearance gauges for machine retaining devices. Design

GOST 9620-94 Laminated glued timber. Sampling and general requirements for testing

GOST 9621-72 Laminated glued timber. Methods for determination of physical properties

GOST 9622-87 Laminated glued timber. Methods for determination of tensile strength and modulus of elasticity

GOST 9624-2009 Laminated glued timber. Methods for determination of shear strength limits.

GOST 9625-2013 Laminated glued timber. Methods for determination of strength limit and modulus of elasticity in static bending.

GOST 11358-89 Dial-type thickness gauges and dial-type pipe wall thickness gauges graduated in 0.01 and 0.1 mm. Technical Specifications

GOST 14614-79 Decorative plywood. Technical Specifications

GOST 15612-2013 Products of wood and wood materials. Methods for determination of surface roughness parameters

GOST 18321-73 Statistical quality control. Random sampling methods for custom production

GOST 27678-2014 Wood-based panels and plywood. Perforation method for determination of formaldehyde content.

GOST 30255-2014 Furniture, wood, and polymer materials. The method for determination of formaldehyde and other volatile chemicals in the air of climatic chambers

GOST 30427-96 General-purpose plywood. General rules for classification by appearance

GOST 32155-2013 Wood-based panels and plywood. Determination of formaldehyde emissions with gas analysis method”

Note: While using this standard it is advisable to check validity of the standards referenced against the National Standards reference index.

3 CLASSIFICATION AND SIZES

3.1 SVEZA Laser plywood is classified according to the glue joint water resistance as INT / FK - water-resistant plywood, glued using carbamide-formaldehyde or carbamide-melamine-formaldehyde adhesives, for indoor use.

3.2 Two types of SVEZA Laser plywood are made, depending on the characteristics and quality of the outer layers and the requirements applicable to inner layers: SVEZA Laser Standard BB/BB (LST BB/BB) и SVEZA Laser Premium BB/BB (LPR BB/BB).

3.3 As for the degree of surface mechanical processing, SVEZA Laser plywood is manufactured sanded on both sides, S2S / III2.

3.4 Depending on the surface finish type, SVEZA Laser plywood is manufactured: without finish, and with UV finish with varnish in order to protect it from dirt and moisture penetration during its transportation and storage. For the finish characteristics see Table 1.

Table 1

SVEZA Laser plywood type	SVEZA Laser Standard BB/BB	SVEZA Laser Premium BB/BB
Outer layer finish types	No finish	
	UV finish	
Finish characteristics	SVEZA Laser plywood, finished with UV curing with clear or translucent varnish of any shade	

3.5 Dimensions

3.5.1 Length and width of SVEZA Lazer plywood sheets must be as shown in Table 2 below.

Table 2

in millimeters

Length (width) of plywood sheet	Tolerance limit
1500, 1525	±3.0
1220, 1250	±3.0
Notes:	
1. Plywood is permitted to be produced in other sizes by agreement between the manufacturer and the customer, with ±3.0 mm tolerances on length and width.	
2. The plywood sheet length is measured along the grain of the face veneers.	

3.5.2 The thickness and number of plies of SVEZA Laser plywood must correspond to the data in Table 3 below.

Table 3

Nominal thickness of plywood, mm	Number of plies, minimum	Thickness variation in a single sheet, maximum, mm	Tolerance limit, mm
3.0	3	0.2	±0.3
4.0	3		±0.3
5.0	5		±0.3
6.0	5		±0.3
6.5	5		±0.3
8.0	7		±0.3
9.0	7		±0.3
10.0	7		±0.3

Table 3 — continued

Nominal plywood thickness (mm)	Number of plies, minimum	Thickness variation in a single sheet, maximum, mm	Tolerance limit, mm
12.0	9	0.2	±0.3
15.0	11		±0.2
18.0	13		±0.2
20.4	15		±0.2
21.0	15		±0.2
24.0	17		±0.2
27.0	19		±0.2
30.0	21		±0.2
Note: 1. Plywood may be produced with other thicknesses, number of plies, and tolerance limits by agreement between the manufacturer and the customer.			

3.5.3 SVEZA Laser plywood sheets must be cut at a right angle.

Out-of-squareness must not exceed 1.5 mm per 1 m of the sheet edge length, using the quality control method as per clause 6.4.1.

Difference in the diagonal lengths must not exceed 1.5 mm per 1 m of the sheet edge length, when using the quality control method as per clause 6.4.2.

3.5.4 Deviation from straightness for the edges must not exceed 2 mm per 1 m of the sheet length.

3.6 SVEZA Laser plywood marking must include the following information:

- product designation with wood species specified;
- grade;
- plywood type;
- emission class;
- surface treatment type;
- surface finish type;
- dimensions;
- this Standard number.

Example of marking for birch plywood SVEZA Laser INT / FK grade, SVEZA Laser Standard BB/BB type, emission class E1, both sides sanded, finished with clear or translucent varnish, 1,525 mm length, 1,525 mm width, and 10 mm thickness:

*Фанера SVEZA Laser березовая / Birch Plywood SVEZA Laser,
INT / FK, LST BB/BB, E1, S2S / III2, UV, 1525 x 1525 x 10
STO 72199510-001-2017*

4 TECHNICAL REQUIREMENTS

4.1 Characteristics

4.1.1 Birch veneer is used to make external and inner layers of SVEZA Laser plywood.

Veneer thickness in the external and inner layers must not exceed 2.0 mm.

Minimum thickness of external layers after sanding must be not less than half the initial thickness of the external layer.

For an even number of veneer layers, the two middle layers' grain direction must be parallel. Veneer layers arranged symmetrically within the plywood thickness must have the same thickness.

4.1.2 Wood flaws and processing defects that exceed the limits specified in Appendix A are not permitted in external layers of SVEZA Laser plywood. Terms and definitions for wood flaws and processing defects — as per GOST 30427 and Appendix B.

4.1.3 Knots, holes, and cracks are filled with veneer inserts of various shapes and sizes.

The veneer inserts must be attached firmly, match the surface, correspond to the plywood outer layer timber species, color, and grain direction.

4.1.4 In inner layers of SVEZA Laser Premium BB/BB plywood, wood flaws and processing defects that exceed the limits specified in Appendix C are not permitted.

4.1.5 Cavities at the edges of SVEZA Laser Premium BB/BB plywood, caused by inner layer defects such as crevices or knots, are permitted within the standard limits in Appendix C for the specified defects.

Cavities at the outer edges of SVEZA Laser Premium BB/BB plywood that are caused by any other defect not mentioned in Appendix C are permitted to be not more than 5 mm in depth in one layer.

4.1.6 In inner layers of SVEZA Laser Standard BB/BB plywood, wood flaws and processing defects that do not affect plywood quality and dimensions, requirements to which are set forth in the present standard, are allowable.

4.1.7 For painting of UV finish SVEZA Laser plywood edges, varnish or paint should be used to protect the plywood from moisture penetration. The color of edge protection must imitate the base coat color.

4.1.8 No requirements for the surface quality are applicable to SVEZA Laser plywood with UV finish.

4.2 Formaldehyde content in the plywood and formaldehyde release from SVEZA Laser plywood into the room air must comply with the value specified in Table 4.

Table 4

Emission class	Formaldehyde release		Formaldehyde content per 100 grams of absolutely dry weight of plywood (perforation method), mg
	Chamber method, mg/m ³ of air	Gas analysis method, mg/m ² *h	
E1	Up to 0.124	Up to 3.5 inclusive, or less than 5.0 during 3 days after manufacturing	Up to 8.0 inclusively

4.3 Physical and mechanical performance of SVEZA Laser plywood is specified in Table 5.

Table 5

Parameter name	Thickness, mm	Physical and mechanical parameter values
1 Moisture, max %	3 – 30	10
2 Shear strength for shearing through adhesive layer, MPa, min	3 – 30	1.0
3 Ultimate static bending strength: — along the grain of face veneers, MPa, min — against the grain of face veneers, MPa, min	9 – 30	45 30
4 Modulus of elasticity in static bending: — along the grain, MPa, min — against the grain, MPa, min	9 – 30	5000 3000
5 Tensile strength along the grain, MPa, min	3-8	30
6 Requirements for UV finish coating	3-30	No requirements are imposed

Notes:

1. The indicated moisture limits must be adhered to before shipping the plywood from the manufacturer's warehouse
2. Adhesive layer cleaving test has to be performed in various layers of adhesive as per agreement between the manufacturer and customer
3. Plywood samples preparation procedure for adhesive layer shear test:
— soaking in water (20 ± 3) °C for 24 hours
4. The parameter of clause 5 shall be selected by agreement between the manufacturer and the customer.

4.4 SVEZA Lazer plywood stock is accounted for in cubic meters. One sheet's volume is calculated without regard to rounding. The volume of assembled

plywood stacks and batches is calculated with an accuracy of 0.001 m³. The area of a single plywood sheet is calculated with an accuracy of 0.01 m², and the area of the sheets in a batch with an accuracy of 0.5 m².

4.5 Marking is applied using indelible black or green ink on the edge of each plywood sheet as a stamp or text without margins. Marking must include the following information:

- plywood grade (INT);
- plywood type - (LST BB/BB/ LPR BB/BB);
- surface finish type (in availability of UV finish) - (UV);
- manufacturer (number or name);
- thickness;
- sorter number;

Edge stamp is placed in the corner of the transverse or longitudinal edge.

For plywood with a thickness of 3 to 9 mm, the stamp may be applied once per each (1-3) sheets.

Flat face should not be stamped.

By agreement between the manufacturer and the customer, the following changes might be implemented:

- to not apply marking to plywood sheets;
- additional information must be added in the mandatory marking.

4.6 Stacking SVEZA Laser plywood

The plywood must be packed in 400, 600 or 900 mm high stacks separated by types, finish types, dimensions, and thickness.

By agreement between the manufacturer and the customer, the plywood may be packed in stacks of a height other than that specified.

The plywood in the stack must be placed in the same direction relative to the grain.

4.7 Packing and labeling of ready stacks of SVEZA Laser plywood

Packing of the plywood stacks should ensure their integrity and preserve the stacks during transportation.

4.7.1 Packing material is polyethylene film and/or stretch film along with the plywood covers and wraps of at least 4 mm thickness.

4.7.2 SVEZA Laser Premium BB/BB plywood must be packed with a polyethylene film and/or stretching wrap.

4.7.3 SVEZA Laser Standard BB/BB plywood shall be packed with a polyethylene film and/or stretching wrap only on customer's request.

4.7.4 The plywood bundles shall be wrapped using packing strip, with protective angle pieces placed under the strip where it bends over the plywood stack edges.

4.7.5 By agreement of manufacturer with the customer, other types and methods of packing the plywood could be used.

4.8 Packed stacks of SVEZA Laser plywood shall be labeled using 298x209 mm (A4) and 378x264 mm (A3) labels. The label text shall be in Russian and/or English language, placed on two side strips, on opposite sides and/or perpendicular to each other. Both labels shall bear the same information:

- trademark
- product designation - Birch Plywood SVEZA LASER / ФАНЕРА SVEZA LASER БЕРЕЗОВАЯ
- dimensions, plywood thickness and thickness tolerance value (if required)
- plywood grade (INT / FK)
- plywood type
- type of mechanical treatment applied to plywood face
- plywood finish type
- number of sheets in a bundle
- working shift code
- plywood production date
- emission class
- order No. as per Special Terms and Conditions (by agreement between the manufacturer and the customer)
- manufacturer name and address
- document, governing plywood manufacture
- certification signs and quality control marks
- handling signs: 'Keep Dry' and 'Use No Hooks'
- barcode - if a data collection terminal (scanner) is available.

For more streamlined storage operations, additional marking may be applied using labels or stencils.

5 PRODUCT ACCEPTANCE REGULATIONS

5.1 SVEZA Laser plywood shall be accepted in lots.

Lot means a certain number of plywood sheets of single type, finish type, and size.

For each lot, a single supporting document has to be issued, containing the following information:

- trademark
- manufacturer name and address
- plywood mark
- lot size
- name of the process standard to which the plywood shall comply.

5.2 Checking the quality and size of plywood sheets shall be done by means of selective sampling and testing. In sampling inspection, sheets of plywood are selected by means of "random" sampling as per GOST 18321 in the quantity stated in Table 6.

Table 6

in sheets

Lot size	Controlled parameter as per sections herein			
	3.5.1; 3.5.2; 3.5.3; 3.5.4		4.1.2; 4.1.3	
	Sample size	Acceptance number	Sample size	Acceptance number
Up to 500	8	1	13	1
501-1200	13	1	20	2
1201-3200	13	1	32	3
3201-10000	20	2	32	3

5.3 Moisture, shear strength through the adhesive layer, strength limit for static bending across and along the grains of the outer veneers, and the modulus of elasticity for static bending along and across the grains of the outer veneers shall be monitored for each thickness and number of plies a minimum of once per month for each customer order.

5.4 For formaldehyde release control, at least one sheet of plywood shall be sampled every 7 days.

5.5 For formaldehyde content monitoring, at least one sheet of plywood shall be sampled every 15 days.

5.6 The lot shall be considered compliant to the applicable requirements of the standard and accepted, provided that in the samples:

- the number of plywood sheets not complying with the standard requirements in terms of dimensions, out-of-squareness, straightness, wood defects, and processing defects, is less than or equal to the acceptance number stated in Table 6;
- there are no sheets in the sample having blisters, ply splitting, or bark patch;
- the physical and mechanical parameters are compliant with the ranges set forth in Table 5;
- formaldehyde emission and content are within the limits set forth in Table 4.

6 TEST METHODS

6.1 Sampling procedure shall be as per GOST 9620, GOST 27678, GOST 31255, GOST 30255, [1] - [2].

6.2 Plywood length and width shall be measured at two points parallel to the edges, at least 100 mm from edges, with a metal tape according to GOST 7502 with a tolerance of 1 mm. The arithmetic mean value of the two measurements is considered the actual length (width) of the sheet.

6.3 Plywood thickness shall be measured at least 25 mm from the edges, in the middle of each sheet's face.

The arithmetic mean value of the four measurements is considered the actual thickness of the sheet.

The following devices are used for thickness measurement:

- thickness gauge as per GOST 11358 with the scale unit value not exceeding 0.1 mm;
- micrometer as per GOST 6507 with the scale unit value not exceeding 0.1 mm;

Thickness difference in one plywood sheet is defined as the difference between the maximum and the minimum thickness of the four measurements.

6.4 Out-of-squareness of a sheet of plywood

6.4.1 Out-of-squareness in a plywood sheet shall be measured with a measurement square as per GOST 3749. Out-of-squareness shall be determined by measuring the maximum deviation of the sheet edges from the L-square surface using a probe as per GOST 8925.

6.4.2 Out-of-squareness may be also determined by the difference of diagonal lines of the sheet measured by metal tape ruler as per GOST 7502 with the scale unit value 1 mm.

6.5 Out-of-straightness of a plywood sheet's edges shall be defined by measuring the maximum gap between the sheet's edge and the edge of the metal ruler, using a probe according to GOST 8925 with a tolerance of 0.2 mm.

6.6 Warping of the plywood sheet

6.6.1 For SVEZA Laser Standard BB/BB plywood, warping shall be determined as per GOST 30427.

6.6.2 For SVEZA Laser Premium BB/BB plywood, warping shall be determined on a special vertical bench with dimensions not less than the plywood sheet length and width. First, the shape of sheet warping W or P must be assessed visually by placing it on the edge to the vertical bench.

6.6.2.1 Plywood with the W warping shape must be tightly pressed against and fixed to the vertical bench at points 1, 2 and 3, and the measurement shall be carried out at point 4 with a metal ruler as per GOST 427 or measurement metal tape as per GOST 7502, as shown in Figure 1.

6.6.2.2 Plywood with the P warping shape must be fixed near the floor base and vertical bench at points 1 and 2, and the measurement shall be carried out at point 3 with a metal ruler as per GOST 427 or measurement metal tape as per GOST 7502, as shown in Figure 1.

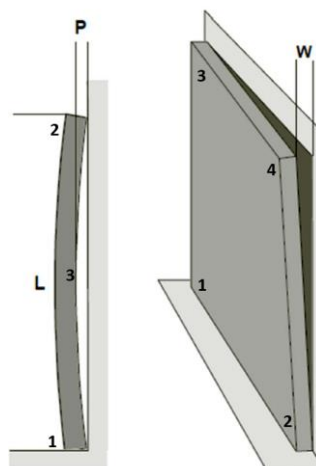


Fig. 1

6.6.3 Table 7 indicates warping tolerances depending on shape.

Table 7

Warping shape	Plywood nominal thickness, mm	Distance between the check plane and sheet surface, maximum, mm		
		Per 1 meter of edge length	For L – 1500 L – 1525	For L – 1220 L – 1250
P / W	≤ 6.5	Not considered		
P	6.5 to 15	8	12	10
P	>15	5	7.5	6
W	> 6.5	10	15	12

6.7 Moisture — as per GOST 9621, [3].

6.8 Density - as per GOST 9621.

6.9 Shear strength through adhesive layer — as per GOST 9624, [4].

6.10 Tensile strength and modulus of elasticity in static bending — GOST 9625, [5].

6.11 Tensile strength along the grain - as per GOST 9622.

6.12 Formaldehyde release into the environment — as per GOST 30255, GOST 32155 and [1].

6.13 Formaldehyde content — as per GOST 27678

6.14 Surface roughness — as per GOST 15612.

6.15 Measurement of wood flaws and processing defects — as per GOST 30427 and GOST 2140.

7 TRANSPORTATION AND STORAGE

7.1 SVEZA Laser plywood shall be transported in closed transport vehicles in accordance with the haulage rules applicable to the respective means of transport. Contact with moisture should be avoided during transportation in order to avoid changes in geometry, physical parameters and quality of the plywood, and in order to keep emission class stable.

7.2 Storage of SVEZA Laser plywood

The plywood must be stored indoor in stacks placed horizontally on pallets or on wooden shims, at a temperature between –40°C and +50°C and relative humidity up to 65%.

MANUFACTURER'S WARRANTY

The manufacturer guarantees conformance of SVEZA Laser plywood to the quality requirements hereby if transportation and storage conditions are satisfied.

The INT / FK grade plywood guaranteed shelf life is 3 years following the day of receipt by customer.

If the plywood is to be used for further processing, it is recommended to contact the manufacturer for more details about the properties and specifications of the plywood.

8 SAFETY AND ENVIRONMENTAL REQUIREMENTS

8.1 The content of hazardous chemicals emitted into residential or public building air from the SVEZA Laser plywood (hereinafter referred as plywood) during use of plywood products must not exceed the requirements under items [6], [7], and [8].

8.2 Plywood must be produced using materials and components approved for such use by the national sanitary and epidemiological inspection authorities.

8.3 Only persons age 18 and older with no medical contra-indications shall be allowed to work in plywood production. Medical examinations are conducted according to the applicable instructions from the Ministry of Health of the Russian Federation.

8.4 Personnel engaged in plywood manufacturing must be provided with personal protection equipment compliant with the applicable regulations under GOST 12.4.011.

8.5 The specific activity of Cesium 137 in plywood must not exceed the health-based exposure limits set forth in the requirements of [9].

8.6 The standard plywood composition does not include raw materials, or components classified as hazardous waste.

8.7 Plywood usually has a long service life, and there are a number of ways to recycle it. Plywood must be recycled taking into account the ordinances regarding recycling in the effective laws of various countries.

APPENDIX A
(mandatory)

**Limit values for wood flaws and processing defects — as per GOST 30427 for outer plies
of SVEZA Laser plywood**

Limit values for wood flaws and processing defects — as per GOST 30427 for outer plies of SVEZA Laser plywood are listed in Table A.1

Table A.1

WOOD FLAWS AND PROCESSING DEFECTS	Laser Premium BB/BB (LPR BB/BB)	Laser Standard BB/BB (LST BB/BB)
1. Pin knots	Allowable	
2. Sound knots, intergrown, light and dark	Allowed up to 15 mm in diameter with shakes up to 1 mm width, quantity up to 2 unit /m ²	Allowed up to 25 mm in diameter with cracks up to 1 mm width, quantity up to 10 unit /m ²
3. Partially intergrown knots	Intergrown knots up to 15 mm in diameter, no more than 2 per m ² allowed	Intergrown knots up to 15 mm in diameter, no more than 10 per m ² allowed
4. Black knots, loose knots, knot holes (no bark inclusions)	Intergrown knots up to 6 mm in diameter, no more than 2 per m ² allowed	Intergrown knots up to 6 mm in diameter, no more than 3 per m ² allowed
5. Close shakes	Allowable up to 300 mm long in a quantity of 5 per meter of sheet width	
6. Open shakes	Allowable up to 250 mm long and up to 2 mm wide, not more than 3 per meter of sheet width	
7. Open joints on spliced veneer	Use of edge-jointed veneer is not allowed	
8. Timber structure flaws (diagonal grain, swirly grain, burls, bud traces)	Allowable	
9. Timber structure flaws (light/dark inner inbark)	Light inbark is allowable, dark inbark is allowable within the dimensions of intergrown knots	

Table A.1 — continued

WOOD FLAWS AND PROCESSING DEFECTS	Laser Premium BB/BB (LPR BB/BB)	Laser Standard BB/BB (LST BB/BB)
10. Timber structure flaws (surface inbark)	Allowable length within the total number under the black knot standards	
11. Sound discoloration (false heartwood)	Up to 25 % of surface — allowable	
12. Sound discoloration (stains, streaks, streak traces)	Allowable up to 250 mm long and up to 10 mm wide in total not more than 10 per m ²	
13. Sound discoloration (grouped streaks)	Allowable: up to 60x40 mm size, not more than 1 per m ²	
14. Chemical coloration, sap stains (blue and colored sap stains), discoloration after storage	Up to 50 percent of the sheet surface area (false heartwood included) is allowable	
15. Biological damages (wormholes)	Allowable within the total number under the black knot standards	
16. Discoloration with partial wood integrity damage	Not allowable	
17. Patching of knots and holes with wood inserts	Inserts of various shape and size are allowable in a quantity of 8 m ²	
18. Double insert	Allowable in a quantity of 1 per m ²	
19. Patching open shakes with sealing agents or veneer patches	Open shakes wider than 2 mm must be patched with glued veneer inserts or sealing agent	
20. Faceplate bulges (imprinted)	Allowable: up to 200 mm long and up to 10 mm wide, in total not more than 3 per sheet	
21. Overlaps	Allowable up to 100 mm long and up to 2 mm wide, not more than 1 per meter of sheet width	
22. Stains from manufacturing (beam traces, strips)	Up to 10 % of sheet surface — allowable	
23. Glue stains	Up to 5 % of sheet surface — allowable	
24. Mechanical damage (cuts, holes)	Allowable within the total number under the black knot standards	
25. Scratches, ribs, blows, ridges	Not allowable	
26. Blister, delamination (also when bended), bark patch	Not allowable	
27. Unsanded stains (nonuniform sanding)	Not allowable	
28. Oversanding of veneers	Not allowable	
29. Metal inclusions	Not allowable	
30. Non-smooth peeling	Up to 5 % of sheet surface — allowable	

Table A.1 (end)

WOOD FLAWS AND PROCESSING DEFECTS	Laser Premium BB/BB (LPR BB/BB)	Laser Standard BB/BB (LST BB/BB)
31. Waviness, rough saw cut, ripple	Not allowable	
32. Surface roughness for unfaced plywood	Roughness parameter R_m as per GOST 7016, mkm, 100 maximum	
33. Pockets (no bark inclusions)	Allowable: in size of group strains up to 60x40 mm, not more than $1/m^2$	
34. Veneer lengthwise gluing	Not allowable	
35. Glued veneer particles	Not allowable	
36. Deviation from allowable dimensions	Dimensions as per clauses 3.5.1, 3.5.3, 3.5.4	
37. Warping	As per clause 6.6.2	Not considered for plywood up to 6.5 mm thick; not more than 1% of the size of the largest side of the plywood sheet is allowable for plywood more than 6.5 mm thick

Note: Any defects not specified in Appendix A are not allowed.

**APPENDIX B
(mandatory)**

**Terms and definitions for processing defects of external layers of
SVEZA Lazer plywood**

Terms and definitions for processing defects of external layers of the SVEZA Lazer plywood are specified in Table B.1

Table B.1

Name of the processing defect	Definition
Glued veneer particles	Veneer particles glued to or pressed into plywood surface
Non-smooth peeling	Dense small surface recessions caused by local removal of wood during peeling
Pocket	Cavity inside the wood or between annual layers filled with gum resins.

APPENDIX C
(mandatory)

Wood flaws and processing defects limits for inner layers of SVEZA Lazer Premium plywood

Wood flaws and processing defects limits for inner layers of the SVEZA Lazer Premium plywood are listed in Table C.1

Table C.1

WOOD FLAWS AND PROCESSING DEFECTS	LIMIT VALUES FOR PLYWOOD INNER LAYERS
1. Pin knots	Allowable
2. Sound knots, intergrown, light and dark	Allowable 15 mm max. in diameter, 5 per sheet
3. Partially intergrown knots	Allowable 15 mm max. in diameter, 5 per sheet
4. Black knots, loose knots, knot holes (no bark inclusions), tobacco color	Allowable 15 mm max. in diameter, 5 per sheet
5. Close shakes	Allowable
6. Open shakes	Allowable up to 2 mm wide, without limitations on length and quantity
7. Use of edge-jointed veneer Gap in the edge-jointed veneer joints	Use of edge-jointed veneer is not allowed
8. Use of spliced veneer	Allowable with use of laser-compatible adhesive
9. Bark	Not allowable
10. Chemical colorations, sap stains (blue and colored sap stains), discoloration after storage of wood without compromising of the wood integrity	Allowable
11. Discoloration with partial wood integrity damage	Allowable up to 5% of sheet surface

Table C.1 (end)

WOOD FLAWS AND PROCESSING DEFECTS	LIMIT VALUES FOR PLYWOOD INNER LAYERS
12. Biological damages (wormholes), mechanical damages (including hook cuts)	Not considered with up to 3 mm size; above 3 mm is allowable within the total number under the black knot standards
13. Patching of crevices and holes left by knots	Allowable by veneer patches of any form and size without quantity limitation
14. Soot, soot dust, and other products of burning on the veneer surface	Not allowable
15. Stable discoloration (false heartwood, stains, streaks, batch streaks)	Allowable
16. Non-smooth peeling	Allowable
17. Open ingrowth (no bark inclusions)	Allowable length within the total number under the black knot standards

References

- [1] DIN EN ISO 12460-3 Wood-based panels. - Determination of formaldehyde emissions. Part 3. Gas analysis method
- [2] EN 326-1-1994 Wood-based panels. Sampling, cutting, and quality control. Part 1. Testing sample selection and cutting, and expression of test results
- [3] EN 322:1993 Wood-based panels. Determination of moisture content
- [4] EN 314-1:2004 Plywood. Gluing quality. Part 1. Test methods
- [5] EN 310:1993 Wood-based panels. Determination of the modulus of elasticity in bending, and the bending strength limit
- [6] HS 2.1.6.1338-03 Maximum allowable concentrations (MAC) of pollutants in the atmospheric air of population aggregates
- [7] HS 2.1.6.2309-07 Safe reference levels of impact (SRLI) of pollutants in the atmospheric air of population aggregates. Health standards
- [8] HS 2.1.6.2328-08 Addendum to GN 2.1.6.2309-07, Safe reference levels of impact (SRLI) of pollutants in the atmospheric air of population aggregates. Health standards
- [9] Unified sanitary-epidemiological and health requirements for goods subject to sanitary and epidemiological supervision (monitoring), approved by the Customs Union Commission Decision No. 299 as of May 28, 2010

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Development organization
OOO SVEZA Uralskiy

Head of Developing company:
Branch Director, Uralskiy
OOO SVEZA

_____ D.L. Maltsev

Development Lead:
Director of Production and Quality Control Department

OOO SVEZA Uralskiy

_____ Yu.A. Podozerova

Responsible
Quality department manager

_____ E.B. Vershinina