



CORPORATE STANDARD*

SVEZA COLOR FILM FACED BIRCH PLYWOOD Technical Specifications

STO 52654419-007-2018

Saint Petersburg
2018

* In case of discrepancies, the Russian version of the organization's standard is to be considered as priority. / В случае возникновения разночтений приоритетной является версия стандарта организации на русском языке

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* of December 27, 2002 and Federal Law of June 29, 2015.

No. 162-FZ *On 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*, subject to GOST R 1.5-2012, *Standardization In the Russian Federation. National standards. Regulations on arrangement, representation, execution, and designation*.

Information on Standard

1 DEVELOPED AND INTRODUCED by SVEZA Forest, a limited liability company

2 APPROVED AND ENACTED by order of the General Director of OOO SVEZA Forest dated ____ 20__ .No. ____

3 APPROVED by OOO SVEZA Forest Sales and Marketing Director R.A. Muzyka _____, ____ 20 ____

4 FIRST RELEASE

5 THE EXPERT CONCLUSION, dated 05.04.2018, 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 Technical Committee on Standardization TK 121.

This standard may only be used for work with the written consent of OOO SVEZA Forest.

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CORPORATE STANDARD

**SVEZA COLOR FILM FACED BIRCH PLYWOOD
Technical Specifications****Film Faced Birch Plywood SVEZA COLOR
Technical Requirements**

Effective date – _____ **20**_____**1 SCOPE**

This standard applies to SVEZA COLOR birch plywood, waterproof, film-faced with thermoset polymer-based film (hereinafter referred to as SVEZA COLOR plywood), designed for use in the construction, furniture industry, vehicle, railway car, and container manufacture, and packaging, as well as for manufacture of interior elements with high requirements for decorative characteristics.

2 REGULATORY REFERENCES

This standard hereby includes regulatory reference to the following standards:

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

GOST 427-75 Metal rulers. Specifications

GOST 3749-77 90° L-squares. Specifications

GOST 6507-90 Micrometers. Specifications

GOST 7502-98 Metal measuring tapes. Specifications

GOST 8925-68 Feeler gauges for machine tool accessories. Design

GOST 9620-94 Glued laminated timber. Sampling and general requirements for testing

GOST 9621-72 Glued laminated timber. Methods for determination of physical properties

GOST 9622-87 Glued laminated timber. Methods for determination of tensile strength and modulus of elasticity

GOST 9624-2009 Glued laminated timber. Methods for determination of shear strength limits

GOST 9625-2013 Glued laminated timber. Methods for determination of strength and modulus of elasticity in static bending.

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

GOST 14614-79 Decorative plywood. Specifications

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

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

GOST 30255-2014 Furniture, wood, and polymer materials. Method for determination of formaldehyde and other volatile chemicals in the air of climate 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 by gas analysis method

GOST R 53920-2010 Veneered plywood. Specifications

STO 52654419-001-2018 General Purpose Birch Plywood. Technical Specifications

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

3 CLASSIFICATION AND DIMENSIONS

3.1 SVEZA COLOR plywood with the EXT/FSF mark is manufactured according to the degree of glue joint water resistance: plywood with enhanced water resistance of the glue joint, glued using phenol-formaldehyde adhesives, and intended for indoor and outdoor usage.

Notes: Film-faced birch plywood belongs to the EXT formaldehyde emissions group

3.2 Depending on the surface appearance, the SVEZA COLOR plywood is divided into grades: 1sel, 1, 2, 3.

3.3 Depending on applied coating type and method, SVEZA COLOR plywood is divided by surface types:

- F – smooth surface;
- W – surface with net-line coating;
- SP – surface for further painting;
- UN (UNCOATED)– surface without coating.

Note:

1. Surface types may be combined.
2. In forming orders and marking SVEZA COLOR plywood stacks for a UN-surface without coating, the designation of the plywood surface ply grade is indicated according to STO 52654419-001.
3. On the SVEZA COLOR plywood of 1/2 grade and F/W surface type – grade 2 is always related to side F.

3.4 Dimensions

3.4.1 The length and width of SVEZA COLOR plywood sheets must be as shown in Table 1 below.

Table 1

In millimeters

Length (width) of plywood sheet	Maximum deviation
1220; 1250	±3.0
1500; 1525	±4.0
2440; 2500	±4.0
3000; 3050	±5.0

Notes:

1. SVEZA COLOR plywood may be produced with other dimensions and maximum deviations by agreement between the manufacturer and the customer
2. The SVEZA COLOR plywood sheet length is measured along the grain of the face plies.

3.4.2 SVEZA COLOR plywood thickness must be as shown in Table 2 below.

Table 2

In millimeters

Nominal Thickness plywood thickness	Number of plies, mini- mum	Tolerance limit	Thickness var- iation, max.
6	5	±0.3	0.2
6.5	5		
8	6 and 7		
9	7		
10	7 and 8	±0.5	
12	9		
15	11		
18	13		
21	15		
24	17		
27	19	±1.0	
30	21		
35	25		
40	28 and 29		

Note - SVEZA COLOR plywood is permitted to be produced with other thicknesses, number of plies, and maximum deviations by agreement between the manufacturer and the customer

3.4.3 SVEZA COLOR plywood sheets must be cut square.

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

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

3.4.4 Out-of-straightness for the SVEZA COLOR plywood edges must not exceed 1 mm per 1 m of the sheet edge length.

3.5 The reference designation for SVEZA COLOR plywood must include the following information:

- product designation with wood species specified;
- grade;
- quality;
- surface type;
- emission class;
- dimensions;
- film type;
- this Standard number.

Example of marking for film-faced SVEZA COLOR birch plywood of EXT / FSF type, 1 sel/1sel grade, with smooth surface type on both sides, emission class E1, 2440 mm length, 1220 mm width, 12 mm thickness, film type DB 120/120:

Фанера SVEZA COLOR березовая ламинированная / Film Faced Birch Plywood
SVEZA COLOR
EXT / FSF, 1sel/1sel, F/F, E1, 2440 x 1220 x 12, DB 120/120
STO 52654419-007-2018

4 TECHNICAL REQUIREMENTS

4.1 Characteristics

4.1.1 For SVEZA COLOR plywood manufacture the general purpose plywood is used with inner and outer plies of birch veneer EXT / FSF, sanded, at least WGE (III) grade, manufactured as per STO-52654419-001

Veneer thickness in the external and inner plies of SVEZA COLOR plywood shall not exceed 2 mm.

4.1.2 Paper impregnated with synthetic resins (hereinafter referred as a face coating or film) is used to cover the external ply of SVEZA COLOR plywood.

4.1.3 In order to protect from moisture absorption, SVEZA COLOR plywood butt ends are coated with acrylic water-based paint.

The color of edge protection must imitate the base face coating color. The paints recommended for application are indicated in Appendix A.

4.1.4 Depending on the surface appearance quality, SVEZA COLOR plywood is fabricated in grades as follows: 1sel/1sel; 1sel/1, 1/1; 1/2; 2/2; 3/3.

SVEZA COLOR plywood surface appearance must conform to the regulations set forth in Appendix B.

Terms and definitions for processing defects are given in Appendix C.

4.2 Formaldehyde content in the plywood and formaldehyde emission from SVEZA COLOR plywood into the room air must comply with the value specified in Table 3.

Table 3

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

4.3 For physical and mechanical performance of SVEZA COLOR plywood see Table 4 and 5.

Table 4

Parameter name	Thickness (mm)	Physical and mechanical parameter values
1 Moisture, %	6 – 40	5 – 12
2 Static bending strength: — along the grain of face plies (MPa), min — across the grain of face plies (MPa), min	9 – 40	60 30
3 Modulus of elasticity in static bending: — along the grain (MPa), min — across the grain (MPa), min	9 – 40	6000 3000
4 Tensile strength along the grain of face plies (MPa), minimum	6 – 6.5	30

Table 4 (end)

Parameter name	Thickness (mm)	Physical and mechanical parameter values
5 Durability of face coating bonding with veneer	6 – 40	The face coating must not peel at the intersection of two cut lines.
6 Face coating resistance to steam	6 – 40	No swelling. Minor gloss loss. No blisters.
7 Face coating resistance to sodium hydroxide (NaOH)	6 – 40	Color of solution after tests (NaOH) from bright yellow to clear.
8 Face coating water resistance	6 – 40	Spots and swelling are not allowable
9 Surface waviness of SVEZA COLOR plywood used for decking (Rippling test)	6 – 40	Average beam length no greater than 20 mm
10 Face coating resistance to hydrochloric acid (HCl) - for melamine films	6 – 40	Minor gloss alteration is allowable. The face coating is hard and resistant to mechanical exposure.
Notes: 1. Values of Sections 4-10 shall be selected by agreement between the manufacturer and the customer 2. Other test methods may be used, based on practical requirements of consumers, to judge the suitability of SVEZA COLOR plywood for the intended purpose		

Table 5

Average value of shear strength through adhesive layer, MPa	Percentage of destruction in wood
Above 0.2 up to 0.4 inclusively	Above or equal to 80
Above 0.4 up to 0.6 inclusively	Above or equal to 60
Above 0.6 but less than 1.0	Above or equal to 40
1.0 and more	—

Table 4 (end)

<p>Notes:</p> <p>1 Film faced birch plywood shall be prepared for testing using one of these methods:</p> <p>1.1 boil in water for 1 hour;</p> <p>1.2 boil in water for 6 hours;</p> <p>1.3 boil in water for 4 hours, dry in a ventilated cabinet at a temperature of 60 ± 3 °C for 16–20 hours, repeat soaking in boiling water for 4 hours and cool in 20 ± 3 °C water for 1 hour;</p> <p>1.4 boil in water for 72 ± 1 hours, cool in 20 ± 3 °C water for 1 hour, and repeat once every 3 months;</p> <p>1.5 soak in water 20 ± 3 °C for 24 hours, and repeat once every 3 months.</p> <p>Methods 1.3, 1.4, and 1.5 are used to prepare film faced birch plywood for new resins testing. The sample preparation method shall be selected according to the agreement between the manufacturer and the customer.</p> <p>2. The percentage of wood destruction is determined visually.</p> <p>3. The shear test shall be performed in varying adhesive plies according to the agreement between the manufacturer and customer.</p>

4.4 SVEZA COLOR plywood stock is accounted for in cubic meters. One sheet's volume is calculated without regard to rounding. The volume of assembled SVEZA COLOR plywood stacks and batches is calculated with accuracy of 0.001 m³. The area of a single SVEZA COLOR plywood sheet is calculated with accuracy of 0.01 m², and the area of the sheets in a batch with accuracy of 0.5 m².

4.5 Marking shall be applied with indelible paint on the edge or face (only lined side) of each SVEZA COLOR plywood sheet.

Marking must include the following information:

- plywood type;
- plywood grade;
- manufacturer (number or name);
- thickness and/or sorter number.

For the SVEZA COLOR plywood with a thickness of 6-9 mm the stamp may be placed once for each (1-3) sheet.

Allowable by agreement between the manufacturer and the customer:

- to not mark SVEZA COLOR plywood sheets;
- to not include additional information in the mandatory marking.

4.6 Packing of SVEZA COLOR plywood

The SVEZA COLOR plywood must be packed in 400, 600, or 900 mm high stacks separately, according to, grades, surface types, sizes, thicknesses, and film types.

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

4.7 Packing and labeling of ready stacks of SVEZA COLOR plywood

SVEZA COLOR packing of the plywood stacks shall ensure their integrity and preserve the stacks during transportation.

4.7.1 Packing of the SVEZA COLOR plywood stacks shall ensure their integrity and preserve the stacks during transportation.

Main packing methods and types are regulated by OOO SVEZA-Les. Other types and methods of SVEZA COLOR plywood packing may be used by agreement between the manufacturer and the customer.

4.7.2 Marking of packed SVEZA COLOR plywood stacks shall be performed with labels.

The label text shall be in Russian and/or English, placed on two parallel or perpendicular side strips. Both labels shall bear the same information:

- trademark;
- product designation - Film-Faced Birch Plywood SVEZA COLOR / Фанера SVEZA COLOR березовая ламинированная;
- dimensions, plywood thickness and thickness tolerance value (if required);
- SVEZA COLOR plywood grade and surface type;
- SVEZA COLOR plywood type;
- film type;
- number of sheets in a stack;
- working shift;
- SVEZA COLOR plywood production date;
- emission class;
- order No. as per Special Terms and Conditions (by agreement with the customer);
- reference document governing SVEZA COLOR plywood manufacture;
- manufacturer name and address;
- 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.

4.8 For SVEZA COLOR plywood areas of application see Appendix D.

5 ACCEPTANCE REQUIREMENTS

5.1 SVEZA COLOR plywood shall be accepted in lots.

Lot means a certain number of SVEZA COLOR plywood sheets of the same grade, surface type, film type and size.

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

- trademark;
- manufacturer name and address;
- SVEZA COLOR plywood mark;
- lot size;
- reference document governing SVEZA COLOR plywood manufacture.

5.2 The quality and dimensions of SVEZA COLOR plywood sheets shall be checked by means of selective sampling and testing. In sampling inspection, sheets of

SVEZA COLOR 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			
	3.4.1; 3.4.2; 3.4.3; 3.4.4		4.1.4	
	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
3201-10,000	20	2	32	3

The definition of sampling scope for subsections (4 – 10) of Table 4 is as by agreement between the manufacturer and the customer.

5.3 Moisture, shear strength through the adhesive layer, strength in static bending across and along the outer veneers, modulus of elasticity for static bending along and across the grains of the outer veneers should be checked for each thickness and number of plies of SVEZA COLOR plywood at least once per month.

Checking of each lot is allowed as agreed by the manufacturer with the customer, and for this purpose 0.1% of sheets shall be selected from the lot, but at least one sheet.

5.4 One SVEZA COLOR plywood sheet from any sampling size will be taken for the purpose of formaldehyde emissions monitoring.

Formaldehyde emissions shall be tested at least once every 30 days or after any changes have been made to the resin/glue formula.

5.5 The necessity of test performance, frequency and scope of testing as per parameter of Sections (4-10) of Table 4 shall be set by agreement between the manufacturer and the customer.

5.6 Results of formaldehyde content or emissions tests as well as physical/mechanical tests for a plywood lot manufactured per STO 52654419-001 may be applied to film-faced birch plywood manufactured in the same lot.

5.7 The lot is considered as compliant to the applicable requirements of the standard and is accepted, provided that in the samples:

— the number of SVEZA COLOR plywood sheets not complying with the this standard requirements in terms of dimensions, out-of-squareness, out-of-straightness, and processing defects is less than or equal to the acceptance number stated in Table 6;

— the physical and mechanical properties are in conformity with the values established in Tables 4 and 5;

— formaldehyde emissions are compliant with the limits set forth in Table 3.

6 TEST METHODS

6.1 Sampling procedure — as per GOST 9620, GOST 27678, GOST 30255, GOST 32155, [1], [2].

6.2 SVEZA COLOR plywood length and width are measured at two points parallel to the edges, at least 100 mm from edges with a metal measuring tape according to GOST 7502 with an error of 1 mm. The arithmetic mean value of the two measurements is considered the actual length (width) of the sheet.

6.3 The thickness shall be measured at least 25 mm from 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 a scale division not exceeding 0.1 mm;

— micrometer as per GOST 6507 with a scale division not exceeding 0.1 mm.

Thickness difference in one SVEZA COLOR 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 SVEZA COLOR plywood

6.4.1 Out-of-squareness of SVEZA COLOR plywood sheet shall be measured as per GOST 30427. The out-of-squareness value sheet shall be measured with an L-square as per GOST 3749. Out-of-squareness is defined by measuring the maximum deviation of the sheet edges from the L-square surface using a metal ruler in accordance with GOST 427 with an error of 1 mm.

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

6.5 Out-of-straightness of a SVEZA COLOR plywood sheet's edges shall be determined by measuring the maximum gap between the sheet's edge and the edge of the metal ruler using a feeler gauge according to GOST 8925 with an error of 0.2 mm.

6.6 Warping — as per GOST 30427.

6.7 Moisture — GOST 9621, [3].

6.8 Strength limit for shearing through adhesive layer — as per GOST 9624, [4].

6.9 Modulus of elasticity in static bending and strength — per GOST 9625, [5].

6.10 Tensile strength along the grain — as per GOST 9622.

6.11 Measurement of processing defects — as per GOST 30427.

6.12 Durability of face coating bonding to the plywood – as per GOST 14614.

6.13 Face coating resistance to steam - as per GOST R 53920.

6.14 Face coating resistance to sodium hydroxide (NaOH) - as per GOST R 53920.

6.15 Face coating water resistance — as per GOST 14614.

6.16 Surface waviness of SVEZA COLOR plywood used for decking (Rippling test) - as per Appendix E.

6.17 Face coating resistance to hydrochloric acid (HCl) - for melamine films - as per Appendix F.

6.18 Formaldehyde content complies with GOST 27678 (this method is used as a reference), and formaldehyde emissions into the environment comply with GOST 30255, GOST 32155 and [1].

7 TRANSPORTATION AND STORAGE

7.1 SVEZA COLOR plywood shall be transported in enclosed vehicles according to the haulage rules applicable to the respective means of transport.

In transportation, it is essential to avoid severe humidification of SVEZA COLOR plywood to avoid swelling at the edges, sheet warping, and massive indentation of packing straps or other quality loss.

7.2 Storage of SVEZA COLOR plywood.

The SVEZA COLOR plywood must be stored in premises protecting plywood from atmospheric precipitation, in stacks placed horizontally on pallets or on wooden shims, at a temperature between $-40\text{ }^{\circ}\text{C}$ and $+50\text{ }^{\circ}\text{C}$ and relative humidity up to 80%.

8 MANUFACTURER'S WARRANTY

The manufacturer shall guarantee conformance of SVEZA COLOR plywood to the quality requirements of the existing standard if transportation and storage conditions are satisfied.

The EXT / FSF grade SVEZA COLOR plywood guaranteed shelf life is 5 years following the day of receipt by the customer.

If the SVEZA COLOR 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.

9 SAFETY AND ENVIRONMENTAL REQUIREMENTS

9.1 The content of hazardous chemicals emitted into residential or public building air during use of SVEZA COLOR plywood products must not exceed the requirements under items [6], [7], and [8].

9.2 SVEZA COLOR plywood must be produced using materials and components approved by the national sanitary and epidemiological inspection authorities.

9.3 Only persons age 18 and older with a clean bill of health are allowed to work in SVEZA COLOR plywood production. Medical examinations are conducted according to the applicable instructions from the Ministry of Health of the Russian Federation.

9.4 Personnel engaged in SVEZA COLOR plywood manufacturing must be provided with personal protective equipment according to the applicable regulations under GOST 12.4.011.

9.5 Specific activity of Cesium 137 in SVEZA COLOR plywood must not exceed health standards set forth in [9].

9.6 The standard SVEZA COLOR plywood composition does not include raw materials or components classified as hazardous waste.

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

10 RECOMMENDATIONS FOR USE

10.1 SVEZA COLOR plywood is designed for multiple applications. Adherence with plywood application and storage regulations will make it possible to increase its service life.

10.2 Slight variation in the SVEZA COLOR plywood thickness due to moist air during transport, along the edge for a distance up to 50 mm from the edge is allowable.

10.3 Sawing of SVEZA COLOR plywood

Sawing of SVEZA COLOR plywood for parts shall be performed with band or circular saws.

To obtain a clean cut, the sawing shall be performed correctly - first, the sawing shall be done transversely to the face side of the grain direction, and then lengthwise. This method makes it possible to avoid splitting the corners and to decrease face chip size and quantity.

When sawing with a circular saw, high speed and low feed rate are recommended.

To prevent plywood from moisture absorption while sawing, the SVEZA COLOR plywood butt ends must necessarily be treated with special types of water-based emulsion paint or other sealant.

10.4 Drilling of SVEZA COLOR plywood

All the holes made during installation work, in order to prevent moisture penetration into the SVEZA COLOR plywood must be filled with water-based emulsion paint or other sealants, and it is recommended to treat the sheet surface with water-repellent compound.

To obtain a hole with even edges, a sufficiently sharp drill fitted with a front cutter shall be used.

Drilling should start from the face side. Use of a padding sheet is recommended to avoid splitting on the board reverse face.

To avoid splitting of SVEZA COLOR plywood plies while using nails, use of nails with thread or special wood screw is recommended. A distance from the sheet edge to nail of (12-15) mm is considered as recommended.

10.5 Rippling is common, wave-shaped convexities on the surface of SVEZA COLOR plywood, related to the technology of wood processing and wood material properties, and approximately up 0.8 mm height and various length. These are due to water absorption by the plywood (see Photo 1).



Photo 1

This is observed especially often when SVEZA COLOR plywood is used under conditions of direct contact between the plywood and water.

For use in open premises, sudden climate change during the day and/or seasonal precipitation conditions (for example, spring and autumn months) may also contribute to the appearance of the ripple effect.

The waviness formation continues until complete saturation with moisture up to approximately 28% through cut edges, edges without additional sealant protection, drilled holes, installed rivets or face coating damage not seen during visual examination with the naked eye (see Photo 2).

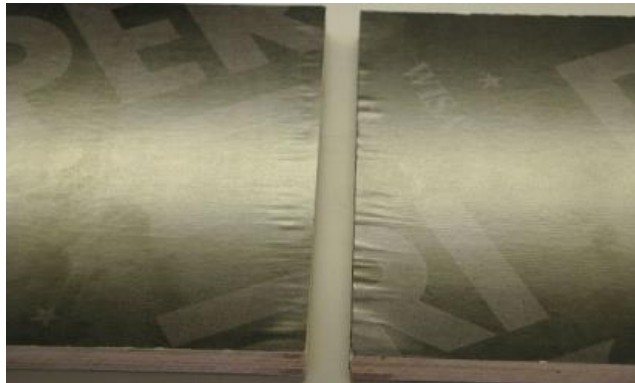


Photo 2

After complete saturation, the waviness from SVEZA COLOR plywood sheets surface disappears almost completely, normally after 2-3 cycles of plywood contact with water and drying after each contact.

APPENDIX A
(informational)

Types of face coating and acrylic paints

For types of face coating and acrylic paints see Table A.1.

Table A.1

Materials of paper for laminate	Paint type and Ral
PAPER 42/117 NOVOX OW OPAL WHITE	PAINT В/Д БАК-ВД-АК-1602-012 RAL 7038
UNCOLOURED PAPER FOR FURTHER PAINTING Б/Л 214 1560	PAINT В/Д БАК-ВД-АК-1602-012 RAL 8017
PAPER 42/117 FM LIB LIGHT BROWN 1560 mm	PAINT В/Д БАК-ВД-АК-1602-012 RAL8004
PAPER TECHNO 1540 LIGHT GREY SURFAKTOR	PAINT В/Д БАК-ВД-АК-1602-012 RAL 7038
PAPER ANYPRESS B HEAVY 220 SURFAKTOR	PAINT В/Д БАК-ВД-АК-1602-012 RAL 8017
PAPER TPS 827 SVEZA PERI SURFAKTOR	PAINT В/Д БАК-ВД-АК-1602-012 RAL 8017
PAPER 80/220 FA7 BLB KOTKAMILLS	PAINT В/Д БАК-ВД-АК-1602-012 RAL 8017
PAPER PS 40/120 PHENOL 1560 mm NOVEL	PAINT В/Д БАК-ВД-АК-1602-012 RAL 8017
PAPER T/KOP Б/Л 120 1560	PAINT В/Д БАК-ВД-АК-1602-012 RAL 8017
PAPER YELLOW Б/Л 167 1560	PAINT В/Д БАК-ВД-АК-1602-012 RAL2000
PAPER T/KOP Б/Л 220 1560	PAINT В/Д БАК-ВД-АК-1602-012 RAL 8017
PAPER KAM/CEP Б/Л 174 1560	PAINT В/Д БАК-ВД-АК-1602-012 RAL 7038
PAPER T/KOP SVEZA 120 1560	PAINT В/Д БАК-ВД-АК-1602-012 RAL 8017
PAPER D/BR SVEZA PERI 220 1560	PAINT В/Д БАК-ВД-АК-1602-012 RAL 8017
PAPER LIGHTGRAY Б/Л 220 1560	PAINT В/Д БАК-ВД-АК-1602-012 RAL8004
PAPER Б/Л 1280 mm YELLOW KOTKAMILLS	PAINT В/Д БАК-ВД-АК-1602-012 RAL2000
PAPER WHITE Б/Л 205 1560	PAINT В/Д БАК-ВД-АК-1602-012 RAL 7038
PAPER WHITE FOR FURTHER PAINTING Б/Л 214	PAINT В/Д БАК-ВД-АК-1602-012 RAL 8017

Note — The manufacturer reserves the right to use in SVEZA COLOR plywood manufacture other types of paper for film-facing and/or paint without consent of the customer, without compromise to product properties.

APPENDIX B
(mandatory)

Limit standards for processing defects of SVEZA COLOR plywood grades

For limit standards for processing defects of SVEZA COLOR plywood grades see Table B.1

Table B.1

Description of processing defects	Limit standards for processing defects for grades			
	1 sel	1	2	3
1. Printing of wood grain structure, healthy knots, inserts	Permitted			
2. Film detaching, ruptures, absence, peeling	allowable on a single edge, no more than 3 mm long provided it is coated with moisture-resistant paint of the main face coating		allowable no more than 2% of sheet area provided it is coated with moisture-resistant paint of main face coating color	allowable
3. Temperature-related stains	not allowable		allowable without face coating integrity loss	allowable
4. Film overlaps (riffles, wrinkles)	allowable no more than 5 mm wide, no more than 100 mm long, and no more than 1 per sheet surface	allowable no more than 10 mm wide, no more than 500 mm long, and no more than 1 per m ²	allowable	

Appendix B — continued

Description of processing defects	Limit standards for processing defects for grades			
	1 sel	1	2	3
5. Sticking of film fragments	allowable of the same color and total area no more than 60 mm ² on the sheet surface	allowable: of the same color, up to 30x30 mm, not more than 1 per m ² or up to 10x100 mm, not more than 1 per m ² . allowable: up to 60 mm ² on the sheet surface of other color	allowable	
6a. Burned film (burnout) due to outer ply defects: cracks, damages, detached knots	not allowable		allowable	
6b. Burned film (burnout) due to outer ply defects: rough peeling	not allowable		allowable	
6c. Burned film (burnout) due to outer ply defects: stripes and spots from sanding	not allowable		allowable up to 25% of sheet area	allowable
7a. Traces from inner ply defects: detached knots, holes	not allowable	allowable: in the form of spots up to 25x25 mm, not more than 1/m ²	allowable	
7b. Traces of inner ply defects: open split, cracks	allowable of up to 60 mm ² total area on the sheet surface	allowable no more than 5 mm wide, no more than 300 mm long, and no more than 1 per running meter	allowable	

Appendix B — continued

Description of processing defects	Limit standards for processing defects for grades			
	1 sel	1	2	3
8 Trace of glued or edge-jointed veneer	not allowable	allowable without face coating damage	allowable	
9. Stripes and spots from press platens	not allowable	allowable		
10. Stripes and spots from film	not allowable	allowable: up to 15% of sheet area	allowable	
11. Local swellings on the plywood surface	not allowable		allowable no more than 100 mm, no more than 1/m ²	allowable
12. Veneer particles glued into the face ply	not allowable	allowable: in a form of spots up to 10x10 mm, not more than 1/m ²	allowable	
13. Indentations of press platens	allowable of total area not exceeding 600 mm ² , with up to 400 mm ² on sheet each side	allowable: up to 5% of sheet area	allowable	
14. Dents	allowable of up to 60 mm ² total area on the sheet surface	allowable: up to 6 mm diameter, not more than 1 per m ² provided durable bonding of film or up to 1 mm width, up to 200 mm length, not more than 1 per m ²	allowable no more than 0.5 mm depth without face coating damage	allowable
15. Scratches	not allowable		allowable with touching up with paint	

Appendix B — end

Description of processing defects	Limit standards for processing defects for grades			
	1 sel	1	2	3
16 Trimming defects, edge splintering	allowable no more than 3 mm long provided it is coated with moisture-resistant paint of main face coating color		allowable no more than 10 mm long provided it is coated with moisture-resistant paint	allowable
17. Paint streaks	allowable — no more than 5 mm		allowable	
18 Lack of veneer	not allowable	allowable on single edge, no more than 5 mm depth		allowable
19. Local veneer delamination in plywood inner plies (concealed blister)	not allowable			allowable
20. Warping	for plywood up to 6.5 mm thick inclusive - not considered; for plywood thickness more than 6.5 mm is allowable with up to 15 mm deflection per 1 m of plywood sheet diagonal length			
21. Deviations from allowable dimensions	dimensions as per Sections 3.4.1, 3.4.2, 3.4.3, 3.4.4			allowable
22. Sheets sticking to each other	not allowable		allowable	
23. Deviation of non-identical film color and logo within a single lot	not allowable		allowable	

Notes:

1. Any defects not specified in Appendix B are not allowed.
2. The total number of defects in 1 sel grade as per Sections 5, 7b, and 14 of this Appendix shall not exceed the single defect limit values.

APPENDIX C
(mandatory)

Terms and definitions of processing defects

For terms and definitions of processing defects see Table C.1

Table C.1

Designation of processing defects	Definition
Printing of wood grain structure, healthy knots, inserts	Contour of healthy knots, wood grain structure, inserts on the surface of face filmed plywood
Film detaching, ruptures, absence, peeling	Non-coated areas of face filmed plywood surface
Temperature-related stains	Alteration of film color (with loss of face coating integrity and/or without such loss) due to premature film hardening without pressure
Film overlaps (riffles)	Local thickening due to film overlap on the plywood surface
Sticking of film fragments	Glued film fragments deposited on the plywood face surface during face-filming process
Burned film (burnout)	Loss of film integrity due to outer ply defects
Traces from inner ply defects	Loss of film integrity due to inner ply defects
Stripes and spots from press platens	Stripes and spots on the film-faced plywood surface due to fouling of press platens
Stripes and spots from film	Abnormally colored areas of film-faced plywood surface due to emission of film volatile substances during pressing
Local swellings on the plywood surface	Partial delamination of film from the film-faced plywood surface
Veneer particles glued into the face ply	Veneer particles glued into the face ply before the face-filming

Appendix C — end

Designation of processing defects	Definition
Press platen indents	Local convexities on film-faced plywood surface, formed due to defects on face filming press platens
Dents	Local indentation of outer ply with damage of lining surface
Scratches	Damage of film-faced plywood face coating surface by a sharp object, in the form of a narrow long recession or local indentation of the face ply with face coating damage
Edge splintering, trimming defects	Defects involving absence of face coating along the film-faced plywood sheet edge
Paint streaks	Paint intrusion on the film-faced plywood sheet face
Absence of veneer	Defect characterized by lack of inner ply veneer, except butt knots and cracks
Local veneer delamination in plywood inner plies (concealed blister)	Separation of two adjacent plywood plies along the adhesive layer
Sheet sticking	Persistent sticking of film-faced plywood sheet faces caused by paint streaks
Wrinkles	A surface defect in the form of a group of alternating longitudinal depressions and protrusions, with irregular shape and arbitrary direction (resembling wrinkles or ripples) resulting from improper operation of the film deposition station and / or defective film

APPENDIX D
(mandatory)

Areas of SVEZA COLOR plywood application

The areas of SVEZA COLOR plywood application are presented in Table D.1

Table D.1

Direction of application	Element function	Note
Light commercial transport	Open elements of trailers, towed vehicles, vehicle bodies wall paneling	For additional protection from the effect of water, elements and parts need their edges protected after cutting (painting, protection with sealants, etc.)
Buses	Open elements of cabins, luggage compartment	
Boats, motor boats, vessels, etc.	Open elements of berth walls and other vessel premises. Open elements of inflatable boats and motor boats - transoms, seats, decks, board decks, floorboards, bottom boards	
Packaging of concert equipment	Internal and external elements of cases, trunks, suitcases, casing	
Interiors	Finish material for residential and public premises	
Other	Furniture elements for residential and public premises Elements of structures for year round outdoor use, provided there is additional treatment of fabrication holes and / or joints of structures, and compliance with operating rules under the aggressive effect of sunlight, rain, snow, and temperature gradient from +40 °C to -50 °C (playgrounds, benches, etc.)	

APPENDIX E
(mandatory)

Method of determination of surface waviness of SVEZA COLOR plywood used for decking (Rippling test)

Test is performed using:

- drill of 1 mm diameter;
- aluminum tape, paint, wax.

Two 100x100 mm samples of SVEZA COLOR plywood shall be taken for the test. Other sample size may be used, provided the dimensions will not affect test results. Tests must be performed on both faces of the sample (upper and lower). Conditioning of samples is not required. Before the test, sample butt ends shall be sealed with aluminum tape, paint or wax.

Tests performance and assessment of results

1. The surface of SVEZA COLOR plywood samples shall be punctured with a drill for the face coating and outer ply thickness depth in a quantity of 9 pieces as per Figure 1.

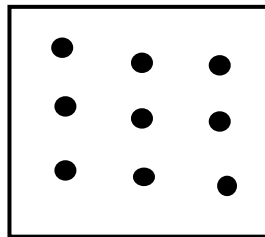


Figure 1

2. Samples with punctures are to be covered with a damp cloth and left for 2 hours, periodically moistening the cloth.

3. The tested surface is subjected to visual inspection and waviness (rays) measurements with a ruler or measuring tape as per GOST 7502.

The arithmetic mean value of 9 measurements shall be considered as the test result.

APPENDIX F
(mandatory)

**Method of determination of face coating resistance to hydrochloric acid
(HCl) - for melamine films**

Test is performed using:

- glass cap or sample bottle of (30-40) mm diameter;
- 5% HCl solution;
- pipette;
- stop watch;
- ashless filters.

Two 100x100 mm samples of SVEZA COLOR plywood shall be taken for the test. Other sample size may be used, provided the dimensions will not affect test results. Tests must be performed on both faces of the sample (upper and lower). Conditioning of samples is not required. Before tests, samples shall be seasoned for at least 24 hours. Temperature of samples shall not exceed 20 °C.

Test performance and assessment of results

1. A 5 % HCl solution is taken in the pipette, the solution is poured on the sample, the poured solution is closed with a glass cap and the stop watch is started.
2. After 20 minutes the glass cap is removed, residues of HCL solution are cleaned from the sample surface with filter paper (ashless filters).
3. After the sample is scratched using a sharp tool, a visual inspection is performed.

This test may be performed on the plywood lining production facility, after the plywood cools down.

4. Face coating resistance to hydrochloric acid shall be assessed with a three-point scale, based on change of tested surface structure in accordance with Table F.1.

Table F.1

Result	Assessment of surface change
1. Over-curing of film	No gloss alteration, the face coating is hard.
2. Complete (normal) curing of film	Minor gloss alteration, the face coating is hard and resistant to mechanical exposure.
3. Total non-curing of film	Absence of gloss and washing out of resin, surface softening and swelling, the film comes off from veneer, after scratching the film peels off.

References

- [1] DIN EN ISO 12460-3 Wood-based panels - Determination of formaldehyde release. 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, expressing test results
- [3] EN 322:1993 Wood-based panels. Determination of moisture content
- [4] EN 314-1:2004 Plywood. Bond quality. Part 1. Test methods
- [5] EN 310:1993 Wood-based panels. Determination of the modulus of elasticity in bending, and of bending strength
- [6] HS 2.1.6.3492-17 Maximum allowable concentrations (MAC) of pollutants in the atmospheric air of urban and rural settlements
- [7] HS 2.1.6.2309-07 Tentative safe exposure levels (TSEL) of pollutants in the atmospheric air of populated places. Health standards
- [8] HS 2.1.6.2328-08 Addendum to GN 2.1.6.2309-07, Tentative safe exposure levels (TSEL) of pollutants in the atmospheric air of populated places. Health standards
- [9] Unified sanitary epidemiological and health standards for goods subject to sanitary and epidemiological control approved by the Customs Union Commission decision No. 299 as of May 28, 2010

Keywords: corporate standard, SVEZA COLOR film faced birch plywood, dimensions, technical requirements, packaging, labeling, quality control methods, transportation, storage, warranty.

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