

STATE STANDARD  
GOST 5186-88

CELLULOSE ELECTRICAL INSULATING  
SULPHATE FOR CONDENSER,  
CABLE AND TRANSFORMER

PAPER  
TECHNICAL CONDITIONS  
GOST 5186-88

Official edition  
E

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GOSUDARSTVENNYSTANDARTSOYZASSR

CELLULOSE ELECTRICAL INSULATING  
SULPHATE FOR CONDENSER,  
CABLE AND TRANSFORMER  
PAPER

GOST  
5186-88

Specifications

Sulphate insulating pulp for capacitor tissue,  
cable and transformer papers. Specifications  
OKP 54 1123

Validity from 01.01.60  
up to 01.01.95

Failure to comply with the standard is punishable by law

This standard applies to electrical insulation  
softwood sulphate pulp for condensation  
torn, cable and transformer paper, manufactured  
for the needs of the national economy and for export.

1. TECHNICAL REQUIREMENTS

1.1. The pulp must be manufactured in accordance with the requirements  
according to this standard for technological documentation,  
approved in the prescribed manner.

1.2. Sizes

1.2.1. Depending on the purpose and quality indicators, the  
lyulose should be manufactured in the following grades: E-1, E-2, E-3 and  
E-4. The purpose of cellulose grades is given in the appendix.

1.2.2. Pulp should be made in sheets of size  
600X800mm and 700X630mm. Limit deviations in size  
should not exceed ± 10 mm.

1.3. Specifications

1.3.1. Pulp quality indicators must correspond  
the norms indicated in the table.

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Norms for the brand

Indicator name

Higher  
grade

The first  
grade

E-1

E-2

eh

E-4

Test Method

Indicator name	29.0-31.0	27.0-31.0	25.0-32.0	26.0-31.0	28.0-31.0	According to GOST 10070-74
2 Dynamic Elm						
3 Mechanical properties when grinding in a mill CRA up to (60 ± 1) * SHR breaking length, m, not less	9500	9500	9000	9000	9500	According to GOST 135251-79
4 Mass fraction of ash, %, no more	0.27	0.27	0.30 (0.25) *	0.27	0.27	According to GOST 18461-73
5 Mass fraction of iron, %, no more	0.0015	0.0015	0.0020	0.0010	0.0010	According to GOST 18462-77
6 Specific electrical water conductivity heavy, μS / cm, no more with 1 * 50 module with module 1-20	15 thirty	15 thirty	15 thirty (6.3-7.0)	12 24 (6.0-7.3)	12 24 (6.0-7.3)	According to GOST 8552-72
7 pH of water extract	6.3-7.0	6.3-7.0	(6.0-7.0) *			According to GOST 12523-77

Continuation

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Indicator name	Norm for the brand					Test Method
	Higher grade	The first grade	E2	E3	E4	
8 Mass fraction of sodium, %, no more						0.0006
9 Wastes attributed to conditional weight of cellulose 500 g absolutely dry condition, piece of notes from 0.1 to 1.0 mm2 inclusive, not more	650	650	650	650	650	650
area from 1.0 to 1.5 mm2 inclusive, not more	20	20	thirty	20	20	20
area over 1.5 mm2	0	0	0	0	0	0
10 Moisture, %	12.0-20.0	12.0-20.0	12.0-20.0	12.0-20.0	12.0-20.0	12.0-20.0

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Note The indicator "Mass fraction of sodium" is introduced from 01 01 91 g.

\* Standard for pulp intended for export,

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- 1.3.2. Moisture for determining the mass of cellulose in steam
- 1.4. Markirovka
- 1.4.1. Product labeling must be made by shrink paint on a stencil, gluing a label, made typographic, stamping or punching on the top packing sheet of pulp of each bale and have the following content:
  - the name of the manufacturer and its trademark;
  - product name, brand and grade;
  - serial number of the batch and date of production;
  - serial number of the bale;
  - gross and net weight;
  - designation of this standard.
- 1.4.2. Transport marking - according to GOST 14192-77 with the use of manipulation signs "Afraid of dampness" 74X105 GOST 14192-77, "Do not take the hooks directly!" 74X105 GOST 14192-77 and a warning sign "Do not quit!"
- 1.5. Do packing
  - 1.5.1. Cellulose should be packed in bales of (200 ± 0.5) kg each. The bale must be wrapped in at least two layers of unbleached sulfate cellulose according to OST 13-140-82 and for pulled by steel wire with a diameter of (2.50 ± 0.06) mm according to GOST 3282-74 in four belts (two in the longitudinal and two in the transverse directions), which should be on the symmetrical distance from the edge of the bale. The twist knot must not protrude beyond the bale.
  - 1.5.2. From December to March, at the request of the consumer, packaging

Pulp the cellulose into bales weighing  $(150.0 \pm 0.5)$  kg.  
1.5.3. Packages are formed from individual bales of cellulose. Package dimensions are set according to GOST 24597-81 and should be no more than 1240X840X1350 mm. Package weight should not more than 1000 kg. The number of bales in a bag is not more than four. Packages must be held together vertically single use mating in accordance with GOST 26663-85 in two directions perpendicular to each other. Number about mating - at least two.

#### 2. ACCEPTANCE

- 2.1. Acceptance rules - according to GOST 7004-78.
- 2.2. Specific electrical conductivity of water extract at a module of 1: 20, it is determined only for cellulose, designed for export.
- 2.3. Indicators "breaking length", "breaking strength at multiple inflections", "specific electrical conductivity

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water extract "trash" the manufacturer checks periodically on one batch per day, as well as at the request of consumers.  
If you receive unsatisfactory results, periodically tests carry out acceptance tests before receiving positive results in 5 games.

#### 3. Methods of control

- 3.1. Sampling according to GOST 7004-78.
- 3.2. Preparation of cellulose samples for the determination of chemical indicators - according to GOST 19318-73, mechanical indicators - according to GOST 14363.4-79.
- 3.3. When determining pH, according to GOST 12523-77 is allowed use a water extract prepared to determine specific electrical conductivity at a module of 1: 50.

#### 4. TRANSPORTATION AND STORAGE

- 4.1. TRANSPORTING
  - 4.1.1. Pulp is transported by all types of transport to covered vehicles in accordance with the rules of transfer carriage of goods operating on this type of transport.
  - 4.1.2. Transportation of cellulose in packages - according to GOST 21929-76.
  - 4.1.3. Stowage and securing of goods transported by rail road, - in accordance with the loading specifications and cargo fastening approved by the USSR Ministry of Railways.
- 4.2. H r and n c
  - 4.2.1. Pulp should be stored in covered warehouses. protected from precipitation and soil moisture.
  - 4.2.2. Pulp bales must be stacked.

#### 5. MANUFACTURER'S WARRANTIES

- 5.1. The manufacturer guarantees that the pulp meets the requirements in accordance with this standard, subject to storage conditions and transportation.  
The guaranteed shelf life of cellulose is 1 year from the date of manufacture production.

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APPENDIX  
Recommended

#### PURPOSE OF CELLULOSE BRANDS

- E-1 — for capacitor paper of the KOH type up to 8 microns thick;
- 3-2 - for capacitor paper of the KOH type with a thickness of 9 to 30 microns, transformer paper brands TV-120, TVU-080;
- E-3 - for cable paper for insulating cables for voltage from software up to 500 kV and paper of the FE type with a density of 0.8 g / cm<sup>3</sup> for aluminum oxide electrolytic capacitors;
- 3-4 - for capacitor paper of the SKON type and paper with small dielectrics richness losses.

INFORMATION DATA

1. DEVELOPED AND INTRODUCED by the Ministry of Forestry USSR

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2. APPROVED AND INTRODUCED BY Decree of Guo of the USSR State Committee for Standards dated 05.25.88 No. 1470

3. REPLACE GOST 5186-82

4. REFERENCE REGULATORY AND TECHNICAL DOCUMENTS YOU

Designation of STD, for which cottage link	Subclause item number
GOST 3282-74	1 5 1
GOST 7004-78	2 1, 3 1
GOST 8552-72	Table, subparagraph 6
GOST 10070-74	Table, subparagraph 1
GOST 10638-73	Table, subparagraph 8
GOST 12395-76	Table, subparagraph 2
GOST 12523-77	Table, subparagraph 7, 3 3
GOST 13523 1-79	Table, subparagraph 3
GOST 13525 2-80	Table, subparagraph 3
IOCT 14192-77	1 4 2
GOST 14363.3-84	Table, subparagraph 9
GOST 14363 4-79	32
GOST 16932-82	Table, subparagraph 10
GOST 18461-73	Table, subparagraph 4
GOST 18462-77	Table, subparagraph 5
GOST 19318-73	32
GOST 21929-76	4 1 2
GOST 24597-81	1 53
GOST 26663-85	153
OST 13-140-82	1 5 1

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