Scope of Accreditation for the Testing Laboratory (Center) / Medical Laboratory

Testing Center of All-Russia Electrotechnical Institute −
the Branch of the Federal State Unitary Enterprise
"Russian Federal Nuclear Center – Zababakhin All-Russia Research Institute of Technical Physics"

Testing laboratory (center) / medical laboratory name

111250, Moscow, Krasnokazarmennaya Street 12, Blds. 3, 7

Buziness address

for Compliance with GOST ISO/IEC 17025-2019

Title and reference details of an international or national standard establishing general requirements for the competence of testing and calibration laboratories / individual requirements to the quality and competence of medical laboratories

§§	Documents establishing rules and techniques of research (testing) and measurements	Equipment	OKPD[1] 2 code	TN VED EAEU[2] code	Defined parameter	Range
1	2	3	4	5	6	7
1	GOST 3484.1 Clauses 2, 3	Power transformers (general-purpose and for special applications); current transformers; voltage transformers; and electrical reactors	27.11.4	8504210000 8504221000 8504229000 850423000 850431 850432000 850433000	Transformation ratio Primary winding voltage Secondary winding voltage Vector group	10 V to 127 kV от 10 V to 127 kV regular/irregular (0 to 11)
2	GOST 3484.1 Clause 4				DC winding resistance	200 μΩ to 200 kΩ

[1] Russian Classification of Products by Economic Activity Type
[2] Eurasian Economic Union's Commodity Nomenclature of Foreign Economic Activity

1	2	3	4	5	6	7
3	GOST 3484.1 Clause 5			850434000	Short-circuit loss Short-circuit voltage	0 kV to 40 kV 0 % to 100 %
4	GOST 3484.1 Clause 6				No-load operation loss and current	0 kV to 40 kV 0 % to 100 %
5	GOST 3484.1 Clause 7				Zero phase-sequence resistance	0.1 μΩ to 100 kΩ
6	GOST 3484.2 Clauses 1-6	Power transformers (general-purpose and for special applications) and electrical reactors	27.11.4	8504210000 8504221000 8504229000 850423000 850431 850432000 850433000 850434000	Temperature rise in temperature-rise test	0 °C to 300 °C 0 kV to 35 kV 5 Hz to 100 Hz 1 μΩ to 200 kΩ
7	GOST 3484.3 Subclause 4.1	Power transformers (general-purpose and for special applications, as well as transformer assembly) and electrical reactors	27.11.4	8504210000 8504221000 8504229000 850423000 850431 850432000 850433000 850434000	Insulation resistance	3 kΩ to 1000 GΩ
					Absorption coefficient – insulating resistance – time	 3 kΩ to 1000 GΩ 1 s to 60 s
8	GOST 3484.3 Subclause 4.2				Dielectric loss angle tangent Winding capacity	0.01 % to 100 % 20 pF to 1 μF
9	GOST R 52719 Subclause 9.2.1	Power transformers and autotransformers	27.11.4	–	Structural dimensions of elements	1 mm to 10000 mm
10	GOST 22756 Subclause 2.5	Power transformers; electromagnetic voltage transformers; line regulating transformers; and current-limiting shunt, current-limiting grounding and arc-suppression reactors	27.11.4	8504210000 8504221000 8504229000 850423000 850431 850432000 850433000 850434000	Insulation strength Test lightning impulse voltage	passed/failed 0 kV to 2250 kV
11	GOST 22756 Subclause 2.6				Insulation strength Test switching impulse voltage	passed/failed 750 kV to 1600 kV
12	GOST 22756 Subclause 2.7				Insulation strength Test power-frequency voltage	passed/failed 0 kV to 950 kV
13	GOST P 56738 Clause 10	Power transformers (autotransformers); line regulat-	27.11.4	8504210000 8504221000	Short-time AC applied voltage	passed/failed 0 kV to 425 kV

1	2	3	4	5	6	7
14	GOST R 56738 Clause 12	ing transformers; and shunt, current-limiting, and arc-suppression reactors		8504229000 850423000 850431 850432000 850433000 850434000	Partial discharge at power-frequency voltage	1 pC to 100 nC
15	GOST R 56738 Clause 13				Insulation strength at lightning impulse voltage	passed/failed 0 kV to 2250 kV
16	GOST P 56738 Clause 14				Insulation strength at switching impulse voltage	passed/failed 750 kV to 1600 kV
17	GOST 20074 Clauses 1-5	AC electrical equipment for voltages greater than 1000 V	27	8504 8535 8546	Partial discharge	1 pC to 100 nC
18	GOST 20243	Single-phase transformers of power greater than 4 kVA and three-phase transformers of power greater than 6.3 kVA	27.11.4	8504210000 8504221000 8504229000 850423000 850431 850432000 850433000 850434000	Short-circuit current withstand Test dynamic current Test short-time thermal current	passed/failed 0 kA to 200 kA 0 kA to 100 kA
19	GOST R 54827 Subclause 13.4	General-purpose dry transformer, including autotransformers; auxiliary station transformers; and transformers for packaged transformer substations (PTS) of voltage classe up to and including 35 kV	27.11.4	8504210000 8504221000 8504229000 850423000 850431 850432000 850433000 850434000	Environmental resistance: – temperature – relative humidity	passed/failed -70 °C to +150 °C 10 % to 98 %
20	GOST R 54827 Subclause 27.3				Transformer thermal shock load	-70 °C to +70 °C 0 kA to 50 kA
21	GOST 1516.2	Power transformers (general-purpose and for special applications) and electrical reactors	27.11.4	8504210000 8504221000 8504229000 850423000 850431 850432000 850433000 850434000	Insulation strength	passed/failed
					Insulation strength at lightning impulse voltage	0 kV to 2250 kV
					Test AC voltage	0 kV to 425 kV
22	GOST 1516.2 Subclauses 4.1-4.5, Clauses 5, 6, Subclauses 7.1-7.5, 7.7,	AC electrical equipment and installations for voltages greater than 3 kV	27	8504 8535 8536	Insulation strength Insulation strength at lightning impulse voltage	passed/failed 0 kV to 2250 kV
					Insulation strength at switching impulse voltage	750 kV to 1600 kV

1	2	3	4	5	6	7
	Clause 8			8546	Test power-frequency voltage	1 kV to 950 kV
					Test power-frequency AC voltage in testing insulation strength to thermal break-down	1 kV to 500 kV
					Electric strength at DC voltage	2 kV to 70 kV
23	GOST 1516.2 Subclause 7.6				Radio interference	passed/failed 10 dB to 100 dB
					Test power-frequency AC voltage in radio interference measurement test	1 kV to 500 kV
24	GOST 14794 Subclause 6.1	Current-limiting series reactors, single and coupled	27.11.4	850450	Design Structural dimensions of elements	compliant/noncompliant 0.1 mm to 10000 mm
25	GOST 14794 Subclause 6.2				Inductive resistance	от 0,1 Ω to 30 кΩ
26	GOST 14794 Subclause 6.7				Coupling coefficient – inductive resistance	от 0 to 30 кΩ
27	GOST 14794 Subclause 6.8				Loss measurement	от 0 to 40 kV
28	GOST 14794 Subclause 6.10				Current division in parallel branches	от 0 to 630 A
29	GOST 14794 Subclause 6.11				Resistance to thermal shocks Temperature rise in temperature-rise test	passed/failed от 0 °C to 300 °C
30	GOST 14794 Subclause 6.12				Short-circuit current withstand and load impact resistance Test dynamic current Test short-time thermal current	passed/failed 0 kA to 200 kA 0 kA to 100 kA
31	GOST 8008 Clause 4	Switching devices for the power transformer coil taps	27.11.4	8504210000 8504221000 8504229000 8504230001 8504230009	Resistance of current-conducting circuit elements	1 μΩ to 199.9 Ω 0.1 mA to 100 A
32	GOST 8008 Clause 6				Insulation strength: Test power-frequency AC voltage Test lightning impulse voltage	passed/failed 0 kV to 950 kV 0 kV to 2250 kV
33	GOST 8008 Clause 7				Resistance to thermal shocks Temperature rise in temperature-rise test	passed/failed 0 °C to 300 °C
34	GOST 8008 Clause 9				Short-circuit current withstand Test dynamic current	passed/failed 0 kA to 200 kA

1	2	3	4	5	6	7
					Test short-time thermal current	0 kA to 100 kA
35	GOST 8008 Clause 14				Actuators and interlocks	passed/failed
36	GOST 16962.1-89 Clause 2	High-voltage electrotechnical products with open broken contacts	27.12.10	8535 8546	Operability when exposed to glaze-ice	passed/failed
37	GOST 30630.2.1 Clause 4	Machines; instruments; and all types of miscellaneous technical products	25, 26, 27, 28	8504 8535 8536 8546 8504 8535 8536 8546	Resistance to the ambient temperature upper value in service	passed/failed -70 °C to +150 °C
38	GOST 30630.2.1 Clause 5				Resistance to the ambient temperature upper value in transportation and storage	passed/failed -70 °C to +150 °C
39	GOST 30630.2.1 Clause 6				Resistance to the ambient temperature lower value in service	passed/failed -70 °C to +150 °C
40	GOST 30630.2.1 Clause 7				Resistance to the ambient temperature lower value in transportation and storage	passed/failed -70 °C to +150 °C
41	GOST 30630.2.1 Clause 8				Resistance to ambient temperature change	passed/failed
42	GOST R 51369 Clause 4	Machines; instruments; and all types of miscellaneous technical products	25, 26, 27, 28	8504 8535 8536 8546 8504 8535 8536 8546	Resistance to long-term and accelerated exposure to air humidity or in dew-fall conditions	passed/failed от 0 to 100%
43	GOST P 51369 Clause 5				Resistance to short-term exposure to air humidity	passed/failed 0 % to 100%
44	GOST R 51369 Clause 7				Resistance to frost with its subsequent melting (for test units with overall dimensions up to 3.2mx2.6mx4.7 m)	passed/failed –30 °C to +10 °C 0 kV to 350 kV
45	GOST R 51369 Clause 8				Operability when exposed to glaze-ice	passed/failed 0 mm to 30 mm –20 °C to –7 °C
46	GOST R 51371 Clause 4	Machines; instruments; and all types of miscellaneous technical products	25, 26, 27, 28	8504 8535 8536 8546 8504 8535 8536 8546	Impact strength	passed/failed 30 $m \cdot s^{-2}$ to 100 $m \cdot s^{-2}$
47	GOST R 51371 Clause 5				Impact resistance	passed/failed 30 $m \cdot s^{-2}$ to 100 $m \cdot s^{-2}$

1	2	3	4	5	6	7
48	GOST 30630.1.2 Subclause 4.3	Machines; instruments; and all types of miscellaneous technical products	25, 26, 27, 28	8504 8535 8536 8546 8504 8535 8536 8546	Vibration resistance	passed/failed 1.5 $m \cdot s^{-2}$ to 400 $m \cdot s^{-2}$ 5 Hz to 600 Hz maximum displacement 6 mm
49	GOST 30630.1.2 Subclause 5.4				Vibration survival strength	passed/failed 1.5 $m \cdot s^{-2}$ to 400 $m \cdot s^{-2}$ 5 Hz to 600 Hz maximum displacement 6 mm
50	GOST 30630.1.2 Subclause 6.4				Resistance to sinusoidal vibration with elevated acceleration amplitude	passed/failed 1.5 $m \cdot s^{-2}$ to 400 $m \cdot s^{-2}$ 5 Hz to 600 Hz maximum displacement 6 mm
51	GOST R 51909 Subclause 5.6.1	Machines; instruments; and all types of miscellaneous technical products	25, 26, 27, 28	8504 8535 8536 8546 8504 8535 8536 8546	Strength in transportation	passed/failed 30 $m \cdot s^{-2}$ to 100 $m \cdot s^{-2}$ 0 kg to 10 kg
52	GOST 30630.2.6 Subclause 6.3	Machines; instruments; and all types of miscellaneous technical products	25, 26, 27, 28	8504 8535 8536 8546 8504 8535 8536 8546	Resistance to water under short-term immersion	passed/failed down to 2.0 m 0 h to 24 h
53	GOST 30630.2.6 Subclause 7.4				Resistance to rain	passed/failed 0 ml/min to 6 ml/min 0 h to 2 h
54	GOST 30630.2.6 Subclause 8.4				Drop proofness	passed/failed 0 ml/min to 0.5 ml/min 0 min to 20 min
55	GOST 10390 Clause 6	Power, current and voltage transformers; reactors; gears; capacitors; cable boxes; and porcelain, glass and polymer insulators and insulation structures	27	8504 8535 8536 8546	External insulation strength in conditions of contamination and humidity 50% discharge voltage in conditions of contamination	passed/failed 1 kV to 950 kV 1 kV to 950 kV
56	GOST 9920 Subclause 2.2	Three-phase 50 Hz AC electrical installations of voltage class 3 to 750 kV	27	8504 8535 8536	Leakage path length for external insulation	0 mm to 15000 mm

1	2	3	4	5	6	7
				8546		
57	GOST 8024 Subclause 2.1	Circuit-breakers; disconnectors; contactors; switchgear; current transformers; current conductors; and wall tube insulators	27	8504 8535 8536 8546	Temperature rise in temperature-rise test Test current	0 °C to 300 °C 0 to 12 000 A
58	GOST 8024 Subclause 2.2				Ambient temperature	–40 °C to +85 °C
59	GOST 8024 Subclause 2.3				Temperature measured by the thermometer	–40 °C to +100 °C
60	GOST 8024 Subclause 2.4				Temperature measured by the thermocouple	–40 °C to +300 °C
61	GOST 8024 Subclause 2.5				Temperature measured by the resistance test Resistance of the gear main circuit Ambient temperature Test current	 1 μΩ to 199.9 Ω 0 °C to +60 °C 0.1 mA to 100 A
62	GOST 8024 Subclause 2.6				Resistance of the gear main circuit	1 μΩ to 199.9 Ω 0.1 mA to 100 A
63	GOST R 55194 Clause 4.5	50 Hz AC electrical equipment and installations and their parts of voltage class 1 to 750 kV	27	8504 8535 8536 8546	Insulation strength in the rain: Test switching impulse voltage Test power-frequency AC voltage	passed/failed 750 kV to 1600 kV 0 kV to 950 kV
64	GOST R 55194 Clause 5				Insulation strength at lightning impulse voltage 50 % discharge voltage of the lightning impulse	passed/failed от 0 to 2250 kV от 0 to 2250 kV
65	GOST R 55194 Clause 6				Insulation strength at switching impulse voltage	passed/failed 750 kV to 1600 kV
66	GOST R 55194 Clause 7				Insulation strength at AC voltage Average AC discharge voltage	passed/failed 0 kV to 950 kV 0 kV to 950 kV
67	GOST R 55194 Subclause 7.6				Thermal break-down resistance at AC voltage	passed/failed 0 kV to 500 kV
68	GOST R 55194 Subclause 7.7				Radio interference at AC voltage Test power-frequency AC voltage	passed/failed 10 dB to 100 dB 0 kV to 500 kV
69	GOST R 55194 Subclause 7.8				Insulation strength Test power-frequency AC voltage	passed/failed 0 kV to 950 kV
70	GOST R 55194				Insulation strength at DC voltage	passed/failed

1	2	3	4	5	6	7
	Clause 8					0 kV to 70 kV
71	GOST R 52565 Subclause 9.1	Three-phase 50 Hz AC circuit-breakers for rated voltages 3 and up to and including 750 kV	27.12.110	8535	Geometrical dimensions Mass Protective coating condition Surface condition of external insulation parts Correctness of nameplates Correctness of marking and branding	0 mm to 15000 mm 0 kg to 5000 kg normal/defective normal/defective correct/incorrect (visual check) correct/incorrect (visual check)
72	GOST R 52565 Subclause 9.2				Mechanical operability	passed/failed
73	GOST R 52565 Subclauses 9.2.2 – 9.2.6				Mechanical operability Closing and opening times Contact pressures Control circuit voltage Electrical resistance Useful current of control electromagnets	passed/failed 0.2 ms to 6.5 s 0 kN to 5 kN 0 V to 1000 1 μΩ to 1000 μΩ 0 A to 100 A
					Test force	0.1 kN to 10 kN
74	GOST R 52565 Subclause 9.5				Short-circuit through current withstand: Test dynamic current Test short-time thermal current	passed/failed 0 kA to 200 KA (0 s to 0.5 s) 0 kA to 100 kA (0 s to 3 s)
75	GOST R 52565 Subclause 9.6				Switching capacity Test power-frequency AC voltage Test switching current	passed/failed up to 42 kV up to 63 кА
76	GOST R 52565 Subclause 9.9				Radio interference at AC voltage	passed/failed от 10 kV to 500 kV
77	GOST R 52565 Subclause 9.10				Resistance to climatic ambient factors	passed/failed –70 °C to +150 °C
78	GOST 14254 Clause 12	Machines; instruments; and all types of miscellaneous technical products	25, 26, 27, 28	8504 8535 8536 8546 8504 8535 8536	Degree of protection from access to dangerous parts of equipment designated by the first characteristic digit	IP1X, IP2X, IP3X, IP4X
79	GOST 14254 Clause 14				Degree of water protection designated by the second characteristic digit	IPX3, IPX4, IPX5

1	2	3	4	5	6	7
				8546		
80	GOST 17717 Subclause 7.1	Load interrupters and their actuators for rated voltages of 3 kV to 10 kV	27.12.10.110	8535	Geometrical dimensions Mass Protective coating condition Surface condition of external insulation parts Correctness of nameplates Correctness of marking and branding	0 mm to 15000 mm 0 kg to 5000 kg normal/defective normal/defective correct/incorrect (visual check) correct/incorrect (visual check)
81	GOST 17717 Subclause 7.4				Mechanical operability test	passed/failed 0 V to 500 V 0 A to 1000 A 1 μΩ to 0.1 ms to 10 s
82	GOST 17717 Subclause 7.5				Short-circuit through current withstand Test parameters: – dynamic current – short-time thermal current, 3 s – short-time thermal current, 1 s	passed/failed up to 200 kA up to 51 kA up to 100 kA
83	GOST 17717 Subclause 7.8.1				Standard reliability test for mechanical durability	passed/failed
84	GOST R 52726 Subclause 8.1	AC disconnectors and earthing switches for 50 Hz power-frequency voltages greater than 1 kV and their actuators	27.12.10.120	853530	Geometrical dimensions Mass Protective coating condition Surface condition of external insulation parts Correctness of nameplates Correctness of marking and branding	0 mm to 15000 mm 0 kg to 5000 kg normal/defective normal/defective correct/incorrect (visual check) correct/incorrect (visual check)
85	GOST R 52726 Subclause 8.2				Health of product mechanisms and their compliance with technical documentation	passed/failed
86	GOST R 52726 Subclause 8.3				Electrical resistance Test current	1 μΩ to 199.9 Ω 0.1 mA to 100 A
87	GOST R 52726 Subclause 8.5				Mechanical characteristics	passed/failed 0 s to 1000 s 0 kN to 1 kN
88	GOST R 52726				Operability of locking devices	passed/failed

1	2	3	4	5	6	7
	Subclause 8.6					0 kN to 1 kN
89	GOST R 52726 Subclause 8.7				Operability in ice formation conditions	passed/failed 0 mm to 500 mm
90	GOST R 52726 п. 8.8.2				Actuator resistance to current-induced heating	passed/failed 0 °C to 300 °C 0 V to 500 V
91	GOST R 52726 Subclause 8.9				Short-circuit through current withstand: – dynamic current – short-time thermal current	passed/failed 0 kA to 200 kA 0 kA to 100 kA
92	GOST R 52726 Subclause 8.13				Insulation strength Test power-frequency AC voltage	passed/failed 1 kV to 500 kV
					Radio interference	up to 100 dB
93	GOST R 52726 Subclause 8.14				Mechanical strength margin of insulators	– 0 kN to 500 kN
94	GOST R 52726 Subclause 8.15				Switching capacity: – compensating current – transformer no-load current – charging current of overhead and cable lines	passed/failed 0 A to 1600 A 0 A to 5 A 0 A to 5 A
95	GOST R 52726 Subclause 8.16				Induced current switching capacity	passed/failed 0 A to 80 A
96	GOST R 52726 Subclause 8.17.				Rated short-circuit making current making capacity	passed/failed 0 kA to 200 kA
97	GOST R 52726 Subclause 8.19				Electrical resistance of the earthing circuit Test current	1 μΩ to 199.9 Ω 0.1 mA to 100 A
98	GOST 7746 Subclause 9.1	Electromagnetic current transformers for rated voltages 0.66 to 750 kV	27.11.4	850431 8504320002	Geometrical dimensions Mass Protective coating condition Surface condition of external insulation parts Correctness of nameplates Correctness of marking and branding Completeness	0 mm to 15000 mm 0kg to 5000 kg normal/defective normal/defective correct/incorrect correct/incorrect compliant/noncompliant
99	GOST 7746 Subclause 9.2.1				Insulation strength Test power-frequency AC voltage Test lightning impulse voltage Test switching impulse voltage	passed/failed 0 kV to 950 kV 0 kV to 2250 kV 750 kV to 1600 kV

1	2	3	4	5	6	7
100	GOST 7746 Subclause 9.2.3				Intersection insulation strengtj	passed/failed 0 kV to 100 kV
101	GOST 7746 Subclause 9.2.6				Turn-to-turn insulation strength	passed/failed 0 kV to 5 kV
102	GOST 7746 Subclause 9.3, GOST 8.217 Subclause 9.2				Winding insulation resistance	passed/failed 3 kΩ to 1000 GΩ
103	GOST 7746 Subclause 9.5, GOST 8.217 Subclauses 9.3, 9.4, 9.5				Polarity of windings, current and angle errors Measured error range Test current	compliant/noncompliant 0.01 % to 100% 0 A to 5000 A
104	GOST 7746 Subclause 9.6				Accuracy limit factor and gear safety coefficient Test current	compliant/noncompliant 0 kA to 100 kA
105	GOST 7746 Subclause 9.8				Exciting current of secondary windings	0 A to 100 A
106	GOST 7746 Subclause 9.9				Temperature rise in temperature-rise test	0 °C to +300 °C
107	GOST 7746 Subclause 9.10				Short-circuit through current withstand Test parameters: – dynamic current – short-time thermal current, 3 s – short-time thermal current, 1 s	passed/failed up to 200 kA up to 51 kA up to 100 kA
108	GOST 7746 Subclause 9.13				Resistance to climatic and mechanical ambient factors Test parameters: – ambient air temperature – ambient air humidity – force applied	passed/failed; –60 °C to +150 °C; 10 % to 98 %; 0.1 kN to 10 kN
109	GOST 1983 Subclause 9.1	Electromagnetic and capacitor voltage transformers	27.11.42	850431 8504320002	Geometrical dimensions Mass Protective coating condition Surface condition of external insulation parts Correctness of nameplates Correctness of marking and branding Completeness	0 mm to 15000 mm 0 kg to 5000 kg normal/defective normal/defective correct/incorrect correct/incorrect compliant/noncompliant
110	GOST 1983				Winding insulation resistance	0 GΩ to 1000 GΩ

1	2	3	4	5	6	7
	Subclause 9.3					
111	GOST 1983 Subclause 9.6				Vector group	correct/incorrect (0 to 11)
112	GOST 1983 Subclause 9.6, GOST 8.216 Subclauses 10.2, 10.3				Vector group Voltage error and angle error Measured error range Test voltage	compliant/noncompliant 0.1 % to 100 % 0 kV to 250 kV
113	GOST 1983 Subclauses 9.7, 9.8				Voltage across open triangle bushings of secondary supplementary windings of three-winding transformers	0 V to 600 V
114	GOST 1983 Subclause 9.9				Temperature rise in temperature-rise test at limiting power	0 °C to +300 °C
115	GOST 1983 Subclause 9.10				Transformer resistance to long-term single-phase earthed short-circuit of the power line	passed/failed 0 kV to 500 kV 0 VA to 2000 VA 1 μΩ to 20 kΩ
116	GOST 1983 Subclause 9.11				Transformer ability to withstand short-circuit current	passed/failed 0 kV to 500 kV 0 s to 10 s
117	GOST 1983 Subclause 9.12				Operability of capacitor transformers in transient modes	passed/failed 0 kV to 500 kV 0 s to 100 s
118	GOST 1983 Subclause 9.13				Resistance to climatic and mechanical ambient factors Test parameters: – ambient air temperature – ambient air humidity – force applied	passed/failed –60 °C to +150 °C 10 % to 98 % 0 kN to 10 kN
119	GOST 14694 Subclause 1.1	Metal-enclosed switchgear	27.12.3	853720	Geometrical dimensions Mass Correctness of nameplates Correctness of marking and branding Exterior	0 mm to 15000 mm 0 kg to 5000 kg correct/incorrect correct/incorrect compliant/noncompliant
120	GOST 14694 Subclauses 1.1, 1.5				Compliance with the design drawings and availability of technical documentation package	compliant/noncompliant
121	GOST 14694				Temperature-rise test	passed/failed

1	2	3	4	5	6	7
	Clause 3				Test current	0 °C to 300 °C 50 A to 5000 A
122	GOST 14694 Subclause 4.3				Operation of cabinet and withdrawable parts mechanisms	passed/failed 0 kN to 1 kN
123	GOST 14694 Subclause 4.4				Making and breaking operation of the main circuit switchgear	passed/failed 0.1 ms to 10 s
124	GOST 14694 Subclause 4.5				Switchgear and actuator characteristics	passed/failed 0.1 ms to 10 s
125	GOST 14694 Subclause 4.6				Mechanical strength of switchgear structural elements in multiple operations	passed/failed up to 10000 CO cyles 0 V to 1000 V
126	GOST 14694 Subclause 4.7				Operability of instruments, gear, and diagrams of auxiliary circuits	passed/failed up to 1000 CO cycles 0 V to 1000 V
127	GOST 14694 Subclause 4.8				Operability of locking devices	passed/failed 0 kN to 1 kN 0 V to 500 V
128	GOST 14694 Subclause 4.9				Operability of fixing devices	passed/failed 0 kN to 1 kN 0 V to 500 V
129	GOST 14694 Subclause 4.10				Operability of earthing switches	passed/failed 0.02 mm to 0.5 mm 1 μΩ to 1999.9 Ω 0.1 mA to 100 A
130	GOST 14694 Subclauses 5.1, 5.2				Insulation strength Test power-frequency AC voltage Test impulse voltage	passed/failed 1 kV to 950 kV 0 kV to 200 kV 3 kV to 500 kV
131	GOST 14694 Subclause 6.4				Mechanical strength of air terminals	passed/failed 0 kN to 50 kN
132	GOST 14694 Clause 7				Dynamic and thermal short-circuit currents: – dynamic current – short-time thermal current, 3 s – short-time thermal current, 1 s	passed/failed to kA 200 KA up to 51 kA up to 100 kA
133	GOST 14694 Clause 10				Compatibility of identic withdrawable parts	passed/failed operates/does not operate

1	2	3	4	5	6	7
						0 kN to 1 kN 0 mm to 10000 mm
134	GOST 14694 Clause 13				Auxiliary transformer no-load current breaking capacity	passed/failed от 0 to 3 A
135	GOST R 54828-2011 Subclause 6.17	Indoor and outdoor sulphur hexafluoride-insulated metal-enclosed switchgear	27.12.3	853720	Thermal resistance of partitions and insulators	–60 °C to +85 °C
136	GOST R 54828-2011 Subclause 7.2.2				Low-voltage circuit operation	compliant/noncompliant 0 V to 500 V
137	GOST 20248 Clause 1	Three-phase 50 Hz and 60 Hz AC packaged transformer substations (PTS)	27.12.3	853720	Geometrical dimensions Mass Correctness of nameplates Correctness of marking and branding Exterior	0 mm to 15000 mm 0 kg to 5000 kg correct/incorrect correct/incorrect compliant/noncompliant
138	GOST 20248 Clause 3				Short-circuit current withstand: – dynamic current – short-time thermal current	passed/failed 0 kA to 200 kA 0 kA to 100 kA
139	GOST 20248 Clause 4				Proper arrangement of operative control, protection, automatic, and alarm circuits	passed/failed 0 V to 500 V
140	GOST 20248 Clause 5				Operation of switchgear and main circuit actuators	passed/failed 0 V to 500 V
141	GOST 20248 Clause 6				Operability of mechanical and electrical locking devices	passed/failed 0 kN to 1 kN 0 V to 500 V
142	GOST 20248 Clause 7				Mechanical strength of PTS structural elements in multiple operations	passed/failed 0 kN to 10 kN 0 V to 500 V
143	GOST 20248 Subclause 8.4				PTS insulation strength in dew-fall conditions	passed/failed 3 kΩ to 1000 GΩ 50 V to 5000 V 0 °C to 50 °C 40 % to 98 %
144	GOST 20248 Clause 13				Check assembly, compatibility of identic withdrawable devices	passed/failed operates/does not operate

1	2	3	4	5	6	7
						0 kN to 1 kN 0 mm to 10000 mm
145	GOST P 52725 Subclause 8.14	Nonlinear overvoltage suppressors with metal-oxide nonlinear resistors	27.12.10	8535400000	Mechanical strength	passed/failed 0 kN to 500 kN
146	GOST R 52725 Subclause 9.18				Tracking and erosion resistance at AC voltage	passed/failed 10 kV to 80 kV
147	GOST 1282 Subclause 5.2	Power-factor correction capacitors	27.90.5	8532	Mechanical strength	passed/failed 0 kN to 10 kN
148	GOST 1282 Subclause 5.3				Hermeticity	passed/failed 0 °C to 130 °C
149	GOST 1282 Subclause 5.4				Capacity	20 pF to 1 μF
150	GOST 1282 Subclause 5.5				Insulation strength between terminals	passed/failed 0 kV to 100 kV
151	GOST 1282 Subclause 5.6				Insulation strength Test power-frequency AC voltage	passed/failed; 0 kV to 350 kV
152	GOST 1282 Subclause 5.7				Loss-angle tangent	0.01 % to 100%
153	GOST 1282 Subclause 5.8				Thermal resistance Test power-frequency AC voltage	passed/failed 1 kV to 100 kV
154	GOST 1282 Subclause 5.9				Resistance to short-circuited discharge	passed/failed 0 min to 30 min 0 μF to 1 μF
155	GOST 26093 Subclauses 2.1.3, 2.2.1.4, 2.1.6	Ceramic insulators	23.43.10 27.90.12.110	8546200000	Power-frequency breakdown voltage Test power-frequency AC voltage	passed/failed 0 kV to 350 kV
156	GOST 26093 Subclauses 2.1.7, 2.2.1.8				Resistance to continuous spark flow	passed/failed 0 kV to 150 kV
157	GOST 26093 Subclauses 4.2.1, 4.3.1				Resistance to abrupt temperature change Test water temperature	passed/failed +15 °C to +95 °C
158	GOST 26093 Subclauses 1.7, 3.1.2, 3.1.3, 3.2.1-3.2.1.4, 3.2.2.1				Mechanical strength Test mechanical bending load	passed/failed 0 kN to 500 kN
159	GOST 26093				Mechanical bending strength	passed/failed

1	2	3	4	5	6	7
	Subclause 3.2.1.3					0 kN to 500 kN
160	GOST 26093 Subclause 3.2.1.4				Mechanical bending strength at negative temperatures	passed/failed 0 kN to 500 kN -60 °C to 0 °C
161	GOST 26093 Subclause 3.2.2.2				Resistance to single shocks	passed/failed (with energy of up to 60 J)
162	GOST 26093 Subclause 4.2.1				Resistance to thermal shocks (sharp temperature drop)	passed/failed 10 °C to 80 °C
163	GOST 26093 Subclause 4.2.2				Resistance to slow temperature change	passed/failed -60 °C to +85 °C
164	GOST 26093 Subclause 4.2.3				Cold resistance	passed/failed down to -60 °C
165	GOST 26093 Subclause 4.2.4				Moisture resistance	passed/failed up to 98%
166	GOST 26093 Subclause 5.1.1				Surface quality	normal/defective (visual check)
167	GOST 26093 Subclause 5.2				Deviation from rated sizes and shapes	0.1 mm to 50 mm
168	GOST 26093 Subclause 5.7				Water absorption	passed/failed
169	GOST R 52034 Subclause 7.1.2	Ceramic post insulators for voltages greater than 1000 V	23.43.10 27.90.12.110	8546200000	Power-frequency breakdown voltage	0 kV to 400 kV 45 Hz to 65 Hz
170	GOST R 52034 Subclause 7.2.1				Torque	0 kN·m to 10 kN·m
171	GOST R 52034 Subclause 7.2.2				Single-impact resistance	passed/failed (up to 60 kJ)
172	GOST 6490 Subclause 7.4.2	Line suspended cap-and-pin insulators	23.19.25 23.43.10 27.90.12.110	8546100000 8546200000	Power-frequency breakdown voltage	0 kV to 400 kV 45 Hz to 65 Hz
173	GOST 6490 Subclause 7.5.5				Thermomechanical strength	passed/failed –70 °C to +80 °C 0 kN to 200 kN
174	GOST 6490 Subclause 7.4.7				Ability to withstand steep leading-edge impulse voltage	passed/failed 500 kV/μs to 2500 kV/μs
175	GOST 6490				Surface quality of insulation parts of insulators	passed/failed

1	2	3	4	5	6	7
	Subclause 7.3.1					(visual check)
176	GOST 6490 Subclause 7.3.2				Mass Dimensions	0 kg to 5000 kg 0 mm to 15000 mm
177	GOST 6490 Subclause 7.3.6				Thermal resistance Water temperature	passed/failed +15 °C to +95 °C
178	GOST 6490 Subclauses 7.4.2, 7.4.7				Insulation strength Test power-frequency AC voltage	passed/failed 0 kV to 350 kV
					Impulse leading-edge steepness	500 kV/μs to 2500 kV/μs
179	GOST 6490 Subclauses 7.5.1, 7.5.4				Mechanical strength Test mechanical tensile load	passed/failed 0 kN to 500 kN
180	GOST 6490 Subclause 7.5.5				Thermomechanical strength Test mechanical tensile load	passed/failed up to 200 kN
181	GOST 1232 Subclause 8.5	Porcelain and glass line and pin insulators	23.19.25 23.43.10 27.90.12.110	8546100000 8546200000	Mass Dimensions	1 kg to 500 kg up to 8000 mm
182	GOST 1232 Subclause 8.6				Thermal resistance	passed/failed +15 °C to +95 °C
183	GOST 1232 Subclauses 8.8, 8.9, 8.11				Mechanical strength Test mechanical tensile load	passed/failed 0 kN to 500 kN
					Test mechanical bending load	0 kN to 500 kN
184	GOST 1232 Subclause 8.10				Thermomechanical strength Test mechanical tensile load	passed/failed up to 200 kN
185	GOST 1232 Subclause 8.14				Insulation strength Test power-frequency AC voltage	passed/failed 0 kV to 350 kV
186	GOST 1232 Subclause 8.12				Operability of closing device	passed/failed 0 kN to 1 kN 0 V to 500 V
187	GOST 1232 Sublause 8.13				Mechanical destructive force of insulator head protrusions	passed/failed 0 kN to 50 kN
188	GOST 26196 Clauses 1-4	Suspended insulators; sets of insulators; post, pin, rod line, and wall tube insulators for rated voltages greater than 1000 V	23.19.25 23.43.10 27.90.12.110	8546100000 8546200000	Radio interference at AC voltage Test power-frequency AC voltage	passed/failed 0 kV to 500 kV

1	2	3	4	5	6	7
189	GOST R 52082 Subclauses 8.1.9, 8.1.11	Outdoor polymer post insulators	27.90.12.110 22.19.73	8546901000	Insulation strength Test power-frequency AC voltage	passed/failed 1 kV to 900 kV
					Test power-frequency AC voltage at determining breakdown voltage	1 kV to 350 kV
190	GOST R 52082 Subclause 8.4, Annex M				Arc resistance Test current	passed/failed 0.5 kA to 6 kA
191	GOST R 52082 Subclauses 8.5.4-8.5.12				Mechanical strength Test mechanical bending load	passed/failed 0 kN to 500 kN
					Test mechanical torque	0 kN·m to 50 kN·m
					Test temperature	–60 °C to +85 °C
					Bending	0 mm to 250 mm
					Torsional angle	0 deg to 90 deg
192	GOST R 52082 Subclause 8.6.4				Resistance to water penetration	passed/failed 0 h to 50 h 20 °C to 100 °C
193	GOST R 52082 Subclause 8.8				Dimensions Mass	0 mm to 10000 mm 0.5 to 500 kg
194	GOST R 52082 п. 8.9.6				Resistance to colouring fluid penetration	passed/failed 0 min to 60 min
195	GOST R 52082 Subclause 8.1.7				Resistance to lightning impulse voltage – leading-edge steepness	passed/failed up to 2000 kV/μs
196	GOST R 52082 Subclause 8.2				Tracking and erosion resistance at AC voltage	passed/failed 10 kV to 80 kV
197	GOST R 52082 Subclause 8.6				Thermomechanical strength Resistance to water penetration	passed/failed 1 kN to 200 kN passed/failed 0 h to 120 h
198	GOST R 52082 Subclause 8.9.1				Waterproofness class	1 to 7
199	GOST R 52082 Subclause 8.9.5				Protective coating adhesion to the insulation core	passed/failed 0 kN to 2 kN
200	GOST R 52082 Subclause 8.9.7				Water diffusion into the insulation core	passed/failed 0 kg to 500 kg

1	2	3	4	5	6	7
201	GOST R 55189 Subclauses 8.1.1, 8.1.5, 8.1.11, 8.1.12	Suspended polymer rod insulators and interphase spacers	27.90.12.110 22.19.73	8546901000	Insulation strength Test power-frequency AC voltage	passed/failed 1 kV to 900 kV
					Impulse leading-edge steepness	500 kV/μs to 2500 kV/μs
					Protective enclosure surface temperature	0 °C to +300 °C
202	GOST R 55189 Subclauses 8.4.1- 8.4.8				Mechanical strength	passed/failed 0 kN to 500 kN
					Test mechanical bending load	0 kN to 500 kN
203	GOST R 55189 Subclause 8.6				Dimensions Mass	0 mm to 15000 mm 0.1 kg to 500 kg
204	GOST R 55189 Subclause 8.7.7				Resistance to water diffusion into the insulation core	passed/failed 0 kg to 500 kg
205	GOST R 55189 Subclause 8.7.9				Partial discharge attenuation voltage Test power-frequency AC voltage Partial discharge	passed/failed 1 kV to 350 kV 1 pC to 100 nC
206	GOST R 55189 Subclause 8.2				Tracking and erosion resistance Test power-frequency AC voltage	passed/failed 10 kV to 80 kV
207	GOST R 55189 Subclause 8.5.2				Thermomechanical strength	passed/failed 1 kN to 200 kN –70 °C to +80 °C
208	GOST R 55189 Subclause 8.5.4				Resistance to water penetration	passed/failed 0 °C to 100 °C 0 kV/μs to 2500 kV/μs 0 kV to 600 kV 0 kN to 500 kN
209	GOST R 55189 Subclause 8.7.5				Waterproofness class	1 to 7
210	GOST R 55189 Subclause 8.7.6				Resistance to colouring fluid penetration	passed/failed 0 min to 60 min
211	GOST 28856 Subclauses 5.1.1.4, 5.1.2, 5.1.3.1, 5.1.3.2, 5.1.3.6	Suspended polymer rod line insulators and interphase spacers	27.90.12.110	8546	Insulation strength Test lightning impulse voltage	passed/failed 3 kV to 2250 kV
					Test switching impulse voltage	750 kV to 1600 kV
					Test power-frequency AC voltage	1 kV to 950 kV

1	2	3	4	5	6	7
					Impulse leading-edge steepness	up to 2000 kV/μs
212	GOST 28856 Subclauses 5.1.1.5, 5.1.2.1, 5.1.3.7-5.1.3.9				Tracking and erosion resistance Test power-frequency AC voltage	passed/failed 10 kV to 80 kV
213	GOST 28856 Subclauses 5.2.2, 5.2.3				Mechanical strength Test mechanical tensile strength	passed/failed 0 kN to 500 kN
214	GOST 28856 Subclause 5.4				Mass Dimensions	0 kg to 5000 kg 0 mm to 15000 mm
215	GOST 34205 Subclauses 7.6-7.8	Section insulators for railway overhead	27.90.12.110 22.19.73	8546901000	Mechanical strength Test mechanical tensile strength	passed/failed 0 kN to 500 kN
216	GOST 34205 Subclause 7.10				Resistance to water penetration	passed/failed 0 °C to 100 °C 0 kV/μs to 2500 kV/μs 0 kV to 600 kV 0 kN to 500 kN
217	GOST 28739 Subclause 17	Organic-material post insulators for voltages greater than 1000 V	27.90.12.110 22.19.73	8546901000	Partial discharge attenuation voltage Test power-frequency AC voltage	passed/failed 0 kV to 200 kV
218	GOST 28739 Subclause 22				Resistance to water absorption	passed/failed 0 kg to 500 kg
219	GOST 30284 Subclause 7.5	Porcelain and polymer rod insulators and glass cap-and-pin insulators	23.19.25 23.43.10 27.90.12.110 22.19.73	8546100000 8546200000 8546901000	Mechanical strength Test mechanical tensile strength	passed/failed 0 kN to 500 kN
220	GOST 30284 Subclause 7.6				Destructive bending moment	0 kN·m to 100 kN·m
221	GOST 30284 Subclause 7.7				Resistance to thermal shocks - abrupt temperature drop	passed/failed +10 °C to +80 °C
222	GOST 30284 Subclause 7.8				Thermomechanical strength	passed/failed 1 kN to 200 kN –70 °C to +80 °C
223	GOST 30284 Subclause 7.12				Resistance to single shocks - with energy	passed/failed 0 m to 2 m 0 kg to 10 kg
224	GOST 30284 Subclause 7.13				Resistance to water penetration	passed/failed 0 °C to 100 °C 0 kg to 500 kg

1	2	3	4	5	6	7
225	GOST 30284 Subclause 7.14				Resistance to lightning impulse voltage - impulse leading-edge steepness	passed/failed up to 2000 kV/μs
226	GOST 30284 Subclause 7.15				Resistance to electric arc	passed/failed 1 kA to 6 kA
227	GOST 30284 Subclause 7.16				Tracking and erosion resistance Test power-frequency AC voltage	passed/failed 10 kV to 80 kV
228	GOST R 52287 Subclause 6.4.3	Electrical bushings in reactor protective enclosure	23.43.10 27.12.3	853720 8546200000 8546901000	Conductor continuity	passed/failed 0 kΩ to 1 kΩ
229	GOST R 52287 Subclause 6.4.6				Partial discharge	1 pC to 100 nC
230	GOST R 52287 Subclause 6.4.9				Rated short-time overload current	100 A to 5000 A
231	GOST R 52287 Subclause 6.4.10				Short-circuit current withstand: – dynamic current – short-time thermal current	passed/failed 0 kA to 200 kA 0 kA to 100 kA
232	GOST R 55187 Subclause 9.1	15 to 60 Hz AC bushings for rated voltages greater than 1000 V / Insulated bushings for rated alternating voltages greater than 1000 V	23.43.10 27.90.12.110 22.19.73	8546200000 8546901000	Geometrical dimensions Mass Exterior	0 mm to 15000 mm 0 kg to 2000 kg compliant/noncompliant
233	GOST R 55187 Subclause 9.4				Insulation resistance measuring terminals	3 kΩ to 1000 GΩ
234	GOST R 55187 Subclauses 9.5, 9.8 – 9.10, 9.12, 9.13				Insulation strength Test lightning impulse voltage	passed/failed 3 kV to 2250 kV
					Test switching impulse voltage	750 kV to 1600 kV
					Test power-frequency AC voltage	1 kV to 950 kV
					Test power-frequency AC voltage in radio interference measurement test	1 kV to 500 kV
					Radio interference	10 dB to 100 dB
					Test power-frequency AC voltage in partial discharge measurement test	1 kV to 350 kV
					Partial discharge	1 pC to 100 nC
					Test power-frequency AC voltage in measuring terminal test	0 kV to 5 kV

1	2	3	4	5	6	7
235	GOST R 55187 Subclause 9.6				Current-carrying circuit Test current	1 μΩ to 199.9 Ω 0.1 mA to 100 A
236	GOST R 55187 Subclause 9.7				Capacity of basic bushing insulation Dielectric loss angle tangent of basic bushing insulation	20 pF to 1 μF 0.01 % to 100 %
237	GOST R 55187 Subclause 9.11				Insulation strength at long-term exposure to power-frequency voltage	passed/failed 0 kV to 300 kV
238	GOST R 55187 Subclause 9.15				Thermal breakdown withstand at AC voltage	passed/failed 0 kV to 500 kV
239	GOST R 55187 Subclause 9.17				Temperature rise in temperature-rise test Test rated current	passed/failed 50 A to 5000 A
240	GOST R 55187 Subclause 9.18				Short-circuit current withstand: – dynamic current – short-time thermal current	passed/failed 0 kA to 200 kA 0 kA to 100 kA
241	GOST R 55187 Subclause 9.19				Mechanical strength at cantilever load	passed/failed 0 kN to 10 kN
242	GOST R 55187 Subclause 9.22				Resistance to water penetration	passed/failed 0 °C to 100 °C
243	GOST R 51155 Subclause 5.1.4	Overload line accessories for non-insulated leads and lightning protection cables of overhead power lines for voltages greater than 1000 V	27.33.13.120 27.33.13.130	8535900008 8547900000	Geometrical dimensions Mass Correctness of marking and branding Exterior Completeness	0 mm to 15000 mm 0 kg to 5000 kg correct/incorrect compliant/noncompliant compliant/noncompliant
244	GOST R 51155 Subclause 5.2.1				Embedding strength of leads (cables) at mechanical load	passed/failed 0 kN to 50 kN
245	GOST R 51155 Subclauses 5.2.1-5.2.4, 5.2.6, 5.2.7				Mechanical strength Mechanical tensile load	passed/failed 0 kN to 500 kN
246	GOST R 51155 Subclause 5.2.6				Disruptive load of accessories	passed/failed 0 kN to 50 kN
247	GOST R 51155 Subclause 5.3.4-5.3.6				Electric contact resistance, lead portion resistance	1 μΩ to 199.9 Ω 0.1 mA to 100 A
248	GOST R 51155 Subclause 5.3.8				Electric contact resistance, lead portion resistance	1 μΩ to 199.9 Ω 0.1 mA to 100 A
249	GOST R 51155 Subclause 5.4				Remagnetization loss Voltage	passed/failed 0 V to 1000 V

1	2	3	4	5	6	7
					Power Test current	0 kV to 10 kV 50 A to 5000 A
250	GOST R 51155 Subclause 5.8				Insulation strength Test power-frequency AC voltage Radio interference	passed/failed 0 kV to 500 kV 10 dB to 100 dB
251	GOST 2933 Clause 2	Gears for AC voltages up to 1000 V and DC voltages up to 1200 V: automatic and nonautomatic circuit-breakers; disconnectors; contactors; magnetic starters; relays; controllers; fuses; resistors; rheostats; and other gears	27.12.2	8536	Geometrical dimensions Mass Correctness of marking and branding Exterior Completeness	0 mm to 15000 mm 0 kg to 5000 kg correct/incorrect compliant/noncompliant compliant/noncompliant
252	GOST 2933 Clause 3				Operation parameters	passed/failed 0 A to 30 A
253	GOST 2933 Clause 4				Insulation strength at AC voltage Insulation resistance	passed/failed 0 kV to 10 kV 3 kΩ to 1000 GΩ
254	GOST 2933 Clause 5				Temperature rise in temperature-rise test	0 °C to 300 °C 100 A to 5000 A
255	GOST 2933 Clause 6				Electrical resistance Test current Voltage drop Consumed power	1 μΩ to 199.9 Ω 0.1 mA to 100 A 0 V to 1000 V –
256	GOST 2933 Clause9				Short-circuit through current withstand	passed/failed 0 kA to 100 kA
257	GOST 2933 Clause 10				Mechanical and switching wear-resistance Number of cycles Test switching current	passed/failed up to 25 kA
258	GOST 6815 Subclause 6.1	AC busways and power distribution bars up to 1000 V	27.12.3	853720	Geometrical dimensions Mass Correctness of marking and branding Exterior Completeness	0 mm to 15000 mm 0 kg to 5000 kg correct/incorrect compliant/noncompliant compliant/noncompliant
259	GOST 6815 Subclause 6.2				Mechanical strength	passed/failed 0 kN to 1 kN
260	GOST 6815 Subclause 6.3				Contact connections	0 mm to 500 mm 1 μΩ to 199.9 Ω
261	GOST 6815				Paint coating thickness	10 μm to 1 mm

1	2	3	4	5	6	7
	Subclause 6.7					
262	GOST 6815 Subclause 6.12				Short-circuit through current withstand	passed/failed 0 kA to 100 kA
263	GOST 13781.0 Subclause 6.11	Box joints for paper or plastic-insulated power cables for alternating voltages up to 35 kV	27.33.14.000	853590000	Short-circuit current withstand: – dynamic current – short-time thermal current	passed/failed 0 kA to 200 kA 0 kA to 100 kA
264	GOST 13781.0 Subclause 6.12				Insulation strength Test power-frequency AC voltage Test DC voltage	passed/failed 0 kV to 500 kV 0 kV to 70 kV
265	GOST 13781.0 Subclause 6.15				Tracking and erosion resistance at AC voltage	passed/failed 10 kV to 80 kV
266	GOST 13781.0 Subclauses 6.16 – 6.18				Climatic resistance Ambient air temperature Ambient air humidity Resistance to heating cycles at simultaneous exposure to test voltage	passed/failed –60 °C to +150 °C 10 % to 98 % passed/failed 0 A to 5000 A 0 kV to 200 kV
267	GOST 13781.0 Subclause 6.20					
268	GOST 31996 Subclause 8.2.1	Plastic-insulated power cables for rated voltages of 0.66, 1, and 3 kV	27.32.13 27.32.14	854460	Design Structural dimensions	compliant/noncompliant 0 mm to 8000 mm
269	GOST 31996 Subclause 8.3.3				Insulation strength Geometrical dimensions	0 GΩ to 1000 GΩ 0 mm to 8000 mm
270	GOST 31996 Subclause 8.3.4				Insulation strength: – lightning pulse – AC voltage	passed/failed 0 kV to 100 kV 0 kv to 50 kV
271	GOST 20494-2001 Subclause 8.1	Insulating operative rods and rods for movable grounding	27.90.12	8535900008	Geometrical dimensions Mass Surface condition of isolation parts Correctness of marking and branding Completeness	0 mm to 15000 mm 0 kg to 500 kg normal/defective correct/incorrect compliant/noncompliant
272	GOST 20494-2001 Subclause 8.4				Insulation strength at AC voltage	passed/failed 0 kV to 1050 kV
273	GOST 20494-2001 Subclause 8.5.1				Mechanical tensile strength	passed/failed 0 kN to 10 kN
274	GOST 20494-2001				Mechanical bending strength	passed/failed

1	2	3	4	5	6	7
	Subclause 8.5.2					0 kN to 10 kN
275	GOST 20494-2001 Subclause 8.5.4				Maximum force per hand	0 kN to 1 kN
276	GOST R 50345 Subclause 9.7.1	AC air circuit-breakers designed for operation at frequencies of 50 Hz or 60 Hz and rated voltages up to 1000 V	27.12.22	853620	Climatic resistance Ambient air humidity	passed/failed 10 % to 98 %
277	GOST R 50345 Subclause 9.7.2				Main-circuit insulation resistance	passed/failed 0 GΩ to 1000 GΩ
278	GOST R 50345 Subclause 9.7.5				Insulation strength at AC voltage	passed/failed 0 kV to 10 kV
279	GOST R 50345 Subclause 9.7.6				Insulation strength at impulse voltage	passed/failed 0 kV to 50 kV
280	GOST R 51321.1 Subclause 8.2.1	Low-voltage switchgear and controlgear / Low-voltage switch and control devices	27.12	8536 8537	Temperature rise in temperature-rise test	0 °C to 300 °C 100 A to 5000 A
281	GOST R 51321.1 Subclause 8.2.2				Insulation strength	passed/failed 0 kV to 6 kV
282	GOST R 51321.1 Subclause 8.2.3				Short-circuit current withstand: – dynamic current – short-time thermal current	passed/failed 0 kA to 200 kA 0 kA to 100 kA
283	GOST R 51321.1 Subclause 8.2.4				Protective circuit efficiency	passed/failed 0 V to 500 V 0 A to 100 A
284	GOST R 51321.1 Subclause 8.2.5				Air clearances and leakage distance	0 mm to 8000 mm
285	GOST R 51321.1 Subclause 8.2.6				Mechanical operability	passed/failed 0 kN to 1 kN
286	GOST R 51321.1 Subclause 8.3.4				Insulation resistance	passed/failed 0 GΩ to 1000 GΩ
287	GOST 1516.3 Subclauses 4.3, 4.4, 4.5.4, 4.5.5, 4.14, 8.1.4, 8.2.2, 8.3, 8.4.2, 8.4.5, 13.5, 13.6	Electrical equipment and installations for alternating voltages greater than 3 kV	27	8504 8535 8536 8546	Insulation strength Test power-frequency AC voltage in control and auxiliary circuit tests	passed/failed 0 kV to 6 kV
288	GOST 17512 Clauses 2-4	Electrical equipment and installations for alternating voltages 1 to 750 kV	27	8504 8535 8536	Test lightning impulse voltage	3 kV to 2250 kV
					Test switching impulse voltage	750 kV to 1600 kV

1	2	3	4	5	6	7
				8546	Test power-frequency AC voltage	1 kV to 950 kV
289	GOST R 51097 Subclauses 5.2 – 5.5	Sets of insulators and overhead line accessories	27	8535 8546	Insulation strength Test power-frequency AC voltage	passed/failed 1 kV to 500 kV
					Radio interference	up to 100 dB
290	Operation guide RAPM.411218.002RE Megaohmmeters E6-32, E6-31 and E6-31/1	Gears and electrotechnical devices for alternating and direct voltages up to 1000 V and higher	27	8536 8537 8546	Insulation resistance	0 GΩ to 1000 GΩ
291	GOST R 55025 Subclause 8.2.1	Plastic-insulated power cables for rated voltages 6 to 35 kV	27.32.14	854460	Design Structural dimensions	compliant/noncompliant 0 mm to 8000 mm
292	GOST R 55025 Subclause 8.3.3				Specific insulation resistance Insulation resistance Geometrical dimensions of the sample	– 3 kΩ to 1000 GΩ 0 mm to 8000 mm
293	GOST R 55025 Subclauses 8.3.6, 8.3.7, 8.3.8, 8.3.9				Insulation strength:	passed/failed
					Test power-frequency AC voltage	1 kV to 500 kV
					Test impulse voltage	3 kV to 2250 kV
					Test power-frequency AC voltage in partial discharge measurements Partial discharge	1 kV to 350 kV 1 pC to 100 nC
					Dielectric loss angle tangent	0.01 % to 100 %
294	GOST 18410 Subclause 4.2.1	Power cables with impregnated paper insulation	27.32.14	854460	Structural elements	compliant/noncompliant
295	GOST 18410 Subclause 4.4.1				Cable resistance to coil-processing	passed/failed
296	GOST 2990 Subclauses 4.1, 4.2	Cables; leads; and cords	27.32.13	854442 854449	Insulation strength: Test power-frequency AC voltage Test impulse voltage	passed/failed 1 kV to 500 kV 3 kV to 2250 kV
297	GOST R 53354 Subclauses 3.3, 3.4, Clauses 4, 5	Cables and accessories	27.32.14	854460	Insulation strength Test impulse voltage	passed/failed 3 kV to 2250 kV
298	GOST 3345	Cables; leads; and cords	27.32.1	854460	Insulation resistance	0 GΩ to 1000 GΩ

1	2	3	4	5	6	7
	Clauses 2, 3, 4					
299	GOST 7229 Clauses 4, 5	Cables; leads; and cords	27.32.1	854460	Electrical resistance of power cores and conductors Test current	1 μΩ to 199.9 Ω 0.1 mA to 100 A
300	GOST 12179 Clauses 3, 4	Cables and leads	27.32.1	854460	Dielectric loss angle tangent	0.01 % to 100 %
301	GOST 15581 Subclause 5.2	Coupling and power take-off capacitors for power lines	27.90.5	8532	Hermeticity	passed/failed 0 °C to 130 °C
302	GOST 15581 Subclauses 5.3, 5.12				Capacity	20 pF to 1 μF
303	GOST 15581 Subclauses 5.4, 5.14, 5.15				Insulation strength Test power-frequency AC voltage Test impulse voltage	passed/failed 1 kV to 950 kV 3 kV to 2250 kV
304	GOST 15581 Subclause 5.6				Loss-angle tangent	0.01 % to 100 %
305	GOST 15581 Subclause 5.7				Geometrical dimensions Exterior	0 mm to 15000 mm compliant/noncompliant
306	GOST 15581 Subclause 5.16				Mass	up to 500 kg
307	GOST 15581 Subclause 5.17				Resonance frequency of free capacitor oscillations Frequency	compliant/noncompliant 20 Hz to 200 кHz
308	GOST 15581 Subclauses 5.18-5.22				Climatic resistance Test power-frequency AC voltage in determining heat resistance	passed/failed 1 kV to 100 kV
					Ambient air humidity	10 % to 98 %
					Ambient air temperature	–60 °C to +85 °C
					Test power-frequency AC voltage in determining resistance to frost accumulation with its subsequent melting	1 kV to 500 kV
309	GOST 15581 Subclause 5.23				Mechanical strength at wind load and horizontal tension of connecting leads	passed/failed 0 kN to 10 kN
310	GOST R 55190 Subclause 6.3.2	Metal-enclosed switchgear	27.12	8535 8537	Resistance of auxiliary circuit contacts	exceeds/does not exceed 1 μΩ to 1999.9 Ω
311	GOST R 55190 Subclause 6.4.2				Temperature-rise test of auxiliary and control equipment	exceeds/does not exceed 0 °C to 300 °C

1	2	3	4	5	6	7
312	GOST R 55190 Subclause 6.5				Short-circuit dynamic and short-time thermal currents: – dynamic current – short-time thermal current, 3 s – short-time thermal current, 1 s	passed/failed up to 200 kA up to 51 kA up to 100 kA
313	GOST R 55190 Subclause 6.9.6				Auxiliary circuit insulation strength Test power-frequency AC voltage	passed/failed 0.1 kV to 6 kV
314	GOST R 55190 Subclause 6.12				Operability of switchgear, withdrawable parts, and locking devices	passed/failed
315	GOST 6581 Subclauses 1.4, 1.5, Clause 4	Insulation liquids	19.20.29.172	2710	Breakdown voltage at 50 Hz frequency	0 kV to 100 kV
316	GOST 12.2.024-87 Clause 2	Power transformers	27.11.4	8504	Corrected acoustic power	30 dB to 137 dB
317	GOST 20493 Subclauses 8.1, 8.2	Voltage indicating devices	27.90.12	8535900008	Verification of health, completeness, package, marking, availability of corrosion protection, insulation surface condition, availability of locking ring, support documentation, and compliance with design drawings	compliant/noncompliant
318	GOST 20493 Subclauses 8.9.2, 8.10.3				Indicator voltage	compliant/noncompliant 0 kV to 100 kV
319	GOST 20493 Subclause 8.9.2				Indicator health	healthy/ faulty
320	GOST 20493 Subclauses 8.4, 8.5, 8.9.5, 8.10.5, 8.10.6				Insulation strength at AC voltage	passed/failed 0 kV to 950 kV
321	GOST 20493 Subclauses 8.10.8, 8.10.9				Bending strength	passed/failed 0 kN to 500 kN
322	GOST 20493 Subclause 8.8				Electrical insulation resistance of charging device	3 kΩ to 1000 GΩ
323	GOST 20493 Subclause 8.6				Climatic resistance Ambient temperature	passed/failed –60 °C to +85 °C
324	IEC 60137 Subclauses 8.2 – 8.7, 9.5, 9.6	Insulated bushings for alternating voltages greater than 1000 V	23.43.10 27.90.12.110 22.19.73	8546200000 8546901000	Insulation strength Test lightning impulse voltage	passed/failed 0 kV to 2250 kV
					Test switching impulse voltage	750 kV to 1600 kV
					Test power-frequency AC voltage	0 kV to 950 kV

1	2	3	4	5	6	7
					Test power-frequency AC voltage at long-term exposure to partial discharge and in partial discharge measurements	1 kV to 350 kV
					Test power-frequency AC voltage in determining the ability to withstand thermal breakdown and radio interference	1 kV to 500 kV
					Test power-frequency AC voltage in measuring terminal test	0 kV to 5 kV
					Partial discharge	1 pC to 100 nC
					Radio interference	up to 100 dB
325	IEC 60137 Subclause 8.8				Temperature in temperature-rise test Test current	0 °C to 300 °C 50 A to 5000 A
326	IEC 60137 Subclause 8.9				Short-circuit current withstand: – dynamic current – short-time thermal current, 3 s – short-time thermal current, 1 s	passed/failed up to 200 кА up to 51 кА up to 100 кА
327	IEC 60137 Subclause 8.10				Mechanical strength at cantilever load	passed/failed 0 kN to 10 kN
328	IEC 60137 Subclause 8.14				Exterior Dimensions Mass	compliant/ noncompliant 0 mm to 15000 mm 0 kg to 5000 kg
329	IEC 60137 Subclause 9.2				Basic insulation capacity Dielectric loss angle tangent	20 pF to 1 μF 0.01 % to 100 %
330	IEC 60076-1 Subclause 11.3	Power transformers	27.11.4	8504210000 8504221000 8504229000 850423000 850431 850432000 850433000 850434000	Voltage ratio and vector group	0.8 to 20000 0 to 11
331	IEC 60076-1 Subclause 11.2				Winding DC resistance Test current	$2 \cdot 10^{-4}$ Ω to $2 \cdot 10^{5}$ Ω 0.1 mA to 100 A
332	IEC 60076-1 Subclause 11.4				Short-circuit loss. Short-circuit voltage	0 kV to 40 kV 0 % to 100 %
333	IEC 60076-1 п. 11.5				No-load loss and current	0 kV to 40 kV 0 % to 100 %
334	IEC 60076-1 Subclause 11.6				Zero sequence resistance	0.1 μΩ to 100 kΩ
335	IEC 60076-2 Clause 7	Power transformers	27.11.4	8504210000 8504221000	Temperature in temperature-rise test	0 °C to 300 °C 1 μΩ to 200 kΩ

1	2	3	4	5	6	7
				8504229000 850423000 850431 850432000 850433000 850434000		
336	IEC 60076-3 Clauses 10, 12, 13, 14	Power transformers and reactors	27.11.4	8504210000 8504221000 8504229000 850423000 850431 850432000 850433000 850434000	Insulation strength Test lightning impulse voltage	passed/failed 3 kV to 2250 kV
					Test switching impulse voltage	750 kV to 1600 kV
					Test power-frequency AC voltage	0 kV to 425 kV
					Partial discharge	1 pC to 100 nC
337	IEC 60076-5 Clause 4	Power transformers	27.11.4	8504210000 8504221000 8504229000 850423000 850431 850432000 850433000 850434000	Ability to withstand short circuit and inrush current	passed/failed up to 10 kA
338	IEC 60076-11 Subclause 27	Dry transformers	27.11.4	8504210000 8504221000 8504229000 850423000 850431 850432000 850433000 850434000	Environmental resistance: Test parameters: – temperature – relative humidity	passed/failed –60 °C to +85 °C 10 % to 98 %
339	IEC 61869-1 ed.1 Subclause 7.2.1.1	Instrument transformers	27.11.4	850431 8504320002	Geometrical dimensions Mass Protective coating condition Surface condition of external isolation parts Correctness of nameplates Correctness of marking and branding Completeness	0 mm to 15000 mm 0 kg to 5000 kg normal/defective normal/defective correct/incorrect correct/incorrect compliant/noncompliant
340	IEC 61869-1 ed.1 Subclause 7.4.5				Cantilever load	passed/failed up to 50 kN

1	2	3	4	5	6	7
341	IEC 61869-1 ed.1 Subclauses 7.2.3.1- 7.2.3.3, 7.2.4, 7.3.1-7.3.4, 7.4.1, 7.4.2				Insulation strength Test power-frequency AC voltage	passed/failed 1 kV to 950 kV
					Test lightning impulse voltage	10 kV to 2250 kV
					Test switching impulse voltage	750 kV to 1600 kV
					Test power-frequency AC voltage in partial discharge measurements	0 kV to 425 kV
					Test power-frequency AC voltage in testing of internal and intersection insulations of the secondary windings	0.1 kV to 6 kV
					Partial discharge	1 pC to 100 nC
342	IEC 61869-1 ed.1 Subclause 7.3.6				Vector group	compliant/ noncompliant
343	IEC 61869-1 ed.1 Subclause 7.4.3				Basic insulation capacity Dielectric loss angle tangent of the basic insulation	20 pF to 1 μF 0.01 % to 100 %
344	IEC 61869-1 ed.1 Subclause 7.2.2				Heating temperature at limiting output	0 °C to 300 °C
345	IEC 61869-1 ed.1 Subclause 7.2.7.1				Protection against access to hazardous parts of the equipment: – the first characteristic digit – the second characteristic digit	passed/failed IP1X, IP2X, IP3X, IP4X IPX3, IPX4, IPX5
346	GOST IEC 60044-1 Subclause 7.2	Current transformers	27.11.4	850431 8504320002	Heating in continuous operating regime Test current load Temperature	passed/failed 50 A to 5000 A 0 °C to 300 °C
347	GOST IEC 60044-1 Subclauses 7.3 – 7.5, 8.2.1, 8.2.2, 8.4, 9.1				Insulation strength Test lightning impulse voltage	passed/failed 3 kV to 2250 kV
					Test switching impulse voltage	750 kV to 1600 kV
					Test power-frequency AC voltage	1 kV to 950 kV
					Test power-frequency AC voltage in radio interference measurement tests	1kV to 500 kV
					Radio interference	up to 100 dB
					Test power-frequency AC voltage in partial discharge measurement tests	1 kV to 350 kV

1	2	3	4	5	6	7
					Partial discharge	1 pC to 100 nC
348	GOST IEC 60044-1 Subclause 9.2				Capacity Dielectric loss angle tangent	20 pF to 1 μF 0.01 % to 100 %
349	GOST IEC 60044-1 Subclause 9.3				Mechanical strength Test impact	passed/failed 0 kN to 10 kN
350	IEC 61869-2 ed.1 Subclauses 7.2.3, 7.3.1	Electromagnetic current transformers	27.11.4	850431 8504320002	Insulation strength Test power-frequency AC voltage	passed/failed 0 kV to 950 kV
					Test lightning impulse voltage	10 kV to 2250 kV
					Test switching impulse voltage	750 kV to 1600 kV
351	IEC 61869-2 ed.1 Subclause 7.4.3				Capacity Loss-angle tangent	20 pF to 1 μF 0.01 % to 100 %
352	IEC 61869-2 ed.1 Subclauses 7.2.6, 7.3.5				Current and angle error	0.1%
353	IEC 61869-2 ed.1 Subclause 7.3.203				Exciting current of the secondary windings	compliant/noncompliant 0 A to 100 A
354	IEC 61869-2 ed.1 Subclause 7.2.2				Temperature in temperature-rise test Test current	0 °C to 300 °C 50 A to 5000 A
355	IEC 61869-2 ed.1 Subclause 7.2.201				Short-circuit through current withstand: –dynamic current – short-time thermal current, 3 s – short-time thermal current, 1 s	passed/failed up to 200 kA up to 51 kA up to 100 kA
356	IEC 61869-3 ed.1 Subclauses 7.2.3.1-7.2.3.3, 7.3.1, 7.3.2	Electromagnetic voltage transformers	27.11.4	850431 8504320002	Insulation strength Test power-frequency AC voltage	passed/failed 0 kV to 950 kV
					Test lightning impulse voltage	0 kV to 2250 kV
					Test switching impulse voltage	750 kV to 1600 kV
					Partial discharge	1 pC to 100 nC
357	IEC 61869-3 ed.1 Subclauses 7.2.6, 7.3.5				Vector group Voltage and angle error	compliant/noncompliant 0.01 % to 100 %
358**S**	IEC 61869-3 ed.1 Subclause 7.2.2				Temperature in temperature-rise test Burden range	passed/failed 0 VA to 2000 VA
359	IEC 61869-3 ed.1 Subclause 7.2.301				Short-circuit current withstand of the secondary windings	passed/failed 0 kV to 500 kV 0 s to 10 s

1	2	3	4	5	6	7
360	IEC 61869-3 ed.1 Subclause 7.4.3				Basic insulation capacity Dielectric loss angle tangent of the basic insulation	20 pF to 1 μF 0.01 % to 100 %

Director _____ M. E. Zheleznov