



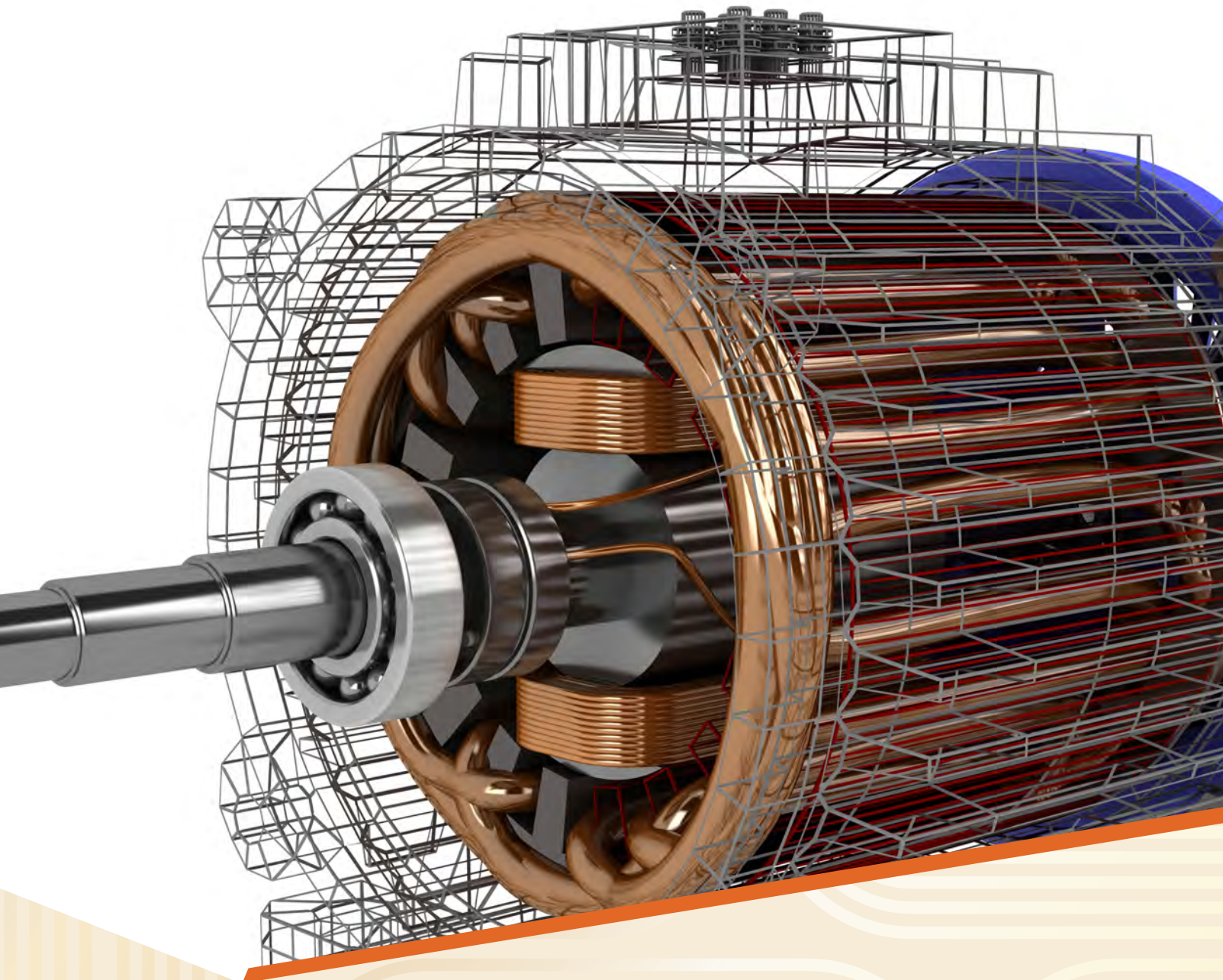
**Ludinovocable**  
cable factory



**Gomelcable**  
cable factory

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STRATEGIC PARTNERSHIP



# ENAMELLED AND WINDING WIRES

2019

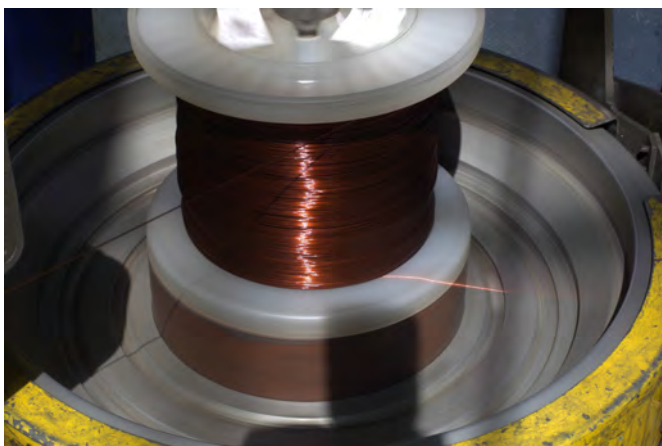
## OUR COMPANY

"Gomelcable" aluminium and copper wires conduct and transform energy at the largest power stations of Central and Eastern Europe. The aerial power lines of Belarus and neighboring countries, electric motors of the technical equipment surrounding us also consist of our products.

History of JSC "Gomelcable" began in 1958 . According to government plan of general electrification of the Republic it was decided to create the specialized plant for manufacturing of bare wires for aerial power lines The name "Gomelcable" was appropriated to our enterprise on October 24, 1958. So the 24th of October became the company's date of birth.



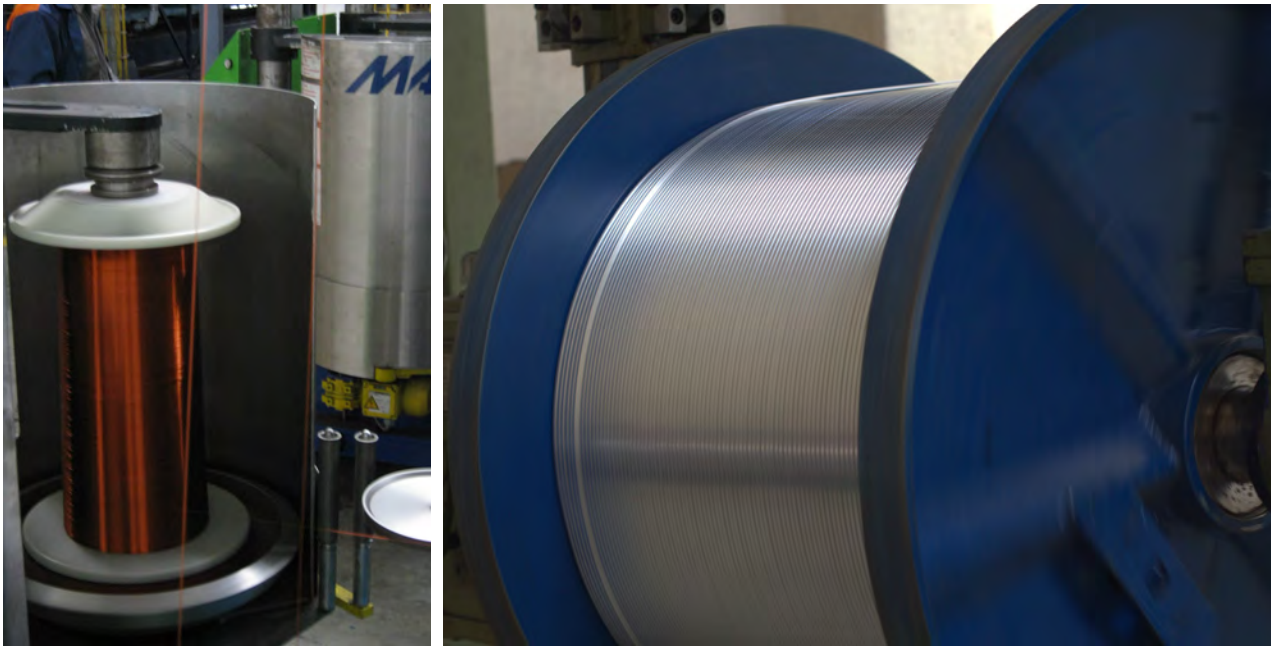
Industry development in period of 1960-1970 demanded expansion of winding wires production. "Gomelcable" company developed too. In 1961 it was finished the construction of enameled and other winding wires shop.



New quality standards and requirements demanded equipment modernization. Regarding this our enterprise began step-by-step re-equipment which is carried out since 1998 up to the present day.

In the terms of technical re-equipment and production modernization in the period from 1998 up to 2014 year our enterprise has bought 18 new high-capacity enameling machines from companies "MAG" (Austria) and "NewTech" (Italy).

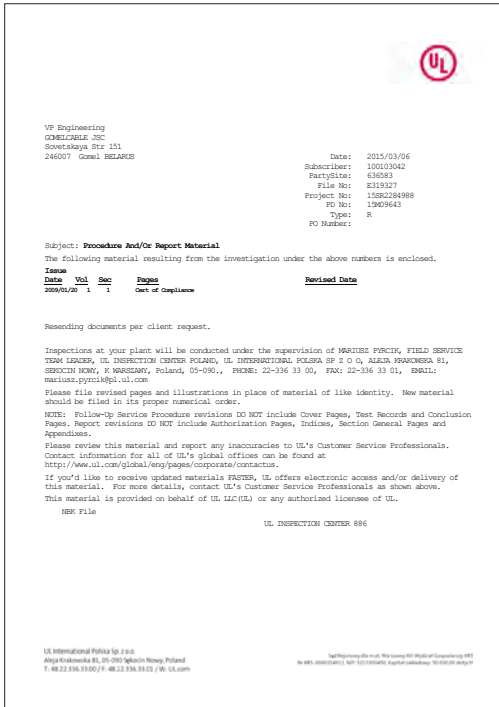
Using new enameling machines, best electro insulating varnishes from Italian and French producers, JSC "Gomelcable" produce enameled wires in accordance with world market requirements: improved technical, mechanical and electrical characteristics. High quality of our products is confirmed by many years of deliveries of our production to the biggest Belarusian companies of electrical industry, to companies from CIS countries as also to European customers from Poland, Czech Republic, Bulgaria, Slovakia and others.



The high-performance equipment, expansion of plant facilities, work of well-qualified personnel allow to "Gomelcable" to work for setting on production of new products with additional characteristics accordingly to customers demands.



# QUALITY



Our production corresponds to the international standard IEC 60317 and safety standard UL 1446. Certification on compliance to the UL standard 1446 was carried out by Underwriters Laboratory Inc.



The "Gomelcable" management system corresponds the international standard ISO 9001:2008, with the scope of certification "Design, development and manufacture of bare wires for aerial power lines and enameled, glass-fiber, enameled glass-fiber, glass-polyester, enameled glass - polyester winding wires. The certificate is issued by certification body for systems and personnel "TUV Thuringen e.V."

Several times our company was awarded for achieving of a high level of quality in producing of wires.

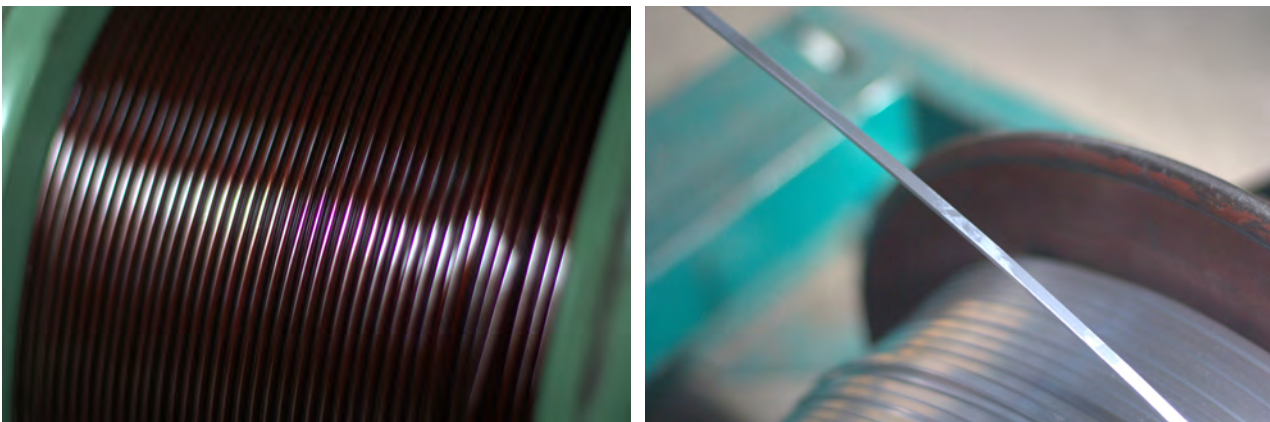
"Gomelcable" became a winner of the prize of Byelorussian Ministry of Industry for achievements in the field of quality.

"Gomelcable" company also got the prize in the field of science and technique for development and manufacturing application of the round copper wire with self—bonding layer.



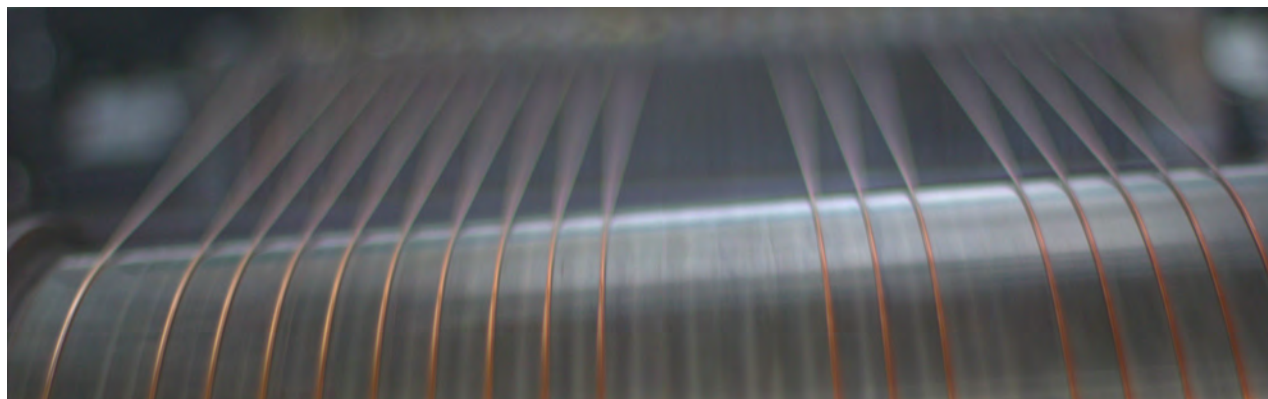
Enameled wire of "Gomelcable" production several times became a winner in category "The goods for industrial purposes" of the contest "The best goods of Belarus". This fact shows the high quality of manufacturing process and products.

We are very interested in establishment of strong business relations with enterprises of all countries. We hope that our cooperation will be long-term and mutually advantageous.

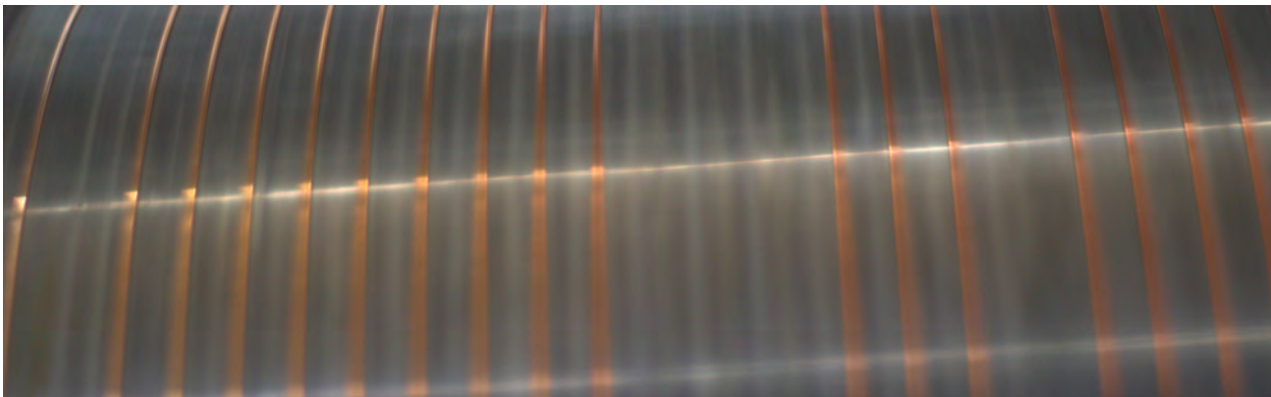


## WINDING WIRES WITH ENAMEL INSULATION







Type, grade	Heat class	Norms and standards	Range of diameters, mm/ section, mm <sup>2</sup>	Type of insulation	Thermo-plasticity	Heat shock	Properties and applications
<b>Enameled copper round wires</b>							
PEE1-155 PEE2-155	155(F)	TC BY 400052314.014-2006 IEC 60317-3	0,100- 5,000	Polyesterimide	270°C	175°C	Designed for manufacturing of the windings in electric machines, apparatus and devices
PEE1-180 PEE2-180 PEE3-180	180(H)	TC BY400052314.027- 2009 IEC60317-8	0,100- 5,000	Polyesterimide	300°C	200°C	
PETD1-200 PETD2-200	200(C)	TC BY400052314.013- 2005 IEC60317-13	0,100- 5,000	Polyesterimide +Polyamidimide	330°C	220°C	
PEFD1-180-MEK PEFD2-180-MEK PEFD3-180-MEK	180(H)	TC BY 400052314.011-2003 IEC60317-22	0,100- 5,000	Polyesterimide +Polyamidimide	300°C	200°C	Intended for application in the devices working with refrigerants in mixture with coolant oils
PEE1V-K 200 PEE2V-K 200	200(C)	TC BY400052314.026- 2009 IEC60317-38	0,250- 1,080	Polyesterimide +Polyamidimide +Polyamide	320°C	220°C	With self-bonding layer
PEU1-155 PEU2-155	155(F)	TC BY 400052314.048-2014 IEC 317-20	0,100- 5,000	Polyurethane	200°C	175°C	Tinned. Designed for winding of the transformers.
PEU1-180 PEU2-180	180(H)	TC BY 400052314.048-2014 IEC 317-51	0,100- 5,000	Polyurethane	230°C	200°C	



Type, grade	Heat class	Norms and standards	Range of diameters, mm/ section, mm <sup>2</sup>	Type of insulation	Thermo-plasticity	Heat shock	Properties and applications
<b>Enameled aluminium round wires</b>							
PEEI1-130A	130(B) 155(F)	TC BY 400052314.020-2006	0,280-5,000	Polyester or polyesterimide	175°C	200°C	Manufacturing of the windings in electric machines, apparatus and devices
PEEI1-D 200 A PEEI2-D 200 A	200(C)	TC BY 400052314.021-2006 IEC 60317-25	0,280-5,000	Polyester or polyesterimide + polyamidimide	320°C	220°C	
<b>Enameled copper rectangular wires</b>							
PEEIP1-155 PEEIP2-155	155(F)	TC BY 400052314.042-2012 IEC 60317-16	S: 5-64 a:1,06-4,5 b:3.75-16 aspect ratio (b/a): 1,4 ≤ b/a < 8	Polyetherimide or polyester	-	175°C	Designed for manufacturing of the windings in electric machines
PEEIP1-180 PEEIP2-180	180(H)	TC BY 400052314.042-2012 IEC 60317-28		Polyetherimide or polyester	-	200°C	
PEEIP1 -D200 PEEIP2 -D200	200(C)	TC BY 400052314.042-2012 IEC 60317-29		Polyetherimide or polyester + polyamidimide	-	220°C	
<b>Enameled aluminium rectangular wires</b>							
PEEIP1-155 A PEEIP2-155 A	155(F)	TC BY 400052314.041-2012	S: 6,5-72 a:1,8-6 b:3.75-16 aspect ratio (b/a): 1,4 ≤ b/a < 8	Polyester or polyesterimide	-	175°C	Designed for manufacturing of the windings in electric machines
PEEIP1-180 A PEEIP2-180 A	180(H)	TC BY 400052314.041-2012		Polyester or polyesterimide	-	200°C	
PEEIP1 -D200 A PEEIP2 -D200 A	200(C)	TC BY 400052314.041-2012		Polyester or polyesterimide + polyamidimide	-	220°C	





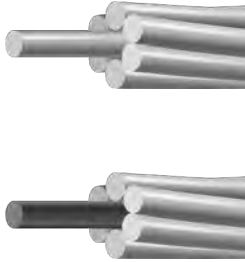


## ELECTROTECHNICAL WIRE, WIRE IN PAPER INSULATION, BARE WIRES

Type	Norms and standards	Range of diameters, mm/ section, mm <sup>2</sup>	Properties and applications	Type of packing	
<b>Copper electrotechnical round wire</b>					
MT	TC BY 400052314.040-2017	0,200-7,000	Industrial application	coils, spools	
MM	TC BY 400052314.040-2017	0,200-8,000			
<b>Copper electrotechnical rectangular wire</b>					
PMT	GOST 434-78	5,0-35,0	Industrial application	coils	
PMM	GOST 434-78	5,0-150,0		coils, drum №7, №8	
<b>Aluminium electrotechnical round wire</b>					
AT	TC BY 400052314.038-2017	0,280-8,000	Industrial application	coils	
AM	TC BY 400052314.038-2017	0,280-8,000		coils, drum №7, №8, spools	
<b>Aluminium electrotechnical rectangular wire</b>					
PAT	TC BY 400052314.039-2017	10,0-75,0	Industrial application	coils	
PAM	TC BY 400052314.039-2017	5,0-150,0		coils, drum №7, №8	
<b>Winding round wires with copper core in paper insulation</b>					
PMB round insulation thickness 0,30; 0,55; 0,72; 0,96; 1,2; 1,68; 1,92; 2,88; 4,08 5,76	TC BY 400052314.018-2006	2,5-7,5	Used for winding of the electrical machines and apparatus	wooden drum №8, metal drum №7, spools 630;500;355	
<b>Winding rectangular wires with copper core in paper insulation</b>					
PMB rectangular insulation thickness 0,30; 0,45; 0,55; 0,72; 0,96; 1,2; 1,35; 1,68; 1,92; 2,48; 2,96	TC BY 400052314.018-2006	5-80,0	Used for winding of the electrical machines and apparatus	wooden drum №8, metal drum №7, spools 630;500;355	





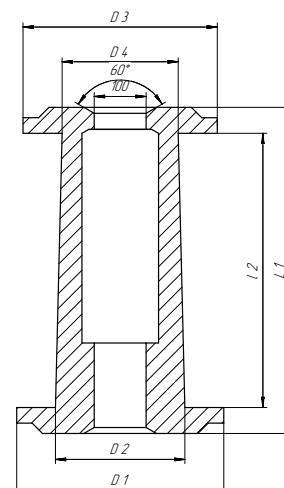
Type	Norms and standards	Range of diameters, mm/ section, mm <sup>2</sup>	Properties and applications	Type of packing	
<b>Winding round wires with copper core in aramid paper («Nomex») insulation</b>					
PMN round insulation thickness 0,24	TC BY 400052314.018-2006	2,65-7,5	Used for winding of the electrical machines and apparatus	wooden drum №8, metal drum №7, spools 630;500;355	
<b>Winding round wires with aluminium core in paper insulation</b>					
PAB round insulation thickness 0,30; 0,55; 0,72; 0,96; 1,20; 1,68; 1,92; 2,88; 4,08; 5,76	TC BY 400052314.018-2006	2,65-7,5	Used for winding of the electrical machines and apparatus	wooden drum №8, metal drum №7, spools 630;500;355	
<b>Winding rectangular wires with aluminium core in paper insulation</b>					
PAB rectangular insulation thickness 0,30; 0,45; 0,55; 0,72; 0,96; 1,2; 1,35; 1,68; 1,92; 2,48; 2,96.	TC BY 400052314.018-2006	8-100,0	Used for winding of the electrical machines and apparatus	wooden drum №8, metal drum №7, spools 630;500;355	
<b>Winding round wires with aluminium core in aramid paper («Nomex») insulation</b>					
PAN round Insulation 0,24	TC BY 400052314.018-2006	2,65-7,5	Used for winding of the electrical machines and apparatus	wooden drum №8, metal drum №7, spools 630;500;355	
<b>Winding wires with copper core for submersible water-filled electric motors</b>					
PEPT- 100	TC BY 400052314.049-2017	0,45-2,00	Used for stator winding of submersible water-filled electric motors	coils	
<b>Aluminium and steel-aluminium bare wires for aerial power lines</b>					
A	GOST 839-80	16,0-240,0	Intended for energy transmission through aerial power lines. Steel core with section 19-48 mm <sup>2</sup> , twisted steel bare wires number - 7,0, twisted steel bare wires Ø 1,85-4,5 mm. Twisted aluminium bare wires number 6-30, twisted aluminium bare wires Ø 1,85-4,5 mm	wooden drum №14, 16, 16a, 18a	
AS	GOST 839-80	16,0/2,7 - 300,0/48,0			
TPZh A - current-conduc aluminium core	TC BY 400052314.044-2013	16,0-120,0			
TPZh AS - current-conduct steel-aluminium core	TC BY 400052314.044-2013	25,0-95,0			
TPZh FA - current-conduct aluminium profile core	TC BY 400052314.044-2013	25,0-120,0			

## WINDING WIRES WITH GLASS FIBER INSULATION AND THE INSULATION OF SYNTHETIC MATERIALS WITH FIBERGLASS COATING

Type of enamel insulation or synthetic materials	Range	Type of glass-fibre insulation	Heat class	Varnish layer	Copper wire type	Aluminium wire type	Breakdown voltage (V)		Norms and standards		
Heatproof high-strength	For aluminum wires: round Ø 2,65-5,0 mm, rectangular 4 - 80 mm <sup>2</sup>  For copper wires: round Ø 1,9-5,0 mm, rectangular 4 - 60 mm <sup>2</sup>	glass-fibre + glass-fibre	180 (H)	absent	PETVSD		800-1500		TC BY 400052314.045-2013 TC BY 400052314.043-2013		
					PETVSDT*						
PETVSLD											
PETVSLDT*											
Heatproof			180 (H)	absent	PETSD		Copper	Aluminium			
					PETS LD						
					180 (H)	present	PSD-L	APSD-L		450-600	500-600
							PSDT-L*	APSDT-L*		400-550	400-550
						absent	PSD	APSDT-L*		450-600	500-600
							PSDT*	APSDT*		400-550	400-550
	200 (C)	present			PSDK-L	APSDK-L	350-550	500-600			
					PSDKT-L*	APSDKT-L*	350-550	400-550			
	200 (C)	absent			PSDK	APSDK	450-600	500-600			
					PSDKT*	APSDKT*	350-550	400-550			
					PSLDK	APSLDK	450-600	500-600			
					PSLDKT*	APSLDKT*	350-550	400-550			
	180 (H)	absent			PSLD	APSLD	450-600	500-600			
					PSLDT*	APSLDT*	400-550	500-600			
Polyamide film with fluoroplastic coating			200 (C)	present	-	APPTSD	4000				



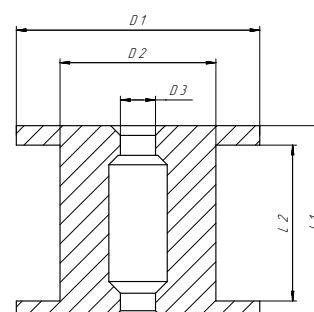
Enameled copper round wires									
Type	Dimensions of the spools						Range of round wire diameters, mm	Average weight of wire per packing unit, kg	
	D1	D2	D3	D4	L1	L2		Copper wire	Aluminium wire
250/400	250	160	263	140	400	335	0,250-3,150	35	12
315/500	315	200	300	180	500	425	0,250-3,150	75	25
400/630	400	250	375	224	630	530	0,250-3,150	160	50



Cylindrical spools									
Type	Dimensions of the spools					Range of round wire diameters, mm	Range of rectangular wire cross-sections, mm <sup>2</sup>	Average weight of wire per packing unit, kg	
	D1	D2	D3	L1	L2			Copper wire	Aluminium wire
K 125	125	80	16	125	100	0,1-0,2	-	2,5	-
K 250	250	160	36	200	160	0,1-4,5	5-64	17	5,5
K 355	355	224	36	200	160	2,0-5,0	5-64	20	6
DWF 500	500	315	36	250	180	2,0-5,0	5-64	80	30
VN 630	630	425	127	230	180	2,5-7,5	5-78		50

Drums for winding wires									
7 M	700	400	-	275	220-230	2,5-5,0	5-64	140	50
Drum D700 mm from plywood	700	400	50	250	175	2,5-7,5	5-78	200	70
Wooden drum №8	800	450	50	350	212	2,5-5,0	5-64	250	90
Metal drum №8	800	450	50	310	260	2,5-5,0	5-64	250	90

Wooden drums for bare wires							
Type	Dimensions of the reels					Average weight of wire per packing unit, kg	
	D1	D2	D3	L1	L2	A	AS
14	1400	750	70	826	710	1000	1100
16	1600	1200	70	716	600	1700	2100
16a	1600	800	80	916	800	1800	2200
18a	1800	900	80	1060	900	2000	2700





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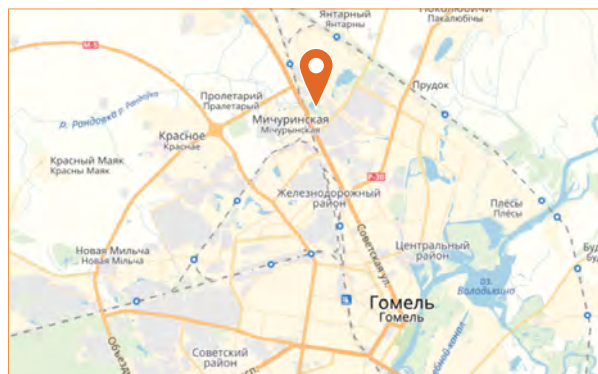
Location of warehouses:

## Gomel

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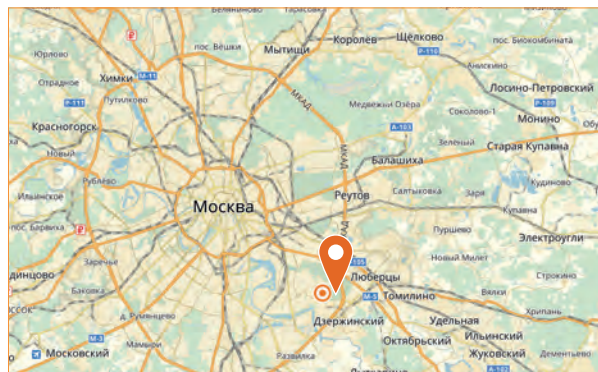


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