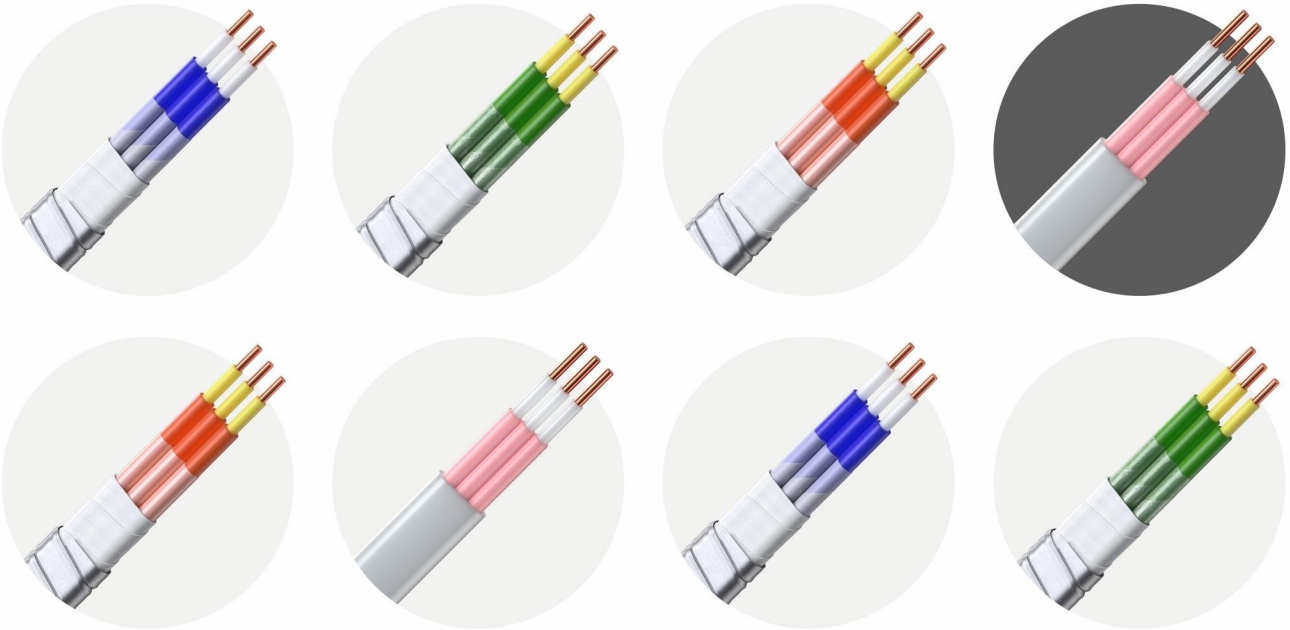
НАРОДНОЕ ПРЕДПРИЯТИЕ
ПОДОЛЬСККАБЕЛЬ

CABLES FOR SUBMERGED OIL ELECTRIC PUMPS

Catalog



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6 701

PODOLSKKABEL is one of the leading enterprises in the cable industry. Since 1941, the plant has been manufacturing high-quality cables and wires, rightfully holding a leading position in its market segment.

The company operates steadily, continues to grow, and looks to the future with confidence. The plant actively participates in the import substitution program, offering high-quality, in-house manufactured products to the market. A modern approach to operations and the use of advanced technologies enable us to keep pace with the times and fully meet market demands.

QUALITY

Products manufactured by the PODOLSKKABEL plant comply with the requirements of state standards and technical specifications, as evidenced by test reports and relevant certificates. We operate as a full-cycle enterprise, ensuring quality control at every stage of production. The use of modern manufacturing and testing equipment guarantees the high quality of our products. The company is a member of the Electrocable Association and an active participant in the «Cable Without Danger» project.

JSC NP Podolskkabel is a market leader in cable and wire products for the oil and gas industry. The company holds a certificate, a utility model patent, and a certificate of conformity for its submersible electric pump cables. The high performance characteristics of these submersible oil-well cables are achieved through years of manufacturing experience and the use of top-quality modern materials. All manufactured cables undergo quality control testing at the central plant laboratory to ensure compliance with regulatory standards, and the entire product range holds the necessary quality certificates.

UNIQUE TECHNOLOGIES

For industries requiring high-reliability products—such as the nuclear, oil and gas, aerospace, defense, and shipbuilding sectors—PODOLSKKABEL has been manufacturing cables and wires using radiation cross-linking technology for over 35 years. Our production facilities are equipped with automated systems for the radiation irradiation of insulation made from polyethylene and polymer compounds, covering conductor cross-sections ranging from 0.12 to 120 mm^2.

As a result of radiation exposure (cross-linking), cables and wires acquire:
increased hardness and tensile strength;
resistance to aggressive environments;
enhanced heat resistance;
increased resistance to cracking and crushing forces.

All cable and wire products subjected to radiation processing (cross-linking) are characterized by superior reliability and withstand extreme loads during operation in various adverse conditions.

DQ041

НАРОДНОЕ ПРЕДПРИЯТИЕ
ПОДОЛЬСККАБЕЛЬ

HEAT RESISTANT CABLE

WITH LONG TIME TEMPERATURE OF CORE HEATING

+90 ^{0}C | +120 ^{0}C | +130 ^{0}C

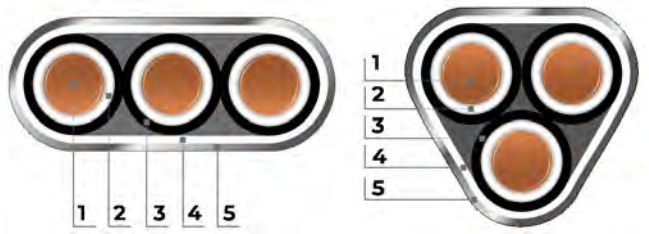
APPLICATION

The cables are designed to supply electrical energy to submerged electrical motors of oil pumping stations, for water hoisting and pumping the liquids from bores, basins ponds and designed to rated AC voltage 3.3, 4.0 and 5.0 kv with the frequency up to 70 Hz.

The cables are designed to work into bore liquid which contains oil as well as water and gas with following features:

water content	100%
pH of accompany water	5,0 - 8,5
concentration of Sulfur Hydrogen for the cables armor of steel zinced tape, not more than, gram per liter	0,01
concentration of Sulfur Hydrogen for the cables of stainless steel tape resistant to corrosion, MPa, not more	1,25
hydrostatic pressure, not more	40
gas factor, not more, cub.m per MT	500

CONSTRUCTION



FLAT CABLE ROUND CABLE

1. **Current carrying conductor**
2. **The 1 –st layer of insulation**
3. **The 2-nd layer of insulation**
4. **Pad**
5. **Armor**

The cables can be made with different types of protective armor:

- **«Б»** - steel zinced tape;
- **«Бк»** or **«Бнк»** - is tape of stainless corrosion resistant steel;
- **«Блк»** - steel tape with corrosion resistant coating with zinc – copper melt coating.

For the cables with rated voltage 4.0 and 5.0 kV figures 4 or 5 are added through mark.

The example of conventional nomination of a cable in the order or in the documentation:

КПсПпБкК-130 3х25-4 ТУ 16.К13-012-2002
as cable with copper conductors, 2 layers of insulation, with armor tape of stainless corrosion resistant steel, round shape, with long admission of cores heating + 130 C^0, to the voltage 4.0kV with 3 major conductors rated cross – section 25 square mm.

TECHNICAL SPECIFICATIONS

Climate version for moderate cold climate. Categories of deployment 1 – 5 by GOST 15150 – 69, for operation in bore liquid.

In static condition the cables resist to the impact of temperature fluctuation from minus 60 to long time admission of core long heating temperature for certain cable type.

Winding of cable and hoist – down operations can be at air temperature not low than minus 40 C^0.

At winding and hoist and down operations bending radius is :

- not less 300 mm for the cores with cross - section 10-16 mm^2;
- not less 360 mm the cores with cross – section 21,15 mm^2;
- not less 380 mm the cores with cross – section 25 mm^2;
- not less 420 mm the cores with cross – section 35 mm^2;

Hoist and down of the cable to the bore shall go smoothly with the speed not more than 0.25 m per a second.

When tube column in the bore passes the section with curve more than 1,5 degrees per 10 meters, or passes to less diameter in the bore, the speed not more than 0,1 m per a second both in hoist or down.

When the cable is fixed to tubes of pump and compressor, take care the cable shall not twist around the tubes and flat cable shall not get twisted around its own axis.

Electrical resistance of insulation of major cores recalculated to the length of 1 km and temperature 20 C^0 shall be not less than 2500 Mohms.

The cables can sustain crushing not less 158 kN.

Insulated cores are sealed in a longer direction at drop of liquid pressure 0,02 MPa per 1 km of the length.

The cables shall pass DC voltage tests 18 kV within not less than 5 minutes . As a result, leakage current in insulation, recalculated to 1 km length and temperature 20 C^0 shall not exceed $1*10^{-5}$ A.

The required length of the cable is agreed when order is formed.

Guaranteed term of cable operation is 2 years since operation of cable started. Operation term does not include the period of storing provided that guaranteed term of storing is not exceeded.

Storing guaranteed term is 1 year since shipment.

Service life of the cable at right conditions of storing is not less 5,5 years.

The cables correspond to the general requirements of ГОСТ Р 51777-2001.

КПБП-90
КПБК-90

+90 °C | 3,3 кВ | 4,0 кВ | 5,0 кВ | ТУ 16.К13-012-2002 | Код ОКПД2 27.32.14.190

КПБП-90 - cable with copper conductors, 2 layers of PE insulation, armor of steel zinc coated tape, flat, with long admission of core heating +90 °C.

КПБК-90 - cable with copper conductors, 2 layers of PE insulation, armor of steel zinc coated tape, round, with long admission of core heating +90 °C.

CONSTRUCTION

1. **Current carrying conductor** - copper;
2. **Insulation** – polyethylene of high density;
3. **Insulation** – polyethylene of high density;
4. **Pad** – as non woven cloth;
5. **Armor** – zinc coated or corrosion resistant tape.

NUMBER OF CONDUCTORS AND ITS RATED CROSS- SECTIONS, OUTER DIAMETERS AND WEIGHTS OF CABLES

CROSS- SECTIONS, mm²	OUTER DIMENSIONS OF THE CABLE, mm	CALCULATED CABLE WEIGHT, kg/km		
		КПБП-90	КПБП-90-4	КПБП-90-5
3x10,0	13,6x33,8	868	884	902
3x13,3	15,0x37,4	990	1006	1024
3x16,0	15,0x37,4	1085	1101	1120
3x21,15	16,2x42,5	1278	1296	1315
3x25,0	16,2x42,5	1413	1430	1450
3x35,0	18,0x48,2	1730	1748	1768

CROSS- SECTIONS, mm²	OUTER DIMENSIONS OF THE CABLE, mm	CALCULATED CABLE WEIGHT, kg/km		
		КПБК-90	КПБК-90-4	КПБК-90-5
3x10,0	29,0	809	798	848
3x13,3	32,0	918	919	967
3x16,0	32,0	1009	1024	1061
3x21,15	35,6	1204	1207	1257
3x25,0	35,6	1338	1344	1393
3x35,0	38,3	1652	1648	1711

LONG TIME CURRENT LOADS FOR THE CABLE

TYPE OF CABLE	CROSS- SECTIONS, mm²	LONG TIME CURRENT LOAD A AT ENVIRONMENT TEMPERATURE, NOT LESS							
		+20 °C	+30 °C	+40 °C	+50 °C	+60 °C	+70 °C	+80 °C	+88 °C
КПБП-90	3x10,0	91	85	77	69	60	49	35	15
	3x13,3	110	101	93	83	72	59	42	19
	3x16,0	122	113	103	92	80	65	47	21
	3x21,15	148	137	125	112	97	79	56	25
	3x25,0	163	151	137	123	106	87	62	27
	3x35,0	203	188	172	154	133	109	77	34
КПБК-90	3x10,0	93	86	79	71	61	50	36	16
	3x13,3	112	103	94	84	73	60	43	19
	3x16,0	124	115	105	94	81	66	48	21
	3x21,15	151	139	127	114	99	80	57	25
	3x25,0	165	153	139	125	108	88	63	28
	3x35,0	202	187	171	153	133	108	76	34

КПпБП-120
КПпБК-120

+120 °C | 3,3 кВ | 4,0 кВ | 5,0 кВ | ТУ 16.К13-012-2002 | Код ОКПД2 27.32.14.190

КПпБП-120 - able with copper conductors, with 2 layers of insulation of copolymer of Propilene, armor of steel zinced wire, flat, with long admission of core heating +120 °C.

КПпБК-120 - cable with copper conductors, with 2 layers of insulation of copolymer of Propilene, armor of steel zinced wire, round, with long admission of core heating +120 °C.

CONSTRUCTION

1. **Current carrying conductor** - copper;
2. **Insulation** - copolymer of Propilene;
3. **Insulation** - copolymer of Propilene;
4. **Pad** - as non woven cloth;
5. **Armor -** steel zinc coated or corrosion resistant tape.

NUMBER OF CONDUCTORS AND ITS RATED CROSS- SECTIONS, OUTER DIAMETERS AND WEIGHTS OF CABLES

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПпБП-120	КПпБП-120-4	КПпБП-120-5
3x10,0	13,6x33,8	848	877	908
3x13,3	15,0x37,4	970	998	1030
3x16,0	15,0x37,4	1059	1093	1135
3x21,15	16,2x42,5	1266	1286	1323
3x25,0	16,2x42,5	1398	1421	1465
3x35,0	18,0x48,2	1703	1737	1786

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПпБК-120	КПпБК-120-4	КПпБК-120-5
3x10,0	29,0	809	822	839
3x13,3	32,0	927	940	957
3x16,0	32,0	1020	1033	1051
3x21,15	35,6	1214	1227	1246
3x25,0	35,6	1350	1363	1382
3x35,0	38,3	1665	1678	1698

LONG TIME CURRENT LOADS FOR THE CABLE

TYPE OF CABLE	CROSS- SECTIONS, MM²	LONG TIME CURRENT LOAD A AT ENVIRONMENT TEMPERATURE, NOT LESS										
		+20 °C	+30 °C	+40 °C	+50 °C	+60 °C	+70 °C	+80 °C	+90 °C	+100 °C	+110 °C	+118 °C
КПпБП-120	3x10,0	105	99	94	88	81	74	66	57	47	33	15
	3x13,3	125	119	112	105	97	89	79	69	56	40	18
	3x16,0	139	132	124	116	108	98	88	76	62	44	20
	3x21,15	170	161	152	142	132	120	107	93	76	54	24
	3x25,0	186	176	166	156	144	131	118	102	83	59	26
	3x35,0	232	221	208	194	180	164	147	127	104	74	33
КПпБК-120	3x10,0	107	101	95	89	83	75	68	58	48	34	15
	3x13,3	128	121	114	107	99	90	81	70	57	40	18
	3x16,0	142	135	127	119	110	100	90	78	63	45	20
	3x21,15	172	163	154	144	133	122	109	94	77	54	24
	3x25,0	189	179	169	158	146	133	119	103	84	60	27
	3x35,0	232	220	207	194	179	164	146	127	104	73	33

КПсПБП-120
КПсПБК-120

+120 °C | 3,3 кВ | 4,0 кВ | 5,0 кВ | ТУ 16.К13-012-2002 | Код ОКПД2 27.32.14.190

КПсПБП-120 - cable with copper conductors , 2 layers insulation of Polyethelelne, armor of steel zinc coated tape, flat, with long admission of core heating +120 °C.

КПсПБК-120 - cable with copper conductors , 2 layers insulation of Polyethelelne, armor of steel zinc coated tape, round, with long admission of core heating +120 °C.

CONSTRUCTION

1. **Current carrying conductor** - copper;
2. **Insulation** - PE of radiation modified;
3. **Insulation** - polyethelene;
4. **Pad** - as non woven cloth;
5. **Armor** - steel zinc coated or corrosion resistant tape.

NUMBER OF CONDUCTORS AND ITS RATED CROSS- SECTIONS, OUTER DIAMETERS AND WEIGHTS OF CABLES

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПсПБП-120	КПсПБП-120-4	КПсПБП-120-5
3x10,0	13,6x33,8	867	879	905
3x13,3	15,0x37,4	988	1001	1025
3x16,0	15,0x37,4	1083	1096	1119
3x21,15	16,2x42,5	1277	1290	1315
3x25,0	16,2x42,5	1411	1424	1450
3x35,0	18,0x48,2	1728	1741	1769

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПсПБК-120	КПсПБК-120-4	КПсПБК-120-5
3x10,0	29,0	803	813	846
3x13,3	32,0	926	936	970
3x16,0	32,0	1015	1038	1072
3x21,15	35,6	1221	1224	1260
3x25,0	35,6	1364	1362	1398
3x35,0	38,3	1665	1666	1705

LONG TIME CURRENT LOADS FOR THE CABLE

TYPE OF CABLE	CROSS- SECTIONS, MM²	LONG TIME CURRENT LOAD A AT ENVIRONMENT TEMPERATURE, NOT LESS										
		+20 °C	+30 °C	+40 °C	+50 °C	+60 °C	+70 °C	+80 °C	+90 °C	+100 °C	+110 °C	+118 °C
КПсПБП-120	3x10,0	105	99	94	88	81	74	66	57	47	33	15
	3x13,3	125	119	112	105	97	89	79	69	56	40	18
	3x16,0	139	132	124	116	108	98	88	76	62	44	20
	3x21,15	170	161	152	142	132	120	107	93	76	54	24
	3x25,0	186	176	166	156	144	131	118	102	83	59	26
	3x35,0	232	221	208	194	180	164	147	127	104	74	33
КПсПБК-120	3x10,0	107	101	95	89	83	75	68	58	48	34	15
	3x13,3	128	121	114	107	99	90	81	70	57	40	18
	3x16,0	142	135	127	119	110	100	90	78	63	45	20
	3x21,15	172	163	154	144	133	122	109	94	77	54	24
	3x25,0	189	179	169	158	146	133	119	103	84	60	27
	3x35,0	232	220	207	194	179	164	146	127	104	73	33

КПсПпБП-120
КПсПпБК-120

+120 °C | 3,3 кВ | 4,0 кВ | 5,0 кВ | ТУ 16.К13-012-2002 | Код ОКПД2 27.32.14.190

КПсПпБП-120 - cable with copper conductors, with 2 layers of insulation of PE and copolymer of Propilene, armored with steel zinc coated tape, flat, with long admission of core heating +120 °C.

КПсПпБК-120 - cable with copper conductors, with 2 layers of insulation of PE and copolymer of Propilene, armored with steel zinc coated tape, round, with long admission of core heating +120 °C.

CONSTRUCTION

1. **Current carrying conductor** - copper;
2. **Insulation** - PE of radiation modified;
3. **Insulation** - copolymer of Propilene;
4. **Pad** - as non woven cloth;
5. **Armor -** steel zinc coated or corrosion resistant tape.

NUMBER OF CONDUCTORS AND ITS RATED CROSS- SECTIONS, OUTER DIAMETERS AND WEIGHTS OF CABLES

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПсПпБП-120	КПсПпБП-120-4	КПсПпБП-120-5
3x10,0	13,6x33,8	864	880	898
3x13,3	15,0x37,4	985	1001	1020
3x16,0	15,0x37,4	1080	1096	1116
3x21,15	16,2x42,5	1273	1290	1310
3x25,0	16,2x42,5	1407	1425	1445
3x35,0	18,0x48,2	1723	1742	1763

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПсПпБК-120	КПсПпБК-120-4	КПсПпБК-120-5
3x10,0	29,0	794	792	808
3x13,3	32,0	910	913	930
3x16,0	32,0	1008	1015	1032
3x21,15	35,6	1197	1200	1217
3x25,0	35,6	1332	1337	1355
3x35,0	38,3	1646	1640	1659

LONG TIME CURRENT LOADS FOR THE CABLE

TYPE OF CABLE	CROSS- SECTIONS, MM²	LONG TIME CURRENT LOAD A AT ENVIRONMENT TEMPERATURE, NOT LESS										
		+20 °C	+30 °C	+40 °C	+50 °C	+60 °C	+70 °C	+80 °C	+90 °C	+100 °C	+110 °C	+118 °C
КПсПпБП-120	3x10,0	105	99	94	88	81	74	66	57	47	33	15
	3x13,3	125	119	112	105	97	89	79	69	56	40	18
	3x16,0	139	132	124	116	108	98	88	76	62	44	20
	3x21,15	170	161	152	142	132	120	107	93	76	54	24
	3x25,0	186	176	166	156	144	131	118	102	83	59	26
	3x35,0	232	221	208	194	180	164	147	127	104	74	33
КПсПпБК-120	3x10,0	107	101	95	89	83	75	68	58	48	34	15
	3x13,3	128	121	114	107	99	90	81	70	57	40	18
	3x16,0	142	135	127	119	110	100	90	78	63	45	20
	3x21,15	172	163	154	144	133	122	109	94	77	54	24
	3x25,0	189	179	169	158	146	133	119	103	84	60	27
	3x35,0	232	220	207	194	179	164	146	127	104	73	33

КПпБП-130
КПпБК-130

+130 °C | 3,3 кВ | 4,0 кВ | 5,0 кВ | ТУ 16.К13-012-2002 | Код ОКПД2 27.32.14.190

КПпБП-130 - cable with copper conductors, with 2 layers of insulation of PE and copolymer of Propilene, armored with steel zinc coated tape, flat, with long admission of core heating +130 °C.

КПпБК-130 - cable with copper conductors, with 2 layers of insulation of PE and copolymer of Propilene, armored with steel zinc coated tape, round, with long admission of core heating +130 °C.

CONSTRUCTION

1. **Current carrying conductor** - copper;
2. **Insulation** - copolymer of Propilene;
3. **Insulation** - copolymer of Propilene;
4. **Pad** - as non woven cloth;
5. **Armor -** steel zinc coated or corrosion resistant tape.

NUMBER OF CONDUCTORS AND ITS RATED CROSS- SECTIONS, OUTER DIAMETERS AND WEIGHTS OF CABLES

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПпБП-130	КПпБП-130-4	КПпБП-130-5
3x10,0	13,6x33,8	860	876	893
3x13,3	15,0x37,4	981	997	1015
3x16,0	15,0x37,4	1075	1092	1110
3x21,15	16,2x42,5	1268	125	1302
3x25,0	16,2x42,5	1402	1420	1438
3x35,0	18,0x48,2	1718	1736	1755

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПпБК-130	КПпБК-130-4	КПпБК-130-5
3x10,0	29,0	805	789	805
3x13,3	32,0	926	910	926
3x16,0	32,0	1027	1012	1027
3x21,15	35,6	1213	1196	1213
3x25,0	35,6	1350	1332	1350
3x35,0	38,3	1654	1635	1654

LONG TIME CURRENT LOADS FOR THE CABLE

TYPE OF CABLE	CROSS- SECTIONS, MM²	LONG TIME CURRENT LOAD A AT ENVIRONMENT TEMPERATURE, NOT LESS											
		+20 °C	+30 °C	+40 °C	+50 °C	+60 °C	+70 °C	+80 °C	+90 °C	+100 °C	+110 °C	+120 °C	+128 °C
КПпБП-130	3x10,0	108	103	98	92	86	80	73	65	56	46	33	23
	3x13,3	129	123	117	110	103	95	87	78	67	55	39	28
	3x16,0	143	137	130	122	114	106	97	86	75	61	43	31
	3x21,15	175	167	158	149	140	129	118	106	91	75	53	37
	3x25,0	192	183	173	163	153	142	129	116	100	82	58	41
	3x35,0	240	228	217	204	191	177	161	144	125	102	72	51
КПпБК-130	3x10,0	110	105	100	94	88	81	74	66	58	47	33	23
	3x13,3	132	126	119	112	105	97	89	79	69	56	40	28
	3x16,0	146	139	132	125	117	108	99	88	76	62	44	31
	3x21,15	178	169	161	151	142	131	120	107	93	76	54	38
	3x25,0	195	186	176	166	155	144	131	117	102	83	59	41
	3x35,0	239	228	216	204	190	176	161	144	125	102	72	51

КПсПБП-130
КПсПБК-130

+130 °C | 3,3 кВ | 4,0 кВ | 5,0 кВ | ТУ 16.К13-012-2002 | Код ОКПД2 27.32.14.190

КПсПБП-130 - cable with copper conductors, with 2 layers of insulation of PE , armored with steel zinc coated tape, flat, with long admission of core heating +130 °C.

КПсПБК-130 - cable with copper conductors, with 2 layers of insulation of PE , armored with steel zinc coated tape, round, with long admission of core heating +130 °C.

CONSTRUCTION

1. **Current carrying conductor** - copper;
2. **Insulation** - PE of radiation modified;
3. **Insulation** - polyethelene;
4. **Pad** - as non woven cloth;
5. **Armor** - steel zinc coated or corrosion resistant tape.

NUMBER OF CONDUCTORS AND ITS RATED CROSS- SECTIONS, OUTER DIAMETERS AND WEIGHTS OF CABLES

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПсПБП-130	КПсПБП-130-4	КПсПБП-130-5
3x10,0	13,6x33,8	879	901	915
3x13,3	15,0x37,4	1001	1024	1042
3x16,0	15,0x37,4	1096	1120	1148
3x21,15	16,2x42,5	1290	1314	1340
3x25,0	16,2x42,5	1424	1450	1481
3x35,0	18,0x48,2	1741	1768	1793

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПсПБК-130	КПсПБК-130-4	КПсПБК-130-5
3x10,0	29,0	813	885	846
3x13,3	32,0	931	1005	970
3x16,0	32,0	1024	1100	1072
3x21,15	35,6	1221	1297	1260
3x25,0	35,6	1368	1435	1398
3x35,0	38,3	1684	1755	1705

LONG TIME CURRENT LOADS FOR THE CABLE

TYPE OF CABLE	CROSS- SECTIONS, MM²	LONG TIME CURRENT LOAD A AT ENVIRONMENT TEMPERATURE, NOT LESS											
		+20 °C	+30 °C	+40 °C	+50 °C	+60 °C	+70 °C	+80 °C	+90 °C	+100 °C	+110 °C	+120 °C	+128 °C
КПсПБП-130	3x10,0	108	103	98	92	86	80	73	65	56	46	33	23
	3x13,3	129	123	117	110	103	95	87	78	67	55	39	28
	3x16,0	143	137	130	122	114	106	97	86	75	61	43	31
	3x21,15	175	167	158	149	140	129	118	106	91	75	53	37
	3x25,0	192	183	173	163	153	142	129	116	100	82	58	41
	3x35,0	240	228	217	204	191	177	161	144	125	102	72	51
КПсПБК-130	3x10,0	110	105	100	94	88	81	74	66	58	47	33	23
	3x13,3	132	126	119	112	105	97	89	79	69	56	40	28
	3x16,0	146	139	132	125	117	108	99	88	76	62	44	31
	3x21,15	178	169	161	151	142	131	120	107	93	76	54	38
	3x25,0	195	186	176	166	155	144	131	117	102	83	59	41
	3x35,0	239	228	216	204	190	176	161	144	125	102	72	51

КПсПпБП-130
КПсПпБК-130

+130 °C | 3,3 кВ | 4,0 кВ | 5,0 кВ | ТУ 16.К13-012-2002 | Код ОКПД2 27.32.14.190

КПсПБП-130 - cable with copper conductors, with 2 layers of insulation of PE and copolymer of Propilene, armor of steel zinc coated tape, flat, with long admission of core heating +130 °C.

КПсПБК-130 - cable with copper conductors, with 2 layers of insulation of PE and copolymer of Propilene, armor of steel zinc coated tape, round, with long admission of core heating +130 °C.

CONSTRUCTION

1. **Current carrying conductor** - copper;
2. **Insulation** - PE of radiation modified;
3. **Insulation** - copolymer of Propilene;
4. **Pad** - as non woven cloth;
5. **Armor -** steel zinc coated or corrosion resistant tape.

NUMBER OF CONDUCTORS AND ITS RATED CROSS- SECTIONS, OUTER DIAMETERS AND WEIGHTS OF CABLES

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПсПпБП-130	КПсПпБП-130-4	КПсПпБП-130-5
3x10,0	13,6x33,8	880	898	932
3x13,3	15,0x37,4	1001	1019	1055
3x16,0	15,0x37,4	1096	1115	1151
3x21,15	16,2x42,5	1290	1310	1347
3x25,0	16,2x42,5	1425	1445	1482
3x35,0	18,0x48,2	1742	1762	1802

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПсПпБК-130	КПсПпБК-130-4	КПсПпБК-130-5
3x10,0	29,0	846	808	840
3x13,3	32,0	971	930	963
3x16,0	32,0	1066	1032	1065
3x21,15	35,6	1264	1217	1252
3x25,0	35,6	1400	1355	1390
3x35,0	38,3	1707	1659	1697

LONG TIME CURRENT LOADS FOR THE CABLE

TYPE OF CABLE	CROSS- SECTIONS, MM²	LONG TIME CURRENT LOAD A AT ENVIRONMENT TEMPERATURE, NOT LESS											
		+20 °C	+30 °C	+40 °C	+50 °C	+60 °C	+70 °C	+80 °C	+90 °C	+100 °C	+110 °C	+120 °C	+128 °C
КПсПпБП-130	3x10,0	108	103	98	92	86	80	73	65	56	46	33	23
	3x13,3	129	123	117	110	103	95	87	78	67	55	39	28
	3x16,0	143	137	130	122	114	106	97	86	75	61	43	31
	3x21,15	175	167	158	149	140	129	118	106	91	75	53	37
	3x25,0	192	183	173	163	153	142	129	116	100	82	58	41
	3x35,0	240	228	217	204	191	177	161	144	125	102	72	51
КПсПпБК-130	3x10,0	110	105	100	94	88	81	74	66	58	47	33	23
	3x13,3	132	126	119	112	105	97	89	79	69	56	40	28
	3x16,0	146	139	132	125	117	108	99	88	76	62	44	31
	3x21,15	178	169	161	151	142	131	120	107	93	76	54	38
	3x25,0	195	186	176	166	155	144	131	117	102	83	59	41
	3x35,0	239	228	216	204	190	176	161	144	125	102	72	51

НАРОДНОЕ ПРЕДПРИЯТИЕ
ПОДОЛЬСККАБЕЛЬ

HEAT RESISTANT CABLE WITH BELT BANDAGE

WITH LONG TIME TEMPERATURE OF CORE HEATING

+90 ^{0}C | +120 ^{0}C | +130 ^{0}C | +140 ^{0}C

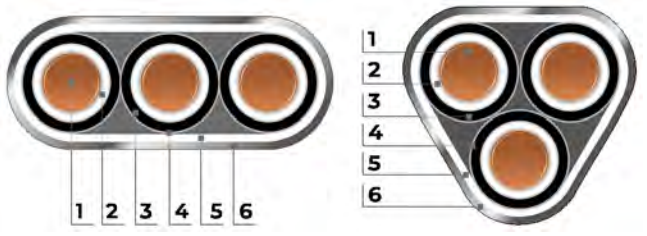
APPLICATION

The cables are designed to transmit electrical energy to submerged electrical motors for oil recovery, as well as motors for water hoist, water removal from the mines, Water ponds, its design capacity to rated AC voltage 3.3, 4.0 and 5.0 kV, frequency up to 70 Hz.

The cables are designed to work in bore liquid , which contains oil and also water and gas with the following indices:

water content	100%
pH of accompany water	5,0 - 8,5
concentration of Sulfur Hydrogen for the cables armor of steel zinced tape, not more than, gram per liter	0,01
concentration of Sulfur Hydrogen for the cables of stainless steel tape resistant to corrosion, MPa, not more	1,25
hydrostatic pressure, not more	40
gas factor, not more, cub.m per MT	500

CONSTRUCTION



FLAT CABLE ROUND CABLE

1. **Current carrying conductor;**
2. **The first layer of insulation;**
3. **The second layer of insulation;**
4. **Tape bandage or protective sheath;**
5. **Pad.**

The cables can be made with different types of protective armor:

- **«Б»** - steel zinced tape;
- **«Бк»** or **«Бнк»** - is tape of stainless corrosion resistant steel;
- **«Блк»** - steel tape with corrosion resistant coating with zinc – copper melt coating.

For the cables with rated voltage 4.0 and 5.0 kV figures 4 or 5 are added through mark.

The example of conventional nomination of a cable in the order or in the documentation:

КПсППЛБкК-130-4 3х25 ТУ 3542-061-15015408-2016
cable with copper conductors,2- layers insulation, with tape bandage above insulation of each core, tape of stainless corrosion resistant steel, round, long admission of core heating+ 130 C, to voltage 4,0 kV with 3 major conductors rated cross section 25 square mm.

TECHNICAL SPECIFICATIONS

Climate version is for moderate cold climate, deployment categories are from 1 to 5 by GOST 15150 –69 for operation in bore liquid.

In static condition the cables can resist to impact of temperature drop from minus 60 °C to long time admission of core heating temperatures for so and so type of cable.

Winding of cable and hoist – down operations can be at air temperature not low than minus 40 °C.

At winding and hoist and down operations bending radius is :

not less 300 mm for the cores with cross - section10-16 мм^2;
not less 360 mm the cores with cross – section 21,15 мм^2;
not less 380 mm the cores with cross – section 25 мм^2;
not less 420 mm for cores with cross – section 35 мм^2.

Hoist and down of the cable to the bore shall go smoothly with the speed not more than 0,25 m per a second.

When tube column in the bore passes the section with curve more than 1,5 degrees per 10 meters, or passes to less diameter in the bore, the speed not more than 0,1 m per a second both in hoist or down.

When the cable is fixed to compressor pipes, prevent twisting of the cable around the tubes and twisting flat cable around its own axis.

Electrical resistance of insulation recalculated to length 1 km and temperature + 20 °C is not less than 2500 mOhm.

The cables can sustain crushing load not less than 158 kN.

Insulated cores are sealed in pressure drop in the liquid 0.02 MPa per 1 meter length.

Cables are tested with DC voltage 18 kV within not less than 5 minutes, leakage current recalculated to 1 km length and temperature + 20 °C shall not exceed $1*10^{-5}$A.

When test the cables already run in the bores the voltage shall not exceed 12 kV.

The required length of cables is determined at the custom.

Guaranteed term of cable operation is 2 years since operation of cable started. Operation term does not include the period of storing provided that guaranteed term of storing is not exceeded.

Guaranteed storing term is 1 year from the moment of shipment.

Service life of the cable is not less than 5,5 years, provided the conditions of storing are followed.

The cables correspond to the general requirements of ГОСТ Р 51777-2001.

КПЛБП-90
КПЛБК-90

+90 ºC | 3,3 кВ | 4,0 кВ | 5,0 кВ | ТУ 3542-061-05015408-2016 | Код ОКПД2 27.32.14.190

КПЛБП-90 - cable with copper conductors, with 2 layers of insulation of PE, with tape bandage above the insulation of each core, armor of steel zinc coated wire, flat, with long time admission of core heating a +90 °C.

КПЛБК-90 - cable with copper conductors, with 2 layers of insulation of PE, with tape bandage above the insulation of each core, armor of steel zinc coated wire, round, with long time admission of core heating a +90 °C.

CONSTRUCTION

1. **Current carrying conductor** - copper;
2. **Insulation** - polyethelene of high density;
3. **Insulation** - polyethelene of high density;
4. **Tape bandage** - Flouride tape winding;
5. **Pad** - as non woven cloth;
6. **Armor** - steel zinc coated or corrosion resistant tape.

NUMBER OF CONDUCTORS AND ITS RATED CROSS- SECTIONS, OUTER DIAMETERS AND WEIGHTS OF CABLES

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПЛБП-90	КПЛБП-90-4	КПЛБП-90-5
3x10,0	13,6x33,8	880	898	916
3x13,3	15,0x37,4	1006	1025	1044
3x16,0	15,0x37,4	1112	1131	1150
3x21,15	16,2x42,5	1303	1323	1342
3x25,0	16,2x42,5	1443	1464	1484
3x35,0	18,0x48,2	1754	1775	1797

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПЛБК-90	КПЛБК-90-4	КПЛБК-90-5
3x10,0	29,0	815	832	848
3x13,3	32,0	938	955	971
3x16,0	32,0	1041	1058	1075
3x21,15	35,6	1228	1246	1263
3x25,0	35,6	1366	1384	1402
3x35,0	38,3	1671	1691	1710

LONG TIME CURRENT LOADS FOR THE CABLE

TYPE OF CABLE	CROSS- SECTIONS, MM²	LONG TIME CURRENT LOAD A AT ENVIRONMENT TEMPERATURE, NOT LESS							
		+20 ºC	+30 ºC	+40 ºC	+50 ºC	+60 ºC	+70 ºC	+80 ºC	+88 ºC
КПЛБП-90	3x10,0	91	85	77	69	60	49	35	15
	3x13,3	110	101	93	83	72	59	42	19
	3x16,0	122	113	103	92	80	65	47	21
	3x21,15	148	137	125	112	97	79	56	25
	3x25,0	163	151	137	123	106	87	62	27
	3x35,0	203	188	172	154	133	109	77	34
КПЛБК-90	3x10,0	93	86	79	71	61	50	36	16
	3x13,3	112	103	94	84	73	60	43	19
	3x16,0	124	115	105	94	81	66	48	21
	3x21,15	151	139	127	114	99	80	57	25
	3x25,0	165	153	139	125	108	88	63	28
	3x35,0	202	187	171	153	133	108	76	34

КПсПЛБП-120 КПсПЛпБП-120
КПсПЛБК-120 КПсПЛпБК-120

+120 °C | 3,3 кВ | 4,0 кВ | 5,0 кВ | ТУ 3542-061-05015408-2016 | Код ОКПД2 27.32.14.190

КПсПЛБП-120/ КПсПЛпБП-120 - cable with copper conductors, 2 - layers of insulation of PE, tape bandage above the insulation of each core, armor of steel zinc coated wire, flat, with long time admission of core heating +120 °C.

КПсПЛБК-120/ КПсПЛпБК-120 - cable with copper conductors, 2 - layers of insulation of PE, tape bandage above the insulation of each core, armor of steel zinc coated wire, round, with long time admission of core heating +120 °C.

CONSTRUCTION

1. **Current carrying conductor** - copper;
2. **Insulation** - PE of radiation modified;
3. **Insulation** - polyethelene;
4. **Tape bandage:**
   - **Л** - Flouride tape winding;
   - **Лп** - wrapping of polyetheleneftalate film;
5. **Pad** - as non woven cloth;
6. **Armor** - steel zinc coated or corrosion resistant tape.

NUMBER OF CONDUCTORS AND ITS RATED CROSS- SECTIONS, OUTER DIAMETERS AND WEIGHTS OF CABLES

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПсПЛБП-120 КПсПЛпБП-120	КПсПЛБП-120-4 КПсПЛпБП-120-4	КПсПЛБП-120-5 КПсПЛпБП-120-5
3x10,0	13,6x33,8	880	898	916
3x13,3	15,0x37,4	1006	1025	1044
3x16,0	15,0x37,4	1112	1131	1150
3x21,15	16,2x42,5	1303	1323	1342
3x25,0	16,2x42,5	1443	1464	1484
3x35,0	18,0x48,2	1754	1775	1797

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПсПЛБК-120 КПсПЛпБК-120	КПсПЛБК-120-4 КПсПЛпБК-120-4	КПсПЛБК-120-5 КПсПЛпБК-120-5
3x10,0	29,0	815	832	848
3x13,3	32,0	938	955	971
3x16,0	32,0	1041	1058	1075
3x21,15	35,6	1228	1246	1263
3x25,0	35,6	1366	1384	1402
3x35,0	38,3	1671	1691	1710

LONG TIME CURRENT LOADS FOR THE CABLE

TYPE OF CABLE	CROSS- SECTIONS, MM²	LONG TIME CURRENT LOAD A AT ENVIRONMENT TEMPERATURE, NOT LESS										
		+20 °C	+30 °C	+40 °C	+50 °C	+60 °C	+70 °C	+80 °C	+90 °C	+100 °C	+110 °C	+118 °C
КПсПЛБП-120 КПсПЛпБП-120	3x10,0	104	98	93	87	80	73	65	57	46	33	15
	3x13,3	124	118	111	104	96	88	78	68	55	39	18
	3x16,0	138	131	123	115	107	97	87	75	62	44	19
	3x21,15	168	159	150	140	130	119	106	92	75	53	24
	3x25,0	184	174	165	154	142	130	116	101	82	58	26
	3x35,0	230	218	206	192	178	163	145	126	103	73	33
КПсПЛБК-120 КПсПЛпБК-120	3x10,0	105	99	94	88	81	74	66	57	47	33	15
	3x13,3	125	119	112	105	97	89	79	69	56	40	18
	3x16,0	139	132	125	117	108	98	88	76	62	44	20
	3x21,15	169	160	151	141	131	120	107	93	76	53	24
	3x25,0	185	176	166	155	144	131	117	102	83	59	26
	3x35,0	227	216	203	190	176	161	144	125	102	72	32

КПсПпЛБП-120 КПсПпЛпБП-120 КПсПпЛБК-120 КПсПпЛпБК-120

+120 °C | 3,3 кВ | 4,0 кВ | 5,0 кВ | ТУ 3542-061-05015408-2016 | Код ОКПД2 27.32.14.190

КПсПпЛБП-120/ КПсПпЛпБП-120 - cable with copper conductors, 2 -layers of insulation of PE and propilene copolyumer, tape bandage above the insulation of each core, armor of steel zinc coated wire, flat, with long time admission of core heating +120 °C.

КПсПпЛБК-120/ КПсПпЛпБК-120 - copper conductors, 2 -layers of insulation of PE and propilene copolyumer, tape bandage above the insulation of each core, armor of steel zinc coated wire, round, with long time admission of core heating +120 °C.

CONSTRUCTION

1. **Current carrying conductor** - copper;
2. **Insulation** - PE of radiation modified;
3. **Insulation** - copolymer of Propilene;
4. **Tape bandage:**
   - **Л** - Flouride tape winding;
   - **Лп** - wrapping of polyetheleneftalate film;
5. **Pad** - as non woven cloth;
6. **Armor** - steel zinc coated or corrosion resistant tape.

NUMBER OF CONDUCTORS AND ITS RATED CROSS- SECTIONS, OUTER DIAMETERS AND WEIGHTS OF CABLES

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПсПпЛБП-120 КПсПпЛпБП-120	КПсПпЛБК-120-4 КПсПпЛпБК-120-4	КПсПпЛБК-120-5 КПсПпЛпБК-120-5
3x10,0	13,6x33,8	899	925	1400
3x13,3	15,0x37,4	1019	1053	1069
3x16,0	15,0x37,4	1117	1141	1166
3x21,15	16,2x42,5	1310	1351	1363
3x25,0	16,2x42,5	1448	1484	1499
3x35,0	18,0x48,2	1762	1799	1820

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПсПпЛБК-120 КПсПпЛпБК-120	КПсПпЛБК-120-4 КПсПпЛпБК-120-4	КПсПпЛБК-120-5 КПсПпЛпБК-120-5
3x10,0	29,0	851	827	842
3x13,3	32,0	970	949	967
3x16,0	32,0	1065	1052	1069
3x21,15	35,6	1261	1239	1257
3x25,0	35,6	1398	1377	1395
3x35,0	38,3	1716	1682	1703

LONG TIME CURRENT LOADS FOR THE CABLE

TYPE OF CABLE	CROSS- SECTIONS, MM²	LONG TIME CURRENT LOAD A AT ENVIRONMENT TEMPERATURE, NOT LESS										
		+20 °C	+30 °C	+40 °C	+50 °C	+60 °C	+70 °C	+80 °C	+90 °C	+100 °C	+110 °C	+118 °C
КПсПпЛБП-120 КПсПпЛпБП-120	3x10,0	104	98	93	87	80	73	65	57	46	33	15
	3x13,3	124	118	111	104	96	88	78	68	55	39	18
	3x16,0	138	131	123	115	107	97	87	75	62	44	19
	3x21,15	168	159	150	140	130	119	106	92	75	53	24
	3x25,0	184	174	165	154	142	130	116	101	82	58	26
	3x35,0	230	218	206	192	178	163	145	126	103	73	33
КПсПпЛБК-120 КПсПпЛпБК-120	3x10,0	105	99	94	88	81	74	66	57	47	33	15
	3x13,3	125	119	112	105	97	89	79	69	56	40	18
	3x16,0	139	132	125	117	108	98	88	76	62	44	20
	3x21,15	169	160	151	141	131	120	107	93	76	53	24
	3x25,0	185	176	166	155	144	131	117	102	83	59	26
	3x35,0	227	216	203	190	176	161	144	125	102	72	32

КПпЛБП-120 КПпЛпБП-120
КПпЛБК-120 КПпЛпБК-120

+120 °C | 3,3 кВ | 4,0 кВ | 5,0 кВ | ТУ 3542-061-05015408-2016 | Код ОКПД2 27.32.14.190

КПпЛБП-120/ КПпЛпБП-120 - cable with copper conductors, 2 layer insulation of copolymer of Propylene, tape bandage above the insulation of each core, flat, with long time admission of core heating +120 °C.

КПпЛБК-120/ КПпЛпБК-120 - cable with copper conductors, 2 layer insulation of copolymer of Propylene, tape bandage above the insulation of each core, armored of steel zinc coated tape, round, with long time admission of core heating +120 °C.

CONSTRUCTION

1. **Current carrying conductor** - copper;
2. **Insulation** - copolymer of Propilene;
3. **Insulation** - copolymer of Propilene;
4. **Tape bandage:**
   - **Л** - Flouride tape winding;
   - **Лп** - wrapping of polyetheleneftalate film;
5. **Pad** - as non woven cloth;
6. **Armor** - steel zinc coated or corrosion resistant tape.

NUMBER OF CONDUCTORS AND ITS RATED CROSS- SECTIONS, OUTER DIAMETERS AND WEIGHTS OF CABLES

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПпЛБП-120 КПпЛпБП-120	КПпЛБП-120-4 / КПпЛпБП-120-4	КПпЛБП-120-5 КПпЛпБП-120-5
3x10,0	13,6x33,8	873	917 / 911	908
3x13,3	15,0x37,4	998	1045 / 1030	1034
3x16,0	15,0x37,4	1103	1131 / 1129	1140
3x21,15	16,2x42,5	1293	1340 / 1321	1331
3x25,0	16,2x42,5	1433	1476 / 1458	1472
3x35,0	18,0x48,2	1742	1787 / 1773	1783

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПпЛБК-120 КПпЛпБК-120	КПпЛБК-120-4 КПпЛпБК-120-4	КПпЛБК-120-5 КПпЛпБК-120-5
3x10,0	29,0	832	823	840
3x13,3	32,0	951	946	962
3x16,0	32,0	1045	1049	1065
3x21,15	35,6	1240	1235	1252
3x25,0	35,6	1376	1372	1390
3x35,0	38,3	1693	1678	1696

LONG TIME CURRENT LOADS FOR THE CABLE

TYPE OF CABLE	CROSS- SECTIONS, MM²	LONG TIME CURRENT LOAD A AT ENVIRONMENT TEMPERATURE, NOT LESS										
		+20 °C	+30 °C	+40 °C	+50 °C	+60 °C	+70 °C	+80 °C	+90 °C	+100 °C	+110 °C	+118 °C
КПпЛБП-120 КПпЛпБП-120	3x10,0	104	98	93	87	80	73	65	57	46	33	15
	3x13,3	124	118	111	104	96	88	78	68	55	39	18
	3x16,0	138	131	123	115	107	97	87	75	62	44	19
	3x21,15	168	159	150	140	130	119	106	92	75	53	24
	3x25,0	184	174	165	154	142	130	116	101	82	58	26
	3x35,0	230	218	206	192	178	163	145	126	103	73	33
КПпЛБК-120 КПпЛпБК-120	3x10,0	105	99	94	88	81	74	66	57	47	33	15
	3x13,3	125	119	112	105	97	89	79	69	56	40	18
	3x16,0	139	132	125	117	108	98	88	76	62	44	20
	3x21,15	169	160	151	141	131	120	107	93	76	53	24
	3x25,0	185	176	166	155	144	131	117	102	83	59	26
	3x35,0	227	216	203	190	176	161	144	125	102	72	32

КПпФБП-120
КПпФБК-120

+120 °C | 3,3 кВ | 4,0 кВ | 5,0 кВ | ТУ 3542-061-05015408-2016 | Код ОКПД2 27.32.14.190

КПпФБП-120 - cable with copper conductors, 2 layer insulation of copolymer of Propylene, protective sheath of Flouride copolymer above the insulation of each core, armored of steel zinc coated tape, flat, with long time admission of core heating +120 °C.

КПпФБК-120 - cable with copper conductors, 2 layer insulation of copolymer of Propylene, protective sheath of Flouride copolymer above the insulation of each core, armored of steel zinc coated tape, flat, with long time admission of core heating +120 °C.

CONSTRUCTION

1. **Current carrying conductor** - copper;
2. **Insulation** - copolymer of Propilene;
3. **Insulation** - copolymer of Propilene;
4. **Protective sheath** - Flouride polymer;
5. **Pad** - as non woven cloth;
6. **Armor** - steel zinc coated or corrosion resistant tape.

NUMBER OF CONDUCTORS AND ITS RATED CROSS- SECTIONS, OUTER DIAMETERS AND WEIGHTS OF CABLES

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПпФБП-120	КПпФБП-120-4	КПпФБП-120-5
3x10,0	13,6x33,8	896	935	951
3x13,3	15,0x37,4	1024	1057	1080
3x16,0	15,0x37,4	1130	1154	1187
3x21,15	16,2x42,5	1322	1353	1381
3x25,0	16,2x42,5	1464	1489	1524
3x35,0	18,0x48,2	1776	1810	1839

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПпФБК-120	КПпФБК-120-4	КПпФБК-120-5
3x10,0	29,0	831	847	881
3x13,3	32,0	955	972	1006
3x16,0	32,0	1058	1076	1111
3x21,15	35,6	1247	1265	1301
3x25,0	35,6	1385	1404	1441
3x35,0	38,3	1693	1713	1752

LONG TIME CURRENT LOADS FOR THE CABLE

TYPE OF CABLE	CROSS- SECTIONS, MM²	LONG TIME CURRENT LOAD A AT ENVIRONMENT TEMPERATURE, NOT LESS										
		+20 °C	+30 °C	+40 °C	+50 °C	+60 °C	+70 °C	+80 °C	+90 °C	+100 °C	+110 °C	+118 °C
КПпФБП-120	3x10,0	103	98	92	86	80	73	65	56	46	33	15
	3x13,3	124	117	110	103	96	87	78	68	55	39	17
	3x16,0	137	130	123	115	106	97	87	75	61	43	19
	3x21,15	167	159	150	140	130	118	106	92	75	53	24
	3x25,0	183	174	164	153	142	130	116	100	82	58	26
	3x35,0	229	217	205	192	177	162	145	125	102	72	32
КПпФБК-120	3x10,0	105	100	94	88	82	74	67	58	47	33	15
	3x13,3	126	119	113	105	97	89	80	69	56	40	18
	3x16,0	140	133	125	117	108	99	88	77	63	44	20
	3x21,15	170	161	152	142	131	120	107	93	76	54	24
	3x25,0	186	176	166	156	144	132	118	102	83	59	26
	3x35,0	228	217	204	191	177	161	144	125	102	72	32

КПсПпФБП-120
КПсПпФБК-120

+120 °C | 3,3 кВ | 4,0 кВ | 5,0 кВ | ТУ 3542-061-05015408-2016 | Код ОКПД2 27.32.14.190

КПсПпФБП-120 - cable with copper conductors, 2 layers of insulation of PE and copolymer of Propylene, with protective sheath of Flouride copolymer above the insulation of each core, with armor as steel zinc coated wire, flat, with long time admission of core heating +120 °C.

КПсПпФБК-120 - cable with copper conductors, 2 layers of insulation of PE and copolymer of Propyene, with protective sheath of Flouride copolymer above the insulation of each core, with armor as steel zinc coated wire, round, with long time admission of core heating +120 °C.

CONSTRUCTION

1. **Current carrying conductor** - copper;
2. **Insulation** - PE of radiation modified;
3. **Insulation** - copolymer of Propilene;
4. **Protective sheath** - Flouride polymer;
5. **Pad** - as non woven cloth;
6. **Armor** - steel zinc coated or corrosion resistant tape.

NUMBER OF CONDUCTORS AND ITS RATED CROSS- SECTIONS, OUTER DIAMETERS AND WEIGHTS OF CABLES

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПсПпФБП-120	КПсПпФБП-120-4	КПсПпФБП-120-5
3x10,0	13,6x33,8	899	917	975
3x13,3	15,0x37,4	1027	1045	1098
3x16,0	15,0x37,4	1133	1152	1197
3x21,15	16,2x42,5	1326	1346	1396
3x25,0	16,2x42,5	1468	1488	1534
3x35,0	18,0x48,2	1781	1802	1858

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПсПпФБК-120	КПсПпФБК-120-4	КПсПпФБК-120-5
3x10,0	29,0	834	851	884
3x13,3	32,0	958	975	1010
3x16,0	32,0	1062	1080	1115
3x21,15	35,6	1250	1269	1306
3x25,0	35,6	1390	1409	1446
3x35,0	38,3	1698	1717	1757

LONG TIME CURRENT LOADS FOR THE CABLE

TYPE OF CABLE	CROSS- SECTIONS, MM²	LONG TIME CURRENT LOAD A AT ENVIRONMENT TEMPERATURE, NOT LESS										
		+20 °C	+30 °C	+40 °C	+50 °C	+60 °C	+70 °C	+80 °C	+90 °C	+100 °C	+110 °C	+118 °C
КПсПпФБП-120	3x10,0	103	98	92	86	80	73	65	56	46	33	15
	3x13,3	124	117	110	103	96	87	78	68	55	39	17
	3x16,0	137	130	123	115	106	97	87	75	61	43	19
	3x21,15	167	159	150	140	130	118	106	92	75	53	24
	3x25,0	183	174	164	153	142	130	116	100	82	58	26
	3x35,0	229	217	205	192	177	162	145	125	102	72	32
КПсПпФБК-120	3x10,0	105	100	94	88	82	74	67	58	47	33	15
	3x13,3	126	119	113	105	97	89	80	69	56	40	18
	3x16,0	140	133	125	117	108	99	88	77	63	44	20
	3x21,15	170	161	152	142	131	120	107	93	76	54	24
	3x25,0	186	176	166	156	144	132	118	102	83	59	26
	3x35,0	228	217	204	191	177	161	144	125	102	72	32

КПпЛБП-130 КПпЛпБП-130
КПпЛБК-130 КПпЛпБК-130

+130 °C | 3,3 кВ | 4,0 кВ | 5,0 кВ | ТУ 3542-061-05015408-2016 | Код ОКПД2 27.32.14.190

КПпЛБП-130/ КПпЛпБП-130 - cable with copper conductors, 2 layer insulation of copolymer of Propylene, tape ban, armor of steel zinc coated tape, bandage above the insulation of each core, flat, with long time admission of core heating +130 °C.

КПпЛБК-130/ КПпЛпБК-130 - cable with copper insulation of copolymer of Propylene, tape ban, armor of steel zinc coated tape, tape bandage above the insulation of each core, round, with long time admission of core heating +130 °C.

CONSTRUCTION

1. **Current carrying conductor** - copper;
2. **Insulation** - copolymer of Propilene;
3. **Insulation** - copolymer of Propilene;
4. **Tape bandage:**
   - **Л** - Flouride tape winding;
   - **Лп** - wrapping of polyetheleneftalate film;
5. **Pad** - as non woven cloth;
6. **Armor** - steel zinc coated or corrosion resistant tape.

NUMBER OF CONDUCTORS AND ITS RATED CROSS- SECTIONS, OUTER DIAMETERS AND WEIGHTS OF CABLES

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПпЛБП-130 КПпЛпБП-130	КПпЛБП-130-4 КПпЛпБП-130-4	КПпЛБП-130-5 КПпЛпБП-130-5
3x10,0	13,6x33,8	890	908	926
3x13,3	15,0x37,4	1016	1034	1053
3x16,0	15,0x37,4	1122	1140	1159
3x21,15	16,2x42,5	1312	1331	1351
3x25,0	16,2x42,5	1453	1472	1492
3x35,0	18,0x48,2	1764	1783	1804

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПпЛБК-130 КПпЛпБК-130	КПпЛБК-130-4 КПпЛпБК-130-4	КПпЛБК-130-5 КПпЛпБК-130-5
3x10,0	29,0	823	840	855
3x13,3	32,0	945	962	979
3x16,0	32,0	1048	1065	1082
3x21,15	35,6	1235	1252	1270
3x25,0	35,6	1372	1390	1409
3x35,0	38,3	1677	1696	1715

LONG TIME CURRENT LOADS FOR THE CABLE

TYPE OF CABLE	CROSS- SECTIONS, MM²	LONG TIME CURRENT LOAD A AT ENVIRONMENT TEMPERATURE, NOT LESS											
		+20 °C	+30 °C	+40 °C	+50 °C	+60 °C	+70 °C	+80 °C	+90 °C	+100 °C	+110 °C	+120 °C	+128 °C
КПпЛБП-130 КПпЛпБП-130	3x10,0	107	102	97	92	86	79	72	65	56	46	32	14
	3x13,3	129	123	116	110	103	95	87	78	67	55	39	17
	3x16,0	143	136	129	122	114	105	96	86	75	61	43	19
	3x21,15	174	166	158	149	139	129	117	105	91	74	53	23
	3x25,0	191	182	173	163	152	141	129	115	100	81	58	26
	3x35,0	239	227	216	203	190	176	161	144	125	102	72	32
КПпЛБК-130 КПпЛпБК-130	3x10,0	110	105	99	94	88	81	74	66	57	47	33	15
	3x13,3	131	125	119	112	105	97	88	79	69	56	40	18
	3x16,0	146	139	132	124	116	108	98	88	76	62	44	20
	3x21,15	177	169	160	151	141	131	119	107	92	75	53	24
	3x25,0	194	185	175	165	155	143	131	117	101	83	58	26
	3x35,0	238	227	215	203	190	176	160	143	124	101	72	32

КПсПЛБП-130 КПсПЛпБП-130 КПсПЛБК-130 КПсПЛпБК-130

+130 °C | 3,3 кВ | 4,0 кВ | 5,0 кВ | ТУ 3542-061-05015408-2016 | Код ОКПД2 27.32.14.190

КПсПЛБП-130/ КПсПЛпБП-130 - cable with copper conductors, with 2 layers of PE insulation, tape bandage above the insulation of each core, armor of steel zinc coated tape, flat, with long time admission of core heating +130 °C.

КПсПЛБК-130/ КПсПЛпБК-130 - cable with copper conductors, with 2 layers of PE insulation, tape bandage above the insulation of each core, armor of steel zinc coated tape, round, with long time admission of core heating +130 °C.

CONSTRUCTION

1. **Current carrying conductor** - copper;
2. **Insulation** - polyethelene;
3. **Insulation** - polyethelene;
4. **Tape bandage:**
   - **Л** - Flouride tape winding;
   - **Лп** - wrapping of polyetheleneftalate film;
5. **Pad** - as non woven cloth;
6. **Armor** - steel zinc coated or corrosion resistant tape.

NUMBER OF CONDUCTORS AND ITS RATED CROSS- SECTIONS, OUTER DIAMETERS AND WEIGHTS OF CABLES

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПсПЛБП-130 КПсПЛпБП-130	КПсПЛБП-130-4 КПсПЛпБП-130-4	КПсПЛБП-130-5 КПсПЛпБП-130-5
3x10,0	13,6x33,8	899	916	935
3x13,3	15,0x37,4	1026	1044	1063
3x16,0	15,0x37,4	1131	1150	1170
3x21,15	16,2x42,5	1323	1342	1363
3x25,0	16,2x42,5	1464	1484	1505
3x35,0	18,0x48,2	1775	1797	1817

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПсПЛБК-130 КПсПЛпБК-130	КПсПЛБК-130-4 КПсПЛпБК-130-4	КПсПЛБК-130-5 КПсПЛпБК-130-5
3x10,0	29,0	832	848	865
3x13,3	32,0	955	971	989
3x16,0	32,0	1057	1075	1092
3x21,15	35,6	1245	1263	1282
3x25,0	35,6	1383	1402	1421
3x35,0	38,3	1690	1710	1729

LONG TIME CURRENT LOADS FOR THE CABLE

TYPE OF CABLE	CROSS- SECTIONS, MM²	LONG TIME CURRENT LOAD A AT ENVIRONMENT TEMPERATURE, NOT LESS											
		+20 °C	+30 °C	+40 °C	+50 °C	+60 °C	+70 °C	+80 °C	+90 °C	+100 °C	+110 °C	+120 °C	+128 °C
КПсПЛБП-130 КПсПЛпБП-130	3x10,0	107	102	97	92	86	79	72	65	56	46	32	14
	3x13,3	129	123	116	110	103	95	87	78	67	55	39	17
	3x16,0	143	136	129	122	114	105	96	86	75	61	43	19
	3x21,15	174	166	158	149	139	129	117	105	91	74	53	23
	3x25,0	191	182	173	163	152	141	129	115	100	81	58	26
	3x35,0	239	227	216	203	190	176	161	144	125	102	72	32
КПсПЛБК-130 КПсПЛпБК-130	3x10,0	110	105	99	94	88	81	74	66	57	47	33	15
	3x13,3	131	125	119	112	105	97	88	79	69	56	40	18
	3x16,0	146	139	132	124	116	108	98	88	76	62	44	20
	3x21,15	177	169	160	151	141	131	119	107	92	75	53	24
	3x25,0	194	185	175	165	155	143	131	117	101	83	58	26
	3x35,0	238	227	215	203	190	176	160	143	124	101	72	32

КПсППЛБП-130 КПсППЛпБП-130 КПсППЛБК-130 КПсППЛпБК-130

+130 °C | 3,3 кВ | 4,0 кВ | 5,0 кВ | ТУ 3542-061-05015408-2016 | Код ОКПД2 27.32.14.190

КПсППЛБП-130/ КПсППЛпБП-130 - cable with copper conductors, with 2 layers of insulation of Polyehylene and copolymer of Propylene, with tape bandage above the insulation of each core, armor of steel zinc coated tape, flat, long time admission of core heating +130 °C.

КПсППЛБК-130/ КПсППЛпБК-130 - cable with copper conductors, with 2 layers of insulation of Polyehylene and copolymer of Propylene, with tape bandage above the insulation of each core, armor of steel zinc coated tape, round, long time admission of core heating +130 °C.

CONSTRUCTION

1. **Current carrying conductor** - copper;
2. **Insulation** - PE of radiation modified;
3. **Insulation** - copolymer of Propilene;
4. **Tape bandage:**
   - **Л** - Flouride tape winding;
   - **Лп** - wrapping of polyetheleneftalate film;
5. **Pad** - as non woven cloth;
6. **Armor** - steel zinc coated or corrosion resistant tape.

NUMBER OF CONDUCTORS AND ITS RATED CROSS- SECTIONS, OUTER DIAMETERS AND WEIGHTS OF CABLES

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПсППЛБП-130 / КПсППЛпБП-130	КПсППЛБП-130-4 / КПсППЛпБП-130-4	КПсППЛБП-130-5 КПсППЛпБП-130-5
3x10,0	13,6x33,8	912 / 933	932 / 947	955
3x13,3	15,0x37,4	1032 / 1062	1052 / 1071	1077
3x16,0	15,0x37,4	1131 / 1149	1152 / 1168	1176
3x21,15	16,2x42,5	1324 / 1359	1346 / 1365	1371
3x25,0	16,2x42,5	1462 / 1496	1485 / 1502	1510
3x35,0	18,0x48,2	1778 / 1808	1801 / 1823	1828

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПсППЛБК-130 КПсППЛпБК-130	КПсППЛБК-130-4 КПсППЛпБК-130-4	КПсППЛБК-130-5 КПсППЛпБК-130-5
3x10,0	29,0	866	842	859
3x13,3	32,0	986	967	983
3x16,0	32,0	1080	1069	1087
3x21,15	35,6	1277	1257	1275
3x25,0	35,6	1414	1396	1414
3x35,0	38,3	1733	1703	1721

LONG TIME CURRENT LOADS FOR THE CABLE

TYPE OF CABLE	CROSS- SECTIONS, MM²	LONG TIME CURRENT LOAD A AT ENVIRONMENT TEMPERATURE, NOT LESS											
		+20 °C	+30 °C	+40 °C	+50 °C	+60 °C	+70 °C	+80 °C	+90 °C	+100 °C	+110 °C	+120 °C	+128 °C
КПсППЛБП-130 КПсППЛпБП-130	3x10,0	107	102	97	92	86	79	72	65	56	46	32	14
	3x13,3	129	123	116	110	103	95	87	78	67	55	39	17
	3x16,0	143	136	129	122	114	105	96	86	75	61	43	19
	3x21,15	174	166	158	149	139	129	117	105	91	74	53	23
	3x25,0	191	182	173	163	152	141	129	115	100	81	58	26
	3x35,0	239	227	216	203	190	176	161	144	125	102	72	32
КПсППЛБК-130 КПсППЛпБК-130	3x10,0	110	105	99	94	88	81	74	66	57	47	33	15
	3x13,3	131	125	119	112	105	97	88	79	69	56	40	18
	3x16,0	146	139	132	124	116	108	98	88	76	62	44	20
	3x21,15	177	169	160	151	141	131	119	107	92	75	53	24
	3x25,0	194	185	175	165	155	143	131	117	101	83	58	26
	3x35,0	238	227	215	203	190	176	160	143	124	101	72	32

КПпФБП-130
КПпФБК-130

+130 °C | 3,3 кВ | 4,0 кВ | 5,0 кВ | ТУ 3542-061-05015408-2016 | Код ОКПД2 27.32.14.190

КПпФБП-130 - cable with copper conductors, with 2 layers of Propylene copolymer, protective sheath of flouride copolymer above the insulation of each core, armor of steel zinc coated tape, flat, with long time admission of core heating +130 °C.

КПпФБК-130 - cable with copper conductors, with 2 layers of Propylene copolymer, protective sheath of flouride copolymer above the insulation of each core, armor of steel zinc coated tape, round, with long time admission of core heating +130 °C.

CONSTRUCTION

1. **Current carrying conductor** - copper;
2. **Insulation** - copolymer of Propilene;
3. **Insulation** - copolymer of Propilene;
4. **Protective sheath** - Flouride polymer;
5. **Pad** - as non woven cloth;
6. **Armor** - steel zinc coated or corrosion resistant tape.

NUMBER OF CONDUCTORS AND ITS RATED CROSS- SECTIONS, OUTER DIAMETERS AND WEIGHTS OF CABLES

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПпФБП-130	КПпФБП-130-4	КПпФБП-130-5
3x10,0	13,6x33,8	435	433	989
3x13,3	15,0x37,4	1095	1110	1119
3x16,0	15,0x37,4	1183	1202	1227
3x21,15	16,2x42,5	1395	1411	1422
3x25,0	16,2x42,5	1533	1541	1567
3x35,0	18,0x48,2	1848	1862	1882

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПпФБК-130	КПпФБК-130-4	КПпФБК-130-5
3x10,0	29,0	899	881	915
3x13,3	32,0	1020	1006	1041
3x16,0	32,0	1116	1111	1147
3x21,15	35,6	1315	1301	1338
3x25,0	35,6	1454	1442	1479
3x35,0	38,3	1776	1752	1791

LONG TIME CURRENT LOADS FOR THE CABLE

TYPE OF CABLE	CROSS- SECTIONS, MM²	LONG TIME CURRENT LOAD A AT ENVIRONMENT TEMPERATURE, NOT LESS											
		+20 °C	+30 °C	+40 °C	+50 °C	+60 °C	+70 °C	+80 °C	+90 °C	+100 °C	+110 °C	+120 °C	+128 °C
КПпФБП-130	3x10,0	106	101	96	91	85	79	72	64	56	45	32	14
	3x13,3	127	121	115	109	102	94	86	77	67	54	38	17
	3x16,0	141	135	128	121	113	104	95	85	74	60	43	19
	3x21,15	173	165	156	147	138	127	116	104	90	74	52	23
	3x25,0	189	180	171	161	151	140	127	114	99	81	57	25
	3x35,0	236	225	214	201	188	174	159	142	123	101	71	32
КПпФБК-130	3x10,0	109	104	98	93	87	80	73	66	57	46	33	15
	3x13,3	130	124	117	111	104	96	88	78	68	55	39	18
	3x16,0	144	138	130	123	115	107	97	87	75	62	43	19
	3x21,15	175	167	158	149	140	129	118	106	91	75	53	24
	3x25,0	192	183	174	164	153	142	129	116	100	82	58	26
	3x35,0	235	225	213	201	188	174	159	142	123	100	71	32

КПсПпФБП-130
КПсПпФБК-130

+130 °C | 3,3 кВ | 4,0 кВ | 5,0 кВ | ТУ 3542-061-05015408-2016 | Код ОКПД2 27.32.14.190

КПсПпФБП-130 - cable with copper conductors, with 2 –layers insulation of Polyethylene radiation modified and copolymer of Propylene, with protected sheath of Flouride polymer above the insulation of each core, armor of steel zinc coated tape, flat, long time admission of core heating +130 °C.

КПсПпФБК-130 - cable with copper conductors, with 2 –layers insulation of Polyethylene radiation modified and copolymer of Propylene, with protected sheath of Flouride polymer above the insulation of each core, armor of steel zinc coated tape, round, long time admission of core heating +130 °C.

CONSTRUCTION

1. **Current carrying conductor** - copper;
2. **Insulation** - PE of radiation modified;
3. **Insulation** - copolymer of Propilene;
4. **Protective sheath** - Flouride polymer;
5. **Pad** - as non woven cloth;
6. **Armor** - steel zinc coated or corrosion resistant tape.

NUMBER OF CONDUCTORS AND ITS RATED CROSS- SECTIONS, OUTER DIAMETERS AND WEIGHTS OF CABLES

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПсПпФБП-130	КПсПпФБП-130-4	КПсПпФБП-130-5
3x10,0	13,6x33,8	958	975	993
3x13,3	15,0x37,4	1080	1099	1123
3x16,0	15,0x37,4	1179	1197	1231
3x21,15	16,2x42,5	1378	1396	1427
3x25,0	16,2x42,5	1516	1534	1571
3x35,0	18,0x48,2	1839	1858	1889

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПсПпФБК-130	КПсПпФБК-130-4	КПсПпФБК-130-5
3x10,0	29,0	868	884	919
3x13,3	32,0	993	1010	1046
3x16,0	32,0	1097	1115	1152
3x21,15	35,6	1287	1306	1343
3x25,0	35,6	1427	1446	1485
3x35,0	38,3	1737	1757	1797

LONG TIME CURRENT LOADS FOR THE CABLE

TYPE OF CABLE	CROSS- SECTIONS, MM²	LONG TIME CURRENT LOAD A AT ENVIRONMENT TEMPERATURE, NOT LESS											
		+20 °C	+30 °C	+40 °C	+50 °C	+60 °C	+70 °C	+80 °C	+90 °C	+100 °C	+110 °C	+120 °C	+128 °C
КПсПпФБП-130	3x10,0	106	101	96	91	85	79	72	64	56	45	32	14
	3x13,3	127	121	115	109	102	94	86	77	67	54	38	17
	3x16,0	141	135	128	121	113	104	95	85	74	60	43	19
	3x21,15	173	165	156	147	138	127	116	104	90	74	52	23
	3x25,0	189	180	171	161	151	140	127	114	99	81	57	25
	3x35,0	236	225	214	201	188	174	159	142	123	101	71	32
КПсПпФБК-130	3x10,0	109	104	98	93	87	80	73	66	57	46	33	15
	3x13,3	130	124	117	111	104	96	88	78	68	55	39	18
	3x16,0	144	138	130	123	115	107	97	87	75	62	43	19
	3x21,15	175	167	158	149	140	129	118	106	91	75	53	24
	3x25,0	192	183	174	164	153	142	129	116	100	82	58	26
	3x35,0	235	225	213	201	188	174	159	142	123	100	71	32

КПпЛБП-140 КПпЛпБП-140
КПпЛБК-140 КПпЛпБК-140

+140 °C | 3,3 кВ | 4,0 кВ | 5,0 кВ | ТУ 3542-061-05015408-2016 | Код ОКПД2 27.32.14.190

КПпЛБП-140/ КПпЛпБП-140 - cable with copper conductors, with 2 layers of insulation of Propylene copolymer, with tape bandage above the insulation of each core, armor of steel zinc coated tape, flat, long time admission of core heating +140 °C.

КПпЛБК-140/ КПпЛпБК-140 - cable with copper conductors, with 2 layers of insulation of Propylene copolymer, with tape bandage above the insulation of each core, armor of steel zinc coated tape, round, long time admission of core heating +140 °C.

CONSTRUCTION

1. **Current carrying conductor** - copper;
2. **Insulation** - copolymer of Propilene;
3. **Insulation** - copolymer of Propilene;
4. **Tape bandage:**
   - **Л** - Flouride tape winding;
   - **Лп** - wrapping of polyetheleneftalate film;
5. **Pad** - as non woven cloth;
6. **Armor** - steel zinc coated or corrosion resistant tape.

NUMBER OF CONDUCTORS AND ITS RATED CROSS- SECTIONS, OUTER DIAMETERS AND WEIGHTS OF CABLES

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПпЛБП-140 КПпЛпБП-140	КПпЛБП-140-4 КПпЛпБП-140-4	КПпЛБП-140-5 КПпЛпБП-140-5
3x10,0	13,6x33,8	908	926	944
3x13,3	15,0x37,4	1034	1053	1071
3x16,0	15,0x37,4	1140	1159	1177
3x21,15	16,2x42,5	1331	1351	1370
3x25,0	16,2x42,5	1472	1492	1513
3x35,0	18,0x48,2	1783	1804	1825

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПпЛБК-140 КПпЛпБК-140	КПпЛБК-140-4 КПпЛпБК-140-4	КПпЛБК-140-5 КПпЛпБК-140-5
3x10,0	29,0	914	855	872
3x13,3	32,0	1035	979	996
3x16,0	32,0	1130	1082	1099
3x21,15	35,6	1328	1270	1288
3x25,0	35,6	1466	1409	1427
3x35,0	38,3	1787	1715	1735

LONG TIME CURRENT LOADS FOR THE CABLE

TYPE OF CABLE	CROSS-SECTIONS, MM²	LONG TIME CURRENT LOAD A AT ENVIRONMENT TEMPERATURE, NOT LESS													
		+20 °C	+30 °C	+40 °C	+50 °C	+60 °C	+70 °C	+80 °C	+90 °C	+100 °C	+110 °C	+120 °C	+130 °C	+135 °C	+140 °C
КПпЛБП-140 КПпЛпБП-140	3x10,0	110	105	100	95	90	84	78	71	63	55	45	32	22	0
	3x13,3	129	123	117	111	105	98	91	83	74	64	53	37	26	0
	3x16,0	144	138	132	125	118	110	102	93	83	72	59	42	29	0
	3x21,15	172	165	157	149	141	131	122	111	99	86	70	50	35	0
	3x25,0	191	183	174	165	156	146	135	123	110	95	78	55	39	0
	3x35,0	234	224	213	202	191	178	165	151	135	117	95	67	48	0
КПпЛБК-140 КПпЛпБК-140	3x10,0	109	104	99	94	89	83	77	70	63	54	44	31	22	0
	3x13,3	127	122	116	110	104	97	90	82	74	64	52	37	26	0
	3x16,0	143	136	130	123	116	109	101	92	82	71	58	41	29	0
	3x21,15	170	163	155	147	139	130	120	110	98	85	69	49	35	0
	3x25,0	188	180	172	163	154	144	133	122	109	94	77	54	38	0
	3x35,0	230	221	210	199	188	176	163	149	133	115	94	66	47	0

КПсПпЛБП-140 КПсПпЛпБП-140 КПсПпЛБК-140 КПсПпЛпБК-140

+140 °C | 3,3 кВ | 4,0 кВ | 5,0 кВ | ТУ 3542-061-05015408-2016 | Код ОКПД2 27.32.14.190

КПсПпЛБП-140/ КПсПпЛпБП-140 - cable with copper conductors, with 2 layers insulation of PE and copolymer and with tape bandage above the insulation of each core, armor of steel zinc coated tape, flat, long time admission of core heating +140 °C.

КПсПпЛБК-140/ КПсПпЛпБК-140 - cable with copper conductors, with 2 layers insulation of PE and copolymer and with tape bandage above the insulation of each core, armor of steel zinc coated tape, round, long time admission of core heating +140 °C.

CONSTRUCTION

1. **Current carrying conductor** - copper;
2. **Insulation** - PE of radiation modified;
3. **Insulation** - copolymer of Propilene;
4. **Tape bandage :**
   - **Л** - Flouride tape winding;
   - **Лп** - wrapping of polyetheleneftalate film;
5. **Pad** - as non woven cloth;
6. **Armor** - steel zinc coated or corrosion resistant tape.

NUMBER OF CONDUCTORS AND ITS RATED CROSS- SECTIONS, OUTER DIAMETERS AND WEIGHTS OF CABLES

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПсПпЛБП-140 КПсПпЛпБП-140	КПсПпЛБП-140-4 КПсПпЛпБП-140-4	КПсПпЛБП-140-5 КПсПпЛпБП-140-5
3x10,0	13,6x33,8	479	951	947
3x13,3	15,0x37,4	503	1072	1075
3x16,0	15,0x37,4	517	1172	1182
3x21,15	16,2x42,5	551	1366	1375
3x25,0	16,2x42,5	570	1505	1518
3x35,0	18,0x48,2	614	1822	1831

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПсПпЛБК-140 КПсПпЛпБК-140	КПсПпЛБК-140-4 КПсПпЛпБК-140-4	КПсПпЛБК-140-5 КПсПпЛпБК-140-5
3x10,0	29,0	842	859	875
3x13,3	32,0	967	983	1000
3x16,0	32,0	1069	1087	1104
3x21,15	35,6	1257	1275	1293
3x25,0	35,6	1396	1414	1432
3x35,0	38,3	1703	1721	1741

LONG TIME CURRENT LOADS FOR THE CABLE

TYPE OF CABLE	CROSS-SECTIONS, MM²	LONG TIME CURRENT LOAD A AT ENVIRONMENT TEMPERATURE, NOT LESS													
		+20 °C	+30 °C	+40 °C	+50 °C	+60 °C	+70 °C	+80 °C	+90 °C	+100 °C	+110 °C	+120 °C	+130 °C	+135 °C	+140 °C
КПсПпЛБП-140 КПсПпЛпБП-140	3x10,0	110	105	100	95	90	84	78	71	63	55	45	32	22	0
	3x13,3	129	123	117	111	105	98	91	83	74	64	53	37	26	0
	3x16,0	144	138	132	125	118	110	102	93	83	72	59	42	29	0
	3x21,15	172	165	157	149	141	131	122	111	99	86	70	50	35	0
	3x25,0	191	183	174	165	156	146	135	123	110	95	78	55	39	0
	3x35,0	234	224	213	202	191	178	165	151	135	117	95	67	48	0
КПсПпЛБК-140 КПсПпЛпБК-140	3x10,0	109	104	99	94	89	83	77	70	63	54	44	31	22	0
	3x13,3	127	122	116	110	104	97	90	82	74	64	52	37	26	0
	3x16,0	143	136	130	123	116	109	101	92	82	71	58	41	29	0
	3x21,15	170	163	155	147	139	130	120	110	98	85	69	49	35	0
	3x25,0	188	180	172	163	154	144	133	122	109	94	77	54	38	0
	3x35,0	230	221	210	199	188	176	163	149	133	115	94	66	47	0

КПпФБП-140
КПпФБК-140

+140 °C | 3,3 кВ | 4,0 кВ | 5,0 кВ | ТУ 3542-061-05015408-2016 | Код ОКПД2 27.32.14.190

КПпФБП-140 - cable with copper conductors, with 2 layers of insulation of copolymer of Propylene, with protective sheath of Flour copolymer above the insulation of each core, armor of steel zinc coated tape, flat, long time admission of core heating +140 °C.

КПпФБК-140 - cable with copper conductors, with 2 layers of insulation of copolymer of Propylene, with protective sheath of Flour copolymer above the insulation of each core, armor of steel zinc coated tape, round, long time admission of core heating +140 °C.

CONSTRUCTION

1. **Current carrying conductor** - copper;
2. **Insulation** - copolymer of Propilene;
3. **Insulation** - copolymer of Propilene;
4. **Protective sheath** - Flouride polymer;
5. **Pad** - as non woven cloth;
6. **Armor** - steel zinc coated or corrosion resistant tape.

NUMBER OF CONDUCTORS AND ITS RATED CROSS- SECTIONS, OUTER DIAMETERS AND WEIGHTS OF CABLES

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПпФБП-140	КПпФБП-140-4	КПпФБП-140-5
3x10,0	13,6x33,8	966	991	1007
3x13,3	15,0x37,4	1092	1115	1138
3x16,0	15,0x37,4	1184	1213	1247
3x21,15	16,2x42,5	1393	1412	1443
3x25,0	16,2x42,5	1535	1550	1587
3x35,0	18,0x48,2	1846	1874	1905

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПпФБК-140	КПпФБК-140-4	КПпФБК-140-5
3x10,0	29,0	881	899	933
3x13,3	32,0	1006	1025	1060
3x16,0	32,0	1111	1130	1166
3x21,15	35,6	1301	1321	1358
3x25,0	35,6	1442	1461	1499
3x35,0	38,3	1752	1771	1812

LONG TIME CURRENT LOADS FOR THE CABLE

TYPE OF CABLE	CROSS-SECTIONS, MM²	LONG TIME CURRENT LOAD A AT ENVIRONMENT TEMPERATURE, NOT LESS													
		+20 °C	+30 °C	+40 °C	+50 °C	+60 °C	+70 °C	+80 °C	+90 °C	+100 °C	+110 °C	+120 °C	+130 °C	+135 °C	+140 °C
КПпФБП-140	3x10,0	109	104	100	94	89	83	77	70	63	55	45	31	22	0
	3x13,3	128	123	117	111	105	98	91	83	74	64	52	37	26	0
	3x16,0	143	137	131	124	117	110	101	93	83	72	59	41	29	0
	3x21,15	171	164	156	148	140	131	121	110	99	86	70	49	35	0
	3x25,0	190	182	173	164	155	145	134	122	109	95	77	55	39	0
	3x35,0	232	222	212	201	190	177	164	150	134	116	95	67	47	0
КПпФБК-140	3x10,0	108	103	99	93	88	82	76	70	62	54	44	31	22	0
	3x13,3	127	121	116	110	103	97	90	82	73	63	52	37	26	0
	3x16,0	142	136	129	123	116	108	100	91	82	71	58	41	29	0
	3x21,15	169	162	154	146	138	129	120	109	98	85	69	49	35	0
	3x25,0	187	179	171	162	153	143	132	121	108	94	76	54	38	0
	3x35,0	229	219	209	198	187	175	162	148	132	115	94	66	47	0

КПсПпФБП-140
КПсПпФБК-140

+140 °C | 3,3 кВ | 4,0 кВ | 5,0 кВ | ТУ 3542-061-05015408-2016 | Код ОКПД2 27.32.14.190

КПсПпФБП-140 - cable with copper conductors, with 2 layers of insulation of PE and copolymer of Propylene, with protective sheath of Flouride copolymer above insulation of each core, armor of steel zinc coated tape, flat, with long time admission of core heating +140 °C.

КПсПпФБК-140 - cable with copper conductors, with 2 layers of insulation of PE and copolymer of Propylene, with protective sheath of Flouride copolymer above insulation of each core, armor of steel zinc coated tape, round, with long time admission of core heating +140 °C.

CONSTRUCTION

1. **Current carrying conductor** - copper;
2. **Insulation** - PE of radiation modified;
3. **Insulation** - copolymer of Propilene;
4. **Protective sheath** - Flouride polymer;
5. **Pad** - as non woven cloth;
6. **Armor** - steel zinc coated or corrosion resistant tape.

NUMBER OF CONDUCTORS AND ITS RATED CROSS- SECTIONS, OUTER DIAMETERS AND WEIGHTS OF CABLES

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПсПпФБП-140	КПсПпФБП-140-4	КПсПпФБП-140-5
3x10,0	13,6x33,8	974	994	1011
3x13,3	15,0x37,4	1099	1118	1142
3x16,0	15,0x37,4	1197	1216	1251
3x21,15	16,2x42,5	1396	1416	1447
3x25,0	16,2x42,5	1534	1554	1592
3x35,0	18,0x48,2	1858	1879	1911

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km		
		КПсПпФБК-140	КПсПпФБК-140-4	КПсПпФБК-140-5
3x10,0	29,0	884	902	937
3x13,3	32,0	1019	1028	1064
3x16,0	32,0	1115	1133	1170
3x21,15	35,6	1306	1325	1363
3x25,0	35,6	1446	1466	1505
3x35,0	38,3	1757	1777	1817

LONG TIME CURRENT LOADS FOR THE CABLE

TYPE OF CABLE	CROSS-SECTIONS, MM²	LONG TIME CURRENT LOAD A AT ENVIRONMENT TEMPERATURE, NOT LESS													
		+20 °C	+30 °C	+40 °C	+50 °C	+60 °C	+70 °C	+80 °C	+90 °C	+100 °C	+110 °C	+120 °C	+130 °C	+135 °C	+140 °C
КПсПпФБП-140	3x10,0	109	104	100	94	89	83	77	70	63	55	45	31	22	0
	3x13,3	128	123	117	111	105	98	91	83	74	64	52	37	26	0
	3x16,0	143	137	131	124	117	110	101	93	83	72	59	41	29	0
	3x21,15	171	164	156	148	140	131	121	110	99	86	70	49	35	0
	3x25,0	190	182	173	164	155	145	134	122	109	95	77	55	39	0
	3x35,0	232	222	212	201	190	177	164	150	134	116	95	67	47	0
КПсПпФБК-140	3x10,0	108	103	99	93	88	82	76	70	62	54	44	31	22	0
	3x13,3	127	121	116	110	103	97	90	82	73	63	52	37	26	0
	3x16,0	142	136	129	123	116	108	100	91	82	71	58	41	29	0
	3x21,15	169	162	154	146	138	129	120	109	98	85	69	49	35	0
	3x25,0	187	179	171	162	153	143	132	121	108	94	76	54	38	0
	3x35,0	229	219	209	198	187	175	162	148	132	115	94	66	47	0

НАРОДНОЕ ПРЕДПРИЯТИЕ
ПОДОЛЬСККАБЕЛЬ

HEAT RESISTANT CABLE WITH A COMMON SHELL

WITH LONG TIME TEMPERATURE OF CORE HEATING

+120 ^{0}C | +130 ^{0}C

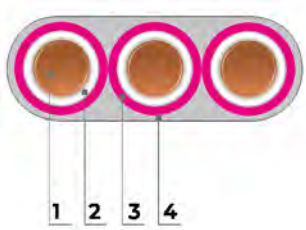
APPLICATION

Cables with three main cores for submersible electric pump installations, designed to supply electrical energy to electric motors of oil production installations for rated alternating voltage 3.3 kV, 4.0 kV and 5.0 kV with a frequency of up to 200 Hz.

The cables are designed to work into bore liquid which contains oil as well as water and gas with following features:

water content up to	100%
pH of associated water	5,0 - 8,5 pH
hydrogen sulfide concentration, not more than	1,25 г/л
hydrostatic pressure, not more than	40 МПа
gas-oil ratio, not more than	500 м³/т

CONSTRUCTION



FLAT CABLE unarmored

FLAT CABLE armored

1. **Current carrying conductor**
2. **The 1 –st layer of insulation**
3. **The 2-nd layer of insulation**
4. **Overall protective sheath.**

1. **Current carrying conductor**
2. **The 1 –st layer of insulation**
3. **The 2-nd layer of insulation**
4. **General shell;**
5. **Pad**
6. **Armor**

The cables can be made with different types of protective armor:
- **«Б»** - steel zinced tape;
- **«Бк»** - is tape of stainless corrosion resistant steel.

For the cables with rated voltage 4.0 and 5.0 kV figures 4 or 5 are added through mark .

Пример записи условного обозначения при заказе и в документации:

КПвОП-130 3х25,0-4 ТУ 27.32.14-070-05015408-2024
cable with copper conductors, with two-layer insulation made of radiation-modified polyethylene, with a common sheath made of propylene-ethylene block copolymers, flat, with a long-term permissible heating temperature of the conductors of +130 ° C, with three main conductors with a nominal cross-section of 25.0 mm² , for a rated voltage of 4.0 kV.

КПвОппБкП-130 3х16,0-3,3 ТУ 27.32.14-070-05015408-2024
cable with copper conductors, with two-layer insulation made of radiation-modified polyethylene, with a common sheath made of propylene-ethylene block copolymers, armored with a stainless steel tape, flat, with a long-term permissible heating temperature of the conductors of +130 ° C, with three main conductors with a nominal cross-section of 16.0 mm², for a rated voltage of 3.3 kV.

TECHNICAL SPECIFICATIONS

Climate version for moderate cold climate. Categories of deployment 1 – 5 by GOST 15150 – 69, FOR OPERATION IN BORE LIQUID.

In static condition the cables resist to the impact of temperature fluctuation from minus 60 to long time admission of core long heating temperature for certain cable type.

Winding of cable and hoist – down operations can be at air temperature not low than minus 40 C⁰.

At winding and hoist and down operations bending radius is :
- not less 300 mm for the cores with cross - section10-16 mm²;
- not less 360 mm the cores with cross – section 21,15 mm²;
- not less 380 mm the cores with cross – section 25 mm²;
- not less 420 mm the cores with cross – section 35 mm²;

The cable withstands bending around rollers with a diameter equal to 15 times the maximum cable diameter at an air temperature of no less than -40°C and during temperature cycling between -40°C and +90°C.

Hoist and down of the cable to the bore shall go smoothly with the speed not more than 0.25 m per a second.

When tube column in the bore passes the section with curve more than 1,5 degrees per 10 meters, or passes to less diameter in the bore, the speed not more than 0,1 m per a second both in hoist or down

When the cable is fixed to tubes of pump and compressor, take care the cable shall not twist around the tubes and flat cable shall not get twisted around its own axis.

Electrical resistance of insulation of major cores recalculated to the length of 1 km and temperature 20 C⁰ shall be not less than 2500 Mohms.

The cables can sustain crushing not less 158 kN.

Insulated cores are sealed in a longer direction at drop of liquid pressure 0,02 MPa per 1 km of the length.

The cables shall pass DC voltage tests 18 kV within not less than 5 minutes . As a result, leakage current in insulation, recalculated to 1 km length and temperature 20 C⁰ shall not exceed $1*10^{-5}$ A.

The required length of the cable is agreed when order is formed.

The cables correspond to the general requirements of ГОСТ Р 51777-2001.

КПвОП-120
КПвОП-130

+120 °C | +130 °C | 3,3 кВ | 4,0 кВ | ТУ 27.32.14-070-05015408-2024 | Код ОКПД2 27.32.14.190

КПвОП-120 / КПвОП-130 - cable with copper conductors with two-layer insulation made of radiation-modified polyethylene, with a overall protective sheath, flat, with a long-term permissible heating temperature of the conductors +120 / +130 °C°.

CONSTRUCTION

1. **Current carrying conductor** - copper;
2. **Insulation** - radiation-modified high-density polyethylene;
3. **Insulation** - radiation-modified high-density polyethylene;
4. **Overall protective sheath** - polyolefin composition.

NUMBER OF CONDUCTORS AND ITS RATED CROSS- SECTIONS, OUTER DIAMETERS AND WEIGHTS OF CABLES

CROSS- SECTIONS, ММ²	OUTER DIMENSIONS OF THE CABLE , ММ	РАСЧЕТНАЯ МАССА КАБЕЛЯ, КГ/КМ	OUTER DIMENSIONS OF THE CABLE , ММ	РАСЧЕТНАЯ МАССА КАБЕЛЯ, КГ/КМ
	КПвОП-120 / КПвОП-130		КПвОП-120-4 / КПвОП-130-4	
3x10,0	13,3x32,2	510	13,7x33,4	532
3x13,3	14,0x34,3	633	14,4x35,5	657
3x16,0	14,4x35,5	713	14,8x36,7	738
3x21,15	15,1x37,6	879	15,5x38,8	905
3x25,0	15,5x38,8	1002	15,9x40,0	1029
3x35,0	16,6x42,1	1308	17,0x43,3	1338

LONG TIME CURRENT LOADS FOR THE CABLE

TYPE OF CABLE	CROSS- SECTIONS, ММ²	LONG TIME CURRENT LOAD A AT ENVIRONMENT TEMPERATURE, NOT LESS											
		+20 °C	+30 °C	+40 °C	+50 °C	+60 °C	+70 °C	+80 °C	+90 °C	+100 °C	+110 °C	+115 °C	+120 °C
КПвОП-120	3x10,0	94	89	84	79	73	66	59	52	42	30	21	0
	3x13,3	111	105	99	93	86	78	70	61	50	35	25	0
	3x16,0	124	118	111	104	96	88	79	68	56	39	28	0
	3x21,15	148	140	132	124	114	104	93	81	66	47	33	0
	3x25,0	164	155	146	137	127	116	103	90	73	52	37	0
	3x35,0	200	190	179	168	155	142	127	110	90	63	45	0

TYPE OF CABLE	CROSS- SECTIONS, ММ²	LONG TIME CURRENT LOAD A AT ENVIRONMENT TEMPERATURE, NOT LESS												
		+20 °C	+30 °C	+40 °C	+50 °C	+60 °C	+70 °C	+80 °C	+90 °C	+100 °C	+110 °C	+120 °C	+125 °C	+130 °C
КПвОП-130	3x10,0	97	93	88	83	78	72	66	59	51	41	29	21	0
	3x13,3	115	109	104	98	91	85	77	69	60	49	35	24	0
	3x16,0	129	123	116	110	103	95	87	78	67	55	39	27	0
	3x21,15	153	146	138	130	122	113	103	92	80	65	46	33	0
	3x25,0	169	161	153	144	135	125	114	102	88	72	51	36	0
	3x35,0	207	198	188	177	165	153	140	125	108	88	63	44	0

При эксплуатации кабеля в газовоздушной среде скважины, а так же если часть кабеля находится в скважинной жидкости, а другая его часть в газовоздушной среде скважины, величину длительно допустимого тока нагрузки кабеля снизить на 20% от указанной в таблицах.

КПвОппБП-120
КПвОппБкП-120

+120 °C | 3,3 кВ | 4,0 кВ | 5,0 кВ | ТУ 27.32.14-070-05015408-2024 | Код ОКПД2 27.32.14.190

КПвОппБП-120 - cable with copper conductors with two-layer insulation made of radiation-modified polyethylene, with a common sheath made of propylene copolymers, armored with galvanized steel tape, flat, with a long-term permissible heating temperature of the conductors of +120 ° C.

КПвОппБкП-120 - cable with copper conductors with two-layer insulation made of radiation-modified polyethylene, with a common sheath made of propylene copolymers, armored with a stainless steel tape, flat, with a long-term permissible heating temperature of the conductors of +120 ° C.

CONSTRUCTION

1. **Current carrying conductor** - copper;
2. **Insulation** - radiation-modified high-density polyethylene;
3. **Insulation** - radiation-modified high-density polyethylene;
4. **General shel**l - propylene copolymer;
5. **Pad** – as non woven cloth;
6. **Armor**:
   - **«Б»** - galvanized steel tape;
   - **«Бк»** - stainless steel tape.

NUMBER OF CONDUCTORS AND ITS RATED CROSS- SECTIONS, OUTER DIAMETERS AND WEIGHTS OF CABLES

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km
	КПвОппБП-120 / КПвОппБкП-120		КПвОппБП-120-4 / КПвОппБкП-120-4		КПвОппБП-120-5 / КПвОппБкП-120-5	
3x10,0	14,8x32,5	953 / 980	14,8x32,5	923 / 870	15,2x33,7	964 / 909
3x13,3	15,5x34,6	1100 / 1129	15,5x34,6	1080 / 1022	15,9x35,8	1120 / 1060
3x16,0	15,9x35,8	1205 / 1235	15,9x35,8	1172 / 1113	16,3x37,0	1211 / 1150
3x21,15	16,6x37,9	1394 / 1426	16,6x37,9	1364 / 1301	17,0x39,1	1405 / 1340
3x25,0	17,0x39,1	1549 / 1582	17,0x39,1	1506 / 1440	17,4x40,3	1548 / 1481
3x35,0	17,7x41,2	1807 / 1738	18,1x42,4	1851 / 1780	18,5x43,6	1895/1823

LONG TIME CURRENT LOADS FOR THE CABLE

TYPE OF CABLE	CROSS- SECTIONS, MM²	LONG TIME CURRENT LOAD A AT ENVIRONMENT TEMPERATURE, NOT LESS											
		+20 °C	+30 °C	+40 °C	+50 °C	+60 °C	+70 °C	+80 °C	+90 °C	+100 °C	+110 °C	+115 °C	+120 °C
КПвОппБП-120 КПвОппБкП-120	3x10,0	96	91	86	81	75	68	61	53	43	30	22	0
	3x13,3	115	109	103	96	89	81	72	63	51	36	26	0
	3x16,0	128	122	115	107	99	91	81	70	57	41	29	0
	3x21,15	155	147	139	130	120	110	98	85	69	49	35	0
	3x25,0	171	162	153	143	133	121	108	94	77	54	38	0
	3x35,0	206	195	184	172	160	146	130	113	92	65	46	0
КПвОппБП-120-4 КПвОппБкП-120-4	3x10,0	97	92	87	81	75	69	62	53	44	31	22	0
	3x13,3	116	110	103	97	90	82	73	63	52	37	26	0
	3x16,0	129	123	116	108	100	91	82	71	58	41	29	0
	3x21,15	156	148	140	131	121	111	99	86	70	49	35	0
	3x25,0	172	164	154	144	134	122	109	94	77	55	39	0
	3x35,0	207	197	186	174	161	147	131	114	93	66	46	0
КПвОппБП-120-5 КПвОппБкП-120-5	3x10,0	98	93	88	82	76	69	62	54	44	31	22	0
	3x13,3	117	111	104	98	90	82	74	64	52	37	26	0
	3x16,0	130	124	116	109	101	92	82	71	58	41	29	0
	3x21,15	157	149	141	132	122	111	100	86	70	50	35	0
	3x25,0	174	165	155	145	134	123	110	95	78	55	39	0
	3x35,0	209	198	187	175	162	148	132	114	93	66	47	0

КПвОппБП-130
КПвОппБкП-130

+130 °C | 3,3 кВ | 4,0 кВ | 5,0 кВ | ТУ 27.32.14-070-05015408-2024 | Код ОКПД2 27.32.14.190

КПвОппБП-130 - cable with copper conductors with two-layer insulation made of radiation-modified polyethylene, with a common sheath of block copolymers of propylene and ethylene, armored with galvanized steel tape, flat, with a long-term permissible heating temperature of the conductors of +130 ° C.

КПвОппБкП-130 - cable with copper conductors with two-layer insulation made of radiation-modified polyethylene, with a common sheath of block copolymers of propylene and ethylene, armored with a stainless steel tape, flat, with a long-term permissible temperature of heating the conductors of +130 ° C.

CONSTRUCTION

1. **Current carrying conductor** - copper;
2. **Insulation** - radiation-modified high-density polyethylene;
3. **Insulation** - radiation-modified high-density polyethylene;
4. **General shel**l - a propylene / ethylene block copolymer;
5. **Pad** – as non woven cloth;
6. **Armor**:
   - **«Б»** - galvanized steel tape;
   - **«Бк»** - stainless steel tape.

NUMBER OF CONDUCTORS AND ITS RATED CROSS- SECTIONS, OUTER DIAMETERS AND WEIGHTS OF CABLES

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km
	КПвОппБП-130 / КПвОппБкП-130		КПвОппБП-130-4 / КПвОппБкП-130-4		КПвОппБП-130-5 / КПвОппБкП-130-5	
3x10,0	13,6x33,8	901 / 927	14,8x32,5	942 / 1164	15,2x33,7	979
3x13,3	15,0x37,4	1050 / 1078	15,5x34,6	1093 / 1373	15,9x35,8	1132
3x16,0	15,0x37,4	1146 / 1175	15,9x35,8	1189 / 1507	16,3x37,0	1229
3x21,15	16,2x42,5	1351 / 1382	16,6x37,9	1397 / 575	17,0x39,1	1438
3x25,0	16,2x42,5	1488 / 1520	17,0x39,1	1535 / 595	17,4x40,3	1577
3x35,0	17,7x41,2	1807/1738	18,1x42,4	1851/1780	18,5x43,6	1895/1823

LONG TIME CURRENT LOADS FOR THE CABLE

TYPE OF CABLE	CROSS- SECTIONS, MM²	LONG TIME CURRENT LOAD A AT ENVIRONMENT TEMPERATURE, NOT LESS												
		+20 °C	+30 °C	+40 °C	+50 °C	+60 °C	+70 °C	+80 °C	+90 °C	+100 °C	+110 °C	+120 °C	+125 °C	+130 °C
КПвОппБП-130 КПвОппБкП-130	3x10,0	100	95	90	85	80	74	67	60	52	44	30	21	0
	3x13,3	119	113	107	101	95	88	80	71	62	52	36	25	0
	3x16,0	133	126	120	113	106	98	89	80	69	58	40	28	0
	3x21,15	161	153	145	137	128	119	108	97	84	70	48	34	0
	3x25,0	177	169	160	151	141	131	119	107	92	77	53	38	0
	3x35,0	213	203	193	182	170	157	144	129	111	95	64	45	0
КПвОппБП-130-4 КПвОппБкП-130-4	3x10,0	101	96	91	86	80	74	68	61	53	44	30	21	0
	3x13,3	120	114	108	102	95	88	81	72	62	52	36	25	0
	3x16,0	134	127	121	114	107	99	90	81	70	58	40	28	0
	3x21,15	162	154	146	138	129	119	109	98	84	70	49	34	0
	3x25,0	178	170	161	152	142	132	120	108	93	77	54	38	0
	3x35,0	215	205	194	183	171	158	145	129	112	95	65	46	0
КПвОппБП-130-5 КПвОппБкП-130-5	3x10,0	102	97	92	87	81	75	69	61	53	44	31	22	0
	3x13,3	121	115	109	103	96	89	81	73	63	52	36	26	0
	3x16,0	135	128	122	115	107	99	91	81	70	58	41	29	0
	3x21,15	163	155	147	139	130	120	110	98	85	70	49	35	0
	3x25,0	179	171	162	153	143	133	121	108	94	77	54	38	0
	3x35,0	216	206	195	184	172	159	146	130	113	95	65	46	0

НАРОДНОЕ ПРЕДПРИЯТИЕ
ПОДОЛЬСККАБЕЛЬ

HEAT RESISTANT CABLE WITH FLUOROPLASTIC INSULATION

WITH LONG TIME TEMPERATURE OF CORE HEATING

+230 ^{0}C

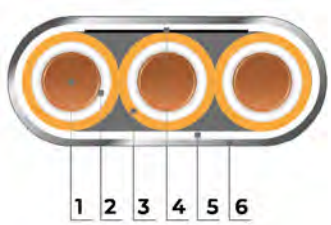
APPLICATION

A flat, heat-resistant cable designed to supply electrical power to the electric motors of oil extraction units—including in aggressive environments—at rated AC voltages of 3.3 kV, 4.0 kV, and 5.0 kV and frequencies up to 200 Hz.

The cables are designed to work into bore liquid which contains oil as well as water and gas with following features:

water content	100%
pH of accompany water	5,0 - 8,5 pH
concentration of Sulfur Hydrogen for the cables armor of steel zinced tape, not more than, gram per liter	0,01 г/л
concentration of Sulfur Hydrogen for the cables of stainless steel tape resistant to corrosion, MPa, not more	1,25 г/л
hydrostatic pressure, not more	40 МПа
газовый фактор, не более	500 м³/т
Unlimited gas-oil ratio is permitted	

CONSTRUCTION



FLAT CABLE

1. **Current carrying conductor**
2. **The 1 –st layer of insulation**
3. **The 2-nd layer of insulation**
4. **Marking tape**
5. **Pad**
6. **Armor**

The cables can be made with different types of protective armor:

- **«Б»** - steel zinced tape;
- **«Бк»** - is tape of stainless corrosion resistant steel.

For the cables with rated voltage 4.0 and 5.0 kV figures 4 or 5 are added through mark.

The example of conventional nomination of a cable in the order or in the documentation:

КИФБП-230-4 3х10,0 ТУ 16.К13-066-2022
flat cable with copper conductors, featuring a first insulation layer of polyimide-fluoroplastic film and a second insulation layer of extruded fluoropolymer, armored with stainless steel tape, with a temperature rating of +230°C, a nominal cross-section of 10.0 mm², and a rated voltage of 4.0 kV.

TECHNICAL SPECIFICATION

Climate version for moderate cold climate. Categories of deployment 1 – 5 by GOST 15150 – 69, for operation in bore liquid.

In a static state, the cables are resistant to temperature fluctuations ranging from -60°C to the maximum permissible long-term conductor operating temperature of +230°C.

Winding of cable and hoist – down operations can be at air temperature not low than minus 40 C⁰.

Кабель выдерживает изгибы вокруг роликов диаметром, равным 15-кратному максимальному диаметру кабеля при температуре воздуха не ниже минус 40 ⁰С и смене температур от минус 40 ⁰С до длительно допустимой температуры нагрева жил +230 ⁰С.

Hoist and down of the cable to the bore shall go smoothly with the speed not more than 0.25 m per a second.

When tube column in the bore passes the section with curve more than 1,5 degrees per 10 meters, or passes to less diameter in the bore, the speed not more than 0,1 m per a second both in hoist or down.

When the cable is fixed to tubes of pump and compressor, take care the cable shall not twist around the tubes and flat cable shall not get twisted around its own axis.

Electrical resistance of insulation of major cores recalculated to the length of 1 km and temperature 20 C⁰ shall be not less than 2500 Mohms.

The cables can sustain crushing not less 158 kN.

The required length of the cable is agreed when order is formed.

Guaranteed term of cable operation is 2 years since operation of cable started. Operation term does not include the period of storing provided that guaranteed term of storing is not exceeded.

Storing guaranteed term is 1 year since shipment.

Service life of the cable at right conditions of storing is not less 5,5 years.

The cables correspond to the general requirements of ГОСТ Р 51777-2001.

КИФБП-230
КИФБкП-230

+230 °C | 3,3 кВ | 4,0 кВ | 5,0 кВ | ТУ 16.К13-066-2022 | Код ОКПД2 27.32.14.190

КИФБП-230 - flat cable with copper conductors, dual-layer insulation (polyimide-fluoroplastic film and extruded fluoropolymer), and galvanized steel tape armor, with a long-term permissible conductor operating temperature of +230°C..

КИФБкП-230 - flat cable with copper conductors, dual-layer insulation (polyimide-fluoroplastic film and extruded fluoropolymer), and stainless steel tape armor, with a maximum permissible long-term conductor operating temperature of +230°C.

CONSTRUCTION

1. **Conductor** – copper;
2. **Insulation** – polyimide-fluoroplastic film;
3. **Insulation** – extruded fluoropolymer;
4. **Wrapping** – glass tape
5. **Pad** - as non woven cloth;
6. **Armor:**
   - **«Б»** - steel zinced tape;
   - **«Бк»** - is tape of stainless corrosion resistant steel.

NUMBER OF CONDUCTORS AND ITS RATED CROSS- SECTIONS, OUTER DIAMETERS AND WEIGHTS OF CABLES

CROSS- SECTIONS, MM²	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km	OUTER DIMENSIONS OF THE CABLE , MM	CALCULATED CABLE WEIGHT, kg/km
	КИФБП-230 / КИФБкП-230		КИФБП-230-4 / КИФБкП-230-4		КИФБП-230-5 / КИФБнкП-230-5	
3x10,0	10,6x24,8	733 / 697	10,8x25,4	758 / 720	11,0x26,0	782 / 744
3x13,3	11,2x26,4	864 / 825	11,4x27,0	891 / 851	11,6x27,6	916 / 875
3x16,0	11,5x27,5	974 / 933	11,7x28,1	1001 / 958	11,9x28,7	1028 / 984
3x21,15	12,3x29,7	1261 / 1277	12,5x30,3	1289 / 1305	12,7x30,9	1318 / 1334
3x25,0	12,7x31,0	1546 / 1563	12,9x31,6	1275 / 1592	13,1x32,2	1604 / 1622

LONG TIME CURRENT LOADS FOR THE CABLE

CROSS- SECTIONS, MM²	LONG TIME CURRENT LOAD A AT ENVIRONMENT TEMPERATURE, NOT LESS										
	+20 °C	+30 °C	+40 °C	+50 °C	+60 °C	+70 °C	+80 °C	+90 °C	+100 °C	+110 °C	+120 °C
3x10,0	112	109	106	103	101	98	94	91	88	85	81
3x13,3	132	129	126	122	119	115	112	108	104	100	96
3x16,0	149	145	142	138	134	130	126	122	117	113	108
3x21,15	179	175	171	166	161	157	152	146	141	136	130
3x25,0	200	195	190	185	180	174	169	163	157	151	145

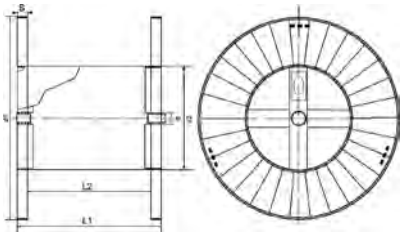
CROSS- SECTIONS, MM²	LONG TIME CURRENT LOAD A AT ENVIRONMENT TEMPERATURE, NOT LESS											
	+130 °C	+140 °C	+150 °C	+160 °C	+170 °C	+180 °C	+190 °C	+200 °C	+210 °C	+220 °C	+225 °C	+230 °C
3x10,0	77	73	69	65	60	55	49	42	34	24	17	0
3x13,3	91	87	82	76	71	65	58	50	41	29	20	0
3x16,0	103	98	92	86	80	73	65	56	46	33	23	0
3x21,15	124	117	111	104	96	88	78	68	55	39	28	0
3x25,0	138	131	123	115	107	98	87	76	62	44	31	0

When the cable is operated in the gas-air environment of a well, or if part of the cable is submerged in well fluid while the other part is in the gas-air environment, the permissible continuous load current must be reduced by 20% relative to the values specified in the tables.

A4

SIZES AND WEIGHT OF METALLIC REELS

TYPE OF THE REEL	D1 FLANGE DIAMETER, MM	D2 BARREL DIAMETER, MM	D BORE DIAMETER, MM	L2 BARREL LENGTH, MM	L1 REEL LENGTH, MM	S ROUND LENGTH, MM	WEIGHT, KG
18	1800	890(±7)	107(±1)	1000	1170	8x50	220
20	2000	800	92	1000	1130	12x60	322
20	1950	800	92	1000	1130	12x65	285



APPROXIMATE CALCULATION OF CABLE LENGTH AT THE REEL

CABLE TYPE	CROSS-SECTIONS, MM²	MAXIMAL LENGTH OF CABLE WINDING AT THE REEL , M	
		REEL N 18 – METAL	REEL N 20 – METAL
КПБП-90	3x10,0	2500	3650
	3x13,3	2250	3300
	3x16,0	2050	3050
	3x21,15	1850	2750
	3x25,0	1700	2500
	3x35,0	1450	2200
КПБК-90	3x10,0	2300	3400
	3x13,3	2100	3100
	3x16,0	1950	2900
	3x21,15	1750	2550
	3x25,0	1600	2350
	3x35,0	1350	2000
КПпБП-120	3x10,0	2600	3750
	3x13,3	2350	3450
	3x16,0	2200	3200
	3x21,15	1850	2750
	3x25,0	1700	2500
	3x35,0	1500	2200
КПпБК-120	3x10,0	2400	3500
	3x13,3	2350	3100
	3x16,0	2350	2900
	3x21,15	1600	2350
	3x25,0	1600	2350
	3x35,0	1350	2000
КПсПБП-120	3x10,0	2700	4000
	3x13,3	2450	3600
	3x16,0	2250	3300
	3x21,15	1850	2750
	3x25,0	1700	2600
	3x35,0	1450	2300
КПсПБК-120	3x10,0	2600	3750
	3x13,3	2350	3450
	3x16,0	2200	3200
	3x21,15	1800	2700
	3x25,0	1500	2300
	3x35,0	1300	2000

CABLE TYPE	CROSS-SECTIONS, MM²	MAXIMAL LENGTH OF CABLE WINDING AT THE REEL , M	
		REEL N 18 – METAL	REEL N 20 – METAL
КПсПпБП-120	3x10,0	2900	4200
	3x13,3	2600	3800
	3x16,0	2400	3550
	3x21,15	2000	2950
	3x25,0	1700	2500
	3x35,0	1450	2200
КПсПпБК-120	3x10,0	2700	4000
	3x13,3	2450	3600
	3x16,0	2250	3300
	3x21,15	1850	2750
	3x25,0	1600	2350
	3x35,0	1350	050
КПсПБП-130	3x10,0	2600	3750
	3x13,3	2350	3450
	3x16,0	2200	3200
	3x21,15	1850	2750
	3x25,0	1700	2500
	3x35,0	1500	2200
КПсПБК-130	3x10,0	2400	3550
	3x13,3	2150	3250
	3x16,0	2000	3000
	3x21,15	1750	2550
	3x25,0	1600	2350
	3x35,0	1350	2050
КПсПпБП-130	3x10,0	2700	4000
	3x13,3	2450	3600
	3x16,0	2250	3300
	3x21,15	1850	2750
	3x25,0	1700	2500
	3x35,0	1450	2200
КПсПпБК-130	3x10,0	2600	3750
	3x13,3	2350	3450
	3x16,0	2200	3200
	3x21,15	1800	2700
	3x25,0	1500	2300
	3x35,0	1300	2000

THE POSITION OF REELS IN THE VEHICLE – FOR REFERENCE

REEL NUMBER	ROOFED RAIL CAR WITH LOAD CAPACITY 63,0 MT	LORRY / AMOUNT				
		8,0 MT CAPACITY LENGTH 5,4 M WIDTH 2,2 M	10,0 MT CAPACITY LENGTH 6,4 M WIDTH 2,2 M	14,0 MT CAPACITY LENGTH 9,8 M WIDTH 2,2 M	20,0 MT CAPACITY EUROTRUCK SEMITRAILER LENGTH 13,5 M WIDTH 2,3 M	20,0 MT CAPACITY SEMITRAILER LENGTH 11,0 M WIDTH 2,2 M
18	14	3	7	5	8	6
20	12	2	2	3	6	6

NOTES

Cable weights and design dimensions are provided for reference purposes. The manufacturer reserves the right to deviate from the stated values for various designs.

The information contained in this publication does not constitute a public offer as defined by Article 437 of the Civil Code of the Russian Federation. The technical specifications for the cables are provided for reference purposes only and are purely informational in nature. Due to the company's ongoing process of technological improvement and product range expansion, product designs and technical specifications are subject to change. Please contact our specialists if you have any questions.

142103, Россия,
Московская область,
г.о. Подольск,
ул. Бронницкая, дом 11

Отдел продаж
8 (800) 302 78 83
office@podolskkabel.ru
podolskkabel.ru