CATALOG

About the Company

“E. SYSTEMS” Limited Liability Company is a dynamicallydeveloping manufacturer of electrical products established in the territory of the Republic of Uzbekistan. To date, the equipment installed at the enterprise allows manufacturing various standard sizes of copper bus bars, cables, metal structures, metal products, and electrical equipment. The manufacturing complex of “E. SYSTEMS” LLC outputs the following types of products:

- **COPPER AND ALUMINUM BUS BARS;**
- **COPPER STRUCTURAL SHAPES, ROUND BARS, AND HEXAGONAL BARS;**
- **COPPER AND ALUMINUM WIRE AND BARE CONDUCTORS;**
- **PET-155 AND PEEA-155 ENAMELED COPPER AND ALUMINUM WIRES;**
- **APPLIANCE CABLES;**
- **POWER CABLES.**

The company has created 140 jobs for residents of the Tashkent region.

Extruded and Sized Copper Rods

(ГОСТ 1535-2016)

Our company produces extruded and sized copper rods, which are manufactured with 100% smelting of melt of the M0 brand copper cathodes. Each batch of copper rods is inspected for its technical state at the certified laboratory of the enterprise.
Our products have excellent performance characteristics:

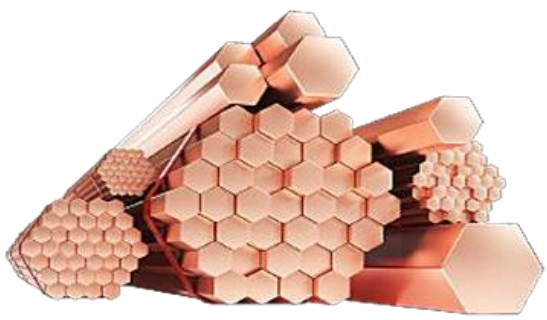
- increased electrical conductivity;
- operational reliability;
- corrosion resistance;
- long service life;
- appearance in accordance with GOST

Extruded copper rods are manufactured in any diameter in the range of 25.5 to 61.5 mm, and sized copper rods are made in the range of 18 to 33 mm.

Extruded		sized	
Size (d)	**Weight (kg/m)**	**Size (d)**	**Weight (kg/m)**
25,5	**4,538**	**18**	**2,261**
26,5	**4,901**	**24**	**4,020**
28,5	**5,668**	**27**	**5,087**
31,5	**6,925**	**30**	**6,281**
33,5	**7,832**	**33**	**7,600**
39,5	**10,888**		
41,5	**12,019**		
46,5	**15,155**		
61,5	**26,395**		

Copper Hexagonal Bars (GOST 1535-2016)

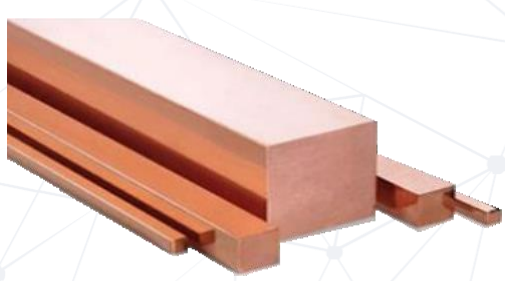
A copper hexagonal bar is a long-length bar in the form of a regular hexagon with a cross-section. The diameter of the inscribed circle is of 5 to 50 mm, the length is of 2 to 6 meters:



Size (d)	Weight (kg/m)
18x21	2,546
30x35	7,073
41x47	12,755
50x58	19,424

Bas Bars, Structural Shapes, and Square Bars (GOST 434-78)

Our copper bus bars, structural shapes and square bars have such highly-demanded characteristics as:
- structural versatility, which ensures easy installation and dismantling;
- excellent flexibility, which allows products to retain all useful characteristics in a deformed state;
- high melting point, which guarantees a certain degree of fire safety under increased loads and overloads;
- corrosion resistance;
- long service life.



Copper solid bus bars (GOST 434-78)

Are manufactured in any size in the range of width of 12.5 to 160 mm, and in terms of thickness, they are manufactured in the range of 3 to 20 mm. It is possible to manufacture bus bars 2 to 6 meters long:

Copper Bus Bars

Size	Weight (kg/m)	Size	Weight (kg/m)
20x3	0,526	40x3	1,059
20x4	0,707	40x4	1,415
20x5	0,881	40x5	1,770
20x8	1,415	40x6	2,126
20x10	1,770	40x8	2,837
25x3	0,659	40x10	3,548
25x5	1,104	40x12	4,260
25x8	1,770	40x20	7,104
30x3	0,792	40x40	14,216
30x4	1,059	50x3	1,326
30x5	1,326	50x4	1,770
30x6	1,593	50x5	2,215
30x7	1,859	50x6	2,659
30x8	2,126	50x8	3,548
30x10	2,659	50x10	4,437
60x4	2,126	80x20	14,216
60x5	2,659	90x10	7,993
60x6	3,193	99x9	7,913
60x8	4,260	100x6	5,326
60x10	5,326	100x8	7,104
60x12	6,393	100x10	8,882
60x16	8,527	100x12	10,660
70x4	2,482	120x10	10,660
70x5	3,104	120x12	12,794
70x10	6,215	120x20	21,328
80x5	3,548	140x15	18,661
80x8	5,682	150x10	13,327
80x10	7,104	160x10	14,216
80x15	10,660	160x15	21,328

Copper square bars (GOST 434-78)

Are non-ferrous metal products in the form of square cross-section bars. Products are manufactured with cross-section sizes of 5x5 mm to 50x50 mm and lengths of 2 to 6 meters.

(Soft and Hard) Copper Wire .

(GOST 839-2019)

Has a small cross-sectional diameter in relation to its length; it is made of various copper alloys by cold deformation.
MM – soft copper wire (annealed);
MT – hard copper wire (unannealed).
Copper wire is a product characterized by high strength, plasticity, flexibility, thermal and electrical conductivity, and resistance to aggressive environments, which has a small weight. So it is used in many areas of industry, primarily as an electric current conductor. For example:
- electric power engineering, electrical engineering (manufacture of wires, cores, cables, windings);
- mechanical engineering, instrument-making industry;
- the aviation industry;
- construction;
- television and radio communications sector;

(Soft and Hard) Copper Wire is manufactured with a nominal diameter of 0.90 to 4.00 mm inclusive and is shipped at the buyer's request in coils or wound in spools, or in boxes with all options sold by weight.

PET-155 and PEEA-155 Enameled Wires

(GOST 21428-75)

Wiring wires are wires used to manufacture windings of electrical machines, devices, and instruments. A significant number of winding wires are also used in the production of instruments, various radio engineering devices, televisions, aviation and space equipment, etc. PET-155 and PEEA-155 are enameled round copper and aluminum wires with a temperature index of 155°C.

Enamel wires made of copper (PET-155) or aluminum (PEEA-155) have varnish-based insulation. To provide them with a high-strength and wear-resistant enamel coating, polyester, polyurethane, and polyvinyl acetal varnishes are used. The insulation obtained is characterized by a fairly high degree of elasticity and has excellent protective and electrical insulating properties. The wire insulation is resistant to:

- thermal shock at a temperature of 155 ± 5 °C.

Main features:

- high strength, though having a small cross-section, and excellent flexibility;

- excellent electrical conductivity and good thermal conductivity;

- the ability to maintain its performance characteristics over a wide temperature range;

- resistance to organic technical liquids such as solvents, toluene, transformer oil;

- stability of electrical resistance throughout the entire service life.

The winding wire diameter is of 0.90 to 2.50 mm, It is shipped wound on reels.

Uninsulated A, AC, M Wires

(GOST 839-2019)

A, AC, M wires, which are items of our own production, are manufactured with the use of modern equipment in accordance with quality requirements. They can be used for various purposes, such as overhead power line wires, grounding wires, and others. They have excellent electrical conductivity, low resistance and good resistance to overloads and heating. The service life of the wires is at least 45 years.

A

AC

M

Wire grade	Wire design	Primarily used
A	Wire twisted from aluminum wires	In the atmosphere of I and II air types, provided that the content of sulfur dioxide in the atmosphere is no more than 150 mg/m^2 per day (1.5 mg/m^3) on land in all macroclimatic regions
AC	Wire consisting of a steel strand and aluminum wires	In the atmosphere of I and II air types, provided that the content of sulfur dioxide in the atmosphere is no more than 150 mg/m^2 per day (1.5 mg/m^3) on land in all macroclimatic regions
M	Wire consisting of one or twisted from several copper wires	In the atmosphere of II and III air types on land and sea in all macroclimatic regions

Design parameters of A grade wires

Nominal cross-section	Cross-section	Diameter	DC resistance of the wire at 20°C ± 1, max	Breaking strength of wire, min	Wire weight
mm^2	mm^2	mm	Ohm/km	N	kg/km
25	24,93	6,39	1,1498	4500	68,0
35	34,62	7,53	0,8347	5913	94,4
50	49,50	9,00	0,5784	8198	134,9
70	66,71	10,65	0,4131	11288	184,5
95	93,96	12,55	0,3114	14784	256,2
120	116,93	14,00	0,2459	19890	318,9
150	147,99	15,75	0,1944	24420	403,6
185	182,7	17,50	0,1574	29832	498,2

Design parameters of AC grade wires

Nominal cross section	Cross-section aluminum/ steel	Diameter		DC resistance of the wire at 20°C. ± 1, max	Breaking strength of wire, min	Wire weight	
		of wire	of steel strand			aluminum parts	steel strand
mm^2	mm^2	mm	mm	Ohm/km	N	kg/km	kg/km
10/1,8	10,6/1,77	4,5	1,5	2,7064	4089	29,04	13,91
16/2,7	16/2,69	5,55	1,85	1,7818	6220	44,18	21,17
25/4,2	24,9/4,15	6,9	2,3	1,1521	9296	68,28	32,71
35/6,2	36,9/6,15	8,4	2,8	0,7774	13524	101,20	48,48
50/8,0	48,2/8,04	9,6	3,2	0,5951	17112	132,18	63,33
70/11	68/11,3	11,4	3,8	0,4218	24130	186,39	89,30
95/16	95,4/15,9	13,5	4,5	0,3007	33369	261,38	125,23
120/19	118/18,8	15,15	5,55	0,2440	41521	322,18	148,16
120/24	115/24	15,3	6,4	0,2490	41521	315,28	188,16
120/27	114/26,6	15,4	6,6	0,2531	49465	312,37	209,52
150/19	148/18,8	16,75	5,55	0,2046	46307	404,79	148,16
150/24	149/24,2	17,1	6,3	0,2039	52279	407,76	190,91
150/34	147/34,34	17,50	7,5	0,2061	62643	403,37	270,56
185/24	187/24,23	18,90	6,3	0,1540	58075	512,31	190,91
185/29	181/29	18,82	6,3	0,1540	58075	496,71	229,00
185/43	185/43,1	19,60	8,4	0,1559	77767	505,98	339,39

Design parameters of M grade wires

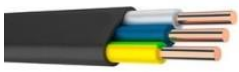
Nominal cross-section	Cross section	Diameter	DC resistance of the wire at 20°C ± 1, max	Breaking strength of wire, min	Wire weight
mm^2	mm^2	mm	Ohm/km	N	kg/km
35	34,61	7,53	0,5238	13141	310,84
50	49,45	9,0	0,3688	17455	444,05
70	67,66	10,65	0,2723	27115	607,55
95	93,96	12,55	0,1944	37637	843,71
120	116,93	14,0	0,1560	46845	1049,94
150	148,00	15,75	0,1238	55151	1328,82
182	182,70	17,6	0,1001	73303	1640,52

VVG, VVG-P, VVGng, VVGng(A), VVGng(A)-LS Cables

(GOST 31996-2012)

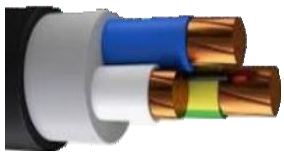
The VVG cable is a power cable consisting of copper conductive cores. It is flexible, with each core protected by an insulating coat of polyvinyl chloride material. In addition, the cable itself has a protective outer sheath made of PVC compound. The cable is designed for the transmission and distribution of electrical energy in stationary installations with a nominal alternating voltage of 0.66 or 1 kW. The difference between VVG cable and other brands is that it is not susceptible to flooding, as it has an additional rubber insulating layer.

VVG



VVG-P

VVGng(A)



VVGng(A)-LS

Explaining of the VVG abbreviation:
“V” – insulating coating made of PVC compound;
“V” – sheath made of polyvinyl chloride compound;
“G” – no additional protection or protective coating;

These power cables have additional markings:
“P” – flat power cable;
“ng” – this cable subtype does not support combustion;
“(A)” – negative combustion indicators in bunched laying (category A);
“LS” – “Low Smoke”.

Cable calculation parameters

Nominal cross-section	Cable outer diameter (approximate)	Cable weight	Electrical resistance of the core at 20°C±1, max
mm^2	mm	kg/km	Ohm/km
2x1,5	6,88	78,66	12,1
2x2,5	7,68	105,81	7,41
2x4,0	9,10	156,46	4,61
2x6,0	10,44	214,35	2,95
2x10,0	12,00	313,99	1,76
2x16,0	14,00	468,77	1,08
3x1,5	8,67	123,70	12,1
3x2,5	9,55	161,01	7,41
3x4,0	10,85	228,01	4,61
3x6,0	12,72	320,34	2,95
3x10,0	14,40	461,65	1,76
3x16,0	16,73	633,60	1,08
4x1,5	7,98	124,35	12,1
4x2,5	8,97	170,26	7,41
4x4,0	10,68	259,69	4,61
4x6,0	12,49	366,58	2,95
4x10,0	14,77	452,07	1,76
4x16,0	19,26	859,62	1,08
4x25,0	24,18	1325,01	0,722
4x35,0	26,78	1750,44	0,524
4x50,0	29,74	2308,74	0,384
5x1,5	8,97	160,60	12,1
5x2,5	10,08	220,01	7,41
5x4,0	12,00	335,71	4,61
5x6,0	14,00	472,98	2,95
5x10,0	16,51	569,43	1,76
5x16,0	20,80	1085,43	1,08
5x25,0	26,51	1658,39	0,722
5x35,0	29,42	2231,67	0,524

AVVG, AVVGng(A), AVVGng(A)-LS, AVVG-P Cables

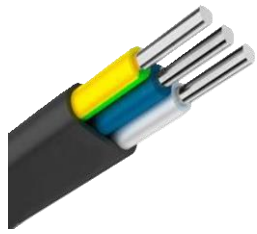
(GOST-31996-2012)

The AVVG cable is a power cable with a conductive core made of aluminum (1 to 5 units in a cable). The insulation and sheath are made of polyvinyl chloride. These conductors are widely used in the construction of distribution substations at industrial facilities, in the arrangement of switchboard rooms of local power transmission lines, and in the wiring installation inside residential and industrial premises.

AVVG

AVVGng(A)

AVVGng(A)-LS



AVVG-P

Explaining the AVVG cable abbreviation:
“A” – aluminum core;
“V” – insulating coating made of PVC compound;
“V” – sheath made of polyvinyl chloride compound;
“G” – no additional protection or protective coating;

These power cables have additional markings:
“P” – flat power cable;
“ng” – this cable subtype does not support the spread of combustion;
“(A)” – negative combustion indicators in bunched laying (category A);
“LS” – “Low Smoke”.

Cable calculation parameters

Nominal cross-section	Cable outer diameter (approximate)	Cable weight	Electrical resistance of the core at 20°C±1, max
mm^2	mm	kg/km	Ohm/km
2x2,5	7,68	105,81	11,36
2x4,0	9,10	156,46	6,79
2x6,0	10,44	214,35	4,65
2x10,0	7,66	238,45	2,81
2x16,0	14,00	468,77	1,78
3x2,5	9,55	161,01	11,36
3x4,0	10,85	228,01	6,79
3x6,0	12,72	320,34	4,65
3x10,0	9,73	366,61	2,81
3x16,0	16,73	633,60	1,78
4x2,5	8,97	170,26	11,36
4x4,0	10,68	259,69	6,79
4x6,0	12,49	366,58	4,65
4x10,0	9,54	452,07	2,81
4x16,0	19,26	859,62	1,78
4x25,0	24,18	1325,01	1,14
4x35,0	26,78	1750,44	0,83
4x50,0	29,74	2308,74	0,60
5x2,5	10,08	220,01	11,36
5x4,0	12,00	335,71	6,79
5x6,0	14,00	472,98	4,65
5x10,0	10,65	569,43	2,81
5x16,0	20,80	1085,43	1,78
5x25,0	26,51	1685,39	1,14
5x35,0	29,42	2231,67	0,83

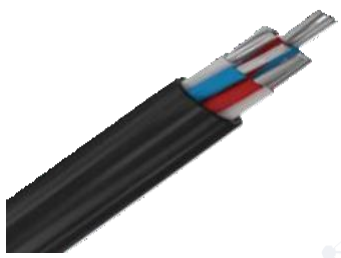
AKVVG, AKVVGng(A), AKVVGng(A)-LS Cables

(GOST 26411-85)

The AKVVG cable is a control cable with an aluminum core, insulation and sheath made of PVC. The cables are designed for fixed connection to electrical devices, apparatus, and terminal blocks of electrical switchgears with a rated alternating voltage of up to 660 V and a frequency of up to 100 Hz or a d.c. voltage of up to 1 kW. They are single layer cables to be placed in cable structures and industrial premises. Bunch wiring is permitted only in outdoor electrical installations and industrial premises attended by service personnel occasionally. However, it is required to use passive fire protection.

AKVVG

AKVVGng (A)



AKVVGng (A)-LS

Explaining the AKVVG cable abbreviation:
“A” – aluminum core;
“K” – control cable;
“V” – insulating coating made of PVC compound;
“V” – sheath made of polyvinyl chloride compound;
“G” – no additional protection or protective coating;

These power cables have additional markings:
“ng” – this cable subtype does not support the spread of combustion;
“(A)” – negative combustion indicators in bunched laying (category A);
“LS” – “Low Smoke”.

Cable calculation parameters

Number and cross section of cores	Cable weight	Outer diameter	Insulation resistance at 20°C ±1, max
pcs/mm^2	kg/km	mm	Ohm/km
4x2,5	114,50	10,20	9,868
4x4,0	153,57	11,82	15,517
4x6,0	189,72	13,02	12,217
5x2,5	132,42	11,00	9,868
5x4,0	179,54	12,81	15,517
5x6,0	223,45	14,16	12,217
7x2,5	162,00	11,82	9,868
7x4,0	223,71	13,83	15,517
7x6,0	281,99	15,33	12,217
10x2,5	218,69	14,56	9,868
10x4,0	305,28	17,24	15,517
10x6,0	387,37	19,24	12,217
14x2,5	273,69	15,68	15,517
14x4,0	388,45	18,64	12,217
14x6,0	498,53	20,84	9,963
19x2,5	343,39	17,30	15,517
19x4,0	493,40	20,65	12,217
19x6,0	638,58	23,15	9,963
27x2,5	461,78	20,45	15,517
27x4,0	670,44	24,57	12,217
27x6,0	873,23	27,65	9,963
37x2,5	595,83	22,78	15,517
37x4,0	874,21	27,47	12,217
37x6,0	1144,39	30,97	9,963

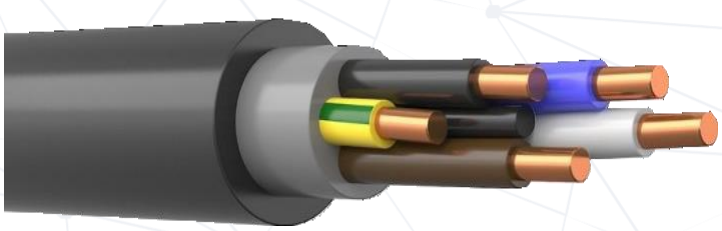
KVVG, KVVGng(A), KVVGng(A)-LS Cables

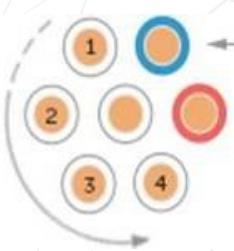
(GOST -26411-85)

The KVVG cable is a control cable with a copper single-wire round conductive core of class 1. Insulated cable cores are twisted. Each twist has a marker pair, the insulated cores of which differ in color from each other and from the other cores. These cables are designed for fixed connection to electrical devices, apparatus, and terminal blocks of electrical switchgears with a rated a.c. voltage of up to 660 V and with a frequency of up to 100 Hz or d.c. voltage of up to 1,000 V. The cables are used for laying outdoors, indoors, in ducts, tunnels, in aggressive environments provided that there are no mechanical impacts on cables. It is allowed to lay the cables in the ground (trenches) providing protection of cables at the points of exit to the surface.

Explaining the KVVG cable abbreviation:
"K" – control cable;
"V" – insulating coating made of PVC compound;
"V" – sheath made of polyvinyl chloride compound;
"G" – no additional protection or protective coating;

These power cables have additional markings:
"ng" – does not spread combustion in bunch laying;
"(A)" – negative combustion indicators in bunch laying;
"LS" – with reduced smoke and gas emission





Calculation cable

Direction cable

Cable calculation parameters

Number and cross sections of cores	Cable weight	Outer diameter	Insulation resistance at 20°C±1, max
pcs/mm^2	kg/km	mm	Ohm/km
4x0,75	93,07	8,35	17,70
4x1,0	107,07	8,73	15,19
4x1,5	130,77	9,31	12,53
4x2,5	173,64	10,20	9,87
4x4,0	248,98	11,82	7,77
4x6,0	333,18	13,02	6,34
5x0,75	107,61	8,92	17,70
5x1,0	124,70	9,35	15,19
5x1,5	153,71	10,00	12,53
5x2,5	206,34	11,00	9,87
5x4,0	298,80	12,81	7,77
5x6,0	402,77	14,16	6,34
7x0,75	132,22	9,51	17,70
7x1,0	155,15	9,99	15,19
7x1,5	194,26	10,71	12,53
7x2,5	265,65	11,82	9,87
7x4,0	390,91	13,83	7,77
7x6,0	533,40	15,33	6,34
10x0,75	177,96	11,48	17,70
10x1,0	210,34	12,12	15,19
10x1,5	265,64	13,08	12,53
10x2,5	366,76	14,56	9,87
10x4,0	544,14	17,24	7,77
10x6,0	746,53	19,24	6,34
14x0,75	224,30	12,29	17,70
14x1,0	268,15	12,99	15,19
14x1,5	343,37	14,05	12,53
14x2,5	481,57	15,68	9,87
14x4,0	723,80	18,64	7,77
14x6,0	1002,78	20,84	6,34
19x0,75	283,06	13,45	17,70

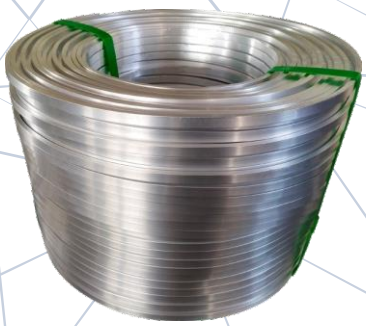
19x1,0	341,31	14,25	15,19
19x1,5	441,55	15,45	12,53
19x2,5	626,31	17,30	9,87
19x4,0	949,81	20,65	7,77
19x6,0	1324,87	23,15	6,34
27x0,75	381,92	15,72	17,70
27x1,0	463,68	16,70	15,19
27x1,5	604,63	18,18	12,53
27x2,5	864,97	20,45	9,87
27x4,0	1320,87	24,57	7,77
27x6,0	1851,26	27,65	6,34
37x0,75	492,67	17,39	17,70
37x1,0	601,97	18,51	15,19
37x1,5	790,74	20,19	12,53
37x2,5	1140,14	22,78	9,87
37x4,0	1752,29	27,47	7,77
37x6,0	2466,75	30,97	6,34

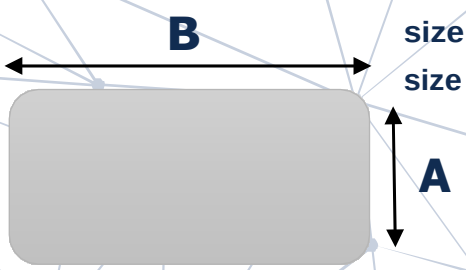
Rectangular Electro-Technical Wire GOST 10687-63

Rectangular electro-technical aluminum soft (PAM) and hard (PAT) wires are used for the manufacture of winding wires and other electrical purposes.

Requirements for mechanical parameters

Cross-section of the wire	PAT grade wire		PAM grade wire	
	Ultimate tensile strength, Mpa, min	Percentage of elongation, min	Ultimate tensile strength, Mpa, min	Percentage of elongation, min
mm^2	kgf/mm	%	kgf/mm^2	%
30 gacha	130 (13,3)	1,5	70 (7,2)	25
30 dan katta	122 (12,5)	2,0	68,6 (7)	26





size by side 'a'=2.8÷5.6 mm
size by side 'b'=3.75÷18.0 mm

Aluminum wire (GOST 839-2019),

Is designed for the manufacture of wires and cables, as well as other electro-technical purposes and actively used as a conducting core (in insulated and non-insulated wires). It is made in two options: hard (AT grade) and soft (AM grade).

Aluminum (AM, AT) wires are made of any diameter in the range of 1.60 to 5.5 mm.

AM – tensile strength is 70 to 100 MPa. Such wire can withstand a large number of bends without destruction.

AT – tensile strength is 160 to 170 MPa.

Requirements for mechanical parameters

Cross-section of the wire	MT grade wire		MM grade wire	
	Ultimate tensile strength, MPa, min	Percentage of elongation, min	Ultimate tensile strength, MPa, min	Percentage of elongation, min
mm^2	kgf/mm^2	%	kgf/mm^2	%
from 0.08 to 10	from 10 to 15	from 0.5 to 2	9,5	from 10 to 25

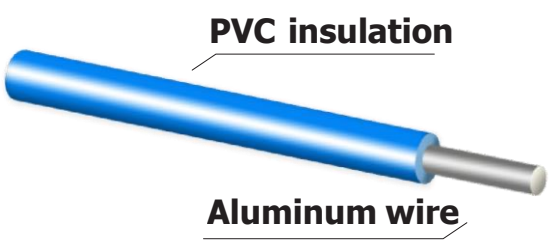
Rectangular copper wires (PMM) (GOST 434-78)

Rectangular copper wires are an extended standard size of filamentary rolled metal products designed both for independent use and for the production of various parts and elements.

Rectangular cross-section copper wire products are manufactured from a melt of pure copper and its alloys, which makes it possible to make long-length products with various chemicophysical and mechanical characteristics. The choice of the grade of the original copper casting is determined by the purpose and conditions of subsequent operation of the rectangular wire. Basically, for the production of this range of wire rolled metal products, 100% copper melt M0, (copper not less than 99.9%), PMM, alloyed with a small amount of nickel and manganese, characterized by good resistance to corrosion destruction, high thermal conductivity and low specific resistance, are smelted.

APV Wires (GOST 6323-79)

Aluminum core wires with insulation made of polyvinyl chloride compound, used for electrical installations for fixed laying in lighting and power networks, as well as for the installation of electrical equipment, machines, mechanisms, and machine tools.



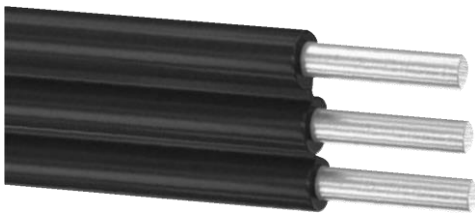
Explaining of the APV wire abbreviation
"A" – Aluminum core;
"P" – Wire;
"V" – Insulation of PVC compound;

Cable calculation parameters

Nominal cross-section	Core class	Cable outer diameter (approximate)	Cable weight	Electrical resistance of the core at 20°C±1, max
mm^2		mm	kg/km	Ohm/km
1x2,5	1	3,35	13,92	12,0
1x4,0	1	3,83	19,80	7,41
1x6,0	1	4,32	28,06	5,11
1x10,0	1	5,30	43,37	3,08
1x16,0	1	6,40	64,76	1,79
1x25,0	2	8,44	101,02	1,15
1x35,0	2	10,12	143,93	0,83
1x50,0	2	11,35	184,15	0,61
1x70,0	2	13,05	272,38	0,40
1x95,0	2	13,85	372,02	0,29
1x120,0	2	16,15	446,35	0,23
1x150,0	2	17,6	562,70	0,18
1x185,0	2	19,75	692,50	0,15
1x240,0	2	21,9	891,73	0,11

APPV and APPBN cables (GOST 31947-2012)

The cables are designed for electrical installations for fixed laying in lighting and power networks, as well as for the installation of electrical equipment, machines, mechanisms and machine tools for a rated alternating voltage of up to 450 V (for up to 450/750 V networks), with a frequency of up to 400 Hz or a d.c. voltage of 1000 V.



Explaining the APPV cable abbreviation
"A" – Aluminum core;
"P" – Wire;
"P" – Flat;
"V" – Insulation of PVC compound;

Explaining the APPBN cable abbreviation
"A" – Aluminum core;
"P" – Wire;
"P" – Flat;
"BN" – For appliances;

Main technical and operational characteristics of the APPV and APPBN wires:

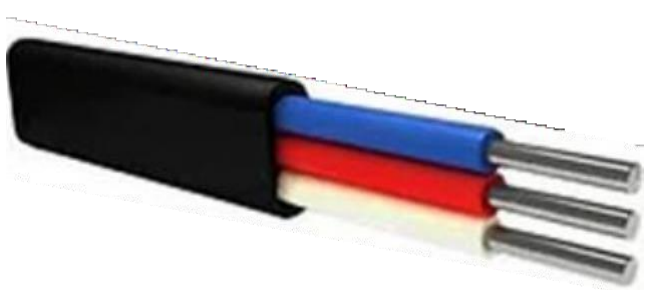
- Nominal voltage is 450 V;
- Ambient temperature during cable operation is of -50 °C to + 45 °C;
- Relative air humidity (at a temperature of up to + 35 °C) is 100 %;
- Minimum cable laying temperature without preheating is -15 °C;
- Maximum long-term permissible operating temperature of the cores is 70°C

Cable calculation parameters

Nominal cross-section	Core class	Cable outer diameter (approximate)	Cable weight	Electrical resistance of the core at 20°C±1, max
mm^2		mm	kg/km	Ohm/km
2x2,5	1	3,35x7,70	31,23	11,36
2x4,0	1	3,83x8,66	42,64	6,79
2x6,0	1	4,30x9,60	55,70	5,11
3x2,5	1	3,35x12,05	46,51	3,08
3x4,0	1	3,83x13,49	63,63	1,91
3x6,0	1	4,30x14,90	83,22	1,20

APUNP wires (GOST 31947-2012)

The aluminum wire with double plastic insulation and a sheath made of polyvinyl chloride compound. The APUNP wire is designed for fixed laying in lighting networks with a rated voltage of up to 250V AC and a frequency of 50 Hz, installation and connection of low-current household devices to an AC network of up to 250 V with a frequency of 50 Hz. (10 Hz) The conductive core is solid and made of aluminum. Installation bending radii during in laying are not less than 10 outer diameters, operating temperature is of -50 to +70 °C; service life under normal operating conditions is at least 15 years.



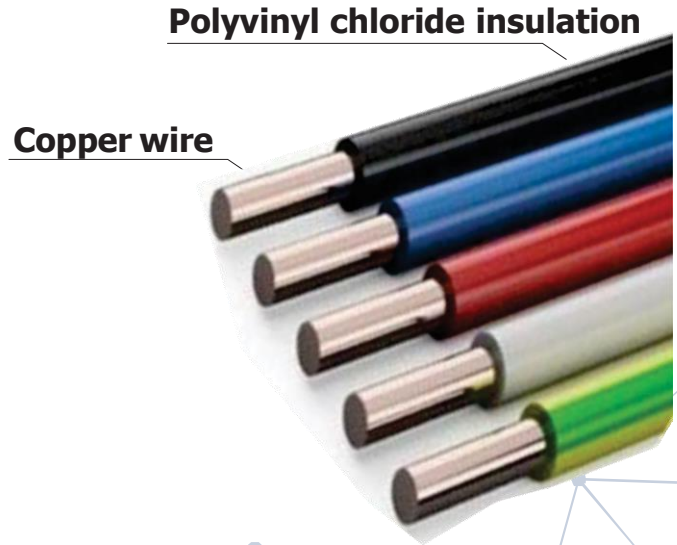
Explaining of the APUNP wire abbreviation:
"A" – Aluminum conductive core;
"P" – Wire;
"UN" – Universal;
"P" – Flat;

Electrical characteristics

Nominal cross-section	Core class	Cable outer diameter (approximate)	Cable weight	Electrical resistance of the core at 20°C±1, max
mm^2		mm	kg/km	Ohm/km
2x2,5	1	4,54x7,48	47,68	11,02
2x4,0	1	5,25x8,90	67,65	7,1
2x6,0	1	5,72x9,84	84,28	4,61
2x10,0	1	7,10x12,2	131,4	3,08
2x16,0	1	8,20x14,4	185,0	1,79
3x2,5	1	4,54x10,42	69,52	11,02
3x4,0	1	5,25x12,55	99,73	7,1
3x6,0	1	5,72x13,96	124,93	4,61
3x10,0	1	7,3x17,9	204,9	3,08
3x16,0	1	8,0x20,0	264,6	1,79

PuV wires (GOST 31947-2012)

The wires are used for electrical installations in fixed laying in lighting and power networks, as well as for the installation of electrical equipment, machines, mechanisms and machine tools, indoor electrical installations for a rated a.c. voltage of up to 450/750V inclusive, with a rated frequency of up to 400 Hz or a d.c. voltage of up to 1000V inclusive. Installation bending radius during is at least 10Dn. The service life of the PuV wire is at least 20 years, provided that the consumer complies with the requirements for transportation, storage, installation, and operation.



Structural elements of the PuV wire:
1. Conductive core.
2. Insulation is made of polyvinyl chloride compound.

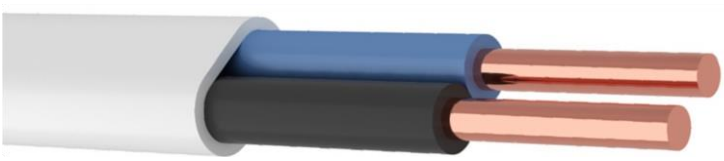
Explaining of the PuV wire abbreviation:
"P" – Wire;
"u" – Installation;
"V" – Polyvinyl chloride compound insulation;

Wire calculation parameters

Nominal cross section	Core class	Cable outer diameter (approx.)	Cable weight	Electrical resistance of the core at 20°C±1, max	Current carrying capacity			
					Temperature of the conductive core 70° C	Ambient temperature 20° C	Temperature of the conductive core 35° C	Ambient temperature 25° C
mm^2		mm	kg/km	Ohm/km	A			
1x1,5	1	2,77	19,53	11,65	23		9	
1x2,5	1	3,34	30,15	7,41	32		13	
1x4,0	1	3,85	46,16	4,61	43		17	
1x6,0	1	4,32	64,13	3,08	56		22	
1x10,0	1	5,50	105,47	1,83	80		30	
1x16,0	2	7,10	194,53	1,073	101		45	
1x25,0	2	8,70	295,49	0,703	140		63	
1x35,0	2	9,81	399,48	0,508	170		79	
1x50,0	2	11,35	547,53	0,372	215		99	
1x70,0	2	13,50	784,87	0,258	270		128	
1x95,0	2	15,55	1074,45	0,187	330		154	

PUVV wires (GOST 31947-2012)

The wires are used for electrical installations in fixed laying in lighting and power networks, as well as for the installation of electrical equipment, machines, mechanisms and machine tools, indoor electrical installations for rated a.c. voltage of up to 450/750V inclusive, with a rated frequency of up to 400 Hz or d.c. voltage up to 1000V inclusive. The installation bending radius is at least 10 Dн. The service life of the PuVV wire is at least 20 years, provided that the consumer complies with the requirements for transportation, storage, installation, and operation.

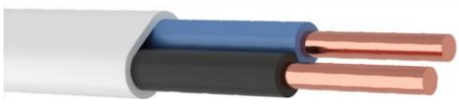


Explaining of the PuVV wire abbreviation:
"P" – Wire;
"u" – Installation;
"V" – Insulation is made of polyvinyl chloride compound;
"V" – Sheath is made of PVC compound with filling.

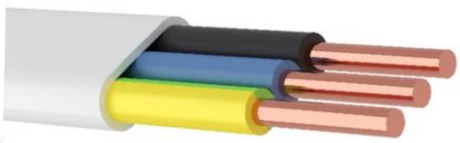
Structural elements of the PuVV wire:

1. Conductive core is made of annealed copper wire according to GOST 22483-77.
2. Insulated cores of the multi-core wire are laid parallel in one plane.

PuVV 1x1,0



PuVV 2x2,5



PuVV 3x1,5

Technical specifications

- Rated a.c. voltage of 450/750V with a frequency of up to 400 Hz;
- Nominal DC voltage of 1000V;
- Insulation resistance at 20 °C is at least 5 MOhm/km;
- Insulation resistance at 70 °C is at least 0.0028. 0.015 MOhm/km;
- Permissible heating temperature of cores is 70 °C.

Tablulated data for calculating the wire weight depending on the cross-section area of the PuVV wire:

Number and cross-section of conductive cores	Core class	Sizes of wires	Cable weight	Electrical resistance of the core at 20°C±1, max
mm^2		mm	kg/km	Ohm/km
2x0,5	1	3,15 x 5,10	31,70	35,77
2x0,75	1	3,57 x 5,54	35,07	23,2
2x1,0	1	3,73 x 5,86	41,55	17,70
2x1,5	1	4,17 x 6,74	56,32	12,6
2x2,5	1	4,54 x 7,48	77,10	7,22
2x4	1	5,25 x 8,90	116,85	4,32
2x6	1	7,1x12,2	156,18	2,96
3x0,5	1	3,15 x 7,10	43,2	35,77
3x0,75	1	3,57 x 7,51	50,44	23,2
3x1,0	1	3,73 x 7,99	60,22	17,70
3x1,5	1	4,17 x 9,31	82,42	12,6
3x2,5	1	4,54 x 10,42	113,65	7,22
3x4,0	1	5,25 x 12,55	173,53	4,32
3x6	1	5,72x13,96	232,77	2,96

PuGV wires (GOST 31947-2012)

The wire is used for electrical installations in fixed laying in lighting and power networks, as well as for installation of electrical equipment, machines, mechanisms and machine tools, indoor electrical installations for a rated a.c. voltage of up to 450/750V inclusive, with a rated frequency of up to 400 Hz or a d.c. voltage of up to 1000V inclusive. The PuGV wire is used for installation in steel pipes, trunks, trays for installation of electrical circuits, where increased flexibility is required during laying and installation.
The installation bending radius is at least 5 outer diameters of the wire.
The service life is at least 20 years provided that the conditions of transportation, storage, laying (installation) and operation are observed.

Explaining of the PuGV wire abbreviation:
"P" – Wire
"u" - Installation
"G" – Flexible
"V" – Insulation is made of polyvinyl chloride compound

Structure of the PuGV wire:

1. **Copper multi-wire conductive core;**
2. **Insulation is made of polyvinyl chloride compound.**

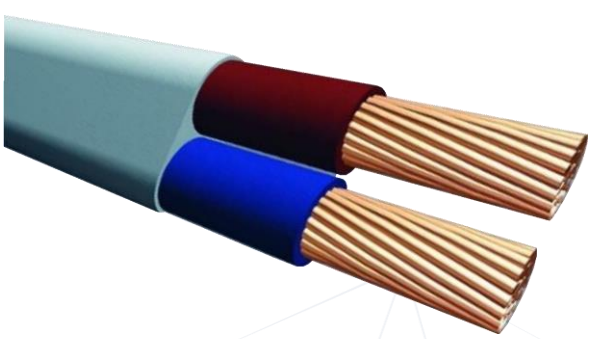
Tabular data for calculating the wire weight depending on the cross-section of the PuGV wire:

Number and cross-section of conductive cores	Core class	Wire sizes	Cable weight	Electrical resistance of the core at 20°±1, max
mm^2		mm	kg/km	Ohm/km
1x0,5	5	2,1	8,27	36,165
1x0,75	5	2,3	11,07	23,586
1x1,0	5	2,5	13,59	18,083
1x1,5	5	2,95	18,98	12,859
1x2,5	5	3,59	29,87	7,715
1x4	5	4,09	43,58	4,822

1x6	5	5,13	63,20	3,215
1x10	5	6,6	107,60	1,858
1x16	5	7,75	161,35	1,168
1x25	5	9,63	248,76	0,753
1x35	5	10,95	345,13	0,523
1x50	5	13,02	491,04	0,366
1x70	5	14,95	673,01	0,260
1x95	5	17,14	895,42	0,195
1x120	5	18,96	1104,46	0,156
1x150	5	21,18	1397,64	0,123
1x185	5	23,39	1694,36	0,102
1x240	5	26,69	2266,74	0,076

PuGVV wires (GOST 31947-2012)

The wires are used for electrical installations in fixed laying in lighting and power networks, as well as for the installation of electrical equipment, machines, mechanisms and machine tools, indoor electrical installations for a rated a.c. voltage of up to 450/750V inclusive, with a rated frequency of up to 400 Hz or a d.c. voltage of up to 1000V inclusive. The installation bending radius is at least 5 Dn. The service life of the PuGVV wire is at least 20 years, provided that the consumer complies with the requirements for transportation, storage, installation, and operation.



Explaining of the PuGVV wire abbreviation:
“P” – Wire
“u” – Installation
“G” – Flexible
“V” – Insulation is made of polyvinyl chloride compound;
“V” – Sheath of PVC compound with filling

Technical parameters of the PuGVV wire

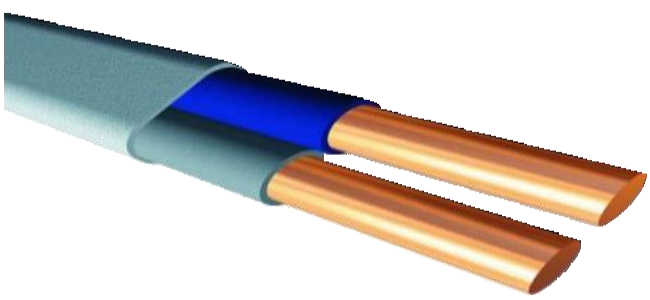
- Lower limit of ambient temperature, -50°C;
- Upper limit of ambient temperature, +65°C;
- Relative air humidity at a temperature of up to +40°C (at a humidity of 98%);
- Laying and installation of cables without preheating is carried out at a temperature of not lower than -15°C;
- Operating voltage is 450 V/750 V;

Cable calculation parameters

Number and cross-section of conductive cores	Wire sizes	Cable weight	Electrical r esistance of the core at 20°C±1, max
mm^2	mm	kg/km	Ohm/km
2x0,35	3,60x5,60	28,73	55,12
2x0,50	3,74x5,88	33,86	34,45
2x0,75	4,00x6,40	40,80	24,50
2x1,0	4,32x7,05	49,99	18,84
2x1,50	4,50x7,40	60,07	12,89
2x2,50	5,00x8,40	85,88	7,25
2x4,0	5,50x9,40	117,22	4,64
2x6,0	6,21x10,81	166,47	2,94
2x10,0	7,4x13,2	262,96	1,76
2x16,0	8,65x5,7	391,33	1,10
3x0,35	3,60x7,60	41,01	55,12
3x0,50	3,74x8,02	48,71	34,45
3x0,75	4,00x8,80	59,12	24,50
3x1,0	4,32x9,77	72,96	18,84
3x1,50	4,50x10,30	88,12	12,89
3x2,50	5,00x11,80	126,98	7,25
3x4,0	5,50x13,30	174,22	4,64
3x6,0	6,21x15,42	248,55	2,94
3x10,0	7,4x19,0	394,39	1,76
3x16,0	8,65x22,75	588,56	1,10

PUNP wires (GOST 31947-2012)

The PUNP brand appliance wires are designed for laying for repair purposes and in lighting networks, installation and connection of low-current devices to an AC network of up to 250 V with a frequency of 10 kHz and for other low-current household devices. The PUNP wires are intended for fixed laying in lighting networks. The bending radius should be at least ten outer diameters.



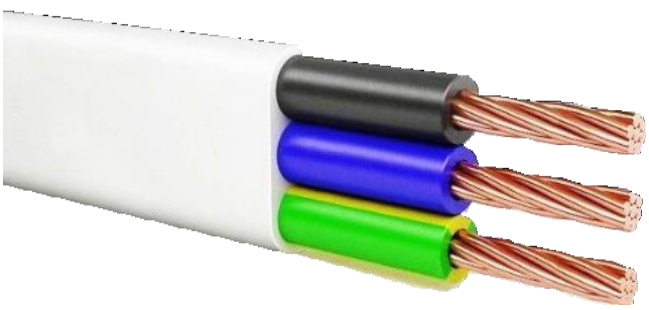
Explaining of the PUNP wire abbreviation:
"P" – Wire;
"UN" - Universal;
"P" – Flat

Tabular data for calculating the wire weight depending on the cross-section area of the PUNP wire:

Number and cross-section of conductive cores	Core class	Outer sizes of the wire	Cable weight	Electrical resistance of the core at 20°C±1, max
mm^2		mm	kg/km	Ohm/km
2x0,75	1	3,57x5,54	35,07	22,89
2x1,0	1	3,73x5,86	41,55	27,1
2x1,5	1	4,17x6,74	56,32	17,17
2x2,5	1	4,54x7,48	77,10	6,86
2x4,0	1	5,25x8,90	116,85	4,29
2x6,0	1	5,72x9,84	156,18	2,86
2x10,0	1	7,10x12,2	250,5	1,78
3x0,75	1	3,57x7,51	50,44	22,89
3x1,0	1	3,73x7,99	60,22	27,1
3x1,5	1	4,17x9,31	82,42	17,17
3x2,5	1	4,54x10,42	113,65	6,86
3x4	1	5,25x12,55	173,53	4,29
3x6	1	5,72x13,96	232,77	2,86

PUGNP wires (GOST 31947-2012)

The PUGNP appliance wires are designed for laying in rooms and lighting networks, installation and connection of low-current devices to an AC network of up to 250V with a frequency of 10 kHz and for other low-current household devices. The PUGNP wires are intended for fixed laying in lighting networks.



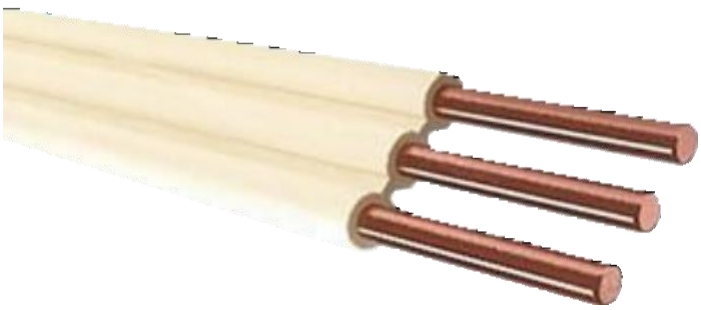
Explaining of the PUGNP wire abbreviation:
"P" – Wire
"UN" – Universal
"G" – Flexible
"P" – Flat

Tabular data for calculating the wire weight depending on the cross-section area of the PUGNP wire:

Number and cross-section of conductive cores	Core class	Values of external sizes of the wire	Cable weight	Electrical resistance of the core at 20°C±1, max
mm^2		mm	kg/km	Ohm/km
2x0,50	4	3,74x5,88	33,86	34,45
2x0,75	4	4,00x6,40	40,80	24,50
2x1,0	4	4,32x7,05	49,99	18,84
2x1,5	4	4,50x7,40	60,07	12,89
2x2,5	4	5,00x8,40	85,88	7,25
2x4,0	4	5,50x9,40	117,22	4,64
2x6,0	4	6,21x10,81	166,47	2,94
2x10,0	4	7,4x13,2	262,96	1,76
2x16,0	4	8,65x15,7	391,33	1,10
3x0,50	4	3,74x8,02	48,71	34,45
3x0,75	4	4,00x8,80	59,12	24,50
3x1,0	4	4,32x9,77	72,96	18,84
3x1,5	4	4,50x10,3	88,12	12,89
3x2,5	4	5,00x11,80	126,98	7,25
3x4,0	4	5,50x13,30	174,22	4,64
3x6,0	4	6,21x15,42	248,55	2,94
3x10,0	4	7,4x19,0	394,39	1,76
3x16,0	4	8,65x22,75	588,56	1,10

PPV wires (GOST 31947-2012)

The wires are used for electrical installations in fixed laying in lighting and power networks, as well as for the installation of electrical equipment, machines, mechanisms and machine tools for a rated voltage of up to 450V (U0/U = 450/750V) with a frequency of 400 Hz or a d.c. voltage of up to 1000V. The wires are designed for use under a canopy or in rooms (facilities) where temperature and humidity fluctuations do not differ significantly from those in the open air and there is relatively free inflow of outside air, for example, in tents, vehicle bodies, trailers, metal rooms without thermal insulation. The wires can be used as built-in elements inside complete products, the design of which eliminates the possibility of moisture condensation on the built-in elements (for example, inside electronic equipment). The PPV brand wires are intended for non-flexible installation.



Explaining of the PPV wire abbreviation
"P" – Wire
"P" – Flat
"V" – Insulation of polyvinyl chloride compound

Structural elements of the PPV wire:

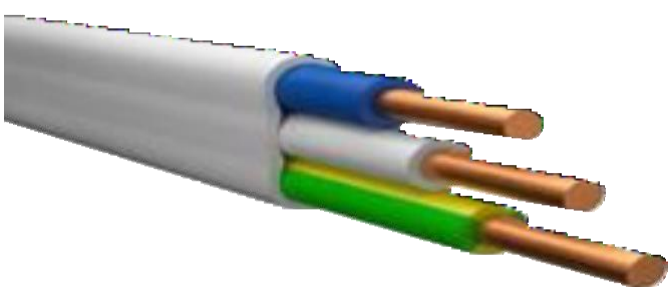
1. **Single-wire copper round conductive core of Class 1**
2. **Insulation made of PVC compound.**

Tabular data for calculating the wire weight depending on the cross-section area of the PPV wire

Number and cross-section of conductive cores	Core class	Nominal insulation thickness	Minimum insulation thickness	Electrical resistance of the core, at 20°C±1, max	Permissible load current
mm^2		mm	kg/km	Ohm/km	A
2,5	1	0,8	0,62	12,1	24
4	1	0,8	0,62	7,41	32
6	1	0,8	0,62	5,11	39

PPBN wires (GOST 31947-2012)

The PPBN wire is a flat wire with polyvinyl chloride insulation, copper cores, and a separating base. The wires are designed for electrical installations in fixed laying in lighting and power networks, as well as for the installation of electrical equipment for a rated a.c. voltage of up to 450V (for networks of up to 450/750V) with a frequency of up to 400 Hz or a d.c. voltage of up to 1000V. They are intended for laying in steel pipes, hollow channels of building structures, on trays, etc., for the installation of electrical circuits.



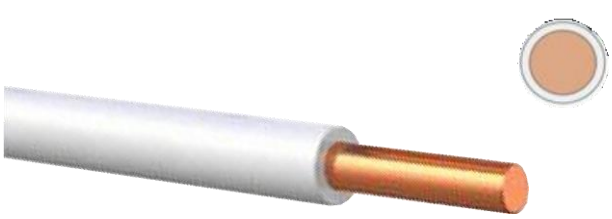
Explaining of the PPBN wire abbreviation
"P" – Wire
"P" – Flat
"BN" – Appliance

Cable calculation parameters

Number of cross-section areas of cores	Core class	Outer diameter	Cable weight	Electrical resistance of thecore at 20°C±1, max
mm^2		mm	kg/km	Ohm/km
2x1,0	1	2,08x5,16	23,67	17,01
2x1,5	1	2,50x6,00	33,95	12,1
2x2,5	1	2,90x6,80	52,73	7,41
2x4	1	3,76x8,52	85,91	4,61
2x6	1	4,24x9,48	121,33	2,95
3x1,0	1	2,08x8,24	35,84	17,01
3x1,5	1	2,50x9,50	51,26	12,1
3x2,5	1	2,90x10,70	79,44	7,41
3x4	1	3,76x13,28	129,20	4,61
3x6	1	4,24x14,72	182,33	2,95

PV-1 wires (GOST 31947-2012)

The wires are used for electrical installations in fixed laying in lighting and power networks, as well as for the installation of electrical equipment, machines, mechanisms and machine tools for a rated voltage of up to 450V (U0/U=450/750 V) with a frequency of 400 Hz or a d.c. voltage of up to 1,000V. The wires are intended for use under a canopy or in rooms (facilities) where fluctuations in temperature and humidity do not differ significantly from fluctuations in the open air and there is relatively free inflow of outside air, for example, in tents, vehicle bodies, trailers, metal rooms without thermal insulation. The wires can be used as built-in elements inside complete products, the design of which eliminates the possibility of moisture condensation on the built-in elements (for example, inside electronic equipment). The wires are intended for laying in steel pipes, hollow channels of building structures and for installation of electrical circuits. The PV-1 wire (cable) has two more names in common use: power cable and installation wire. In addition, the PV-1 is a wire with a copper core of limited flexibility (for cross-sections up to 10 square incl. – single-wire), with polyvinyl chloride insulation.



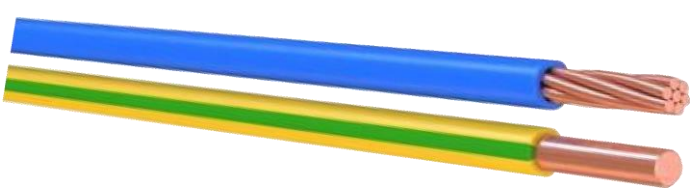
Explaining of the PV-1 wire abbreviation
"P" – Wire
"V" – vinyl insulation
"1" – wire flexibility class

Structural elements of the PV–1 wire:

1. **Copper single-wire;**
2. **Insulation made of PVC compound.**

PV-2 wires (GOST 31947-2012)

The wires are used for electrical installations in fixed laying in lighting and power networks, as well as for the installation of electrical equipment, machines, mechanisms and machine tools with a rated voltage of up to 450V (U0/U=450/750 V) with a frequency of 400 Hz or a d.c. voltage of up to 1,000V. The wires are intended for use under a canopy or in rooms (facilities) where fluctuations in temperature and humidity do not differ significantly from fluctuations in the open air and there is relatively free inflow of outside air, for example, in tents, vehicle bodies, trailers, metal rooms without thermal insulation. The wires can be used as built-in elements inside complete products, the design of which eliminates the possibility of moisture condensation on the built-in elements (for example, inside electronic equipment). The PV-2 brand wires are intended for the installation of sections of electrical circuits where bends in wires are possible;



Explaining of the PV-2 wire abbreviation
"P" – Wire
"V" – PVC compound insulation
"2" - Flexibility class of the core

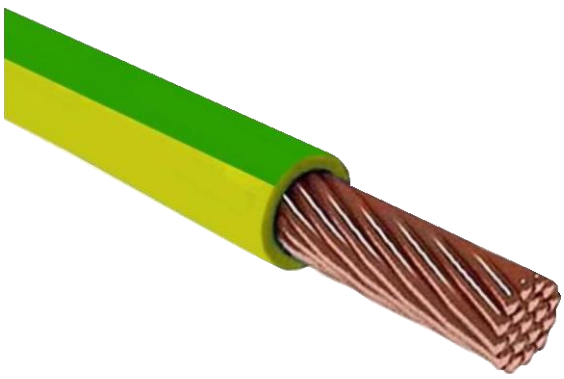
Elements of the PV-2 wire structure:

1. Copper single-wire or multi-wire core;
2. PVC compound insulation.

*optionally, wires can be supplied with a tinned copper core.

PV-3 wire (GOST 31947-2012)

The wires are designed for electrical installations in fixed laying in lighting and power networks, as well as for the installation of electrical equipment for a rated alternating voltage of up to 450V (for networks up to 450/750 V) with a frequency of up to 400 Hz or a d.c. voltage of up to 1000V. They are intended for installation in steel pipes, hollow channels of building structures, on trays, etc., for the installation of electrical circuits.



Explaining of the PV-3 wire abbreviation:
"P" – Wire
"V" – Insulation of polyvinyl chloride compound
"3" – Flexibility class of the core

Elements of the PV-3 wire structure:

1. **Copper single-wire or multi-wire core;**
2. **PVC compound insulation.**

***optionally, wires can be supplied with a tinned copper core.**

PV–4 wire (GOST 31947–2012)

The PV-4 wire is a type of electric wire designed for the transmission and distribution of electric energy at high voltages and currents. These wires are used in various electric power systems, from power plants to end consumers. They are usually provided with thick insulation and, depending on the application, can be protected with additional layers for resistance to physical impacts, chemicals and weather conditions. Power wires can be both underground and overhead, and are often made of copper or aluminum to ensure efficient conductivity of electricity.

Properties and Advantages:

- High efficiency of energy transmission: power wires are designed to minimize energy losses during transmission over long distances.
- Durable insulation: they have reinforced insulation, which ensures safety and resistance to external factors, including moisture, chemicals and mechanical damage.
- Resistance to extreme conditions: power cables are often designed for use in various weather conditions and can withstand extreme temperatures, UV radiation and other extreme factors.
- Durability: made from quality materials, power cables provide a long service life even in difficult operating conditions.
- Flexibility of use: they can be used in a variety of situations, including underground and overhead power lines, as well as in industrial and residential areas.
- High conductivity: power cables, especially those made of copper or aluminum, have excellent electrical conductivity.
- Safety in use: the reinforced insulation and design of these cables reduce the risk of short circuits, fires and other electrical accidents.

Areas of application:

- Overhead and underground power lines: they are used to transmit electricity from power plants to distribution networks and end consumers.
- Industrial facilities and enterprises: used to supply electricity to various industrial installations and equipment.
- Construction sites: used for temporary power supply of construction sites and equipment.
- Residential and commercial buildings: used for internal and external wiring, connection of main electrical systems and large household appliances.
- Electrical distribution boards: used inside electrical panels and cabinets for distribution and control of electrical energy.
- Transport infrastructure: including railway systems and subways, where they are used for power supply.
- Renewable energy systems: used in solar power plants and wind farms for transmission of generated energy.

Installation cables comply with the requirements

(GOST 31947-2012)

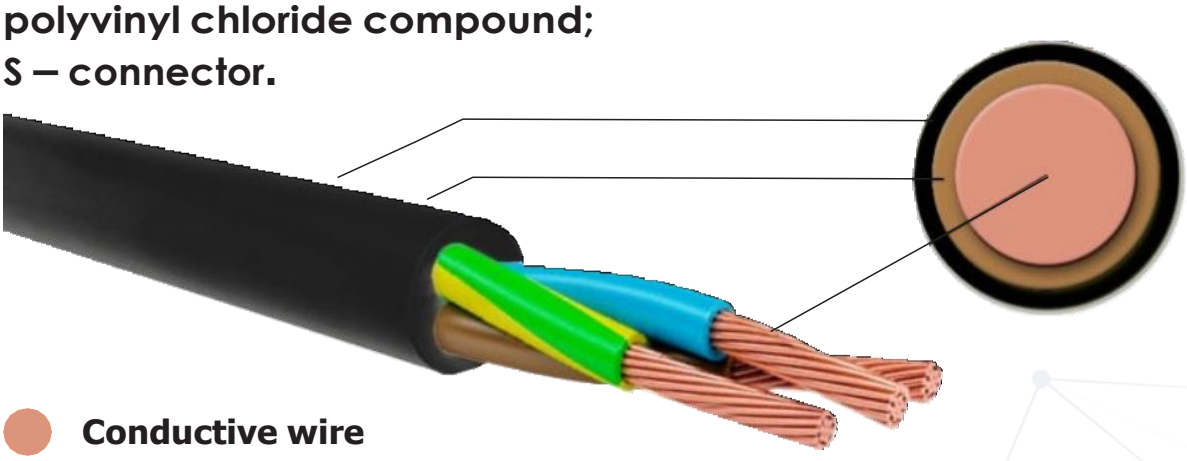
Number of cores Cross section	Nominal outside diameter			Estimated weight		
	PV 1 (2)	PV 3	PV 4	PV 1 (2)	PV 3	PV 4
mm^2	mm			kg/km		
0,5	2,0	2,1	2,14	8,0	8,49	8,7
0,75	2,2	2,3	2,4	10,5	11,4	11,7
1,0	2,3	2,5	2,5	13,2	13,8	14,3
1,5	2,93	2,95	3,1	19,82	18,98	20,9
2,5	3,55	3,59	3,9	30,70	29,87	34,9
4,0	4,09	4,09	4,6	45,80	43,58	50,3
6,0	4,66	5,13	5,3	65,21	63,20	71,4
10,0	5,99	6,60	6,80	109,72	84,60	82,25
16,0	7,10	7,75	8,00	170,09	161,35	155,88
25,0	8,70	9,63	10,05	258,18	248,76	241,12
35,0	9,81	10,95	11,45	347,71	345,13	342,27
50,0	11,55	13,02	13,86	474,35	491,04	490,12
70,0	13,3	14,95	16,10	666,10	673,01	677,19
95,0	15,55	17,14	18,95	918,25	895,42	892,57

PVS wires (GOST 7399-97)

A wire with flexible copper cores, designed for connecting electrical machines and household and similar devices to the electrical network, for electrical appliances and power tools for home maintenance and repair, washing machines, refrigerators, small-scale mechanization equipment for gardening and vegetable gardening, and for making extension cords. This wire is perfect for the so-called “mobile” wiring – as an extension cord or a jack cord. Bending is within the permissible radius (for cross-sections of 0.75-1.0 mm2 – at least 80 mm, for 1.5 mm2 and 2.5 mm2 – at least 120 mm). The wires do not have a negative impact on the conductive core.

Explaining of the PVS product abbreviation:

P – wire;
V – the insulation of the wires and the protective covering are made of polyvinyl chloride compound;
S – connector.



- Conductive wire
- Shell made of PVC plastic
- Insulation made of PVC plastic

Wire design

The wire structure is typical:
conductive cores consist of several small-section wires, tight twisting, therefore no filler is provided, according to GOST, the core class is not lower than the 5th, their number is of two to five, the nominal cross-section area is of 0.5 to 16 mm2 the insulation of cores is made of polyvinyl chloride resin with additives, the thickness of the insulating layer depends on the core thickness the outer cover is made of a material similar to core insulation, 0.8 - 1.2 mm thick. The PVS wire is of a round shape. Marking is applied to the outer surface of the product (sheath), including the KPP brand, the number and cross-section areas of

cores, rated voltage, designation of the GTS (General Technical Specifications) standard (in accordance with which the product is manufactured), specifications, name of the company, country of manufacture, year of manufacture and the sign of circulation on the market of the member states of the Customs Union "EAC". For example, the PVS 4x2.5 is a connecting wire with a PVC sheath and insulation, with four cores with a cross-section area of 2.5 mm2. Standards for the coloring of the core insulation have been adopted. The regulatory documents do not regulate the requirements for the coloring of the sheath; several color solutions are allowed. The most common are white, black, gray, and orange. The colors of the core insulation are defined as follows:

- blue - neutral conductor;
- yellow-green - grounding;
- black or brown - phase.

Cable calculation parameters

Number and cross-section of cores	Wire (number (pcs), diameter)	Cable weight	Cable diameter (outer)
mm^2	mm	kg/km	mm
2x0,5	16x0,20	40,54	5,28
2x0,75	22x0,20	49,55	5,80
2x1,0	30x0,20	55,91	5,96
2x1,5	27x0,25	75,11	6,88
2x2,5	45x0,25	112,32	8,28
2x4	50x0,30	185,39	10,65
2x6	75x0,30	242,30	11,80
2x10	73x0,40	384,26	14,60
2x16	114x0,4	530,94	16,60
2x25	192x0,4	785,25	19,00
3x0,5	16x0,20	47,38	5,57
3x0,75	22x0,20	58,24	6,13
3x1,0	30x0,20	66,91	6,31
3x1,5	27x0,25	93,99	7,49
3x2,5	45x0,25	145,10	9,18
3x4	50x0,30	223,49	11,23

3x6	75x0,30	290,53	12,26
3x10	73x0,40	468,27	15,27
3x16	114x0,4	658,95	17,42
3x25	192x0,4	941,83	20,40
4x0,5	16x0,20	58,79	6,08
4x0,75	22x0,20	72,72	6,70
4x1,0	30x0,20	84,10	6,90
4x1,5	27x0,25	114,35	8,00
4x2,5	45x0,25	177,91	9,84
4x4	50x0,30	280,31	12,25
4x6	75x0,30	367,64	13,40
4x10	73x0,40	606,48	16,98
4x16	114x0,4	856,97	19,39
4x25	192x0,4	1253,03	22,68
5x0,5	16x0,20	69,82	6,64
5x0,75	22x0,20	86,66	7,34
5x1,0	30x0,20	100,70	7,56
5x1,5	27x0,25	150,77	9,39
5x2,5	45x0,25	224,64	11,21
5x4	50x0,30	355,61	13,99
5x6	75x0,30	464,60	15,28
5x10	73x0,40	751,58	19,06
5x16	114x0,4	1061,71	21,76
5x25	192x0,4	1564,74	25,60

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