



Application

Cables are used for the communication systems and data transmission in the frequency span up to 200 MHz and for the electric-power transmission of alternating current of rated voltage up to 500V of frequency 50Hz on the ships of unlimited navigation area, off-shore and floating constructions.

Design

Current-carrying conductor

Copper soft wires (3rd, 4th class). Space between wires is filled with sealing compound.

Insulation

Polyethylene.

Space between current-carrying conductor and insulation must be filled with sealing compound.

Above insulated conductors 0,5 mm² in cross-section general polyethylene insulation is applied.

Screen

Above conductor insulation and general insulation of each twisted pair screen as braid or layer of copper wires is applied.

Space between wires of screen must be filled with sealing compound.

Core

Structural components (screened conductors, screened pairs, pairs or quads of screened conductors, cords) must be twisted in core.

Space between structural components must be filled with sealing compound.

Inner sheath

Above core of cable of KPVEVKG-100 4x(2x0,5)e type PVC compound sheath is applied.

Screen

Above cores of cables of KPVEVKG-100, KPVEVKG-60 types except one-pair cable, above inner sheath of cable of KPVEVKG-100 4x(2x0,5)e type screen as braid of copper wires is applied. Space between wires of screen is filled with sealing compound.

Sheath

PVC compound.

Collective screen

Collective screen as braid of copper tinned wires is applied above sheath of cable of KPVEKG-100 type.

Technical Performances

Nominal cross-section of the conductors, mm² — 0,5; 0,75; 1,0; 1,5. Structural elements (screened conductors, screened pairs, pairs or quads of screened conductors, cords), quantity and nominal cross-section:

KPVKG-100 7e0,75+26x(2x0,5)e — 26 screened pairs of the conductors 0,5 mm² in cross-section, wave resistance is 75 Ohm and seven screened conductors of nominal cross-section of 0,75 mm²;

KPVKG-100 1x(2x0,5)e — one screened pair of the conductors 0,5 mm² in cross-section, wave resistance is 75 Ohm;

KPVKG-100 2x(2e0,75)+4x(2x0,5)e — four screened pairs of the conductors 0,5 mm² in cross-section, wave resistance is 100 Ohm and four screened conductors 0,75 mm² in cross-section.

KPVEKG-100 4x(2x0,5)e — four screened pairs of the conductors 0,5 mm² in cross-section, wave resistance is 100 Ohm;

KPVEVKG-100 4x(2x0,5)e — four screened pairs of the conductors 0,5 mm² in cross-section 100 Ohm;

KPVEVKG-60 14x(2x0,5)e — 14 screened pairs of the conductors 0,5 mm² in cross-section, wave resistance is 100 Ohm;

KPVEVKG-60 12x(2x0,5)e+2x(4e0,75) — 12 screened pairs of the conductors 0,5 mm² in cross-section, wave resistance is 100 Ohm and eight screened conductors 0,75 mm² in cross-section, twisted in two quads;

KPVEVKG-60 10e0,75+6x(2x0,75)e+7e1,0+14e1,5 — six screened conductors 0,75 mm² in cross-section, seven screened conductors 1,0 mm² in cross-section and 14 screened conductors 1,5 mm² in cross-section.

Damping ratio of screened pairs of insulated conductors 0,5 mm² in cross-section

Wave resistance of pair, Ohm	Damping ratio, dB/m, on frequency				
	1 MHz	10 MHz	20 MHz	100 MHz	200 MHz
75	0,025	0,095	0,150	0,28	0,40
100	0,020	0,065	0,092	0,22	0,40

Electrical resistance of insulation of current-carrying conductors counted for the temperature 20°C and length of 1 km, must be not less than:

- at acceptance and supply — 500 megaohm;
- for the period of operation and storage — 20 megaohm.



Electric capacitance, is not more than:

- 95 picofarad/m, screened pairs with wave impedance 75 Ohm;
- 65 picofarad/m, screened pairs with wave impedance 100 Ohm;
- 230 picofarad/m, between conductor and screen (for the screened conductors).

Near-end crosstalk attenuation on the 100m of the length between screened pairs of insulated conductors of cross-section 0,5 mm² is not less than 62 dB on the frequency of 1 MHz and 32 dB on the frequency of 100 MHz.

Cables stand 50 bends on the angle of 90° around the cylinder diameter of which is 8 nominal cable diameters under the standard climatic conditions.

Cables stand 10 bends on the angle of 90° around the cylinder diameter of which is 8 nominal cable diameters, under low ambient temperature up to 10°C.

Cables stand the influence of :

- sinusoidal vibrations;
- single-action physical shock;
- hydrostatic pressure longitudinally and radially:

— 6,0 MPa — for the cable of KPVEVKG-60 type;
— 10,0 MPa — for the cables of KPVKG-100, KPVEKG-100, KPVEVKG-100 types;

- sea water with salt content up to 3,5% under the temperature of -4°C up to +35°C;
- maximum operating temperature of 65°C;
- low ambient temperature for the operation -40°C;
- high relative air humidity is 100% under the temperature of 40°C;
- ambient temperature variation from -40°C to +50°C;
- mould fungi — fouling degree within 2 points;
- exposure to oil, diesel fuel and its vapour within not less than 10 hours

Cables are flame retardant in individual laying. Cable lifting is allowed without sealing compound running out under the temperature of 65°C.

Factory length of the cables is not less than:

- 150 m — for the cables of KPVKG-100 1x(2x0,5)e, KPVEKG-100 4x(2x0,5)e types;
- 50m — for the cables of KPVKG-100 7ex0,75+26x(2x0,5)e, KPVEVKG-100 4x(2x0,5)e, KPVKG-100 2x(2ex0,75)+4x(2x0,5)e, KPVEVKG-60 12x(2x0,5)e+2x(4ex0,75), KPVEVKG-60 14x(2x0,5)e types;
- 25m — for the cables of KPVEVKG-60 10ex0,75+6x(2x0,75)e +7ex1,0+14ex1,5 type

By parties agreement it is possible to ship cable of any length.

Lifetime of the cable is :

- 15 years in stationary outboard laying ;
- 20 years in stationary indoor laying.