



«Saranskabel-Optika», Ltd.

PRODUCT CATALOG

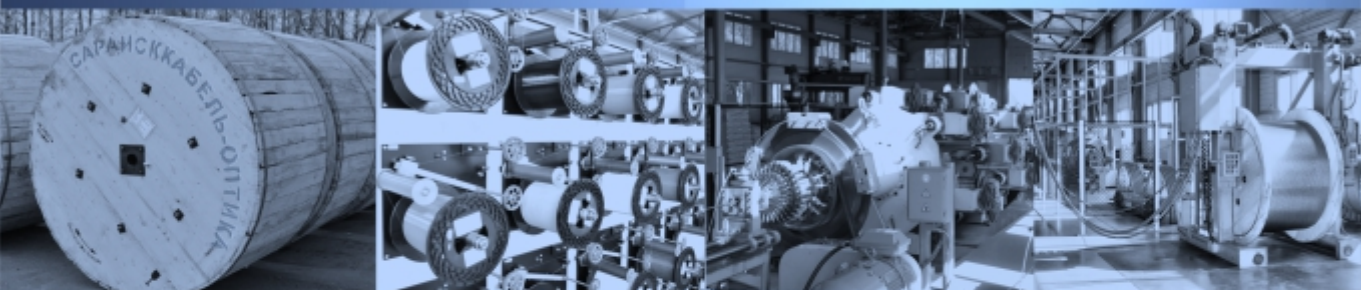


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Saranskkabel-Optika, Ltd.

"Saranskkabel-Optika", Ltd. – is one of the leading Russian manufacturers of fiber-optic cable. The company has been operating on the market since 2000. It is one of the industrial enterprises of Group of Companies "Opticenergo", which consists of 22 companies of various types of activity, including 5 factories.

The production of "Saranskkabel-Optika", Ltd. is located in four workshops with the total area of 15.000 m², equipped by 40 production lines. The potential volume of production is 100 000 km of optical cable per year.

"Saranskkabel-Optika", Ltd. produces the whole range of fiber-optic cables, used in main and local telecommunication networks.

The company has a unique, more than 15 years experience in producing OPGW cables. It was the first who started producing OPGW in Russia. During this time, about 60.000 km of OPGW cables has been delivered to the country's most important energy facilities.

Another unique product for the power industry is an optical cable combined with self-supporting insulated wire, which has advantages and economic benefits. This is a hybrid cable, which allows both electricity and data transmission.

"Saranskkabel-Optika", Ltd. also has leading position in production of non-insulated conductors for overhead lines: AAC, ACSR.

The quality of the products is ensured by the quality management system that meets the requirements of the interstate standard GOST R ISO 9001-2015.

Sales markets are stretched from the western regions of the country to the Pacific Ocean. The company delivers its products to more than 60 regions of Russia, as well as to neighboring countries. Exports account for about 10% of sales.

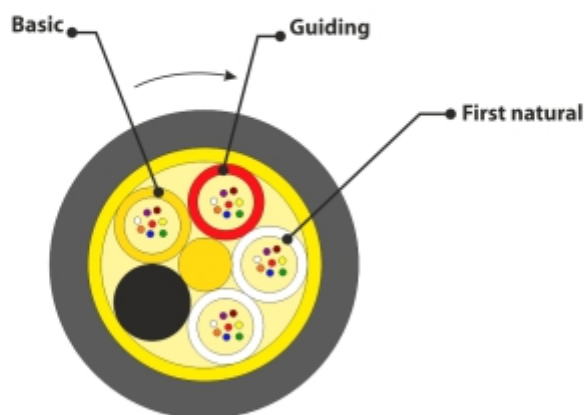
By the present, the company has manufactured and shipped to its consumers more than 600 000 km of cable. Over 6 500 000 km of optical fiber have been processed. According to the results of 2022, "Saranskkabel-Optika", Ltd. is the second largest producer of fiber-optic cable in Russia.

Welcome to cooperation!



COLOR CODES

| № | Fiber color | Fibers number | | | | |
|----|-------------------------|---------------|---|----|----|----|
| | | 4 | 8 | 12 | 16 | 24 |
| 1 | Blue | | | | | |
| 2 | Orange | | | | | |
| 3 | Green | | | | | |
| 4 | Brown | | | | | |
| 5 | Grey | | | | | |
| 6 | White | | | | | |
| 7 | Red | | | | | |
| 8 | Black | | | | | |
| 9 | Yellow | | | | | |
| 10 | Violet | | | | | |
| 11 | Pink | | | | | |
| 12 | Aqua | | | | | |
| 13 | Blue with black ring | | | | | |
| 14 | Orange with black ring | | | | | |
| 15 | Green with black ring | | | | | |
| 16 | Brown with black ring | | | | | |
| 17 | Grey with black ring | | | | | |
| 18 | White with black ring | | | | | |
| 19 | Red with black ring | | | | | |
| 20 | Natural with black ring | | | | | |
| 21 | Yellow with black ring | | | | | |
| 22 | Violet with black ring | | | | | |
| 23 | Pink with black ring | | | | | |
| 24 | Aqua with black ring | | | | | |



Yellow – **basic**.

Red – **guiding**.

Natural – clockwise from the red one.
If required by the customer the color codes can be changed.

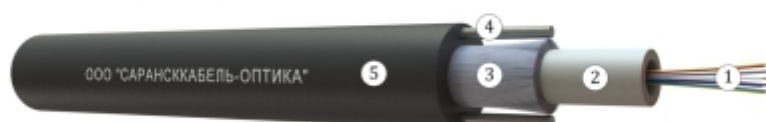


Fiber-optic microcables for urban networks

Application:

Cables are designed for laying inside buildings, in cable trays, channels, for suspension on the pillars of communication lines, poles of urban lighting, between buildings.

OKGS-T/P cable

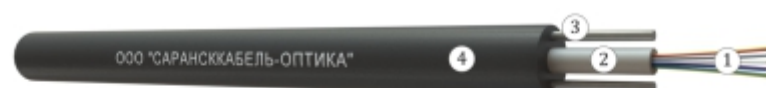


1. Optical fiber
2. PBT loose tube filled with hydrophobic gel
3. Fiberglass yarn
4. Strength member – FRP rod
5. Protective jacket

Brief information about the cable

| Number of fibers | 2-8 | 10-16 | 18-24 | 26-48 |
|------------------------------|-------------------|-------|-------|-------|
| Cable diameter, mm | 5,6 | 6,2 | 6,5 | 8,0 |
| Cable weight, kg / km | 24,2 | 30,3 | 34,0 | 51,6 |
| Tensile strength, kN | from 1,0 | | | |
| Crushing strength, kN/100 mm | not less than 3,0 | | | |

OKG-T/S (P) cables



1. Optical fiber
2. PBT loose tube filled with hydrophobic gel
3. Strength member – steel wire/FRP rod
4. Protective jacket

Brief information about the cable OKG-T/S

| Number of fibers | 2-8 | 10-16 | 18-24 | 26-48 |
|------------------------------|----------|-------|-------|-------|
| Cable diameter, mm | 5,0 | 6,0 | 6,4 | 7,8 |
| Cable weight, kg / km | 30,5 | 39,6 | 43,5 | 60,0 |
| Tensile strength, kN | from 1,0 | | | |
| Crushing strength, kN/100 mm | from 2,0 | | | |

Brief information about the cable OKG-T/P

| Number of fibers | 2-16 | 18-24 | 26-36 | 38-48 |
|------------------------------|-------------------|-------|-------|-------|
| Cable diameter, mm | 4,6 | 5,8 | 6,2 | 7,4 |
| Cable weight, kg / km | 18,2 | 28,6 | 32,3 | 46,1 |
| Tensile strength, kN | from 0,5 | | | |
| Crushing strength, kN/100 mm | not less than 3,0 | | | |

Application:

Cables are designed for laying inside buildings, in cable trays, channels, for suspension on the pillars of communication lines, poles of urban lighting, between buildings.

OKTM-T/S cable



1. Optical fiber
2. PBT loose tube filled with hydrophobic gel
3. Strength member – steel wire/rope
4. Protective jacket

Brief information about the cable

| Number of fibers | 2-8 | 10-16 | 18-24 |
|------------------------------|-------------------|---------|---------|
| Cable dimensions, mm | 6,0×3,8 | 6,7×4,4 | 8,1×5,8 |
| Cable weight, kg / km | 32,9 | 36,6 | 48,7 |
| Tensile strength, kN | from 1,8 | | |
| Crushing strength, kN/100 mm | not less than 3,0 | | |

OKT-T/S cable



1. Optical fiber
2. PBT loose tube filled with hydrophobic gel
3. Strength member – steel wire
4. Protective jacket

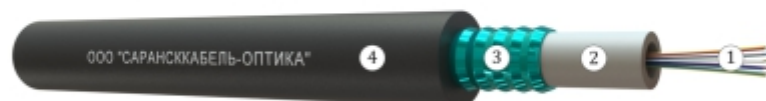
Brief information about the cable

| Number of fibers | 2-16 | 18-24 | 26-48 |
|------------------------------|-------------------|----------|----------|
| Cable dimensions, mm | 9,0×5,3 | 10,0×6,9 | 14,0×8,4 |
| Cable weight, kg / km | 51,0 | 61,0 | 90,1 |
| Tensile strength, kN | from 1,7 | | |
| Crushing strength, kN/100 mm | not less than 3,0 | | |

Application:

Cables are designed for laying in cable ducts, pipes, collectors, tunnels, into grounds of 1-3 groups.

OKL-T cable

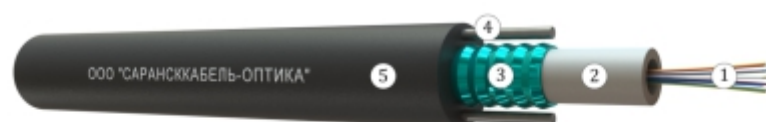


1. Optical fiber
2. PBT loose tube filled with hydrophobic gel
3. Corrugated steel tape armour
4. Protective jacket

Brief information about the cable

| Number of fibers | 2-16 | 18-36 | 38-48 |
|------------------------------|-------------------|-------|-------|
| Cable diameter, mm | 8,0 | 9,9 | 11,0 |
| Cable weight, kg / km | 65,0 | 94,0 | 115,0 |
| Tensile strength, kN | from 0,5 | | |
| Crushing strength, kN/100 mm | not less than 3,0 | | |

OKL-T/S cable

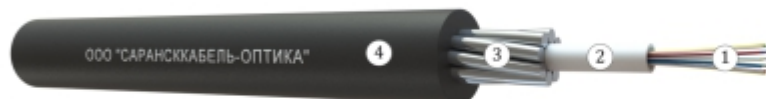


1. Optical fiber
2. PBT loose tube filled with hydrophobic gel
3. Corrugated steel tape armour
4. Strength member – steel wire
5. Protective jacket

Brief information about the cable

| Number of fibers | 2-16 | 18-36 | 38-48 |
|------------------------------|-------------------|-------|-------|
| Cable diameter, mm | 8,5 | 10,5 | 11,6 |
| Cable weight, kg / km | 87,0 | 120,0 | 141,0 |
| Tensile strength, kN | from 1,0 | | |
| Crushing strength, kN/100 mm | not less than 3,0 | | |

OKB-T cable



1. Optical fiber

2. PBT loose tube filled with hydrophobic gel

3. Zinc-coated steel wire armour

4. Protective jacket

* longitudinal watertightness of the cable is provided by a hydrophobic gel

Brief information about the cable

| Number of fibers | 2-8 | 10-24 | 26-36 | 38-48 |
|------------------------------|-------------------|-------|-------|-------|
| Cable diameter, mm | 6,8 | 8,4 | 9,4 | 10,0 |
| Cable weight, kg / km | 83,0 | 129,0 | 160,0 | 180,0 |
| Tensile strength, kN | from 2,7 | | | |
| Crushing strength, kN/100 mm | not less than 3,0 | | | |

Operation parameters for fiber-optic micro-cables

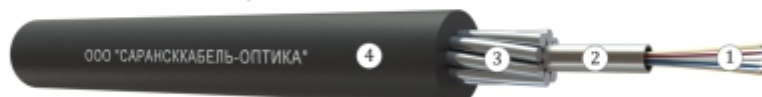
| | |
|---------------------------------|----------------------------|
| Operating temperature range, °C | -40... +60 |
| Installation temperature, ° C | -30**...+50 |
| Min. bending radius | not less than 20 diameters |

** in case of using a cable with FR sheath, the minimum installation temperature is not lower than -10 °C

OKBs cable

OKBs cable with HDPE jacket is designed for installation into grounds of 1-5 groups (depending on the cable design), in cable duct, tunnels, collectors, with high requirements for mechanical strength.

OKBs cable with FRHFLTx jacket is used in fire protection systems, as well as in other systems that must remain operative in a fire condition.



1. Optical fiber

2. Stainless steel loose tube filled with hydrophobic gel

3. Zink-coated steel wire armour

4. Protective jacket

* longitudinal watertightness of the cable is provided by a hydrophobic gel

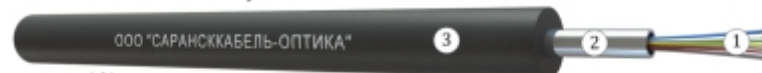
Brief information about the cable

| Number of fibers | 2-24 | 26-36 | 38-48 | 50-96 |
|------------------------------|-------------------|-------|-------|-------|
| Cable diameter, mm | 10,0 | 10,4 | 10,8 | 12 |
| Cable weight, kg / km | 196 | 220 | 242 | 275 |
| Tensile strength, kN | not less than 5,0 | | | |
| Crushing strength, kN/100 mm | not less than 7,0 | | | |

OKLs cable

OKLs cable with HDPE jacket is designed for installation in cable duct, pipes, collectors, tunnels.

OKLs cable with FRHFLTx jacket is used in fire protection systems, as well as in other systems that must remain operative in a fire condition.



1. Optical fiber

2. Stainless steel loose tube filled with hydrophobic gel

3. Protective jacket

Brief information about the cable

| Number of fibers | 2-24 | 26-36 | 36-48 | 50-96 |
|------------------------------|-------------------|-------|-------|-------|
| Cable diameter, mm | 5,8 | 6,2 | 6,6 | 9,0 |
| Cable weight, kg / km | 38 | 43 | 48 | 97 |
| Tensile strength, kN | not less than 1,5 | | | |
| Crushing strength, kN/100 mm | not less than 5,0 | | | |

Operating requirements for fireproof cables

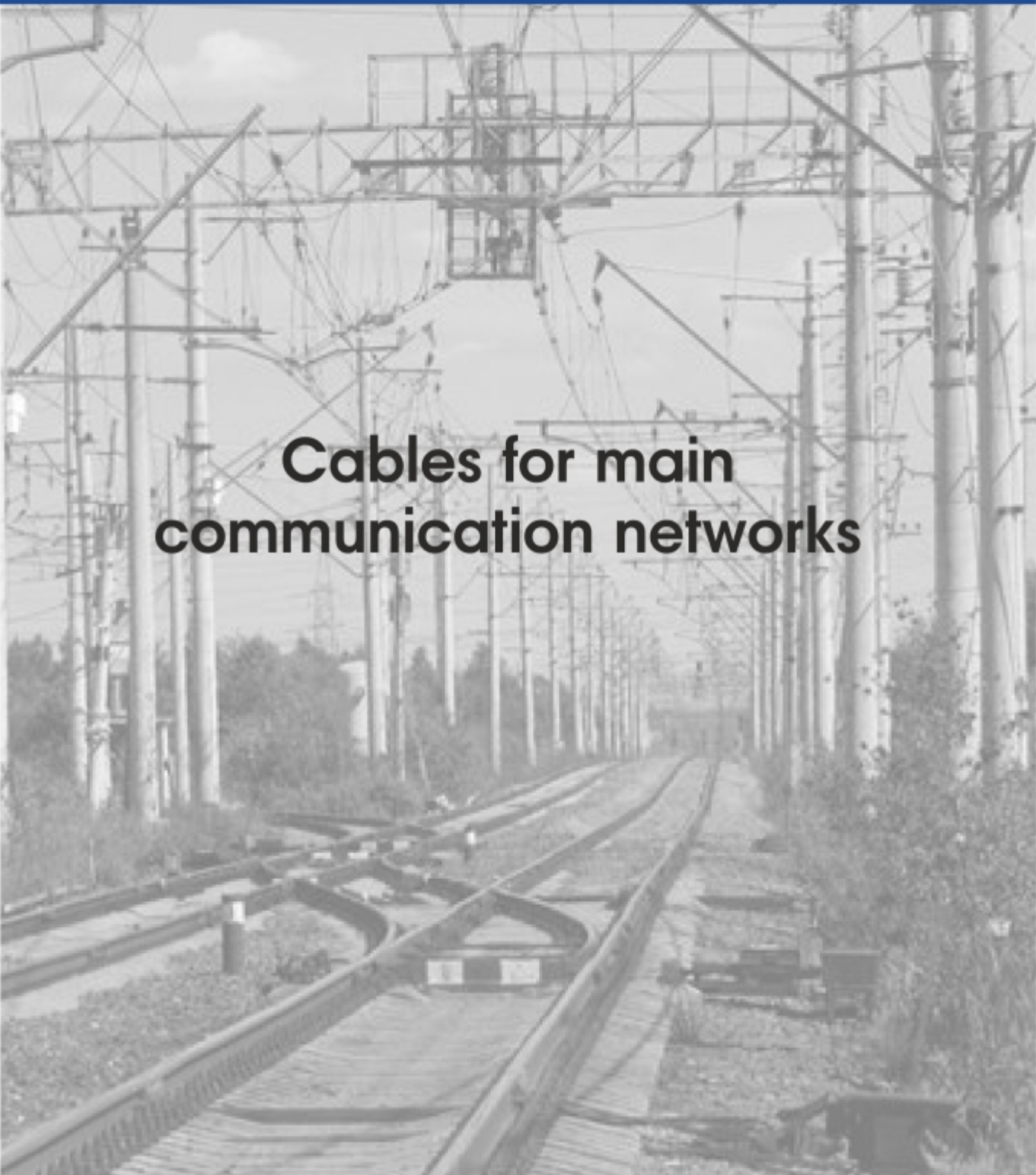
| | |
|---------------------------------|--|
| Operating temperature range, °C | -60... +70 |
| Temperature of installation, °C | Not lower -30** |
| Min. bending radius | Not less than 25 cable diameters |
| Life time | 25 years |
| Warranty period | 2 years after commissioning, no more than 2,5 years from delivery date |

** In case of cables with FR sheath, the minimum installation temperature is not lower than -10 °C.

Cable weight with FR sheath is specified when ordering.



Cables for main communication networks



FIBER-OPTIC CABLES FOR DIRECT BURIED INSTALLATION, ARMOURED BY GALVANIZED STEEL WIRES

Application:

Cables are designed for installation into grounds of 1-5 groups (depending on the cable design), in cable duct, tunnels, collectors, with high requirements for mechanical strength.

OKB cable

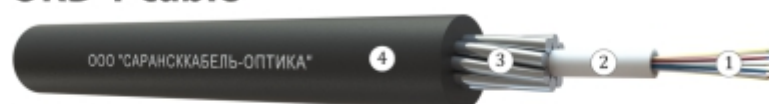


1. Central strength member – fiberglass reinforced plastic rod
 2. Optical fiber
 3. SZ stranded loose tubes filled with hydrophobic gel
 4. Inner jacket
 5. zink-coated steel wire armour
 6. Protective jacket
- *longitudinal watertightness of the cable is provided by a hydrophobic gel*

Brief information about the cable

| Number of fibers | 2-32 | 34-48 | 50-80 | 82-96 | 98-144 |
|------------------------------|--|-------|-------|-------|--------|
| Cable diameter, mm | 11,8 | 13,0 | 13,7 | 14,7 | 17,3 |
| Cable weight, kg / km | 217 | 259 | 283 | 323 | 427 |
| Tensile strength, kN | not less than 3,0 kN for laying in grounds of 1-3 groups; not less than 7,0 kN for laying in grounds of 4-5 groups; | | | | |
| Crushing strength, kN/100 mm | not less than 4,0 kN/100 mm for laying in grounds of 1-3 groups; not less than 7,0 kN/100 mm for laying in grounds of 4-5 groups; | | | | |

OKB-T cable



1. Optical fiber
 2. PBT loose tube filled with hydrophobic gel
 3. Zink-coated steel wire armour
 4. Protective jacket
- * longitudinal watertightness of the cable is provided by a hydrophobic gel*

Brief information about the cable

| Number of fibers | 2-16 | 18-24 | 26-36 | 38-48 |
|------------------------------|--|-------|-------|-------|
| Cable diameter, mm | 9,9 | 10,2 | 11,2 | 11,4 |
| Cable weight, kg / km | 156 | 166 | 199 | 209 |
| Tensile strength, kN | not less than 2,5 kN for laying in grounds of 1-3 groups; not less than 4,0 kN for laying in grounds of 4-5 groups; | | | |
| Crushing strength, kN/100 mm | not less than 4,0 kN/100 mm for laying in grounds of 1-3 groups; not less than 7,0 kN/100 mm for laying in grounds of 4-5 groups; | | | |

FIBER-OPTIC CABLES FOR DIRECT BURIED INSTALLATION, ARMoured BY FIBERGLASS RODS

Application:

OKP cable is designed for installation into grounds when the resistance to external electromagnetic influences is required.

OKP cable



1. Central strength member – fiberglass reinforced plastic rod

2. Optical fiber

3. SZ stranded loose tubes filled with hydrophobic gel

4. Inner jacket

5. Fiberglass rods armour

6. Protective jacket

* longitudinal watertightness of the cable is provided by a hydrophobic gel

Brief information about the cable

| Number of fibers | 2-32 | 34-48 | 50-96 | 98-144 |
|------------------------------|--|-------|-------|--------|
| Cable diameter, mm | 12,2 | 12,9 | 17,2 | 19,7 |
| Cable weight, kg / km | 131 | 147 | 275 | 354 |
| Tensile strength, kN | not less than 3,0 kN for laying in grounds of 1-3 groups; not less than 7,0 kN for laying in grounds of 4-5 groups; | | | |
| Crushing strength, kN/100 mm | not less than 4,0 kN/100 mm for laying in grounds of 1-3 groups; not less than 7,0 kN/100 mm for laying in grounds of 4-5 groups; | | | |

Operating requirements for cables in ground

| | |
|---------------------------------|--|
| Operating temperature range, °C | -60... +70 |
| Temperature of installation, °C | Not lower -30** |
| Min. bending radius | Not less than 20 cable diameters |
| Life time | 25 years |
| Warranty period | 2 years after commissioning, no more than 2,5 years from delivery date |

** In case of cables with FR sheath, the minimum installation temperature is not lower than -10 °C.

Cable weight with FR sheath is specified when ordering.

FIBER-OPTIC CABLES FOR INSTALLATION IN CABLE DUCTS, ARMoured BY CORRUGATED STEEL TAPE

Application:

Cables are designed for installation in cable duct, pipes, collectors, tunnels.

OKL cable



1. Central strength member – fiberglass reinforced plastic rod
2. Optical fiber
3. SZ stranded loose tubes filled with hydrophobic gel
4. Inner jacket
5. Corrugated steel tape armour
6. Protective jacket

* longitudinal watertightness of the cable is provided by a hydrophobic gel

Brief information about the cable

| Number of fibers | 2-24 | 26-48 | 50-96 | 98-144 |
|------------------------------|-------------------|-------|-------|--------|
| Cable diameter, mm | 11,5 | 12,5 | 15,5 | 19,2 |
| Cable weight, kg / km | 126 | 148 | 215 | 309 |
| Tensile strength, kN | not less than 1,5 | | | |
| Crushing strength, kN/100 mm | not less than 3,0 | | | |

OKLm cable



1. Central strength member – fiberglass reinforced plastic rod
2. Optical fiber
3. SZ stranded loose tubes filled with hydrophobic gel
4. Corrugated steel tape armour
5. Protective jacket

* longitudinal watertightness of the cable is provided by a hydrophobic gel

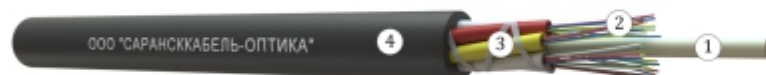
Brief information about the cable

| Number of fibers | 2-32 | 34-48 | 50-80 | 82-96 | 98-144 |
|------------------------------|-------------------|-------|-------|-------|--------|
| Cable diameter, mm | 10,1 | 11,0 | 11,8 | 12,5 | 15,5 |
| Cable weight, kg / km | 94 | 116 | 126 | 145 | 208 |
| Tensile strength, kN | not less than 1,0 | | | | |
| Crushing strength, kN/100 mm | not less than 3,0 | | | | |

Application:

Cables are designed for blowing into protective pipe, which is used for underground laying.

OKG cable



1. Central strength member – fiberglass reinforced plastic rod
 2. Optical fiber
 3. SZ stranded PBT loose tubes filled with hydrophobic gel
 4. Protective jacket
- * longitudinal watertightness of the cable is provided by a hydrophobic gel

Brief information about the cable

| Number of fibers | 2-48 | 50-96 | 98-144 |
|------------------------------|--------------------|-------|--------|
| Cable diameter, mm | 8,5 | 10,2 | 13,2 |
| Cable weight, kg / km | 59 | 85 | 137 |
| Tensile strength, kN | from 1,0 up to 3,5 | | |
| Crushing strength, kN/100 mm | not less than 3,0 | | |

OKM cable



1. Central strength member – fiberglass reinforced plastic rod
 2. PE coating of rod
 3. Optical fiber
 4. SZ stranded PBT micro-loose tubes filled with hydrophobic gel
 5. Protective jacket
- * longitudinal watertightness of the cable is provided by a hydrophobic gel

Brief information about the cable

| Number of fibers | 2-72 | 74-96 | 98-144 |
|------------------------------|----------|-------|--------|
| Cable diameter, mm | 6,0 | 7,0 | 9,0 |
| Cable weight, kg / km | 33,0 | 47,0 | 73,0 |
| Tensile strength, kN | from 1,0 | | |
| Crushing strength, kN/100 mm | from 1,0 | | |

Operating requirements for cables in ducts and pipe blower cables

| | |
|---------------------------------|---|
| Operating temperature range, °C | -60... +70 |
| Temperature of installation, °C | Not lower -30** |
| Min. bending radius | Not less than 20 cable diameters |
| Life time | 25 years |
| Warranty period | 2 years after commissioning, no more than 2,5 years from the date of delivery |

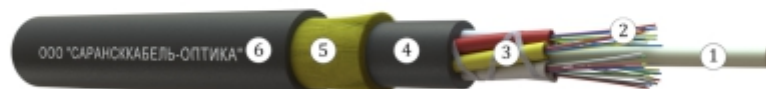
** In case of cables with FR sheath, the minimum installation temperature is not lower than -10 °C.
Cable weight with FR sheath is specified when ordering.

FIBER-OPTIC ADSS CABLES ARMoured BY ARAMID YARNS

Application:

Cables are designed for aerial installation on communication line supports, the railway catenary, power transmission line towers, between buildings.

OKK cable



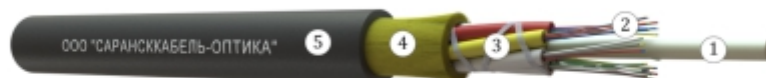
1. Central strength member – fiberglass reinforced plastic rod
 2. Optical fiber
 3. SZ stranded loose tubes filled with hydrophobic gel
 4. Inner jacket
 5. Aramid yarns
 6. Protective jacket
- * longitudinal watertightness of the cable is provided by a hydrophobic gel

Brief information about the cable

| Number of fibers | 2-40 | 42-60 | 62-96 | 98-144 |
|------------------------------|-------------------|-----------|-----------|-----------|
| Cable diameter, mm | 12,4 | 12,5 | 12,4 | 14,7 |
| Cable weight, kg / km | up to 119 | up to 122 | up to 123 | up to 168 |
| Tensile strength, kN | from 3 up to 85 | | | |
| Crushing strength, kN/100 mm | not less than 3,0 | | | |

* Details are given for the average permissible tensile load of 7kN

OKKM cable



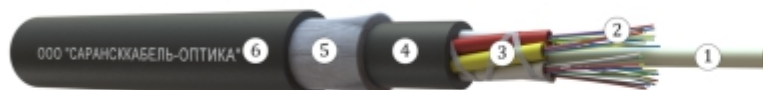
1. Central strength member – fiberglass reinforced plastic rod
 2. Optical fiber
 3. SZ stranded loose tubes filled with hydrophobic gel
 4. Aramid yarns
 5. Protective jacket
- * longitudinal watertightness of the cable is provided by a hydrophobic gel

Brief information about the cable

| Number of fibers | 2-60 | 62-96 | 98-144 |
|------------------------------|-------------------|-----------|-----------|
| Cable diameter, mm | 11,2 | 11,2 | 13,3 |
| Cable weight, kg / km | up to 99 | up to 103 | up to 139 |
| Tensile strength, kN | from 3 up to 12 | | |
| Crushing strength, kN/100 mm | not less than 3,0 | | |

* Details are given for the average permissible tensile load of 7kN

OKKS cable



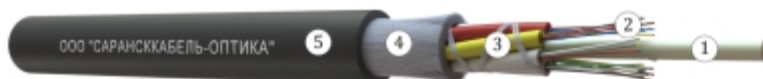
1. Central strength member – fiberglass reinforced plastic rod
 2. Optical fiber
 3. SZ stranded loose tubes filled with hydrophobic gel
 4. Inner jacket
 5. Fiberglass yarns
 6. Protective jacket
- * longitudinal watertightness of the cable is provided by a hydrophobic gel

Brief information about the cable

| Number of fibers | 2-40 | 42-60 | 62-96 | 98-144 |
|------------------------------|-------------------|-----------|-----------|-----------|
| Cable diameter, mm | 12,7 | 12,8 | 13,0 | 15,1 |
| Cable weight, kg / km | up to 130 | up to 133 | up to 142 | up to 183 |
| Tensile strength, kN | from 3 up to 12 | | | |
| Crushing strength, kN/100 mm | not less than 3,0 | | | |

* Details are given for the average permissible tensile load of 7kN

OKKMS cable



1. Central strength member – fiberglass reinforced rod
 2. Optical fiber
 3. SZ stranded loose tubes filled with hydrophobic gel
 4. Fiberglass yarns
 5. Protective jacket
- * longitudinal watertightness of the cable is provided by a hydrophobic gel

Brief information about the cable

| Number of fibers | 2-60 | 62-96 | 98-144 |
|------------------------------|-------------------|-----------|-----------|
| Cable diameter, mm | 11,5 | 11,7 | 13,5 |
| Cable weight, kg / km | up to 110 | up to 118 | up to 149 |
| Tensile strength, kN | from 3 up to 12 | | |
| Crushing strength, kN/100 mm | not less than 3,0 | | |

* Details are given for the average permissible tensile load of 7kN

Operating requirements for ADSS cables

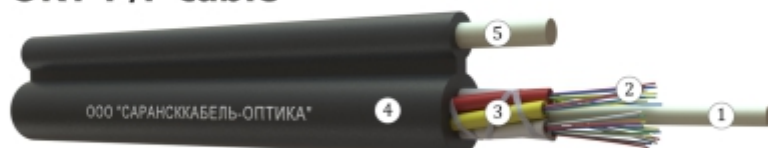
| | |
|---------------------------------|---|
| Operating temperature range, °C | -60... +70 |
| Temperature of installation, °C | Not lower -30 |
| Min. bending radius | Not less than 20 cable diameters |
| Life time | 25 years |
| Warranty period | 2 years after commissioning, no more than 2.5 years from the date of delivery |

FIBER-OPTIC 8-SHAPED AERIAL CABLES WITH AN EXTERNAL STRENGTH MEMBER

Application:

Cables are designed for suspension on overhead power lines, urban lighting pillars, between buildings.

OKT-P/P cable



1. Central strength member – fiberglass rod
2. Optical fiber
3. SZ stranded loose tubes filled with hydrophobic gel
4. Protective jacket
5. FRP rod

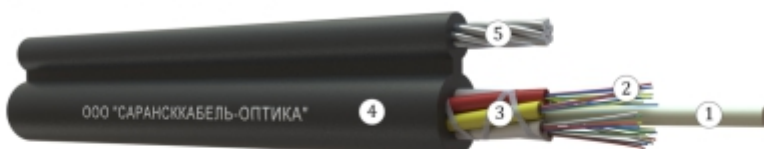
* longitudinal watertightness of the cable is provided by a hydrophobic gel

Brief information about the cable

| Number of fibers | 2-48 | 50-96 | 98-144 |
|------------------------------|-------------------|-----------|-----------|
| Cable dimensions, mm | 16,0×8,9 | 17,9×10,8 | 19,7×12,6 |
| Cable weight, kg / km | 107 | 141 | 192 |
| Tensile strength, kN | from 3 up to 6,0 | | |
| Crushing strength, kN/100 mm | not less than 3,0 | | |

* Details are given for the average permissible tensile strength of 4kN

OKT-P/S cable



1. Central strength member – fiberglass rod
2. Optical fiber
3. SZ stranded loose tubes filled with hydrophobic gel
4. Protective jacket
5. Steel rope

* longitudinal watertightness of the cable is provided by a hydrophobic gel

Brief information about the cable

| Number of fibers | 2-48 | 50-96 | 98-144 |
|------------------------------|-------------------|-----------|-----------|
| Cable dimensions, mm | 13,4×8,9 | 16,6×10,8 | 18,5×12,6 |
| Cable weight, kg / km | 101 | 136 | 187 |
| Tensile strength, kN | from 3 up to 12,0 | | |
| Crushing strength, kN/100 mm | not less than 3,0 | | |

* Details are given for the average permissible tensile strength of 4kN

FIBER-OPTIC 8-SHAPED AERIAL CABLES WITH AN EXTERNAL STRENGTH MEMBER

Application:

Cables are designed for suspension on overhead power lines, urban lighting pillars, between buildings.

OKT-T/P cable



1. Optical fiber
2. PBT loose tube filled with hydrophobic gel
3. Protective jacket
4. FRP rod

Brief information about the cable

| Number of fibers | 2-16 | 10-16 | 18-24 | 26-48 |
|------------------------------|--------------------|-------|----------|----------|
| Cable dimensions, mm | 11,0×6,5 | | 14,7×6,6 | 16,3×8,2 |
| Cable weight, kg / km | 83 | | 108 | 127 |
| Tensile strength, kN | from 1,0 up to 4,0 | | | |
| Crushing strength, kN/100 mm | not less than 3,0 | | | |

* Details are given for the average permissible tensile strength of 4kN

OKT-T/ST cable



1. Optical fiber
2. PBT loose tube filled with hydrophobic gel
3. Protective jacket
4. Steel rope

Brief information about the cable

| Number of fibers | 2-8 | 10-16 | 18-24 | 26-48 |
|------------------------------|--------------------|----------|----------|----------|
| Cable dimensions, mm | 8,5×4,1 | 10,0×5,3 | 11,2×6,9 | 14,2×8,9 |
| Cable weight, kg / km | 47,5 | 60,6 | 73,2 | 94,8 |
| Tensile strength, kN | from 1,0 up to 9,0 | | | |
| Crushing strength, kN/100 mm | from 2,0 up to 5,0 | | | |

* Details are given for the average permissible tensile strength of 4kN

FIBER-OPTIC 8-SHAPED AERIAL CABLES WITH AN EXTERNAL STRENGTH MEMBER

Application:

Cables are designed for suspension on overhead power lines, urban lighting pillars, between buildings.

OKTs cable



1. Optical fiber
2. Stainless steel loose tube filled with hydrophobic gel
3. Protective jacket
4. Steel rope

Brief information about the cable

| Number of fibers | 2-36 | 38-48 |
|------------------------------|-------------------|----------|
| Cable diameter, mm | 13,3×6,2 | 13,7×6,6 |
| Cable weight, kg / km | 128 | 140 |
| Tensile strength, kN | not less than 3,5 | |
| Crushing strength, kN/100 mm | not less than 8,0 | |

Operating requirements for 8-shaped aerial cables

| | |
|---------------------------------|---|
| Operating temperature range, °C | -60... +70 |
| Temperature of installation, °C | Not lower -30 |
| Min. bending radius | Not less than 20 cable diameters |
| Life time | 25 years |
| Warranty period | 2 years after commissioning, no more than 2,5 years from the date of delivery |



Cables for local communication networks

Riser-cables

Application:

Cables are designed for vertical laying inside buildings between floors. Cables are used to create communication lines between the common distribution box and a flat or another location inside the building.

OKV-R (Tight-buffered Riser cable)



1. Tight-buffered optical fiber (G.657A.)
2. Peripheral strength members – fiberglass rods
3. Protective jacket (HFLS)

| Number of fibers | 2-48 |
|-----------------------|----------|
| Cable diameter, mm | 6,5-13,5 |
| Cable weight, kg / km | 38-157 |

OKV-RM (Riser cable with micro-tubes)



1. Micro-tubes with optical fibers (G.657A.)
2. Peripheral strength members – fiberglass rods
3. Protective jacket (HFLS)

| Number of fibers | 2-288 |
|-----------------------|----------|
| Cable diameter, mm | 6,5-13,5 |
| Cable weight, kg / km | 37-149 |

Operating requirements for riser cables

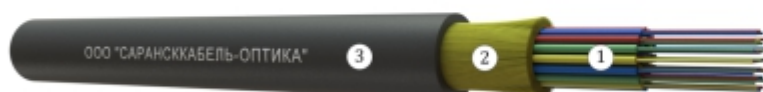
| | |
|---------------------------------|----------------------------------|
| Operating temperature range, °C | -60... +70 |
| Temperature of installation, °C | Not lower -10 |
| Min. bending radius | Not less than 10 cable diameters |
| Tensile strength, kN | not less than 0,5 |
| Crushing strength, kN/100 mm | not less than 0,8 |

Distribution-cables

Application:

Cables are designed for use in structured cable networks inside buildings (including vertical), cable routing organization.

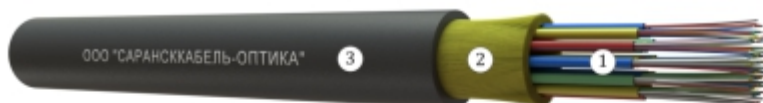
OKV-RD cable



1. Tight-buffered optical fiber
2. Aramid yarns
3. Protective jacket (HFLS)

| Number of fibers | 2-48 |
|-----------------------|------------|
| Cable diameter, mm | 5,3-13,7 |
| Cable weight, kg / km | 23,2-158,1 |

OKV-RDM cable



1. Micro-tubes with optical fibers
2. Aramid yarns
3. Protective jacket

| Number of fibers | 2-288 |
|-----------------------|------------|
| Cable diameter, mm | 5,3-13,7 |
| Cable weight, kg / km | 23,7-150,7 |

Operating requirements for distribution cables

| | |
|---------------------------------|----------------------------------|
| Operating temperature range, °C | -60... +70 |
| Temperature of installation, °C | Not lower -10 |
| Min. bending radius | Not less than 10 cable diameters |
| Tensile strength, kN | not less than 0,5 |
| Crushing strength, kN/100 mm | not less than 0,5 |

Drop- cables

Application:

Cables are designed for in-door installation, for laying on exterior facades of buildings, in cable trays, cable ducts, for suspension on communication line supports, between buildings. It is used in networks, where the minimum diameter of cable must provide reliable protection against mechanical and climatic influences.

OKV-RDB cable



1. Tight-buffered optical fiber
2. PBT loose tube with water blocking yarns.
3. Aramid yarns
4. Protective jacket (HFLS)

Brief information about the cable

| Number of fibers | 1 |
|---------------------------------|----------------------------------|
| Cable diameter, mm | 5,0 |
| Cable weight, kg / km | 30,0 |
| Operating temperature range, °C | -60... +70 |
| Temperature of installation, °C | Not lower -10 |
| Min. bending radius | Not less than 10 cable diameters |
| Tensile strength, kN | not less than 0,05 |
| Crushing strength, kN/100 mm | not less than 2,0 |

OKPA – P(S) cable



1. Optical fiber
2. Strength member – FRP rod/ steel wire
3. Protective jacket (HFLS)

Brief information about the cable

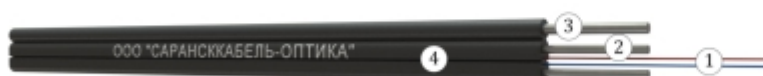
| Number of fibers | 1-4 |
|---------------------------------|----------------------------------|
| Cable dimensions, mm | 3,0 ± 2,0 |
| Cable weight, kg / km | from 10,0 |
| Operating temperature range, °C | -60... +70 |
| Temperature of installation, °C | Not lower -10 |
| Min. bending radius | Not less than 10 cable diameters |
| Tensile strength, kN | From 0,1 (S), from 0,05 (P) |
| Crushing strength, kN/100 mm | From 0,5 |

OKPA-P(S)/P cable



1. Optical fiber
2. Strength member – steel wire/fiberglass rod
3. FRP rod
4. Protective jacket

OKPA- P(S)/S cable



1. Optical fiber
2. Strength member – steel wire/FRP rod
3. Steel wire
4. Protective jacket

Brief information about the cable OKPA- P(S)/P(S)

| Number of fibers | 1-4 | |
|------------------------------|-------------|-------------|
| | OKPA-..../P | OKPA-..../S |
| Cable dimensions, mm | 5,2×2,0 | 5,2×2,0 |
| Cable weight, kg / km | 16 | 22 |
| Tensile strength, kN | from 0,3 | from 1,0 |
| Crushing strength, kN/100 mm | from 0,5 | |

OKPK cable



1. Optical fiber
2. PBT micro loose tube, filled with hydrophobic gel
3. Strength member- FRP rod
4. Protective jacket

Brief information about the cable

| Number of fibers | 1-2 | 1-8 | 1-8 | 1-16 | 1-24 |
|------------------------------|--------------|--------|---------|---------|----------|
| Cable dimensions, mm | 4,4×2,0 | 6,3×29 | 6,8×3,2 | 8,8×4,0 | 10,6×5,1 |
| Cable weight, kg / km | 9,9 | 19,8 | 26,1 | 38,5 | 56,8 |
| Tensile strength, kN | 0,6 | 1,2 | 1,4 | 2,2 | 2,8 |
| Crushing strength, kN/100 mm | not less 3,0 | | | | |

Operation parameters for drop cables

| | |
|---------------------------------|----------------------------|
| Operating temperature range, °C | -60... +70 |
| Installation temperature, °C | -30**...+50 |
| Min. bending radius | not less than 10 diameters |

** in case of using a cable with HFFR sheath, the minimum installation temperature is not lower than -10 °C

Subscriber cables

Application:

Cables are designed for installation inside buildings, directly to the subscriber. Cables are used to make connecting optical cords.

OKV-S (Simplex)



OKV-D (Duplex)



1. Tight-buffered optical fiber
2. Aramid yarns
3. Protective jacket (HFLS)

| Number of fibers | 1 | 2 |
|---------------------------------|----------------------------------|-------------------|
| Cable diameter, mm | 2,85 | 2,85×6,0 |
| Cable weight, kg / km | 6,5 | 13,5 |
| Operating temperature range, °C | -60... +70 | |
| Temperature of installation, °C | Not lower -10 | |
| Min. bending radius | Not less than 10 cable diameters | |
| Tensile strength, kN | Not less than 0,1 | Not less than 0,2 |
| Crushing strength, kN/100 mm | 0,5 | |



Power and communication cables

OPGW cables

Application:

Cables are designed to organize an optical communication line on the supports of power lines 35 kV and above and to protect power lines from direct lightning strikes.

OKGT-c cable



1. Optical fiber
2. Stainless steel loose tube filled with hydrophobic gel
3. Stranded aluminium clad steel wires and/or aluminium alloy wires.

Brief information about the cable

| Number of fibers | 2-24 | 26-48 | 50-96 |
|------------------------------|--------------------|----------|----------|
| Cable diameter, mm | from 8,2 | from 8,8 | from 9,8 |
| Cable weight, kg / km | from 250 | from 275 | from 300 |
| Tensile strength, kN | from 25,0 to 500 | | |
| Crushing strength, kN/100 mm | not less than 10,0 | | |

References, to be specified at the time of placing the order

OKGT-c cable

Recommended for suspension in areas with increased corrosivity



1. Optical fiber
2. Stainless steel loose tube filled with hydrophobic gel
3. Aluminium jacket of steel loose tube
4. Stranded aluminium clad steel wires and/or aluminium alloy wires

Brief information about the cable

| Number of fibers | 2-24 | 26-48 |
|------------------------------|--------------------|-----------|
| Cable diameter, mm | from 9,2 | from 10,6 |
| Cable weight, kg / km | from 210 | from 250 |
| Tensile strength, kN | from 25,0 to 500 | |
| Crushing strength, kN/100 mm | not less than 10,0 | |

References, to be specified at the time of placing the order

OKGT-s cable



1. Aluminium clad steel wire
2. Optical fiber
3. Stainless steel loose tube filled with hydrophobic gel
4. Stranded aluminium clad steel wires and/or aluminium alloy wires.

Brief information about the wire

| Number of fibers | 2-48 | 50-96 | 98-144 | 146-192 |
|------------------------------|--------------------|----------|-----------|-----------|
| Cable diameter, mm | from 11,9 | from 14 | from 14,8 | from 16,4 |
| Cable weight, kg / km | from 350 | from 400 | from 475 | from 550 |
| Tensile strength, kN | from 25,0 to 500 | | | |
| Crushing strength, kN/100 mm | not less than 10,0 | | | |

References, to be specified at the time of placing the order

GT (overhead ground wire)

Application:

Ground wire is used for suspension on the supports of power lines to protect the line from lightning overvoltage.



1. Aluminium clad steel wire
2. Stranded aluminium clad steel wires and/or aluminium alloy wires.

Brief information about the wire

| | |
|------------------------------|----------------------|
| Cable diameter, mm | from 7,9 up to 29,9 |
| Cable weight, kg / km | from 250 up to 3 600 |
| Tensile strength, kN | from 25,0 to 500 |
| Crushing strength, kN/100 mm | not less than 10,0 |

* References, to be specified at the time of placing the order

Operating requirements for OPGW cables

| | |
|---------------------------------|---|
| Operating temperature range, °C | -60... +70 |
| Temperature of installation, °C | Not lower -30 |
| Min. bending radius | Not less than 20 cable diameters |
| Life time | 50 years |
| Warranty period | 5 years after commissioning, no more than 5,5 years from the date of delivery |

Self-supporting insulated wires combined with optical cables

Application:

The product is designed for transmission and distribution of electrical energy on overhead lines and providing optical fiber communication.

Advantages:

- simultaneous transmission of electricity and high-quality communication
- the possibility of branching the electrical part without damaging the optical part
- use of standard tension and supporting fittings
- aesthetics of urban power lines
- reduction of load on supports
- reduction of installation and operating costs

SIP 3 with FOC for networks on voltage 10,0-35,0 kV (SIP-3/O)



1. Central strength member – fiberglass reinforced plastic rod
2. Optical fiber
3. SZ stranded loose tubes filled with hydrophobic gel
4. Web
5. Protective jacket
6. Conductive core

Brief information about the cable

| Rated current conductor cross-section, mm ² | Number of wires in the conductive core, pcs | Tensile strength of the core of the wire, kN, not less than |
|--|---|---|
| 38 | 7 | 10,3 |
| 50 | 7 | 14,2 |
| 70 | 7 | 20,6 |
| 95 | 19 | 27,9 |
| 120 | 19 | 35,2 |
| 150 | 19 | 43,4 |

SIP 2 with FOC (SIP-2/O) for networks on voltage 0.4-1.0 kV



1. Central strength member – fiberglass reinforced plastic rod
 2. Optical fiber
 3. SZ stranded loose tubes filled with hydrophobic gel
 4. Corrugated steel tape armour
 5. Protective jacket
 6. Zero core
 7. Current-conducting core
- * longitudinal watertightness of the optical cable is provided by a hydrophobic gel

Brief information about the cable

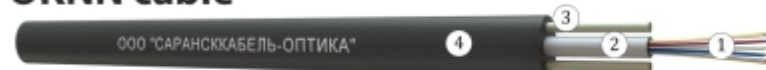
| Rated current conductor cross-section, mm ² | Tensile strength of the core of the wire, kN, not less than |
|--|---|
| 3×16+1×25 | 7,4 |
| 3×25+1×35 | 10,3 |
| 3×35+1×50 | 14,2 |
| 3×50+1×70 | 20,6 |
| 3×70+1×95 | 27,9 |

Fiber-optic cable for winding on power conducting wires

Application:

The cable is intended for winding on a ground wire or phase conductors of existing overhead lines with a voltage of 35-110 kV and above

OKNN cable



1. Optical fiber
2. PBT loose tube filled with hydrophobic gel
3. Strength member – FRP rod
4. Protective jacket

Brief information about the cable

| | |
|---------------------------------|----------------------------------|
| Number of fibers | 2-24 |
| Cable diameter, mm | 3,4x 5,2 |
| Cable weight, kg / km | Not more than 17,5 |
| Tensile strength, kN | 0,3 |
| Operating temperature range, °C | -60... +70 |
| Temperature of installation, °C | Not lower -30 |
| Min. bending radius | Not less than 20 cable diameters |

Aluminium-clad steel wire

Application:

Aluminium-clad steel wire is used in products, that require high corrosion resistance: ground wires, optical ground wires, conductors and others.

Wire mark : 20 SA



1. Steel wire

2. Aluminium sheath

| Operational requirements | |
|------------------------------------|----------------------------|
| Min. tensile strength | 10,7 MPa |
| Min. voltage at 1% elongation | 1000 MPa |
| Relative elongation, not less than | 1,5 % |
| Min. thickness of aluminium | From 8 % |
| Resistivity, not more than | 0,84880 Om mm ² |

Steel tube with optical fibers

Application:

Product is used in production of OPGW cables, fireproof cables and also in monitoring systems.



1. Optical fiber

2. Steel tube filled with hydrophobic gel

Maximal number of fibers in tubes used in fiber-optic cable production

| Tube diameter (mm) | Thickness of the wall (mm) | Max. number of fibers | |
|--------------------|----------------------------|-----------------------|-----|
| | | SMF | MMF |
| 2,8 | 0,2 | 24 | 16 |
| 3,2 | 0,2 | 36 | 24 |
| 3,6 | 0,2 | 48 | 36 |
| 4,4 | 0,2 | 48 | 48 |
| 5,6 | 0,3 | 96 | 72 |



Welcome to cooperation!

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