# BREAKING THROUGH LIMITS

## High-Performance Cable Solutions for Tunneling

prysmian

The planet's pathways

# Connecting the world.

# Today and in the future.

**25**
R&D CENTRES AROUND THE WORLD

Prysmian – the world leader in the energy and telecom cables and systems industry.

**150**
YEARS OF EXPERIENCE

With 150 years' experience, Prysmian is strongly positioned in high-tech markets and offers the widest possible range of products, services, technologies and know-how.

**We specialise in underground and submarine cables and systems** for power transmission and distribution, special cables for applications in many different industries, and medium and low voltage cables for the construction and infrastructure sectors.

**For the telecommunications industry, Prysmian is the world's largest provider** of cutting-edge cables and accessories for voice, video and data transmission, offering a comprehensive range of optical fibres, optical and copper cables and connectivity systems.

**We are committed to environmental responsibility** in our production processes, the protection of the global environment, and the responsible management of relations with the local communities in which we work.

**For us, innovation means meeting the needs of our customers and communities** by understanding their business drivers as quickly as they do. To do that, our team of over 900 Research & Development professionals is constantly looking to the future, predicting and identifying emerging trends in each of our industries and sectors. Acting on this intelligence from 25 R&D centres around the world, we're constantly close to our customers in their own local markets.

# DOWN TO THE CORE

## Powering the Future of Mining

The mining industry demands power, control, and reliability in the harshest conditions.  Prysmian delivers cutting-edge cable solutions engineered for durability, safety, and superior performance – whether in opencast, underground mining, or tunneling. Our advanced technology ensures seamless operation in the most extreme environments, meeting the needs of OEMs, contractors, installers, and mining companies worldwide.

### COMPREHENSIVE CABLE SOLUTIONS FOR MINING & TUNNELING

Prysmian provides a full range of cables for both fixed installations and movable equipment, ensuring efficient power transmission and operational safety. With decades of expertise and close collaboration with leading mining companies, we continuously innovate to meet the evolving demands of the industry.

## Why Choose Prysmian Mining Cables?

Our mining and tunneling cables are designed to excel in demanding applications, offering numerous benefits:

**EXTENDED LIFE SPAN**
Engineered for longevity, reducing down-time and maintenance costs.

**SUPERIOR CLIMATE & CHEMICAL RESISTANCE**
Withstanding extreme temperatures, oil, fuel, moisture, acids, and bases, as well as UV irradiation and ozone.

**UNMATCHED MECHANICAL STRENGTH & FLEXIBILITY**
Designed for high-speed reeling, acceler-ation, extreme bending, torsional loads, and misalignment.

**COMPACT & LIGHTWEIGHT DESIGN**
Up to 30% reduction in cable size and 40% weight reduction without com-promising performance.

**TAILORED ENGINEERING**
Customized solutions for specific mining requirements, including LV/MV, instrumentation, and optical fibre cables.

**ENHANCED SAFETY STANDARDS**
High-grade rubber sheathing ensur-ing optimal mechanical resistance and protection against harsh mining conditions.

### ENGINEERED FOR THE TOUGHEST MINING APPLICATIONS

**1. Opencast & Underground Mining**
Large-scale mining operations rely on highly mobile, heavy-duty machinery that requires flexible and durable power cables. Prysmian provides Medium Voltage (MV) reeling and trailing cables, specially designed to perform under extreme stress, ensuring efficient power distribution for excavators, drills, and conveyor systems.

**2. Tunneling: Beyond Mining**
Tunneling technology is essential not only in mining but also in critical infrastructure projects worldwide, including subway systems and high-speed rail networks. From the Channel Tunnel to San Gottardo, Prysmian cables power the world's most challenging tunneling projects.

### PROVEN RELIABILITY, WORLDWIDE

With manufacturing facilities strategically located near major mining regions across all continents, Prysmian ensures local availability, rapid delivery, and expert support. Our cables have been field-tested and proven in global mining and tunneling applications, reinforcing Prysmian's position as the trusted partner for the industry's most demanding projects.

### PRYSMIAN: DRIVING MINING INNOVATION

As the mining industry evolves, efficiency, safety, and sustainability are paramount. With our state-of-the-art cable solutions, we power the future of mining and tunneling, ensuring operational excellence in even the most challenging environments.
Explore Prysmian's mining and tunneling cable solutions and experience unmatched durability, reliability, safety, and performance down to the core.

# MINING & SUSTAINABILITY

## Powering the Future Responsibly

The world's need for minerals is expected to ten-fold during the next decade. The production of minerals such as graphite, lithium, and cobalt could increase by nearly 500% by 2050. To mine all these minerals while at the same time achieving zero-carbon emissions in the mining operations, calls for a transition towards clean energy and greater energy efficiency.

In fact, from lithium-ion batteries to photovoltaic cells, most green technologies require metals and minerals in their construction, thus essential for a low-carbon future. Consequently, the mining industry is driving the change, aiming for fully electrified, data-driven fleets.

In parallel, innovations and increased efficiency requirements within mines are leading to an increasingly extensive use of equipment operating at higher and higher voltages. The safety of personnel working in proximity to energised equipment, especially in underground mines, has become an increasingly crucial theme, too.



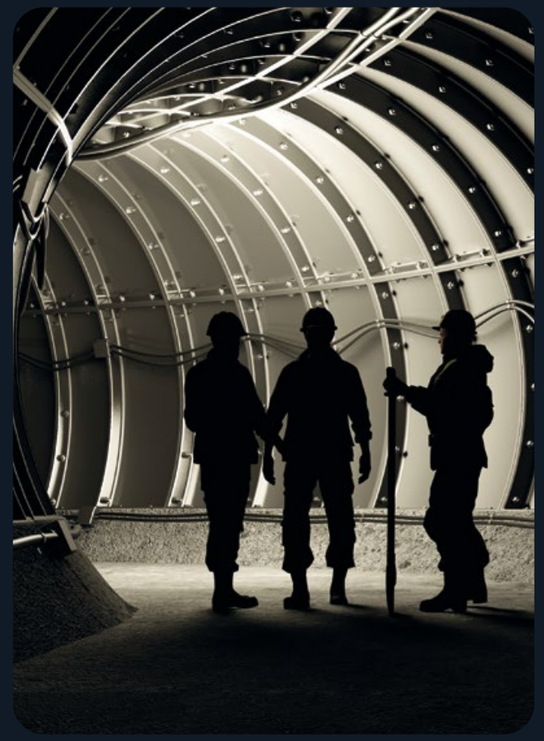
## This is What We Do

### INNOVATION MEETS SUSTAINABILITY

To meet these challenges, Prysmian has, besides extremely resistant and flexible mining cables and technological breakthroughs, developed complete cable solutions for the mining industry. Solutions that will make the production flow flawless, enhance the safety of the workforce, and bring sustainable energy to power it all up.

Our complete cable offer makes mining more sustainable – in many different ways. Safe and sturdy cables saving you on cost, and the environment on $CO_2$ emissions? Sounds too good to be true, doesn't it? But it is the truth! Our complete offer of top-notch mining cables will cost you less in the long run.

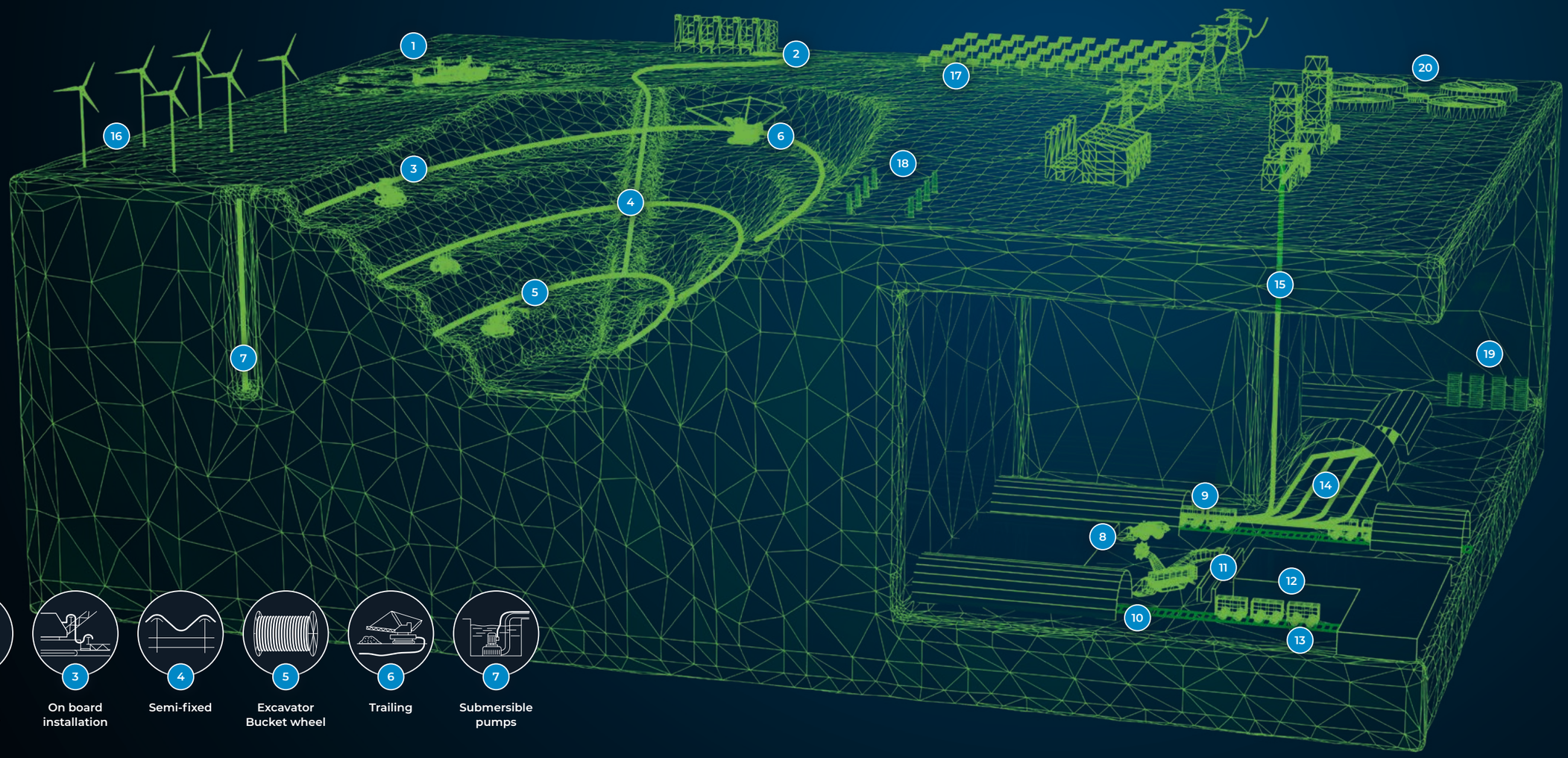
Being tough enough to endure the most uncompromising environments, in terms of everything from mechanical strains to chemical liquids and climate conditions, these cables will run flawlessly for years to come. Add to that a complete range of cables ready to provide every equipment on site with sustainable energy, and your business will have saved a lot more than just money.



The planet's pathways

# SUSTAINABLE MINING ACTIVITIES

Our electrification solutions




## OPENCAST MINING

1 Dredger

2 Stacker/ Reclaimer

3 On board installation

4 Semi-fixed

5 Excavator Bucket wheel

6 Trailing

7 Submersible pumps

## UNDERGROUND MINING & TUNNELING

8 LHD, Scoop, Loader

9 Drill

10 Coal cutter – free trailing

11 Coal cutter – chain application

12 Festoon

13 Shuttle car

14 Fixed installation

15 Shaft cable

## SUPPLEMENTARY SOLUTIONS

16 Wind turbines

17 PV plants

18 EV Charging

19 Server

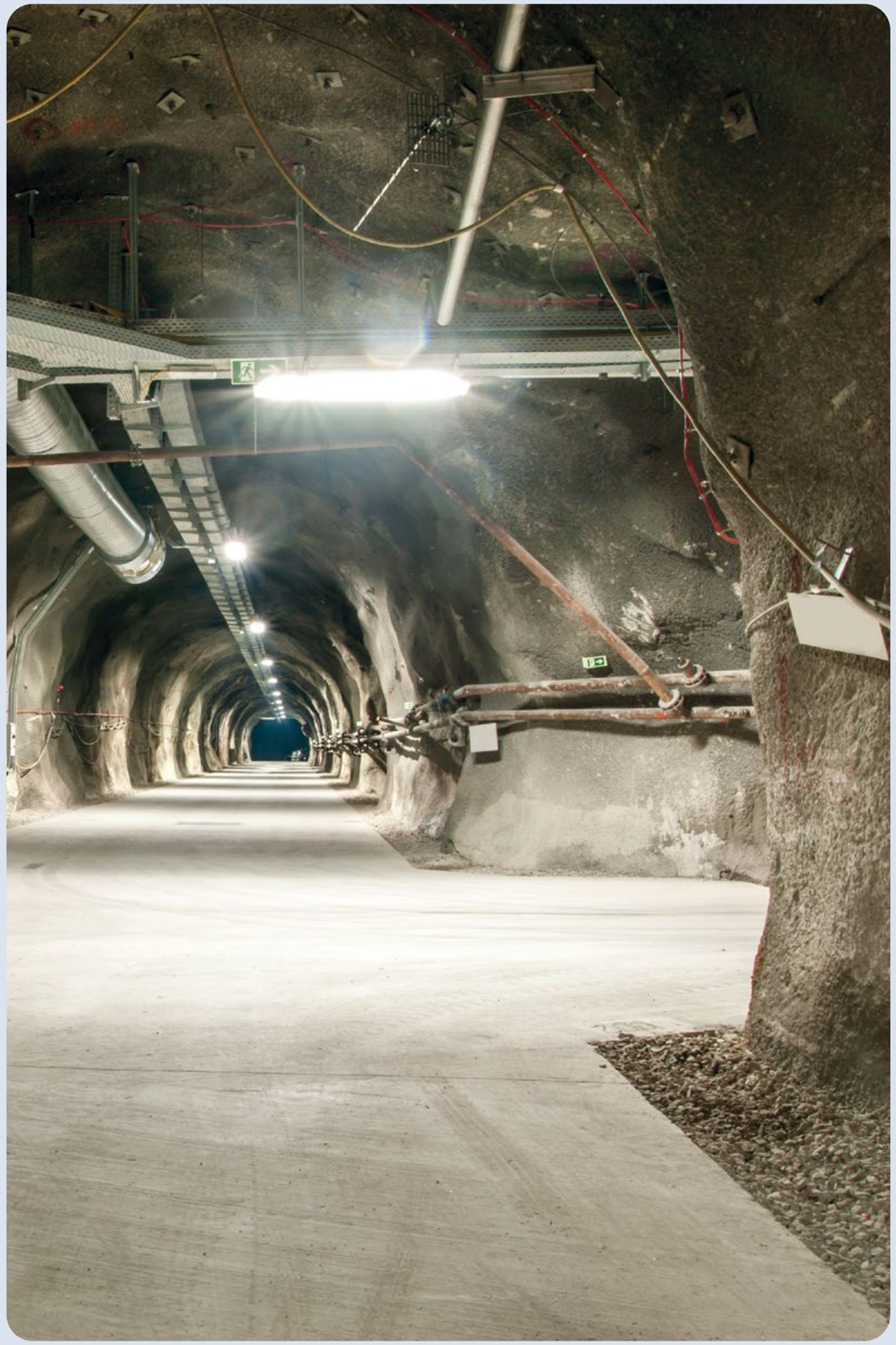
20 Water treatment

# APPLICATION OVERVIEW

## Tunneling

● Main Application
● Suitable

| Application groups | Reeling | Reeling | Festoon | Semi-fixed |
|---|---|---|---|---|
| **TBM REELING** | | | | |
| PROTOMONT TBM (N)TSCGECWOEU | ● | ● | ● | ● |
| **UNDERGROUND REELING** | | | | |
| TROMMELFLEX M-PUR D2X11Y | ● | ● | ● | ● |
| TROMMELFLEX M-PUR BRAIDED D2X11Y | ● | ● | ● | ● |
| TUNNELFLEX-PUR-HF WITHOUT ANTITWISTING PROTECTION | ● | ● | ● | ● |
| TUNNELFLEX-R-PUR-HF WITH ANTITWISTING PROTECTION | ● | ● | ● | ● |
| **CABLES FOR SEMI-FIXED INSTALLATION** | | | | |
| SUPROMONT (N)3GHSSHCH | | | ● | ● |
| SUPROMONT (N)3GHSSYCY | | | ● | ● |



# PROTOMONT TBM

## (N)TSCGECWOEU | 10 - 35 KV

The cables are suitable for use as reeling power supply cables for tunnel boring machines (TBM) in underground mines and for tunnel construction sites.

### STANDARDS / APPROVALS

| | |
|---|---|
| DIN VDE 0250-813 | General |
| GOST -R/-K/-B Fire Certificate of Russian Federation | Certifications / Approvals |
| DIN EN 60332-1-2 / IEC 60332-1-2 | Fire performance |
| IEC 60811-404 | Chemical behaviour |
| DIN EN 60228/ IEC 60228 / VDE 0295 | Conductor |
| DIN VDE 0298-4 | Electrical parameters |
| DIN VDE 0298-3 | Application |

### THERMAL PARAMETERS

| | |
|---|---|
| Max. conductor temperature | 0 °C |
| Max. conductor temperature at short circuit | 250 °C |
| Ambient temperature fix installation (min) | -40 °C |
| Ambient temperature fix installation (max) | 80 °C |
| Ambient temperature flexible installation (min) | -20 °C |
| Ambient temperature flexible installation (max) | 60 °C |

### CHEMICAL PARAMETERS

| | |
|---|---|
| Oil resistant | Yes |
| Ozone resistance | Yes |
| Resistant to UV | Yes |

### MECHANICAL PARAMETERS

| | |
|---|---|
| Torsional stress +/- | 25 °/m |
| Permanent tensile strength (rule) | For reeling application: max. 15 N/mm² |
| | For TBM application: max. 30 N/mm² |
| Travel speed | max. 30m/min |

### ELECTRICAL PARAMETERS

| | | | | | | |
|---|---|---|---|---|---|---|
| Rated voltage U0/U (Um) in kV | 6/10 (12) | 8.7/15 (17.5) | 12/20 (24) | 14/25 (29) | 18/30 (36) | 20/35 (42) |
| Test voltage | 17 kV | 24 kV | 29 kV | 36 kV | 43 kV | 50 kV |
| AC test voltage (control cores) | 2 kV | 2 kV | 2 kV | 2 kV | 2 kV | 2 kV |
| Nominal voltage U | 10,000 V | 15,000 V | 20,000 V | 25,000 V | 30,000 V | 35,000 V |


1 Finely stranded copper, tinned, class 5
PE: Single concentric copper/textile mixed braid over every core, tinned, class 5
2 Semi-conductive EPR
3 EPR rubber, PROTOLON
4 Three main conductors laid up with three control cores in the outer interstice
Main cores: Natural coloring with black semiconductive rubber
Control cores: Black
5 Semi-conductive NBR easy-strip
6 Mix screen over each core
7 EPR rubber
8 Overall spinning of Cu wires
9 Rubber - polychloroprene (PCP)
PROTOFIRM
Special compound 5GM5



MEDIUM VOLTAGE REELING CABLES FOR TUNNEL BORING MACHINES

**ONLINE DATA SHEET**
Here you can find the online data sheet of this product.

### CABLE PROPERTIES

| Basic construction | Conductor Ø | Cable Ø (min) | Cable Ø (max) | Cable weight | Max. tensile strength | Nominal operation capacitance | Operation self induct-ance | Conductor resistance at 20 °C | Current carrying capacity |
|---|---|---|---|---|---|---|---|---|---|
| mm² | mm | mm | mm | kg/km | N | nF/km | mH/km | Ω/km | A |
| **PROTOMONT TBM (N)TSCGECWOEU 6/10KV** | | | | | | | | | |
| 3x2,5ST+6UELKON | 6.4 | 43 | 46 | 3,030 | 1,125 | 310 | 0.33 | 0.795 | 131 |
| 3x35+3x25/3E+3x2,5ST+6ÜLKON | 7.6 | 45.7 | 48.7 | 3,600 | 1,575 | 350 | 0.32 | 0.565 | 162 |
| 3x50+3x25/3E+3x2,5ST+6ÜLKON | 9.1 | 47.9 | 51.9 | 4,190 | 2,250 | 400 | 0.3 | 0.393 | 202 |
| 3x70+3x35/3E+3x2,5ST+6ÜLKON | 10.9 | 54.6 | 58.6 | 5,550 | 3,150 | 460 | 0.29 | 0.277 | 250 |
| 3x95+3x50/3E+3x2,5ST+6ÜLKON | 12.6 | 58.3 | 62.3 | 6,720 | 4,275 | 520 | 0.27 | 0.21 | 301 |
| 3x120+3x70/3E+3x2,5ST+6ÜLKON | 14.2 | 62.1 | 66.1 | 7,950 | 5,400 | 570 | 0.27 | 0.164 | 352 |
| 3x150+3x70/3E+3x2,5ST+6ÜLKON | 15.8 | 68 | 72 | 9,600 | 6,750 | 630 | 0.26 | 0.129 | 404 |
| 3x185+3x95/3E+3x2,5ST+6ÜLKON | 17.8 | 73.1 | 77.1 | 11,000 | 8,325 | 640 | 0.26 | 0.106 | 461 |
| 3x240+3x120/3E+3x2,5ST+6ÜLKON | 20.4 | 80.7 | 84.7 | 14,000 | 10,800 | 640 | 0.25 | 0.0801 | 540 |
| **PROTOMONT TBM (N)TSCGECWOEU 8.7/15KV** | | | | | | | | | |
| 3x25+3x16/3E+3x2,5ST+6ÜLKON | 6.4 | 46.4 | 49.4 | 3,210 | 1,125 | 240 | 0.36 | 0.795 | 139 |
| 3x35+3x25/3E+3x2,5ST+6ÜLKON | 7.6 | 48.7 | 52.7 | 3,730 | 1,575 | 270 | 0.34 | 0.565 | 172 |
| 3x50+3x25/3E+3x2,5ST+6ÜLKON | 9.1 | 53.7 | 57.7 | 4,700 | 2,250 | 300 | 0.32 | 0.393 | 215 |
| 3x70+3x35/3E+3x2,5ST+6ÜLKON | 10.9 | 58 | 62 | 5,990 | 3,150 | 340 | 0.31 | 0.277 | 265 |
| 3x95+3x50/3E+3x2,5ST+6ÜLKON | 12.6 | 61.6 | 65.6 | 7,170 | 4,275 | 380 | 0.29 | 0.21 | 319 |
| 3x120+3x70/3E+3x2,5ST+6ÜLKON | 14.2 | 67.2 | 71.2 | 8,490 | 5,400 | 420 | 0.29 | 0.164 | 371 |
| **PROTOMONT TBM (N)TSCGECWOEU 12/20KV** | | | | | | | | | |
| 3x25+3x16/3E+3x2,5ST+6ÜLKON | 6.4 | 48.8 | 52.8 | 3,800 | 1,125 | 220 | 0.37 | 0.795 | 139 |
| 3x35+3x25/3E+3x2,5ST+6ÜLKON | 7.6 | 51.3 | 55.3 | 4,350 | 1,575 | 240 | 0.35 | 0.565 | 172 |
| 3x50+3x25/3E+3x2,5ST+6ÜLKON | 9.1 | 56.7 | 60.7 | 5,350 | 2,250 | 270 | 0.33 | 0.393 | 215 |
| 3x70+3x35/3E+3x2,5ST+6ÜLKON | 10.9 | 61.3 | 65.3 | 6,500 | 3,150 | 310 | 0.32 | 0.277 | 265 |
| 3x95+3x50/3E+3x2,5ST+6UELKON | 12.6 | 66.4 | 70.4 | 7,900 | 4,275 | 340 | 0.3 | 0.21 | 319 |
| 3x120+3x70/3E+3x2,5ST+6ÜLKON | 14.2 | 70.2 | 74.2 | 9,400 | 5,400 | 380 | 0.29 | 0.164 | 371 |
| 3x150+3x70/3E+3x2,5ST+6ÜLKON | 15.8 | 76 | 80 | 10,800 | 6,750 | 420 | 0.28 | 0.129 | 428 |
| 3x185+3x95/3E+3x2,5ST+6ÜLKON | 17.8 | 82 | 86 | 12,200 | 8,325 | 640 | 0.26 | 0.106 | 488 |
| 3x240+3x120/3E+3x2,5ST+6ÜLKON | 20.4 | 86 | 92 | 14,400 | 10,800 | 690 | 0.25 | 0.0801 | 574 |
| **PROTOMONT TBM (N)TSCGECWOEU 14/25KV** | | | | | | | | | |
| 3x25+3x16/3E+3x2,5ST+6ÜLKON | 6.4 | 54.6 | 58.6 | 4,100 | 1,125 | 190 | 0.4 | 0.795 | 139 |
| 3x35+3x25/3E+3x2,5ST+6ÜLKON | 7.6 | 57.1 | 61.1 | 4,640 | 1,575 | 210 | 0.37 | 0.565 | 172 |
| 3x50+3x25/3E+3x2,5ST+6ÜLKON | 9.1 | 61 | 65 | 5,700 | 2,250 | 230 | 0.35 | 0.393 | 215 |
| 3x70+3x35/3E+3x2,5ST+6UELKON | 10.9 | 66.6 | 70.6 | 6,950 | 3,150 | 260 | 0.33 | 0.277 | 265 |
| 3x95+3x50/3E+3x2,5ST+6UELKON | 12.6 | 71.5 | 75.5 | 8,300 | 4,275 | 290 | 0.32 | 0.21 | 319 |
| 3x120+3x70/3E+3x2,5ST+6ÜLKON | 14.2 | 75.8 | 79.8 | 9,800 | 5,400 | 320 | 0.31 | 0.164 | 371 |

# MEDIUM VOLTAGE REELING CABLES FOR TUNNEL BORING MACHINES

| Basic construction | Conductor Ø | Cable Ø (min) | Cable Ø (max) | Cable weight | Max. tensile strength | Nominal operation capacitance | Operation self induct-ance | Conductor resistance at 20 °C | Current carrying capacity |
|---|---|---|---|---|---|---|---|---|---|
| mm² | mm | mm | mm | kg/km | N | nF/km | mH/km | Ω/km | A |
| **PROTOMONT TBM (N)TSCGECWOEU 18/30KV** | | | | | | | | | |
| 3x25+3x16/3E+3x2,5ST+6ÜLKON | 6.4 | 58 | 62 | 4,490 | 1,125 | 170 | 0.42 | 0.795 | 139 |
| 3x35+3x25/3E+3x2,5ST+6ÜLKON | 7.6 | 60.7 | 64.7 | 5,060 | 1,575 | 180 | 0.39 | 0.565 | 172 |
| 3x50+3x25/3E+3x2,5ST+6ÜLKON | 9.1 | 66.1 | 70.1 | 6,310 | 2,250 | 200 | 0.37 | 0.393 | 215 |
| 3x70+3x35/3E+3x2,5ST+6ÜLKON | 10.9 | 70 | 74 | 7,500 | 3,150 | 230 | 0.35 | 0.277 | 265 |
| 3x95+3x50/3E+3x2,5ST+6ÜLKON | 12.6 | 74.3 | 78.3 | 8,800 | 4,275 | 250 | 0.33 | 0.21 | 319 |
| 3x120+3x70/3E+3x2,5ST+6UELKON | 14.2 | 80.2 | 84.2 | 10,400 | 5,400 | 270 | 0.32 | 0.164 | 37 |
| **PROTOMONT TBM (N)TSCGECWOEU 20/35KV** | | | | | | | | | |
| 3x70+3x35/3E+3x2,5ST+6ÜLKON | 10.8 | 74 | 78 | 8,700 | 3,150 | 210 | 0.37 | 0.277 | 265 |

# TROMMELFLEX-M-PUR

## D2X11Y | 1 KV

TROMMELFLEX-M-PUR is a flexible low voltage reeling cable with optimized dimensions and flame retardant, halogen-free polyurethane outer sheath. The cable is used as power supply for underground mining and tunnelling equipment and designed for frequently changing dynamic loads, such as reeling operation on drilling machines, scoops and LHD's. Suitable to withstand the high mechanical stresses caused by reeling application and the abrasion to be expected in trailing operation.

### STANDARDS / APPROVALS

| | |
|---|---|
| DIN EN 60228/ IEC 60228 / VDE 0295 | Conductor |
| DIN VDE 0298-300 | Core identification |
| IEC 60502-1 | Compound |
| DIN VDE 0298-4 | Electrical parameters |
| DIN EN 60332-1-2 / IEC 60332-1-2 | Fire performance |

### THERMAL PARAMETERS

| | |
|---|---|
| Max. conductor temperature | 90 °C |
| Max. conductor temperature at short circuit | 250 °C |
| Ambient temperature fix installation (min) | -40 °C |
| Ambient temperature fix installation (max) | 80 °C |
| Ambient temperature flexible installation (min) | -30 °C |
| Ambient temperature flexible installation (max) | 80 °C |

### CHEMICAL PARAMETERS

| | |
|---|---|
| Halogen free | Yes |
| Ozone resistance | Yes |
| Resistant to UV | Yes |
| Max. water depth | 10 m |

### MECHANICAL PARAMETERS

| | |
|---|---|
| Torsional stress +/- | 50 °/m |
| Permanent tensile strength (rule) | 20 N/mm² |
| Travel speed | Reeling operation underground: 60 m/min |
| Bending radius (rule) | |
| Acc. to VDE 0298-3: | 4 x D fixed installation |
| | 8 x D reeling operation |

### ELECTRICAL PARAMETERS

| | |
|---|---|
| Rated voltage U0/U (Um) | 0.6/1 (1.2) kV |
| Test voltage | 2.5 kV |
| AC test voltage (control cores) | 2 kV |
| Nominal voltage U | 1,000 V |


1 Finely stranded copper, bare, class 5
2 XLPE
5 Three main conductors laid-up together with split earth conductor and control cores in the inter-stices. Cores twisted with very short length of lay
Main cores: brown, black, grey
Control cores: blue, white
6 Halogenfree polymer
7 Polyurethane (PUR)





**ONLINE DATA SHEET**
Here you can find the online data sheet of this product.

### CABLE PROPERTIES

| Basic construction | Conductor Ø | Cable Ø (min) | Cable Ø (max) | Cable weight | Max. tensile strength | Bending radius moving (min) | Conductor resistance at 20 °C | Current carrying capacity |
|---|---|---|---|---|---|---|---|---|
| mm² | mm | mm | mm | kg/km | N | mm | Ω/km | A |
| **TROMMELFLEX-M-PUR D2X11Y 0.6/1KV** | | | | | | | | |
| 3x25 + 3G6 + 2x1 | 6.2 | 22.5 | 24 | 1,130 | 1,500 | 192 | 0.78 | 131 |
| 3x35 + 3G6 + 2x1,5 | 7.8 | 26.5 | 28 | 1,530 | 2,100 | 224 | 0. 554 | 162 |
| 3x50 + 3G10 + 2x1,5 | 9.6 | 30 | 32 | 2,160 | 3,000 | 256 | 0.386 | 202 |
| 3x70 + 3G16 + 2x1,5 | 11.1 | 35 | 37 | 3,050 | 4,200 | 296 | 0.272 | 250 |
| 3x95 + 3G16 + 2x1,5 | 12.6 | 39.5 | 42 | 3,690 | 5,700 | 336 | 0.206 | 302 |
| 3x120 + 3G25 + 2x1,5 | 14.8 | 44 | 46.5 | 4,810 | 7,200 | 372 | 0.161 | 352 |
| 3x150 + 3G25 + 2x1,5 | 16 | 49 | 52 | 5,780 | 9,000 | 416 | 0.129 | 404 |
| 3x185 + 3G35 + 2x1,5 | 17.7 | 53.5 | 56 | 7,300 | 11,100 | 448 | 0.106 | 461 |
| 3x240 + 3G50 + 2x1,5 | 20.2 | 61.5 | 64.5 | 9,600 | 14,400 | 516 | 0.0801 | 540 |
| 4x50 | 9.6 | 33 | 35 | 2,450 | 4,000 | 280 | 0.386 | 202 |
| 4x70 | 11.1 | 38.1 | 40.6 | 3,300 | 5,600 | 325 | 0.272 | 250 |
| 4G70 + 2x (10x2,5) + 1x (8x1,5)C | 11.1 | 62 | 66 | 5,300 | 5,600 | 528 | 0.272 | 250 |

# TROMMELFLEX-M-PUR BRAIDED

## D2X11Y | 1 KV

TROMMELFLEX-M-PUR is a flexible low voltage reeling cable with optimized dimensions and flame retardant, halogen-free polyurethane outer sheath. The cable is used as power supply for underground mining and tunnelling equipment and designed for frequently changing dynamic loads, such as reeling operation on drilling machines, scoops and LHD's. Suitable to withstand the high mechanical stresses caused by reeling application and the abrasion to be expected in trailing operation.

### STANDARDS / APPROVALS

| | |
|---|---|
| DIN EN 60228/ IEC 60228 / VDE 0295 | Conductor |
| DIN VDE 0298-300 | Core identification |
| IEC 60502-1 | Compound |
| DIN VDE 0298-4 | Electrical parameters |
| DIN EN 60332-1-2 / IEC 60332-1-2 | Fire performance |

### THERMAL PARAMETERS

| | |
|---|---|
| Max. conductor temperature | 90 °C |
| Max. conductor temperature at short circuit | 250 °C |
| Ambient temperature fix installation (min) | -40 °C |
| Ambient temperature fix installation (max) | 80 °C |
| Ambient temperature flexible installation (min) | -30 °C |
| Ambient temperature flexible installation (max) | 80 °C |

### CHEMICAL PARAMETERS

| | |
|---|---|
| Halogen free | Yes |
| Ozone resistance | Yes |
| Resistant to UV | Yes |
| Max. water depth | 10 m |

### MECHANICAL PARAMETERS

| | |
|---|---|
| Torsional stress +/- | 50 °/m |
| Permanent tensile strength (rule) | 25 N/mm² |
| Travel speed | Reeling operation underground: 100 m/min |
| Bending radius (rule) | |
| Acc. to VDE 0298-3: | 4 x D fixed installation |
| | 8 x D reeling operation |

### ELECTRICAL PARAMETERS

| | |
|---|---|
| Rated voltage U0/U (Um) | 0.6/1 (1.2) kV |
| Test voltage | 2.5 kV |
| AC test voltage (control cores) | 2 kV |
| Nominal voltage U | 1,000 V |


2 Finely stranded copper, bare, class 5
3 XLPE
4 Central Aramid carrier element; Three main conductors laid-up together with split earth conductor in the inter-stices. Cores twisted with very short length of lay Main cores: brown, black, grey
6 Halogenfree polymer
7 Braiding
8 Polyurethane (PUR)





**ONLINE DATA SHEET**
Here you can find the online data sheet of this product.

### CABLE PROPERTIES

| Basic construction | Conductor Ø | Cable Ø (min) | Cable Ø (max) | Cable weight | Max. tensile strength | Bending radius moving (min) | Conductor resistance at 20 °C | Current carrying capacity |
|---|---|---|---|---|---|---|---|---|
| mm² | mm | mm | mm | kg/km | N | mm | Ω/km | A |
| **TROMMELFLEX-M-PUR D2X11Y 0.6/1KV** | | | | | | | | |
| 3x25+3G6 | 6.2 | 23 | 25 | 1,215 | 1,875 | 200 | 0.78 | 131 |
| 3x50+3G10 | 9.6 | 30.5 | 32.5 | 2,250 | 3,750 | 260 | 0.386 | 202 |
| 3x70+3G16 | 11.1 | 35.5 | 37.5 | 3,210 | 5,250 | 300 | 0.272 | 250 |
| 3x95+3G16 | 12.6 | 39.5 | 42.5 | 3,925 | 7,125 | 340 | 0.206 | 301 |
| 3x25+3G6+2X1 | 6.2 | 23 | 24.5 | 1,243 | 1,875 | 196 | 0.78 | 131 |
| 3x35+3G6+2X1,5 | 7.8 | 26.5 | 28 | 1,570 | 2,100 | 224 | 0.554 | 162 |
| 3x50+3G10+2X1,5 | 9.6 | 30.5 | 32.5 | 2,376 | 3,750 | 260 | 0.386 | 202 |
| 3x70+3G16+2X1,5 | 11.1 | 35.5 | 37.5 | 3,355 | 5,250 | 300 | 0.272 | 250 |
| 3x95+3G16+2X1,5 | 12.6 | 40 | 42.5 | 4,059 | 7,125 | 340 | 0.206 | 301 |
| 3x120+3G25+2X1,5 | 14.8 | 44.5 | 47 | 5,291 | 9,000 | 376 | 0.161 | 352 |
| 3x150+3G25+2X1,5 | 16 | 49.5 | 52.5 | 6,358 | 11,250 | 420 | 0.129 | 404 |
| 3x185+3G35+2X1,5 | 17.7 | 54 | 56.5 | 8,030 | 13,875 | 452 | 0.106 | 461 |
| 3x240+3G50+2X1,5 | 20.2 | 62 | 65 | 10,560 | 18,000 | 520 | 0.0801 | 540 |
| 4x16 | 5.1 | 22 | 23.5 | 900 | 1,600 | 188 | 1.21 | 99 |

# TUNNELFLEX-PUR HF

## WITHOUT ANTITWISTING PROTECTION | 1 KV

Power supply to mobile equipment with high risk of mechanical damage in mining and tunneling. TUNNELFLEX/PUR HF cable, due to without anti-twisting protection, is suitable for application where it is deflected in one plane only. Maximum speed 60 m/min.

### STANDARDS / APPROVALS

| | |
|---|---|
| DIN EN 60228/ IEC 60228 / VDE 0295 | Conductor |
| DIN VDE 0298-300 | Core identification |
| IEC 60754-1 | Halogen-free |
| DIN EN 60332-1-2 / IEC 60332-1-2 | Fire performance |

### THERMAL PARAMETERS

| | |
|---|---|
| Max. conductor temperature | 90 °C |
| Max. conductor temperature at short circuit | 250 °C |
| Ambient temperature fix installation (min) | -40 °C |
| Ambient temperature fix installation (max) | 80 °C |
| Ambient temperature flexible installation (min) | -30 °C |
| Ambient temperature flexible installation (max) | 80 °C |

### CHEMICAL PARAMETERS

| | |
|---|---|
| Fire behaviour | Yes |
| Flame retardant | In accordance with EN/IEC 60332-1-2 |
| Halogen free | Yes |

### MECHANICAL PARAMETERS

| | |
|---|---|
| Travel speed | 60 m/min |
| Bending radius (rule) | |
| Acc. to VDE 0298-3: | 6 x D fixed installation |
| | 10 x D on drums |

### ELECTRICAL PARAMETERS

| | |
|---|---|
| Rated voltage U0/U (Um) | 0.6/1 (1.2) kV |
| Max. operating voltage Um | 1.2 kV |
| Test voltage | 3.5 kV |


1 Plain copper, flexible, class 5
2 XLPE special compound Brown - Black - Grey
3 Phase cores laid up with earth cores in the interstices
4 Conductor: Plain copper, flexible, class 5
5 optional without control cores
6 HFFR* thermoplastic polyurethane compound
7 HFFR* thermoplastic polyurethane compound, abrasion, tear, oil & chemical resistant

* halogen free and flame retardant



HALOGEN-FREE LOW VOLTAGE POWER CABLES FOR MOBILE APPLICATIONS

### CABLE PROPERTIES

| Basic construction | Conductor Ø | Cable Ø (min) | Cable Ø (max) | Cable weight | Max. tensile strength | Bending radius fixed (min) | Current carrying capacity |
|---|---|---|---|---|---|---|---|
| mm² | mm | mm | mm | kg/km | N | mm | A |
| **TUNNELFLEX-PUR HF-0.6/1KV** | | | | | | | |
| 4G10 | 4.0 | 18.0 | 20.0 | 580 | 800 | 120 | 74 |
| 4G16 | 5.1 | 20.0 | 22.0 | 870 | 1280 | 132 | 99 |
| 3x25+3G6 | 6.5 | 22.5 | 24.0 | 1120 | 1500 | 144 | 131 |
| 3x35+3G6 | 7.5 | 25.5 | 28.0 | 1490 | 2100 | 168 | 162 |
| 3x50+3G10 | 9.1 | 29.5 | 32.0 | 2100 | 3000 | 192 | 202 |
| 3x70+3G16 | 10.8 | 34.0 | 37.0 | 2960 | 4200 | 222 | 250 |
| 3x95+3G16 | 12.1 | 37,5 | 40,5 | 3640 | 5700 | 243 | 301 |
| 3x120+3G25 | 14.3 | 42.0 | 45.0 | 4750 | 7200 | 270 | 352 |
| 3x150+3G25 | 16.1 | 47.5 | 50.5 | 5740 | 9000 | 303 | 404 |
| 3x185+3G35 | 17.5 | 52.0 | 55.0 | 6960 | 11100 | 330 | 461 |
| 3x240+3G50 | 19.9 | 58.0 | 61.0 | 9130 | 14400 | 366 | 540 |
| **TUNNELFLEX-R-PUR HF-0.6/1KV WITH CONTROL CORES** | | | | | | | |
| 3x25+3G6+2x1 | 6.5 | 22.5 | 24.0 | 1150 | 1500 | 144 | 131 |
| 3x35+3G6+2x1,5 | 7.5 | 26.0 | 28.0 | 1530 | 2100 | 168 | 162 |
| 3x50+3G10+2x1,5 | 9.1 | 29.5 | 32.0 | 2130 | 3000 | 192 | 202 |
| 3X70+3G16+2x1,5 | 10.8 | 34.0 | 37.0 | 2990 | 4200 | 222 | 250 |
| 3x95+3G16+2x1,5 | 12.1 | 37.5 | 40.5 | 3670 | 5700 | 243 | 301 |
| 3X120+3G25+2x1,5 | 14.3 | 42.0 | 45.0 | 4780 | 7200 | 270 | 352 |
| 3x150+3G25+2x1,5 | 16.1 | 47.5 | 50.5 | 5780 | 9000 | 303 | 404 |
| 3X185+3G35+2x1,5 | 17.5 | 52.0 | 55.0 | 7000 | 11100 | 330 | 461 |
| 3X240+3G50+2x1,5 | 19.9 | 58.0 | 61.0 | 9170 | 14400 | 366 | 540 |

# TUNNELFLEX-R-PUR HF

## WITH ANTITWISTING PROTECTION | 1 KV

Power supply to mobile equipment with high risk of mechanical damage in mining and tunneling.
Maximum speed 120 m/min.

### STANDARDS / APPROVALS

| | |
|---|---|
| DIN EN 60228/ IEC 60228 / VDE 0295 | Conductor |
| DIN VDE 0298-300 | Core identification |
| IEC 60754-1 | Halogen-free |
| DIN EN 60332-1-2 / IEC 60332-1-2 | Fire performance |

### THERMAL PARAMETERS

| | |
|---|---|
| Max. conductor temperature | 90 °C |
| Max. conductor temperature at short circuit | 250 °C |
| Ambient temperature fix installation (min) | -40 °C |
| Ambient temperature fix installation (max) | 80 °C |
| Ambient temperature flexible installation (min) | -30 °C |
| Ambient temperature flexible installation (max) | 80 °C |

### CHEMICAL PARAMETERS

| | |
|---|---|
| Fire behaviour | Yes |
| Flame retardant | In accordance with EN/IEC 60332-1-2 |
| Halogen free | Yes |

### MECHANICAL PARAMETERS

| | |
|---|---|
| Travel speed | 120 m/min |
| Bending radius (rule) | |
| Acc. to VDE 0298-3: | 6 x D fixed installation<br>10 x D on drums |

### ELECTRICAL PARAMETERS

| | |
|---|---|
| Rated voltage U0/U (Um) | 0.6/1 (1.2) kV |
| Max. operating voltage Um | 1.2 kV |
| Test voltage | 3.5 kV |


1 Plain copper, flexible, class 5
2 XLPE special compound Brown - Black - Grey
3 Phase cores laid up with earth cores in the interstices
4 Conductor: Plain copper, flexible, class 5
5 optional with control cores
6 HFFR* thermoplastic polyurethane compound
7 Synthetic mesh
8 HFFR* thermoplastic polyurethane compound, abrasion, tear, oil & chemical resistant

* halogen free and flame retardant



HALOGEN-FREE LOW VOLTAGE POWER CABLES FOR MOBILE APPLICATIONS

### CABLE PROPERTIES

| Basic construction | Conductor Ø | Cable Ø (min) | Cable Ø (max) | Cable weight | Max. tensile strength | Bending radius fixed (min) | Current carrying capacity |
|---|---|---|---|---|---|---|---|
| mm² | mm | mm | mm | kg/km | N | mm | A |
| **TUNNELFLEX-R-PUR HF-0.6/1KV** | | | | | | | |
| 4G10 | 4.0 | 18.5 | 20.5 | 630 | 800 | 123 | 74 |
| 4G16 | 5.1 | 21.5 | 23.5 | 930 | 1280 | 141 | 99 |
| 3x25+3G6 | 6.5 | 24.5 | 26.5 | 1240 | 1500 | 159 | 131 |
| 3x35+3G6 | 7.5 | 26.0 | 28.5 | 1520 | 2100 | 171 | 162 |
| 3x50+3G10 | 9.1 | 30.0 | 32.5 | 2130 | 3000 | 195 | 202 |
| 3x70+3G16 | 10.8 | 34.0 | 37.0 | 3000 | 4200 | 222 | 250 |
| 3x95+3G16 | 12.1 | 37,5 | 40,5 | 3710 | 5700 | 243 | 301 |
| 3x120+3G25 | 14.3 | 42.5 | 45.5 | 4830 | 7200 | 273 | 352 |
| 3x150+3G25 | 16.1 | 47.5 | 50.5 | 5830 | 9000 | 303 | 404 |
| 3x185+3G35 | 17.5 | 52.0 | 55.0 | 7050 | 11100 | 330 | 461 |
| 3x240+3G50 | 19.9 | 58.0 | 61.0 | 9240 | 14400 | 366 | 540 |
| **TUNNELFLEX-R-PUR HF-0.6/1KV WITH CONTROL CORES** | | | | | | | |
| 3x25+3G6+2x1 | 6.5 | 25,5 | 28.0 | 1260 | 1500 | 168 | 131 |
| 3x35+3G6+2x1,5 | 7.5 | 26.5 | 29.0 | 1560 | 2100 | 174 | 162 |
| 3x50+3G10+2x1,5 | 9.1 | 30.0 | 32.5 | 2160 | 3000 | 195 | 202 |
| 3X70+3G16+2x1,5 | 10.8 | 34.0 | 37.0 | 3030 | 4200 | 222 | 250 |
| 3x95+3G16+2x1,5 | 12.1 | 37.5 | 40.5 | 3740 | 5700 | 243 | 301 |
| 3X120+3G25+2x1,5 | 14.3 | 42.5 | 45.5 | 4860 | 7200 | 273 | 352 |
| 3x150+3G25+2x1,5 | 16.1 | 47.5 | 50.5 | 5860 | 9000 | 303 | 404 |
| 3X185+3G35+2x1,5 | 17.5 | 52.0 | 55.0 | 7080 | 11100 | 330 | 461 |
| 3X240+3G50+2x1,5 | 19.9 | 58.0 | 61.0 | 9270 | 14400 | 366 | 540 |

# SUPROMONT

## (N)3GHSSHCH | 6 - 35 KV

The cables are suitable for use as reeling power supply cables for tunnel boring machines (TBM) in underground mines and for tunnel construction sites.

### STANDARDS / APPROVALS

| | |
|---|---|
| DIN VDE 0298-4 | Electrical parameters |
| Based on DIN VDE 0250-605 | General |
| IEC 61034-2 | Fire performance |
| DIN EN 60332-1-2 / IEC 60332-1-2 | Fire performance |
| IEC 60754-2 | Fire performance |
| GOST -R/-K/-B Fire Certificate of Russian Federation | Certifications / Approvals |

### THERMAL PARAMETERS

| | |
|---|---|
| Max. conductor temperature | 0 °C |
| Max. conductor temperature at short circuit | 250 °C |
| Ambient temperature fix installation (min) | -40 °C |
| Ambient temperature fix installation (max) | 80 °C |
| Ambient temperature flexible installation (min) | 5°C |
| Ambient temperature flexible installation (max) | 80 °C |

### CHEMICAL PARAMETERS

| | |
|---|---|
| Flame retardant | In accordance with EN/IEC 60332-1-2 |
| Halogen free | Yes |
| Resistant to UV | Yes |

### MECHANICAL PARAMETERS

| | |
|---|---|
| Permanent tensile strength (rule) | 15 N/mm² |
| Bending radius (rule) | |
| Acc. to VDE 0298-3: | 6 x D fixed installation |
| | 10 x D flexible operation |


1 Finely stranded copper, bare, class 5
PE: Individually laid-up concentrically around each main core
2 Semi-conductive EPR
3 EPR rubber
PROTOLON HS
Special compound 3GI3
5 Semi-conductive NBR easy-strip
6 Three main cores laid-up, one control core in each outer interstice
Main cores: Natural color with black semiconductive layer
Control cores: Black with white digits
7 Bare Copper wire screen
8 Halogenfree polymer
Special compound HM4
9 Conductive tape and Cu wires
10 Halogenfree polymer
Special compound HM4
11 Galvanised steel braiding
12 Thermoplastic polymer
Special compound HM4

### ELECTRICAL PARAMETERS

| | | | | | |
|---|---|---|---|---|---|
| Rated voltage U0/U (Um) in kV | 3.6/6 (7.2) | 6/10 (12) | 8.7/15 (17.5) | 12/20 (24) | 20/35 (42) |
| Test voltage | 11 kV | 17 kV | 24 kV | 29 kV | 50 kV |
| AC test voltage (control cores) | 2 kV | 2 kV | 2 kV | 2 kV | 2 kV |
| Nominal voltage U | 6,000 V | 10,000 V | 15,000 V | 20,000 V | 35,000 V |



HALOGEN-FREE RUBBER INSULATED MV FLEXIBLE CABLES FOR UNDERGROUND USE

**ONLINE DATA SHEET**
Here you can find the online data sheet of this product.

### CABLE PROPERTIES

| Basic construction | Conductor Ø | Cable Ø (min) | Cable Ø (max) | Cable weight | Max. tensile strength | Nominal operation capacitance | Operation self induct-ance | Conductor resistance at 20 °C | Current carrying capacity |
|---|---|---|---|---|---|---|---|---|---|
| mm² | mm | mm | mm | kg/km | N | nF/km | mH/km | Ω/km | A |
| **SUPROMONT (N)3GHSSHCH 3.6/6KV** | | | | | | | | | |
| 3x25+3x16/3E+3x2,5ST+UEL | 6.4 | 42.7 | 45.7 | 3,178 | 1,125 | 360 | 0.32 | 0.78 | 131 |
| 3x35+3x16/3E+3x2,5ST+UEL | 7.6 | 45.3 | 48.3 | 3,696 | 1,575 | 410 | 0.3 | 0.554 | 162 |
| 3x50+3x25/3E+3x2,5ST+UEL | 9.1 | 48.5 | 52.5 | 4,508 | 2,250 | 470 | 0.29 | 0.386 | 202 |
| 3x70+3x35/3E+3x2,5ST+UEL | 10.8 | 52.1 | 56.1 | 5,437 | 3,150 | 530 | 0.28 | 0.272 | 250 |
| 3x95+3x50/3E+3x2,5ST+UEL | 12.7 | 56.6 | 60.6 | 6,638 | 4,275 | 610 | 0.27 | 0.206 | 301 |
| 3x120+3x70/3E+3x2,5ST+UEL | 14.3 | 60.5 | 64.5 | 7,953 | 5,400 | 670 | 0.26 | 0.161 | 352 |
| 3x150+3x70/3E+3x2,5ST+UEL | 16.1 | 65 | 71 | 9,150 | 6,750 | 740 | 0.25 | 0.129 | 404 |
| **SUPROMONT (N)3GHSSHCH 6/10KV** | | | | | | | | | |
| 3x25+3x16/3E+3x2,5ST+UEL | 6.4 | 44.7 | 48.7 | 3,586 | 1,125 | 320 | 0.33 | 0.78 | 131 |
| 3x35+3x16/3E+3x2,5ST+UEL | 7.6 | 48.7 | 51.7 | 4,020 | 1,575 | 360 | 0.31 | 0.554 | 162 |
| 3x50+3x25/3E+3x2,5ST+UEL | 9.1 | 50.7 | 54.7 | 4,840 | 2,250 | 420 | 0.3 | 0.386 | 202 |
| 3x70+3x35/3E+3x2,5ST+UEL | 10.8 | 55.1 | 59.1 | 5,680 | 3,150 | 470 | 0.28 | 0.272 | 250 |
| 3x95+3x50/3E+3x2,5ST+UEL | 12.7 | 59.5 | 63.5 | 7,090 | 4,275 | 540 | 0.27 | 0.206 | 301 |
| 3x120+3x70/3E+3x2,5ST+UEL | 14.3 | 63.9 | 67.9 | 8,460 | 5,400 | 590 | 0.26 | 0.161 | 352 |
| 3x150+3x70/3E+3x2,5ST+UEL | 16.1 | 72.5 | 77.5 | 9,950 | 6,750 | 650 | 0.25 | 0.129 | 404 |
| **SUPROMONT (N)3GHSSHCH 8.7/15KV** | | | | | | | | | |
| 3x25+3x16/3E+3x2,5ST+UEL | 6.4 | 49.1 | 53.1 | 3,985 | 1,125 | 260 | 0.35 | 0.78 | 139 |
| 3x35+3x16/3E+3x2,5ST+UEL | 7.6 | 52.1 | 56.1 | 4,636 | 1,575 | 290 | 0.33 | 0.554 | 172 |
| 3x50+3x25/3E+3x2,5ST+UEL | 9.1 | 53.9 | 57.9 | 5,410 | 2,250 | 330 | 0.31 | 0.386 | 215 |
| 3x70+3x35/3E+3x2,5ST+UEL | 10.8 | 57.6 | 61.6 | 6,200 | 3,150 | 380 | 0.3 | 0.272 | 265 |
| 3x95+3x95/3E+3x2,5ST+UEL | 12.7 | 63.6 | 67.6 | 7,660 | 4,275 | 430 | 0.29 | 0.206 | 319 |
| 3x120+3x70/3E+3x2,5ST+UEL | 14.3 | 67 | 71 | 8,991 | 5,400 | 470 | 0.28 | 0.161 | 371 |
| 3x240+3x120/3E+3x2,5ST+UEL | 20.5 | 82.5 | 86.5 | 14,500 | 10,800 | 600 | 0.26 | 0.0801 | 574 |
| **SUPROMONT (N)3GHSSHCH 12/20KV** | | | | | | | | | |
| 3x25+3x25/3E+3x2,5ST+UEL | 6.4 | 52.6 | 56.6 | 4,501 | 1,125 | 220 | 0.37 | 0.78 | 139 |
| 3×35+3×16/3E+3×2,5ST+UEL | 7.6 | 53.6 | 57.6 | 4,850 | 1,575 | 250 | 0.35 | 0.554 | 172 |
| 3x50+3x25/3E+3x2,5ST+UEL | 9.1 | 56.8 | 60.8 | 5,630 | 2,250 | 280 | 0.33 | 0.386 | 215 |
| 3x70+3x35/3E+3x2,5ST+UEL | 10.8 | 61 | 65 | 6,740 | 3,150 | 320 | 0.31 | 0.272 | 265 |
| 3x95+3x50/3E+3x2,5ST+ÜL | 12.7 | 66 | 70 | 8,150 | 4,275 | 360 | 0.3 | 0.206 | 319 |
| 3x120+3x70/3E+3x2,5ST+UEL | 14.3 | 70.5 | 74.5 | 9,502 | 5,400 | 390 | 0.29 | 0.161 | 371 |
| 3x150+3x70/3E+3x2,5ST+UEL | 16.5 | 76.5 | 80.5 | 10,900 | 6,750 | 440 | 0.28 | 0.129 | 428 |
| **SUPROMONT (N)3GHSSHCH 20/35KV** | | | | | | | | | |
| 3x70+3x35/3E+3x2,5ST+UEL | 10.8 | 75.3 | 79.3 | 9,450 | 3,150 | 200 | 0.37 | 0.272 | 265 |
| 3x95+3x50/3E+3x2,5ST+UEL | 12.7 | 80.3 | 84.3 | 10,800 | 4,275 | 220 | 0.35 | 0.206 | 319 |
| 3x120+3x70/3E+3x2,5ST+UEL | 14.3 | 83.2 | 88.2 | 12,050 | 5,400 | 240 | 0.34 | 0.161 | 371 |

# SUPROMONT

## (N)3GHSSYCY | 6 - 35 KV

As feeder cable for power supply of shiftable MV equipment, e.g. compressure resistant transformers, for underground mining applications as well as for tunnel sites.

### STANDARDS / APPROVALS

| | |
|---|---|
| Based on DIN VDE 0250-605 | General |
| DIN VDE 0298-4 | Electrical parameters |
| DIN EN 60332-1-2 / IEC 60332-1-2 | Fire performance |
| GOST -R/-K/-B Fire Certificate of Russian Federation | Certifications / Approvals |
| VDE Reg. Nr. 8086 | Certifications / Approvals |

### THERMAL PARAMETERS

| | |
|---|---|
| Max. conductor temperature | 90 °C |
| Max. conductor temperature at short circuit | 250 °C |
| Ambient temperature fix installation (min) | -40 °C |
| Ambient temperature fix installation (max) | 80 °C |
| Ambient temperature flexible installation (min) | 5 °C |
| Ambient temperature flexible installation (max) | 60 °C |

### CHEMICAL PARAMETERS

| | |
|---|---|
| Flame retardant | In accordance with EN/IEC 60332-1-2 |
| Ozone resistance | Yes |
| Resistant to UV | Yes |

### MECHANICAL PARAMETERS

| | |
|---|---|
| Permanent tensile strength (rule) | 15 N/mm² |
| Bending radius (rule) | |
| Acc. to VDE 0298-3: | 6 x D fixed installation |
| | 10 x D flexible operation |


1 Conductor
2 Inner semi-conducting layer
3 Core insulation
4 Control core
5 Outer semi-conducting layer
6 Core arrangement
7 Screen
8 Inner sheath
9 Monitoring
10 Intermediate sheath
11 Armoring / reinforcement
12 Outer sheath

1 Finely stranded copper, bare, class 5
PE: Individually laid-up concentrically around each main core
2 Semi-conductive EPR
3 EPR rubber
PROTOLON HS
Special compound 3GI3
5 Semi-conductive NBR easy-strip
6 Three main cores laid-up, one control core in each outer interstice
Main cores: Natural color with black semiconductive layer
Control cores: Black with white digits
7 Bare Copper wire screen
8 Polyvinyl chloride (PVC)
Special compound DMV6
9 Conductive tape and Cu wires
10 Polyvinyl chloride (PVC)
Special compound DMV6
11 Galvanised steel braiding
12 Polyvinyl chloride (PVC)
Special compound DMV6

### ELECTRICAL PARAMETERS

| Rated voltage U0/U (Um) in kV | 3.6/6 (7.2) | 6/10 (12) | 8.7/15 (17.5) | 12/20 (24) | 14/25 (29) | 18/30 (36) | 20/35 (42) |
|---|---|---|---|---|---|---|---|
| Test voltage | 11 kV | 17 kV | 24 kV | 29 kV | 36 kV | 43 kV | 50 kV |
| AC test voltage (control cores) | 2 kV | 2 kV | 2 kV | 2 kV | 2 kV | 2 kV | 2 kV |
| Nominal voltage U | 6,000 V | 10,000 V | 15,000 V | 20,000 V | 25,000 V | 30,000 V | 35,000 V |



RUBBER INSULATED MV FLEXIBLE CABLES FOR UNDERGROUND USE

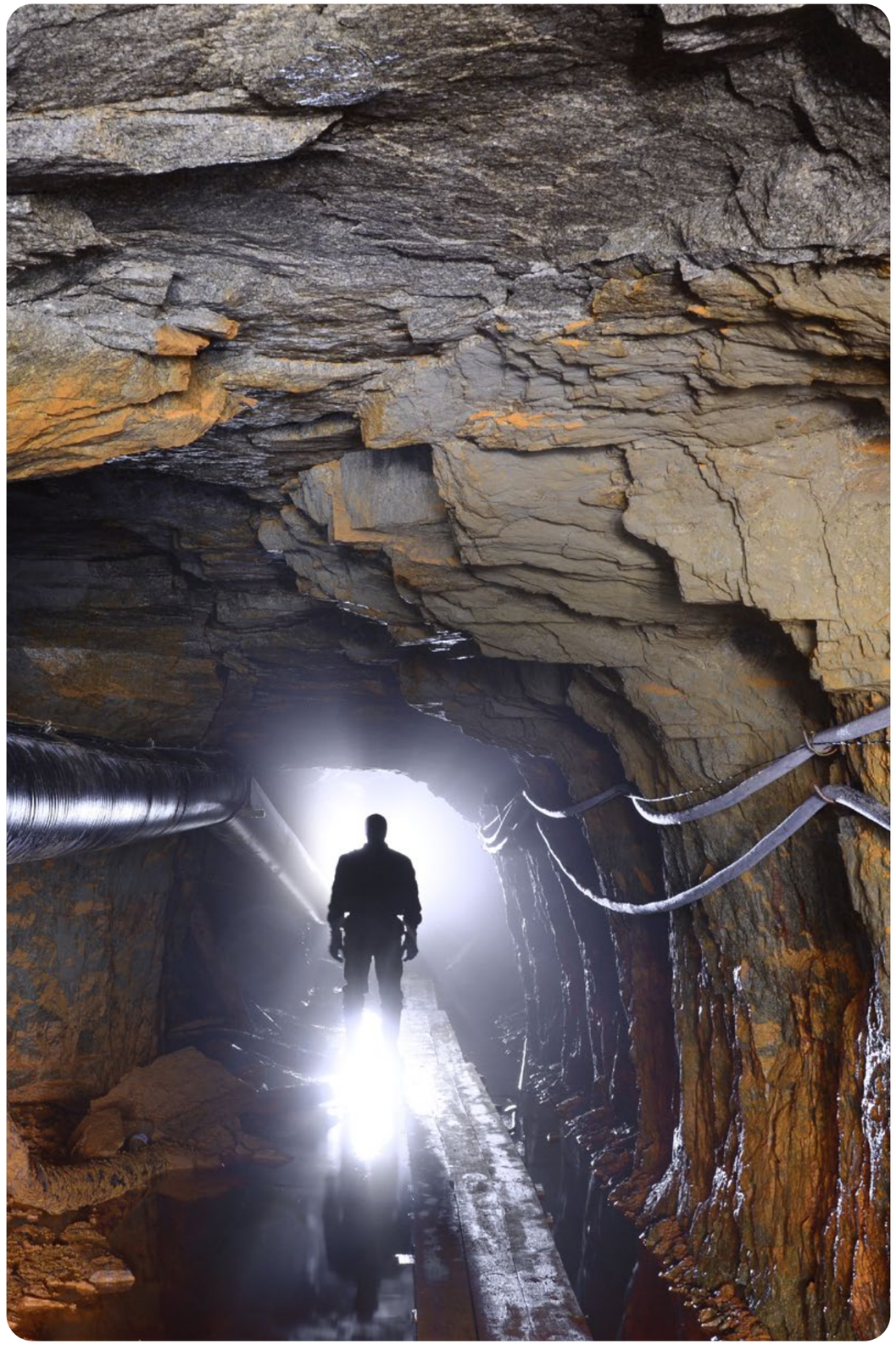
**ONLINE DATA SHEET**
Here you can find the online data sheet of this product.

### CABLE PROPERTIES

| Basic construction | Conductor Ø | Cable Ø (min) | Cable Ø (max) | Cable weight | Max. tensile strength | Nominal operation capacitance | Operation self induct-ance | Conductor resistance at 20 °C | Current carrying capacity |
|---|---|---|---|---|---|---|---|---|---|
| mm² | mm | mm | mm | kg/km | N | nF/km | mH/km | Ω/km | A |
| **SUPROMONT (N)3GHSSYCY 3.6/6KV** | | | | | | | | | |
| 3x25+3x16/3E+3x2,5ST+UEL | 6.4 | 42.7 | 45.7 | 3,180 | 1,125 | 360 | 0.32 | 0.78 | 131 |
| 3x35+3x16/3E+3x2,5ST+UEL | 7.6 | 45.3 | 48.3 | 3,700 | 1,575 | 410 | 0.3 | 0.554 | 162 |
| 3x50+3x25/3E+3x2,5ST+UEL | 9.1 | 49.5 | 53.5 | 4,730 | 2,250 | 470 | 0.29 | 0.386 | 202 |
| 3x70+3x35/3E+3x2,5ST+UEL | 10.8 | 53.2 | 57.2 | 5,720 | 3,150 | 530 | 0.28 | 0.272 | 250 |
| 3x95+3x50/3E+3x2,5ST+UEL | 12.7 | 58.2 | 62.2 | 7,010 | 4,275 | 610 | 0.27 | 0.206 | 301 |
| 3x120+3x70/3E+3x2,5ST+UEL | 14.3 | 62.7 | 66.7 | 8,311 | 5,400 | 670 | 0.26 | 0.161 | 352 |
| 3x150+3x70/3E+3x2,5ST+UEL | 16 | 67.6 | 71.6 | 9,634 | 6,750 | 740 | 0.25 | 0.129 | 404 |
| 3x185+3x120/3E+3x2,5ST+UEL | 17.7 | 71.7 | 75.7 | 11,202 | 8,325 | 800 | 0.25 | 0.106 | 461 |
| **SUPROMONT (N)3GHSSYCY 6/10KV** | | | | | | | | | |
| 3x25+3x16/3E+3x2,5ST+UEL | 6.4 | 45.7 | 48.7 | 3,580 | 1,125 | 320 | 0.33 | 0.78 | 131 |
| 3x35+3x16/3E+3x2,5ST+UEL | 7.6 | 47.8 | 50.8 | 4,130 | 1,575 | 360 | 0.31 | 0.554 | 162 |
| 3x50+3x25/3E+3x2,5ST+UEL | 9.1 | 50.8 | 54.8 | 4,890 | 2,250 | 420 | 0.3 | 0.386 | 202 |
| 3x70+3x35/3E+3x2,5ST+UEL | 10.8 | 55.1 | 59.1 | 5,680 | 3,150 | 470 | 0.28 | 0.272 | 250 |
| 3x95+3x50/3E+3x2,5ST+UEL | 12.7 | 60 | 64 | 7,130 | 4,275 | 540 | 0.27 | 0.206 | 301 |
| 3x120+3x70/3E+3x2,5ST+UEL | 14.3 | 63.9 | 67.9 | 8,450 | 5,400 | 590 | 0.26 | 0.161 | 352 |
| 3x150+3x70/3E+3x2,5ST+UEL | 16 | 68.9 | 72.9 | 9,840 | 6,750 | 660 | 0.25 | 0.129 | 404 |
| 3x185+3x120/3E+3x2,5ST+UEL | 17.7 | 73 | 77 | 11,408 | 8,325 | 740 | 0.25 | 0.106 | 461 |
| **SUPROMONT (N)3GHSSYCY 8.7/15KV** | | | | | | | | | |
| 3x35+3x16/3E+3x2,5ST+UEL | 7.6 | 50.4 | 54.4 | 4,481 | 1,575 | 290 | 0.33 | 0.554 | 172 |
| 3x25+3x16/3E+3x2,5ST+UEL | 6.4 | 49.1 | 53.1 | 3,985 | 1,125 | 220 | 0.36 | 0.78 | 139 |
| 3x50+3x25/3E+3x2,5ST+UEL | 9.1 | 53.9 | 57.9 | 5,300 | 2,250 | 330 | 0.31 | 0.386 | 215 |
| 3x70+3x35/3E+3x2,5ST+UEL | 10.8 | 57.6 | 61.6 | 6,380 | 3,150 | 380 | 0.3 | 0.272 | 265 |
| 3x95+3x50/3E+3x2,5ST+UEL | 12.7 | 63.1 | 67.1 | 7,652 | 4,275 | 430 | 0.29 | 0.206 | 319 |
| 3x120+3x70/3E+3x2,5ST+UEL | 14.3 | 67.4 | 71.4 | 8,940 | 5,400 | 470 | 0.28 | 0.161 | 371 |
| 3x150+3x70/3E+3x2,5ST+UEL | 16 | 72 | 76 | 10,400 | 6,750 | 540 | 0.27 | 0.129 | 428 |
| 3x185+3x120/3E+3x2,5ST+UEL | 17.7 | 75.6 | 79.6 | 11,865 | 8,325 | 580 | 0.26 | 0.106 | 488 |
| **SUPROMONT (N)3GHSSYCY 12/20KV** | | | | | | | | | |
| 3x25+3x16/3E+3x2,5ST+UEL | 6.4 | 52.6 | 56.6 | 3,900 | 1,575 | 200 | 0.37 | 0.554 | 172 |
| 3x35+3x16/3E+3x2,5ST+UEL | 7.6 | 53.6 | 57.6 | 5,090 | 1,125 | 250 | 0.35 | 0.554 | 139 |
| 3x50+3x25/3E+3x2,5ST+UEL | 9.1 | 56.8 | 60.8 | 5,730 | 2,250 | 280 | 0.33 | 0.386 | 215 |
| 3x70+3x35/3E+3x2,5ST+UEL | 10.8 | 61 | 65 | 6,840 | 3,150 | 320 | 0.31 | 0.272 | 265 |
| 3x95+3x50/3E+3x2,5ST+UEL | 12.7 | 66 | 70 | 8,200 | 4,275 | 360 | 0.3 | 0.206 | 319 |
| 3x120+3x70/3E+3x2,5ST+UEL | 14.3 | 69.9 | 73.9 | 9,650 | 5,400 | 390 | 0.29 | 0.161 | 371 |
| 3x150+3x70/3E+3x2,5ST+UEL | 16 | 71 | 75 | 10,932 | 6,750 | 430 | 0.28 | 0.129 | 428 |
| 3x185+3x120/3E+3x2,5ST+UEL | 17.7 | 78.7 | 82.7 | 12,417 | 8,325 | 470 | 0.27 | 0.106 | 488 |

# RUBBER INSULATED MV FLEXIBLE CABLES FOR UNDERGROUND USE

| Basic construction | Conductor Ø | Cable Ø (min) | Cable Ø (max) | Cable weight | Max. tensile strength | Nominal operation capacitance | Operation self induct-ance | Conductor resistance at 20 °C | Current carrying capacity |
|---|---|---|---|---|---|---|---|---|---|
| mm² | mm | mm | mm | kg/km | N | nF/km | mH/km | Ω/km | A |
| **SUPROMONT (N)3GHSSYCY 14/25KV** | | | | | | | | | |
| 3x35+3x16/3E+3x2,5ST+UEL | 7.6 | 57.6 | 61.6 | 5,502 | 1,575 | 210 | 0.37 | 0.554 | 172 |
| 3x50+3x25/3E+3x2,5ST+UEL | 9.1 | 61.4 | 65.4 | 6,517 | 2,250 | 240 | 0.35 | 0.386 | 215 |
| 3x70+3x35/3E+3x2,5ST+UEL | 10.8 | 65 | 69 | 7,526 | 3,150 | 270 | 0.33 | 0.272 | 265 |
| 3x95+3x50/3E+3x2,5ST+UEL | 12.7 | 70 | 73.9 | 8,790 | 4,275 | 300 | 0.32 | 0.206 | 319 |
| 3x120+3x70/3E+3x2,5ST+UEL | 14.3 | 73.9 | 77.8 | 10,137 | 5,400 | 330 | 0.3 | 0.161 | 371 |
| 3x150+3x70/3E+3x2,5ST+UEL | 16 | 78.9 | 82.8 | 11,679 | 6,750 | 360 | 0.29 | 0.129 | 428 |
| 3x185+3x95/3E+3x2,5ST+UEL | 17.7 | 82.5 | 86.4 | 13,095 | 8,325 | 390 | 0.29 | 0.106 | 488 |
| **SUPROMONT (N)3GHSSYCY 18/30KV** | | | | | | | | | |
| 3x50+3x25/3E+3x2,5ST+UEL | 9.1 | 67.4 | 71.4 | 7,487 | 2,250 | 200 | 0.37 | 0.386 | 215 |
| 3x70+3x35/3E+3x2,5ST+UEL | 10.8 | 71.1 | 75.1 | 8,549 | 3,150 | 220 | 0.35 | 0.272 | 265 |
| 3x95+3x50/3E+3x2,5ST+UEL | 12.7 | 76.5 | 80.4 | 10,091 | 4,275 | 250 | 0.34 | 0.206 | 319 |
| 3x120+3x70/3E+3x2,5ST+UEL | 14.3 | 79.9 | 83.8 | 11,268 | 5,400 | 270 | 0.33 | 0.161 | 371 |
| 3x150+3x70/3E+3x2,5ST+UEL | 16 | 84.4 | 89.3 | 12,887 | 6,750 | 290 | 0.31 | 0.129 | 428 |
| **SUPROMONT (N)3GHSSYCY 20/35KV** | | | | | | | | | |
| 3x50+3x25/3E+3x2,5ST+UEL | 9.1 | 71.2 | 75.2 | 8,120 | 2,250 | 180 | 0.39 | 0.386 | 215 |
| 3x70+3x35/3E+3x2,5ST+UEL | 10.8 | 75.3 | 79.3 | 9,450 | 3,150 | 200 | 0.37 | 0.272 | 265 |
| 3x95+3x50/3E+3x2,5ST+UEL | 12.7 | 80.3 | 84.3 | 10,800 | 4,275 | 220 | 0.35 | 0.206 | 319 |
| 3x120+3x70/3E+3x2,5ST+UEL | 14.3 | 83.2 | 88.2 | 12,050 | 5,400 | 240 | 0.34 | 0.161 | 371 |



# GLOBAL REACH, LOCAL EXPERTISE

## Different Technologies for Different Challenges

No matter which country you are in, Prysmian offers local solutions and dedicated points of contact to support you.

### SOLUTIONS DESIGNED TO MEET LOCAL NEEDS

At Prysmian, we understand that every region comes with its own unique set of challenges. That's why we ensure our portfolio includes tailored solutions, produced locally or sourced from our global Centres of Excellence, to meet the specific demands of each market.

Our approach combines deep local expertise with cutting-edge technology, ensuring that every solution aligns with both regional requirements and global standards. Additionally, we prioritize rapid delivery to keep your operations running smoothly and efficiently, no matter where you are.

### HARNESSING THE POWER OF INNOVATION

From locally produced cables to advanced products developed in our global Centres of Excellence, we deliver the best solutions for every application. By leveraging our innovation hubs worldwide, we can address the most complex challenges with precision and reliability.

### COMPREHENSIVE SUPPORT, WHEREVER YOU ARE

Prysmian provides end-to-end support to ensure your projects succeed. With a presence in over 50 countries, our global reach and local expertise enable us to respond quickly and effectively to your needs.
We are more than a cable provider—we are your trusted partner for overcoming challenges and achieving success, any time and any place.

# CABLES. DELIVERED. NO MATTER WHAT.

## Navigating the New Landscape of Global Trade

The world of international trade is evolving rapidly. New policies, like the Built America Buy America Act, Chinese market regulations, or rising international trade tariffs, present challenges for businesses worldwide. Despite these changes, our customers can rest assured that they will continue to receive our high-quality cable products without disruption.

With our global presence and local production facilities, we are fully prepared to adapt to new market demands – no matter where you operate. Our worldwide manufacturing and logistics network ensures consistent supply with our high-quality products, always in compliance with regional regulations.
At Prysmian, we believe that new trade regulations shouldn't hinder your access to the world's best cable solutions. We're here to support you every step of the way.

# Because We Care About Cables – and About You

At our Centers of Excellence in Germany, Prysmian offers cutting-edge services for rubber-insulated flexible cables, customized to fit your specific requirements. Our expertise spans three key areas:

**Medium & High Voltage Cable Services**

**Medical & Low Voltage Cable Harnessing**

**Submersible Pump & Wind Turbine Cable Harnessing**

We provide solutions that are not only quick but also crafted with the utmost attention to detail.

> From the start, their expert advice on component selection and system design was invaluable. The entire project was seamless, thanks to their comprehensive approach.

> We rely on Prysmian for regular VLF testing of our critical cable infrastructure. Their testing process is thorough and efficient, and we have complete confidence in the results.

## ASSEMBLY & TERMINATION – PERFECT FIT, EVERY TIME

At our Centers of Excellence in Germany or directly on-site, we prepare your special cables (1–66 kV AC) for a seamless connection. Our services are customized to fit your exact requirements, ensuring flawless execution every time:

- **PRECISION SEALING**
  Cast-resin, hybrid, and vulcanization types
- **SPECIAL SEALING ENDS**
  Tailored to your needs
- **PLUG-ON SEALING ENDS**
  Medium and low voltage, with fiber optics

## VLF-TESTING TECHNOLOGY – ENERGIZED AND SECURE

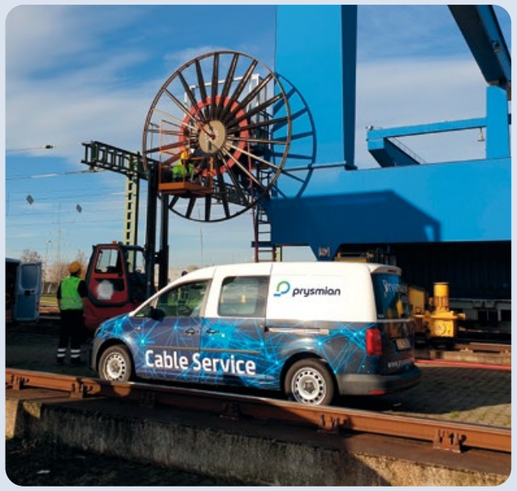
Our portable VLF-Testing System ensures your cable infrastructure is safe and reliable. Using a voltage waveform recommended by DIN VDE standards, we provide on-site testing that meets the highest safety benchmarks:

- **UP TO 60 kV VLF CR**
- **0.1 Hz TEST FREQUENCY**
- **MAX. TESTING LENGTHS:**
  240 mm² cables up to 5 km

## FIBER-OPTIC MEASUREMENTS – PRECISION YOU CAN TRUST

We offer a comprehensive suite of fiber-optic measuring methods to guarantee precision and accuracy:

- **VISUAL INSPECTIONS**
  Thorough assessment of every fiber
- **ATTENUATION MEASUREMENT**
  Across various wavelengths
- **FAULT LOCATION**
  Through OTDR reflectometry
- **ADVANCED MONITORING**
  Temperature and stress tracking with Brillouin frequency measurement




## CUSTOMIZED SYSTEM CONCEPTS – BUILT RIGHT FROM THE START

From the initial planning phase, our team is ready to support you. We provide expert advice on component selection, assembly configurations, and termination methods. If needed, we can supply all necessary components and manage sub-projects to ensure everything aligns perfectly with your goals.



## FIBER-OPTIC PREASSEMBLY & CONNECTION – EXPERTISE IN ACTION

Our specialists develop and configure fiber-optic cable systems for industrial applications, offering:

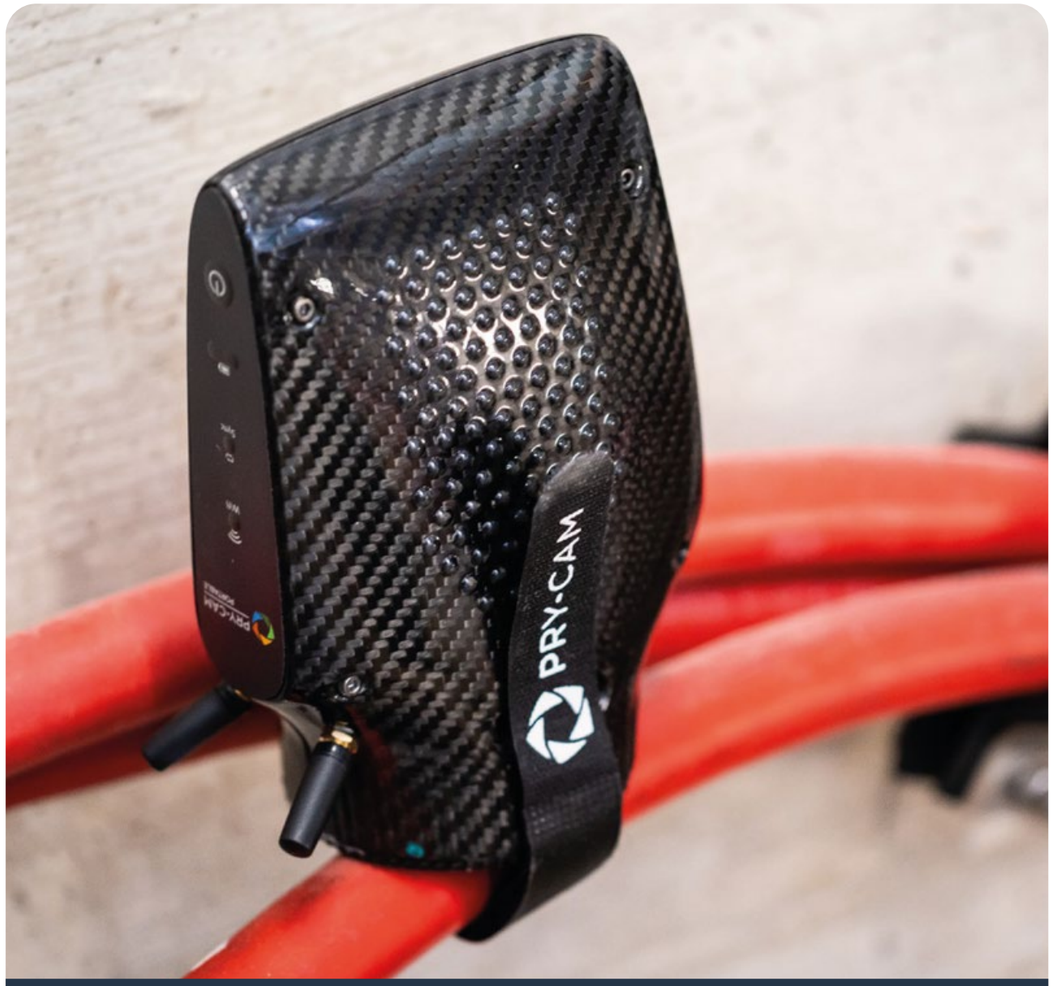
- **HIGH MECHANICAL STRENGTH**
- **MOISTURE PROTECTION**
- **SLEEK, COMPACT DESIGN**
- **OPTIONS FOR FIBER NUMBERS:**
  6, 12, 18, or 24

We also connect fiber-optic cables and combined cables with integrated optical fibers, using the latest techniques like fusion splicing, ensuring reliable and precise connections.

## REPAIR & CONNECTION – FAST, RELIABLE, AND COST-EFFECTIVE

When your cables suffer damage, whether minor or major, we are here to help – quickly and affordably. We repair rubber-insulated flexible cables on-site or at our facilities, using original materials and proven technology. Our expert fitters ensure that your cables remain fully operational.

If you prefer to handle repairs yourself, we provide all necessary original materials in convenient installation sets, ensuring your cables are correctly connected using shrink-on, cast-resin, or vulcanization methods.




# PRY-CAM ASSET MONITORING SYSTEM

## Unlocking the Power of Data-Driven Efficiency

In port infrastructure, the reliability and safety of electrical systems are crucial. Ports are especially vulnerable to disruptions from power outages or malfunctions, leading to significant risks and economic losses.

### PRY-CAM: REVOLUTIONIZING POWER MANAGEMENT

PRY-CAM is a groundbreaking technology for electrical system monitoring and condition assessment. It provides online, accurate, and reliable measurements, diagnosing and localizing defects remotely. This results in enhanced grid reliability, safety, and cost efficiency for port infrastructure.

## Key Features

- **ADAPTABLE PLATFORM**
  Compatible with various SCADA protocols, customizable to customer requirements.
- **COMPREHENSIVE COVERAGE**
  Suitable for electrical equipment from 3 kV to 600 kV, including cables, transformers, and switchgear.
- **INTEGRATED MONITORING**
  Continuous or temporary monitoring of key parameters like partial discharge, temperature, and humidity.
- **FLEXIBLE SOLUTIONS**
  Configurable for specific maintenance and asset management strategies.
- **REAL-TIME DATA**
  Monitoring conditions, malfunctions, and overheating without the need for specific expertise.
- **ADVANCED TECHNOLOGY AND DATABASE**
  Harnessing IoT and a cloud-based system with over three million measurements for effective monitoring and continuous improvement.

**Discover more at www.pry-cam.com**

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