



OPTICAL

TecniKabel

TecniKabel

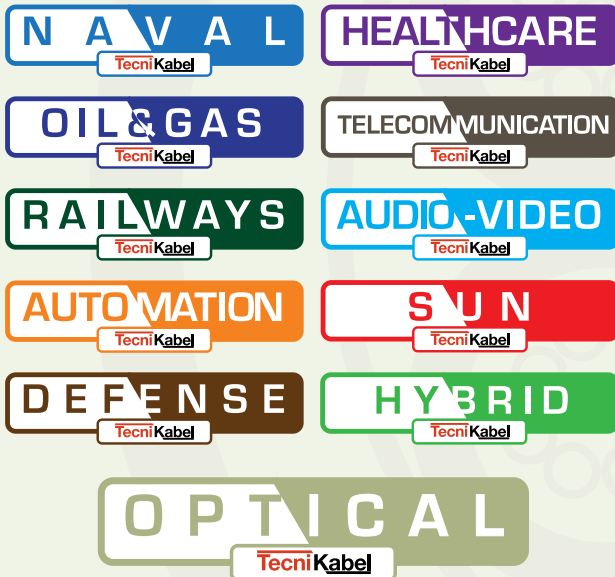
SPECIAL ELECTRICAL CABLES

TECNIKABEL

is a leading company in the special cable sector.

Advanced machinery, investments in research, a high level of know-how of the staff and excellent quality of the products recognized by the leading certification bodies make TECNİKABEL a consolidated business and a constantly growing group.

Our product lines include the following sectors:



COMPANY DATA

Business: Special electrical and optical cables

Founded in: 1978

Share Capital: € 1,040,000

Export: 45 %

Plant: 37,000 sq m

Production Area: 17,000 sq m

Laboratories and Offices: 3,000 sq m

Employees: 102

Quality System ISO 9001 since 1994

Iris certification

FIBRE OPTIC DEPARTMENT MANUFACTURING AREA

Area: 2,000 sq m

MANUFACTURING CAPACITY

Keeping up with the modern technologies, our facility includes:

- • 15 extrusion lines
- • 12 stranding machines
- • 40 braiding machines
- • 1 colouring line
- • 1 SZ stranding line

CERTIFICATIONS



OPTICAL FIBRES

TECNIKABEL is equipped to produce optical cables with the following manufacturing specifications:

STRUCTURE

- 900µm single and double layer tight buffer
- 600µm single-layer tight buffer
- 900µm semitight
- Jelly-filled loose tube
- Dry loose tube

DRAWING ELEMENTS

- Aramidic yarns
- Glass yarns
- Round and flat rods in fibreglass
- Steel wires
- Aramidic ropes

CARRYING ELEMENTS

- Fibreglass Carrier
- Aramidic Carrier
- Metallic carrier (Steel Cables/Wires)

METALLIC AND DIELECTRIC PROTECTIONS/ARMOURINGS

- Corrugated steel tape hot-welded to the sheath
- Galvanized steel tape
- Galvanized steel wire braid
- Steel wire spiral
- Aluminium moisture barrier
- Fibreglass flat rods
- Dielectric antiballistic protections
- Dielectric rodent protection

SHEATHS

- PVC (various grades)
- Flame-retardant LSZH with low production of toxic gases
- Polyethylene
- Polyurethane (various grades)
- Reticulated sheathes resistant to oils, hydrocarbons, drilling sludges (MUD).

TECNIKABEL carries out at its laboratory trasmission, mechanical, and temperature tests, in accordance with the main international standards. Particular needs will be examined by our technical office which will make available our thirty years of experience, and will be able to direct the customer to the best possible solution.

CONTENTS

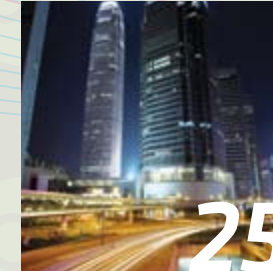
MOTORWAYS/METRO/
RAILWAYS



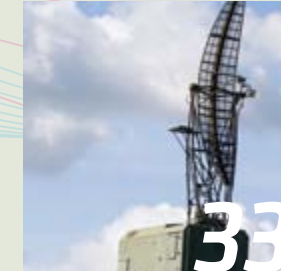
AERIAL LINES



CITIES/BUILDING



DEFENSE



AUTOMATION



OIL & GAS





MOTORWAYS/ METRO/RAILWAYS

TK - DIELECTRIC ARMoured LOOSE MULTI-TUBE

Suitable for laying in pipes, good rodent and water penetration resistance and with excellent mechanical features.

Standard characteristics

Loose tube design up to 24 fibres for each tube

Potentially up to 432 Optic Fibres

Dielectric armouring and rodent resistant glass (or alternatively aramidic yarns)

Sheath suitable for outdoor use

Types of fibre used

Singlemode Low water peak ITU-T G.652D

Singlemode NZD ITU-T G.655/656

Multimode 50/125 G.651 - 62.5/125 IEC 60793-2-10

Multimode 50/125 OM3/OM4 ISO/IEC 11801 IEC 60793-2-10

Specifications for use/laying



Operating temperature
-40°C to +70°C



Laid in buried conduits



Maximum pulling force
up to 10000 N



Impact resistant



Rodent resistant



Water resistant



Minimum bending radius
15 X outer Ø



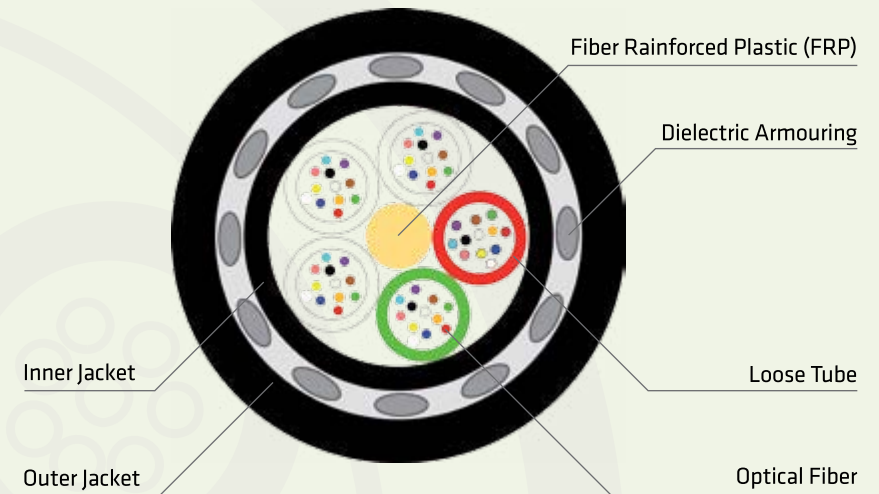
Outdoor



Crush resistant

MOTORWAYS/METRO/RAILWAYS

CABLE SECTION



Construction options



Fire resistant



Antiballistic protection



Flame retardant



Crush resistant and
vibrations resistant



No fire propagation



Resistant to oils
and hydrocarbons



Reduced emission
of fumes and toxic gases



Indoor

TK - DIELECTRIC ARMoured LOOSE MONO-TUBE

Suitable for laying in pipes, good rodent and water penetration resistance and with good mechanical features.

Standard characteristics

Simplex loose tube structure
Potentially up to 24 fibres
Dielectric armouring and rodent resistant glass (or alternatively aramidic fibres)
Sheath suitable for outdoor use

Types of fibre used

Singlemode Low water peak ITU-T G.652D
Singlemode NZD ITU-T G.655/656
Multimode 50/125 G.651 - 62.5/125 IEC 60793-2-10
Multimode 50/125 OM3/OM4 ISO/IEC 11801 IEC 60793-2-10

Specifications for use/laying



Operating temperature
-40°C to +70°C



Outdoor



Maximum pulling force
up to 3000 N



Laid in buried conduits



Rodent resistant



Impact resistant



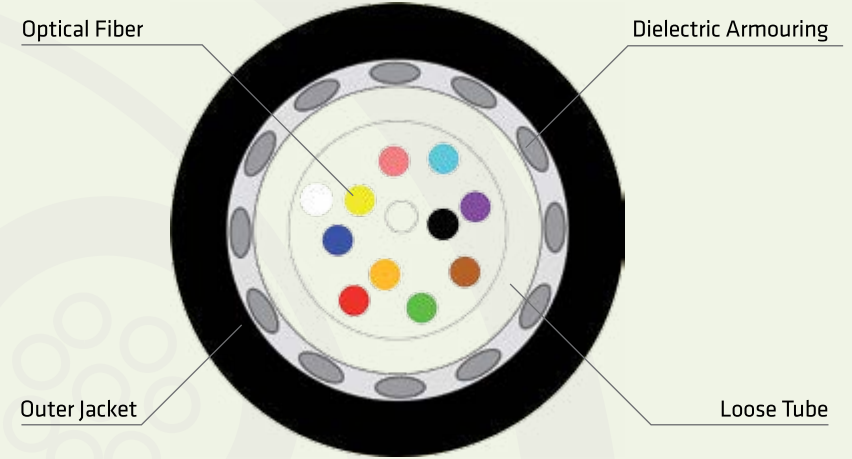
Minimum bending radius
10 X outer Ø



Crush resistant

MOTORWAYS/METRO/RAILWAYS

CABLE SECTION



Construction options



Fire resistant



Water resistant



Flame retardant



Crush resistant and
vibrations resistant



No fire propagation



Resistant to oils
and hydrocarbons



Reduced emission
of fumes and toxic gases



Indoor

TK - METALLIC ARMoured LOOSE MULTI-TUBE

Suitable for direct burial, excellent rodent and water penetration resistance and excellent mechanical features.

• *Standard characteristics*

Loose tube design up to 24 fibres for each tube

Potentially up to 432 Optic Fibres

Double sheath

Protection with aramidic yarns (or alternatively glass yarns)

Metallic armouring in corrugated steel tape

Sheath suitable for outdoor use

• *Types of fibre used*

Singlemode Low water peak ITU-T G.652D

Singlemode NZD ITU-T G.655/656

Multimode 50/125 G.651 - 62.5/125 IEC 60793-2-10

Multimode 50/125 OM3/OM4 ISO/IEC 11801 IEC 60793-2-10

• *Specifications for use/laying*



Operating temperature
-40°C to +70°C



Water resistant



Maximum pulling force
up to 12000 N



Outdoor



Rodent resistant



Laid in buried conduits



Minimum bending radius
20 X outer Ø



Impact resistant



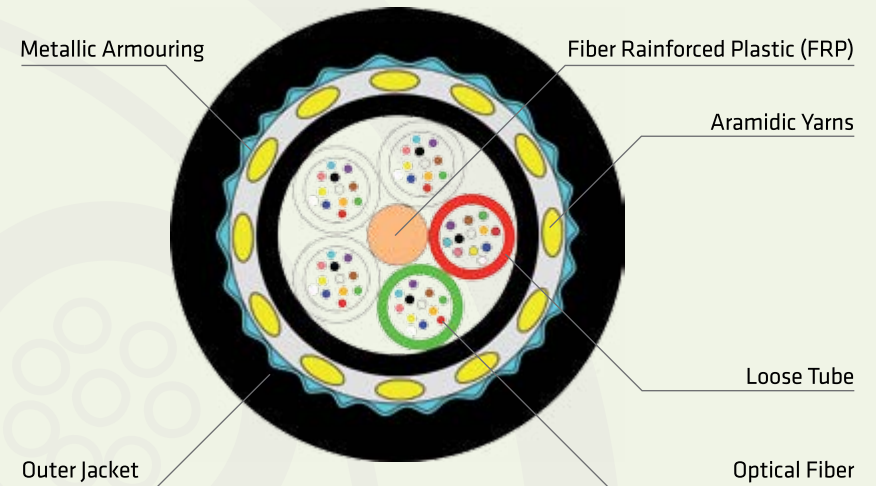
Crush resistant



Crush resistant and
vibrations resistant

MOTORWAYS/METRO/RAILWAYS

CABLE SECTION



• *Construction options*



Fire Resistant



Reduced emission
of fumes and toxic gases



Flame retardant



Resistant to oils
and hydrocarbons



No fire propagation



Indoor

TK - METALLIC ARMoured LOOSE MONO-TUBE

Suitable for direct burial, excellent rodent and water penetration resistance and good mechanical features.

Standard characteristics

Simplex loose tube structure
Potentially up to 24 fibres
Metallic armouring in corrugated steel tape
Sheath suitable for outdoor use (or alternatively thin internal sheath and steel braid)

Types of fibre used

Singlemode Low water peak ITU-T G.652D
Singlemode NZD ITU-T G.655/656
Multimode 50/125 G.651 - 62.5/125 IEC 60793-2-10
Multimode 50/125 OM3/OM4 ISO/IEC 11801 IEC 60793-2-10

Specifications for use/laying



Operating temperature
-40°C to +70°C



Maximum pulling force
up to 750 N



Rodent resistant



up to 5000 N (with insertion
of aramidic and/or glass
yarns under the armouring)



Minimum bending radius
15 X outer Ø



Laid in buried conduits



Crush resistant



Impact resistant



Outdoor



Crush resistant and
vibrations resistant

MOTORWAYS/METRO/RAILWAYS

CABLE SECTION

Metallic Armouring

Loose Tube

Optical Fiber

Outer Jacket

Construction options



Fire resistant



Resistant to oils
and hydrocarbons



Flame retardant



Water resistant



No fire propagation



Indoor



Reduced emission
of fumes and toxic gases

TK - MULTI TIGHT WITH DIELECTRIC PROTECTION

Suitable for indoor use, good flexibility, easy to install into cabinets and racks, low size and weight.

Standard characteristics

- 900µm tight buffer design
- Potentially up to 24 fibres
- Dielectric armouring of aramidic yarns (or alternatively glass yarns)
- Sheath suitable for indoor/outdoor use (Flame retardant Halogen Free)

Types of fibre used

- Singlemode Low water peak ITU-T G.652D
- Singlemode NZD ITU-T G.655/656
- Multimode 50/125 G.651 - 62.5/125 IEC 60793-2-10
- Multimode 50/125 OM3/OM4 ISO/IEC 11801 IEC 60793-2-10

Specifications for use/laying



Operating temperature
-30°C to +70°C



Crush resistant



Maximum pulling force
up to 2000 N



Flame retardant



Indoor



No fire propagation



Minimum bending radius
10 X outer Ø



Reduced emission
of fumes and toxic gases

MOTORWAYS/METRO/RAILWAYS

CABLE SECTION

Tight Buffer

Aramidic Yarns

Outer Jacket

Optical Fiber

Construction options



Rodent resistant



Resistant to oils
and hydrocarbons



Water resistant



Metallic Braid Armouring

TK - BREAKOUT

Suitable for indoor use, good flexibility, easy to install into cabinets and racks, protection on every single fibre.

Standard characteristics

900µm tight buffer structure protected singularly with aramidic yarns (or alternatively 600 µm tight buffer and Semitight)
Potentially up to 37 fibres
Sheath suitable for indoor use (Flame retardant Halogen Free)

Types of fibre used

Singlemode Low water peak ITU-T G.652D
Singlemode NZD ITU-T G.655/656
Multimode 50/125 G.651 - 62.5/125 IEC 60793-2-10
Multimode 50/125 OM3/OM4 ISO/IEC 11801 IEC 60793-2-10

Specifications for use/laying



Operating temperature
-30°C to +70°C



Crush resistant



Maximum pulling force
up to 3000 N



Flame retardant



Indoor



No fire propagation

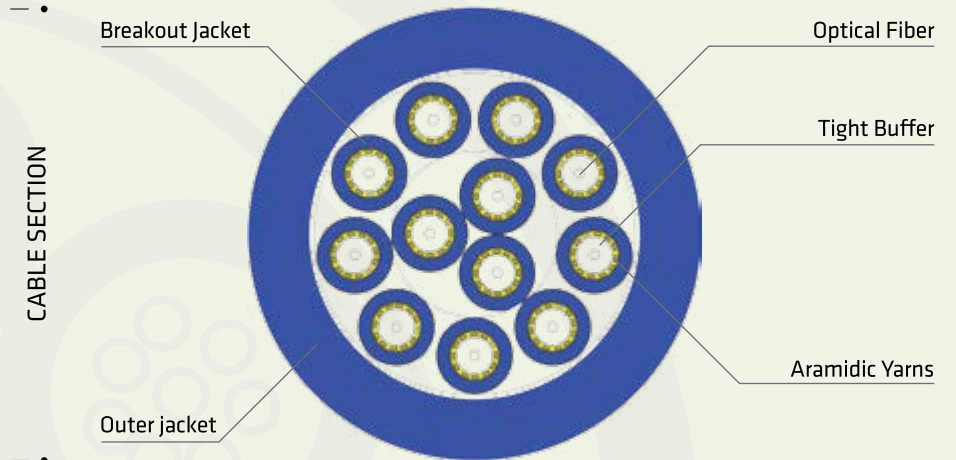


Minimum bending radius
10 X outer Ø



Reduced emission
of fumes and toxic gases

MOTORWAYS/METRO/RAILWAYS



Construction options



Rodent resistant



Resistant to oils
and hydrocarbons



Metallic Braid Armouring



AERIAL LINES

TK - ADSS (ALL DIELECTRIC SELF SUPPORTING)

Suitable for aerial use, resistant to UV rays and water penetration and excellent mechanical features.

– **Standard characteristics**

Loose tube structure up to 24 fibres for each tube
Potentially up to 288 Optic Fibres
Dielectric armoring with aramidic yarns
Sheath suitable for outdoor use

– **Types of fibre used**

Singlemode Low water peak ITU-T G.652D
Singlemode NZD ITU-T G.655/656
Multimode 50/125 G.651 - 62.5/125 IEC 60793-2-10
Multimode 50/125 OM3/OM4 ISO/IEC 11801 IEC 60793-2-10

– **Specifications for use/laying**



Operating temperature
-40°C to +80°C



Maximum pulling force
up to 10000 N



Minimum bending radius
15 X outer Ø



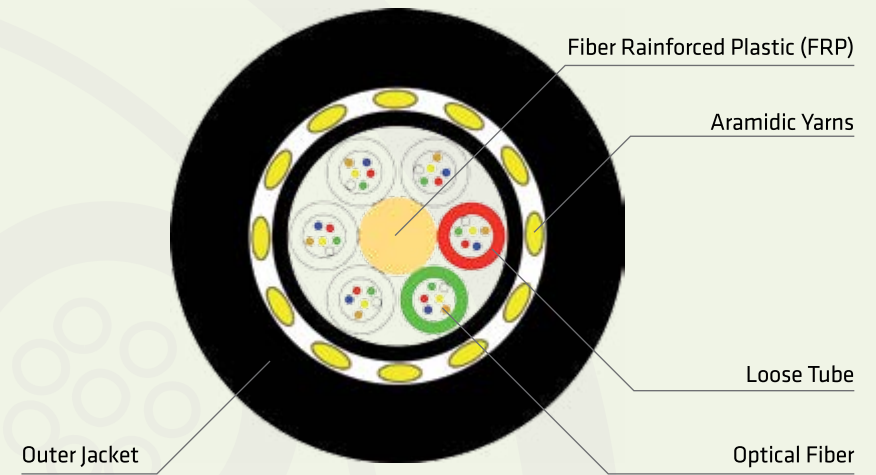
Water resistant



Outdoor

AERIAL LINES

CABLE SECTION



– **Construction options**



Fire resistant



Flame retardant



No fire propagation



Reduced emission
of fumes and toxic gases



Resistant to oils
and hydrocarbons



Indoor



Antiballistic protection

TK - METALLIC SELF-SUPPORTING

Suitable for aerial use, resistant to UV rays and water penetration and excellent mechanical features.

Standard characteristics

Loose tube structure up to 24 fibres for each tube
Potentially up to 288 Optic Fibres
Self-supporting steel wire
Figure "8"
Sheath suitable for outdoor use

Types of fibre used

Singlemode Low water peak ITU-T G.652D
Singlemode NZD ITU-T G.655/656
Multimode 50/125 G.651 - 62.5/125 IEC 60793-2-10
Multimode 50/125 OM3/OM4 ISO/IEC 11801 IEC 60793-2-10

Specifications for use/laying



Operating temperature
-40°C to +80°C



Maximum pulling force
up to 15000 N



Minimum bending radius
15 X outer Ø



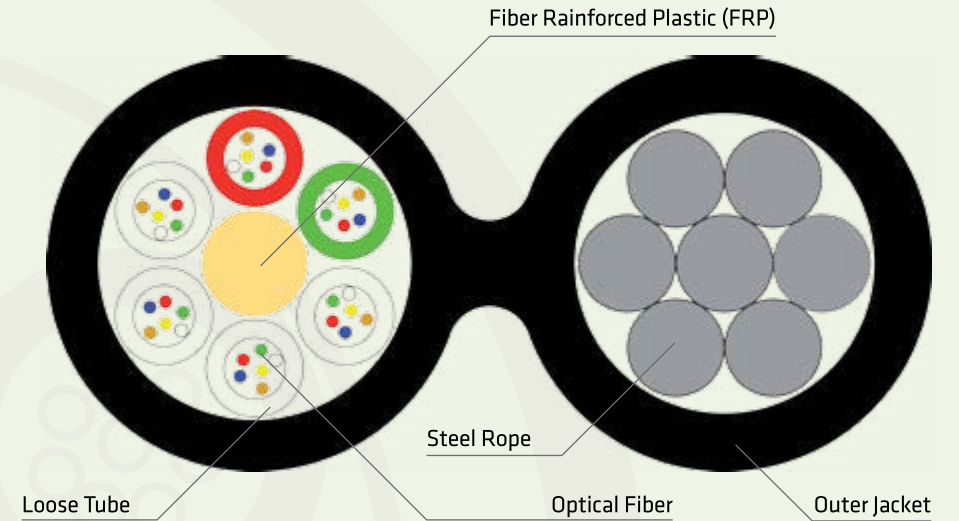
Water resistant



Outdoor

AERIAL LINES

CABLE SECTION



Construction options



Fire resistant



Flame retardant



No fire propagation



Reduced emission
of fumes and toxic gases



Resistant to oils
and hydrocarbons



Indoor



Antiballistic protection



CITIES/BUILDING

TK HOME - FTTH (FIBRE TO THE HOME)

Cable designed for use in buildings up to the end user, mechanical performance is guaranteed by the presence of two steel wires contained in the thin sheath.

– • **Standard characteristics**

Divisible structure

Steel rod (or alternatively dielectric rod)

Sheath suitable for indoor use (Halogen Free)

– • **Types of fibre used**

Singlemode Low water peak ITU-T G.652D

Singlemode Macrobending G.657

Multimode 50/125 G.651 - 62.5/125 IEC 60793-2-10

– • **Specifications for use/laying**



Operating temperature
-20°C to +70°C



Minimum bending radius
10 X outer Ø



Indoor



Flame retardant

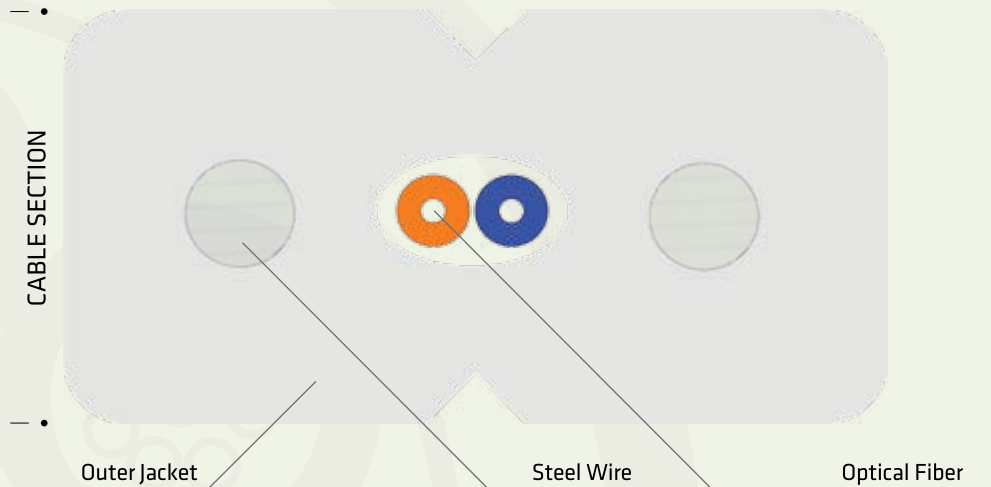


No fire propagation



Reduced emission
of fumes and toxic gases

CITIES/BUILDING



TK HOME - SELF-SUPPORTING MULTITIGHT

Cable suitable for vertical use in buildings, single tight fibres extractable for the length necessary to reach the user at every floor.

Standard characteristics

- 900µm tight buffer structure
- Potentially up to 24 fibres
- Dielectric armouring with glass rods embedded in the sheath
- Sheath suitable for indoor/outdoor use (Flame retardant Halogen Free)

Types of fibre used

- Singlemode Low water peak ITU-T G.652D
- Singlemode Microbending G.657
- Multimode 50/125 G.651 - 62.5/125 IEC 60793-2-10

Specifications for use/laying



Operating temperature
-20°C to +70°C



Minimum bending radius
10 X outer Ø



Indoor



Flame retardant

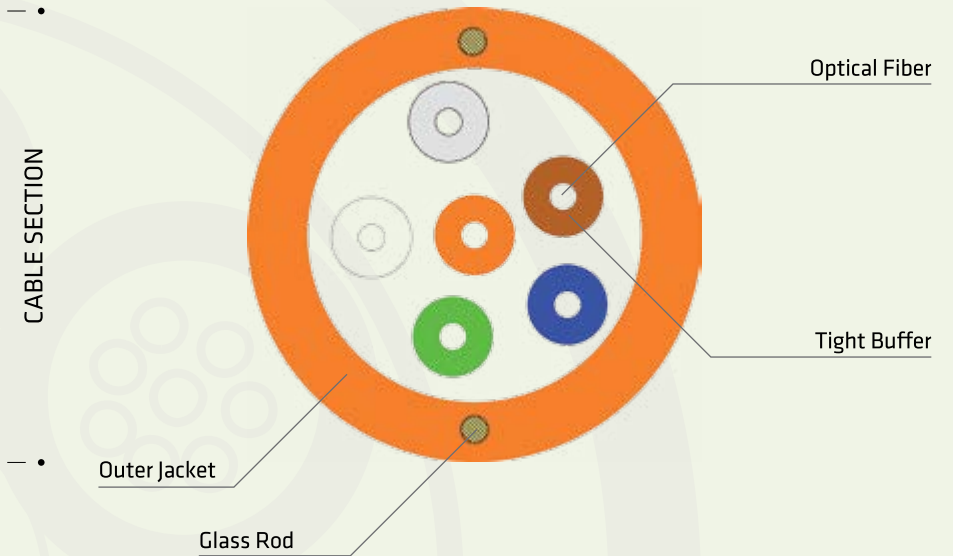


No fire propagation



Reduced emission
of fumes and toxic gases

CITIES/BUILDING



TK - AIR BLOWN

Suitable for use with the Air-Blown system, can be installed in cities avoiding excavations and breaking of the road surface, reducing significantly the installation costs.

Dimensions and weight reduced to the minimum to facilitate blowing in the plastic tubes.

– • **Standard characteristics**

Loose tube structure up to 24 fibres for each tube

Potentially up to 144 Optic Fibres

Sheath for external use in material with a low friction coefficient

– • **Types of fibre used**

Singlemode Low water peak ITU-T G.652D

Singlemode NZD ITU-T G.655/656

– • **Specifications for use/laying**



Operating temperature
-40°C to +70°C



Maximum pulling force
up to 1000 N



Minimum bending radius
10 X outer Ø



Outdoor



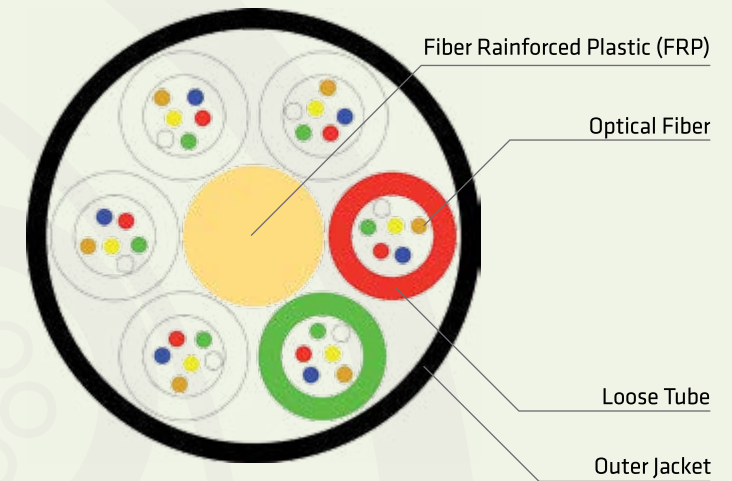
Laid in buried conduits



Water resistant

CITIES/BUILDING

CABLE SECTION





DEFENSE

TK - TACTICAL CABLE

Suitable for temporary outdoor use (military camps), excellent flexibility, resistant to atmospheric agents, excellent mechanical performance, completely dielectric, can be reused.

– • *Standard characteristics*

900µm tight buffer structure
Potentially up to 12 fibres
Dielectric armoring in aramidic yarns
Highly-flexible sheath suitable for outdoor use

– • *Types of fibre used*

Singlemode Low water peak ITU-T G.652D
Singlemode Microbending ITU-T G.657
Multimode 50/125 G.651 - 62.5/125 IEC 60793-2-10

– • *Specifications for use/laying*



Operating temperature
-30°C to +80°C



Maximum pulling force
up to 3000 N



Minimum bending radius
10 X outer Ø



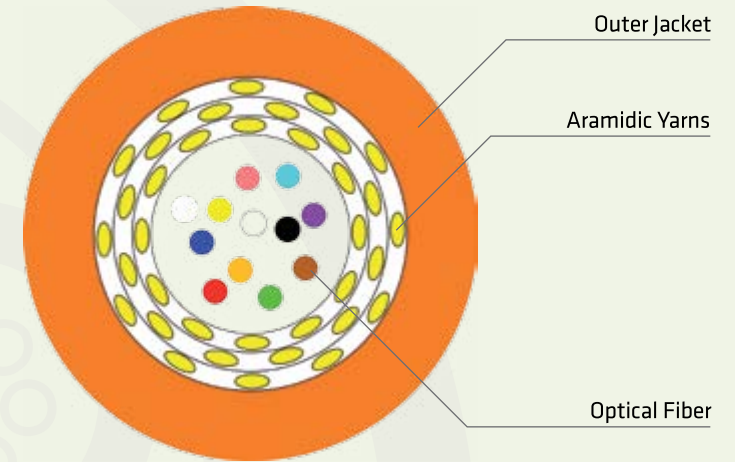
Crush resistant



Outdoor

DEFENSE

CABLE SECTION



– • *Construction options*



Resistant to oils
and hydrocarbons

TK - DROP CABLE

Suitable for use inside conduits, good mechanical performance, completely dielectric.

Standard characteristics

Simplex loose tube structure
Potentially up to 48 fibres
Carriers in glass resin incorporated in the outer sheath
Sheath suitable for outdoor use

Types of fibre used

Singlemode Low water peak ITU-T G.652D
Singlemode NZD ITU-T G.655/656
Multimode 50/125 G.651 - 62.5/125 IEC 60793-2-10

Specifications for use/laying



Operating temperature
-30°C to +70°C



Outdoor



Maximum pulling force
up to 3000 N



Laid in buried conduits



Minimum bending radius
15 X outer Ø



Water resistant

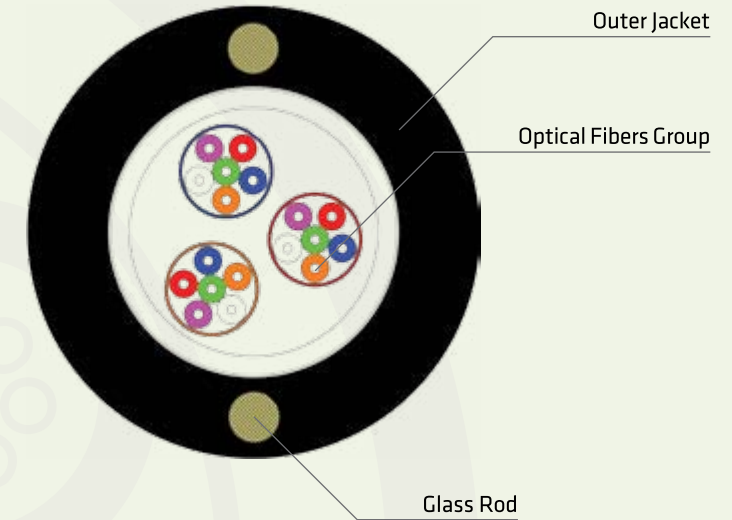


Crush resistant



Impact resistant

CABLE SECTION



DEFENSE



AUTOMATION

TK - MOBILE USE

Suitable for automation use, dielectric protection on every single fibre.

– . **Standard characteristics**

900µm tight buffer structure

Potentially up to 6 fibres

Dielectric protection with aramidic yarns on every single fibre

Highly-flexible sheath suitable for indoor use

– . **Types of fibre used**

Singlemode Low water peak ITU-T G.652D

Singlemode microbending ITU-T G.657

Multimode 50/125 G.651 - 62.5/125 IEC 60793-2-10

Plastic optical fibre 980/1000

– . **Specifications for use/laying**



Operating temperature
-20°C to +60°C



Minimum bending radius
5 X outer Ø



Resistant to oils
and hydrocarbons



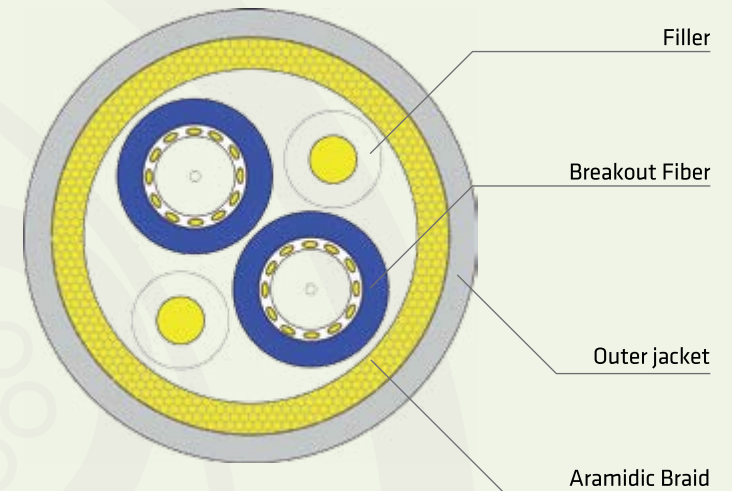
Silicon free



Indoor

AUTOMATION

CABLE SECTION





OIL & GAS

TK - METALLIC ARMoured LOOSE MULTI-TUBE

Suitable for use in critical environments with the presence of hydrocarbons, oils, and aggressive chemical agents, rodent resistance, with excellent mechanical characteristics and fire resistant.















Standard characteristics

- Loose tube structure up to 24 fibres for each tube
- Potentially up to 432 Optic Fibres
- Double sheath
- Metallic armoring with steel wires
- Sheath resistant to hydrocarbons, oils and chemical agents

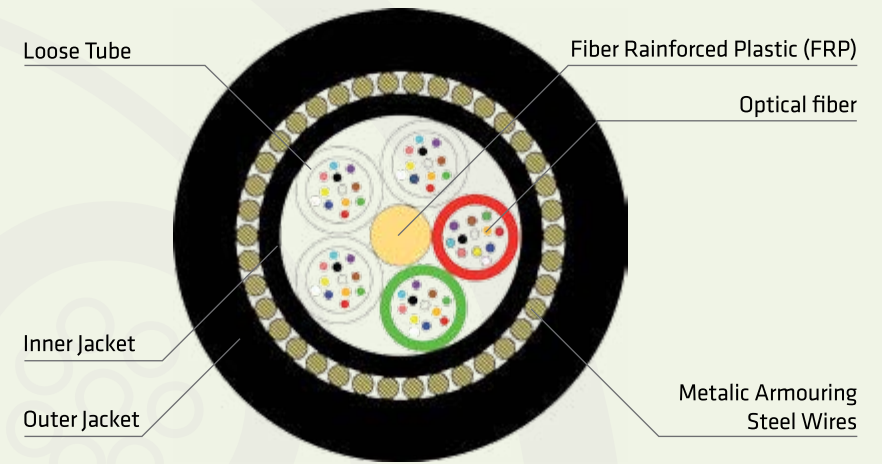
Types of fibre used

- Singlemode Low water peak ITU-T G.652D
- Singlemode NZD ITU-T G.655/656
- Multimode 50/125 G.651 - 62.5/125 IEC 60793-2-10
- Multimode 50/125 OM3/OM4 ISO/IEC 11801 IEC 60793-2-10

Specifications for use/laying

 Crush resistant	 Minimum bending radius 20 X outer Ø	 Resistant to oils and hydrocarbons
 Flame retardant	 Impact resistant	 Indoor
 No fire propagation	 Operating temperature -40°C to +70°C	 Outdoor
 Fire resistant	 Maximum pulling force up to 12000 N	 Crush resistant and vibrations resistant
 Water resistant	 Rodent resistant	

CABLE SECTION



Construction options



Reduced emission of fumes and toxic gases

OIL & GAS



Tecnik Kabel

LEGENDA

TECNIKABEL S.r.l.


TURIN

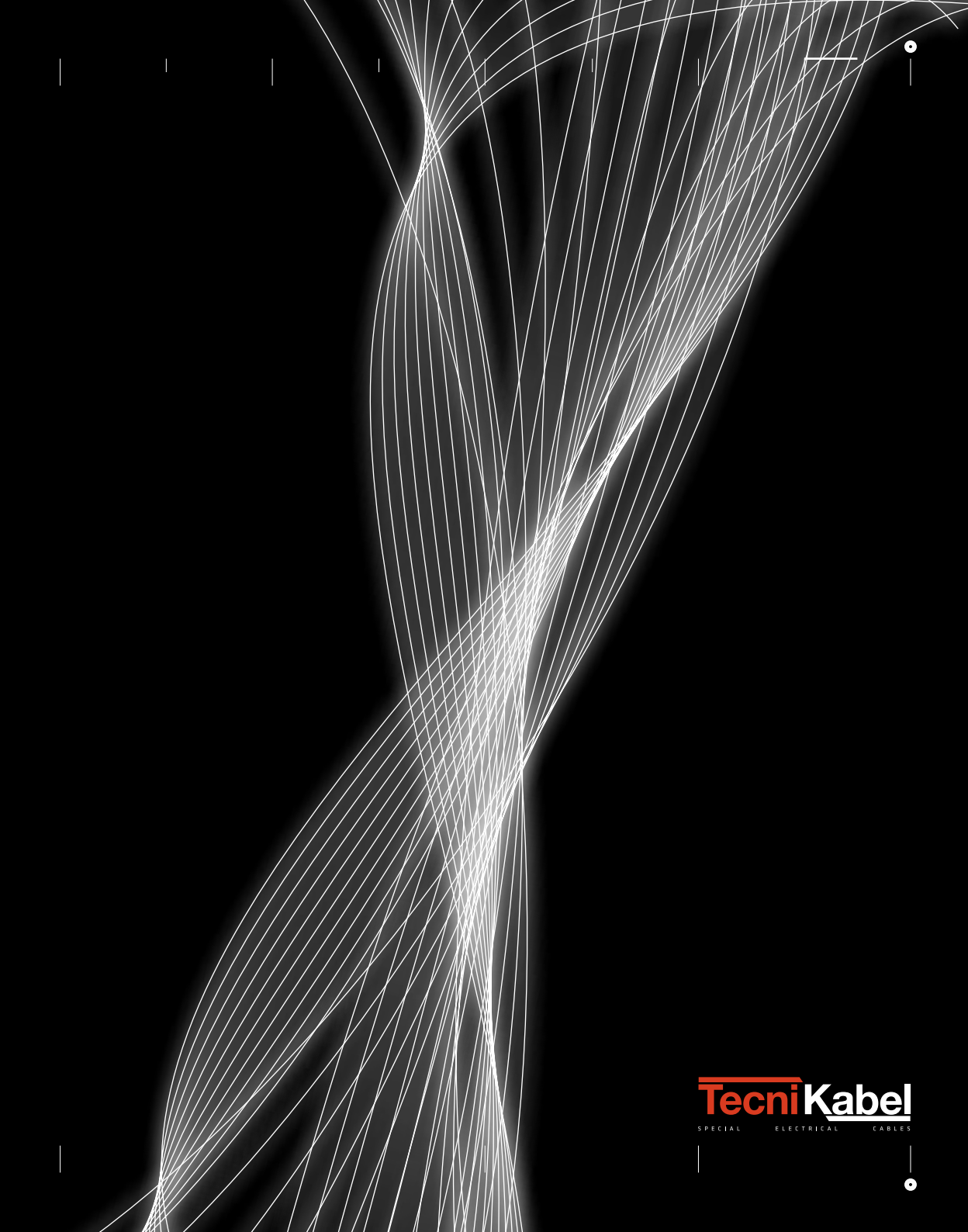
Via Brandizzo, 243
10088 - Volpiano (To)
Telephone: +39.011.9951997
Fax: +39.011.9953062

ROME

Via Casali delle Cornacchiole, 154
00178 - Rome
Telephone: +39.06.50992552
Fax: +39.06.50514022

www.tecnikabel.com

- | | | | |
|---|--------------------------|---|---|
|  | Outdoor |  | Resistant to oils and hydrocarbons |
|  | Indoor |  | Reduced emission of fumes and toxic gases |
|  | Water resistant |  | Minimum bending radius |
|  | Antiballistic protection |  | Operating temperature |
|  | Rodent resistant |  | Maximum pulling force |
|  | No fire propagation |  | Crush resistant |
|  | Flame retardant |  | Crush resistant and vibrations resistant |
|  | Fire resistant |  | Silicon free |
|  | Impact resistant |  | Metallic braid armouring |
|  | Laid in buried conduits | | |



TecniKabel
SPECIAL ELECTRICAL CABLES