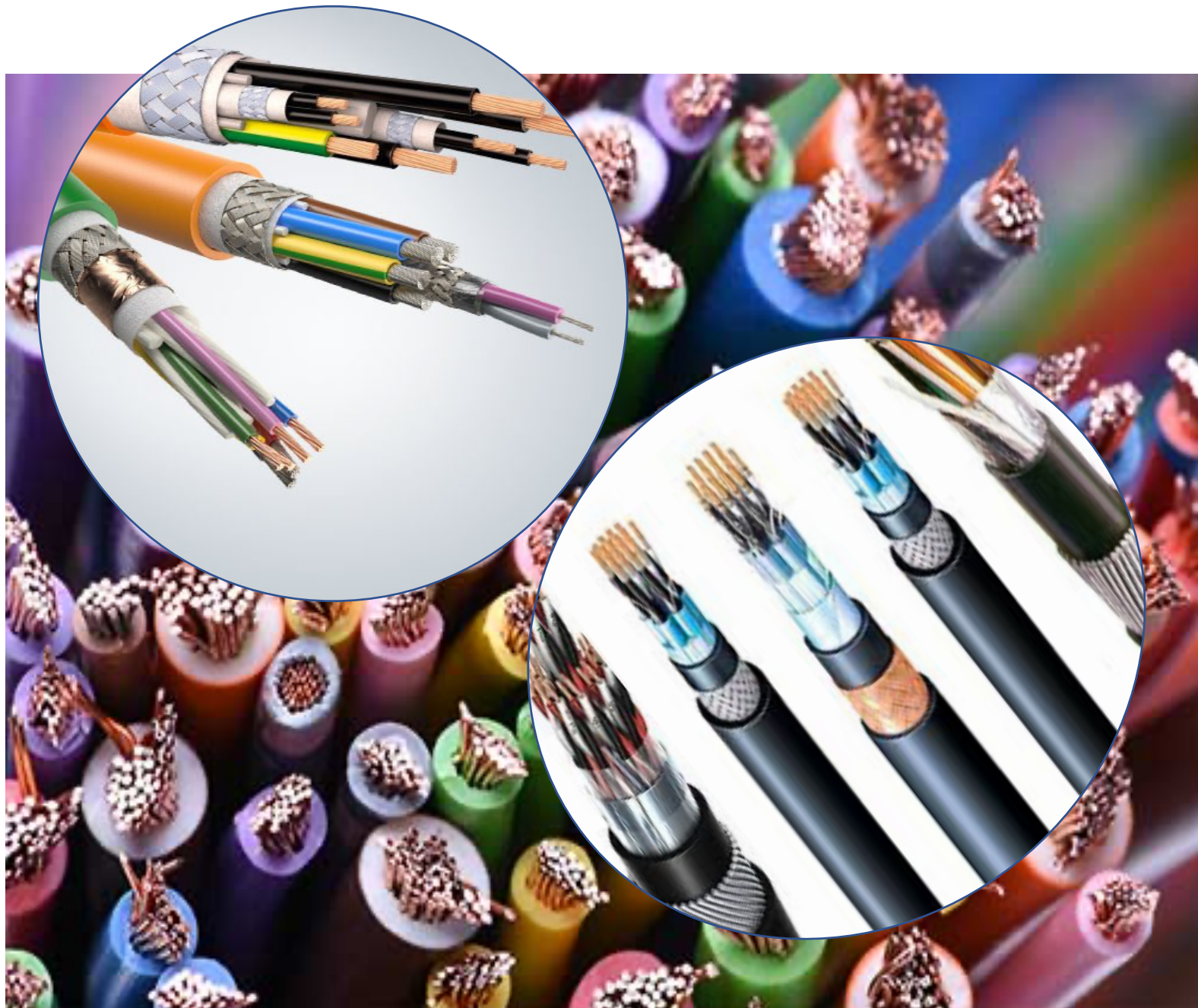




# Instrumentation, Signal and Control Cables





### **BS EN 50288-7 - RE-2X(st)H LSZH (XLPE Insulated) Instrumentation Cable (300 volt)**

Cables are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. petrochemical industry etc.). For installations where fire, smoke emissions and toxic fumes create a potential risk to life and equipment

#### **Construct**

Conductor :0.5mm<sup>2</sup> - 0.75mm<sup>2</sup>: Class 5 flexible copper conductor 1mm<sup>2</sup> and above: Class 2 stranded copper conductor

Insulation :XLPE (Cross-Linked Polyethylene)

Collective Screen :Al/PET (Aluminium/Polyester Tape)

Drain Wire :Tinned copper

Sheath :LSH (Low Smoke Zero Halogen) or available in PVC (Polyvinyl Chloride)

Core Identification :Pairs: White Black, numbered Triples: White Black Red

Voltage Rating :300V

Operating Temperature: Fixed: -40°C to +80°C, Flexed: 0°C to +50°C

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### **BS 5308 Part 1 Type 1 PE / CAM / PVC (PE insulated) Instrumentation Cable**

BS 5308 cables are designed to carry communication and control signals in a variety of installation types including those found in the petrochemical industry. The signals can be of analogue, data or voice type and from a variety of transducers such as pressure, proximity or microphone. Part 1 Type 1 cables are generally designed for indoor use and in environments where mechanical protection is not required.

#### **Construct**

Conductor :0.5mm<sup>2</sup> - 0.75mm<sup>2</sup>: Class 5 flexible copper conductor 1mm<sup>2</sup> and above: Class 2 stranded copper conductor

Insulation : PE (Polyethylene)

Screen :Al/PET (Aluminium/Polyester Tape)

Drain Wire :Tinned copper

Sheath :PVC (Polyvinyl Chloride)

Sheath Colour :Blue Black

Voltage Rating: U<sub>o</sub>/U 300/500V

Temperature Rating : Fixed: -40°C to +80°C Flexed: 0°C to +50°C



### **BS EN 50288-7 - RE-2Y(st)Y SWAY PVC PiMF (PE Insulated SWA Armoured )Cable**

These cables are designed to connect electrical instrument circuits and provide communication services in and around process plants (e.g. petrochemical industry etc.). Pairs are individually shielded for enhanced signal security. Suitable for direct burial applications.

#### **Construct:**

Conductor :0.5mm<sup>2</sup> - 0.75mm<sup>2</sup>: Class 5 flexible copper conductor 1mm<sup>2</sup> and above: Class 2 stranded copper conductor

Insulation :PE (Polyethylene)

Individual and Collective Screen :Al/PET (Aluminium/Polyester Tape)

Drain Wire :Tinned Copper

Inner Sheath :PVC (Polyvinyl Chloride)

Armour :SWA (Galvanised steel wires)

Outer Sheath :PVC (Polyvinyl Chloride)

Core Identification : Pairs: White Black, numbered Triples: White Black Red

Voltage Rating :300V

Operating Temperature :Fixed: -40°C to +80°C Flexed: 0°C to +50°C

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### **BS 5308 Part 1 Type 1 MICA / XLPE / ICAM / LSZH (Fire Resistant) Cable**

BS 5308 cables are designed to carry communication and control signals in a variety of installation types including those found in the petrochemical industry. The signals can be of analogue, data or voice type and from a variety of transducers such as pressure, proximity or microphone. Part 1 Type 1 cables are generally designed for indoor use and in environments where mechanical protection is not required. Suitable for fire resistant installations. Individually screened for enhanced signal security.

#### **Construct**

Conductor : 0.5mm<sup>2</sup> - 0.75mm<sup>2</sup>: Class 5 flexible copper conductor 1mm<sup>2</sup> and above: Class 2 stranded copper conductor

Insulation :MICA Tape + XLPE (Cross-Linked Polyethylene)

Individual and Collective Screen :Al/PET (Aluminium/Polyester Tape)

Drain Wire :Tinned copper

Sheath :LSZH (Low Smoke Zero Halogen)

Sheath Colour :Red Black Blue

Voltage Rating: U<sub>o</sub>/U 300/500V

Operating Temperature :Fixed: -40°C to +80°C Flexed: 0°C to +50°C



## BS 5308 Part 1 Type 2

### BS 5308 Part 1 Type 2

#### PE / CAM / PE / SWA / PVC Instrumentation Cable

BS 5308 cables are designed to carry communication and control signals in a variety of installation types including those found in the petrochemical industry. The signals can be of analogue, data or voice type and from a variety of transducers such as pressure, proximity or microphone. Part 1 Type 2 cables are designed where a greater degree of mechanical protection is required namely outdoor / exposed or direct burial at suitable depth.

#### Construct

Conductor :0.5mm<sup>2</sup> - 0.75mm<sup>2</sup>: Class 5 flexible copper conductor 1mm<sup>2</sup> and above: Class 2 stranded copper conductor

Insulation :PE (Polyethylene)

Screen :Al/PET (Aluminium/Polyester Tape)

Drain Wire :Tinned copper

Bedding :PE (Polyethylene)

Armour :SWA (Galvanised Steel Wire Armour)

Sheath: PVC (Polyvinyl Chloride)

Sheath Colour : Blue Black

Voltage Rating: U<sub>o</sub>/U 300/500V

Temperature Rating : Fixed: -40oC to +80oC Flexed: 0oC to +50oC

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### BS 5308 Part 1 Type 2 SIL / CAM / LSZH / SWA / LSZH (Fire Resistant) Cable

BS 5308 cables are designed to carry communication and control signals in a variety of installation types including those found in the petrochemical industry. The signals can be of analogue, data or voice types and from a variety of transducers such as pressure, proximity or microphone. Part 1 Type 2 cables are designed where a greater degree of mechanical protection is required or where there is direct burial at a suitable depth. Suitable for fire resistant installations.

#### Construct

Conductor :0.5mm<sup>2</sup> - 0.75mm<sup>2</sup>: Class 5 flexible copper conductor 1mm<sup>2</sup> and above: Class 2 stranded copper conductor

Insulation :Silicone rubber ceramic type

Screen :Al/PET (Aluminium/Polyester Tape)

Drain Wire :Tinned copper

Inner Sheath :LSZH (Low Smoke Zero Halogen)

Armour :SWA (Galvanised steel wires)

Sheath :LSZH (Low Smoke Zero Halogen)

Sheath Colour :Red Black

Voltage Rating :(U<sub>o</sub>/U) 300/500V

Operating Temperature :Fixed: -40oC to +80oC Flexed: 0oC to +50oC





### **YY LSZH (HLSH) Control Cable**

Low smoke halogen-free flexible connecting cable for instrumentation and control equipment for tooling machinery, production lines, and in flexible applications with free movement and no tensile load. Suitable for use in dry, ambient and wet rooms. These cables are not suitable for outdoor or underground installations.

#### **Construct**

Conductor: Class 5 flexible plain copper

Insulation :LSZH (Low Smoke Zero Halogen)

Sheath :LSZH (Low Smoke Zero Halogen)

Core Identification : Black with White number From 3 cores: Black with White number + green/yellow.

Sheath Colour: Grey

Voltage Rating: 300/500V

Temperature Rating: Fixed: -40°C to +80°C Flexed: -15°C to +70°C

Specification: VDE 0207-303-7, VDE 0482-332-1-2, IEC 60754-1/2, BS EN/IEC 61034-1/2, BS EN/IEC 60754-1/2

Flame Retardant according to BS EN/IEC 60332-1-2, BS EN/IEC 60332-3-24

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### **YY PVC (YSLY) Control Cable**

Flexible YY control cable for instrumentation and control equipment, for tooling machinery production lines, and in flexible applications for free movement without tensile load. Suitable in dry, ambient and wet rooms. These indoor cables are not used for external or underground installation

#### **Construct**

Conductor: Class 5 flexible plain copper

Insulation: PVC (Polyvinyl Chloride)

Sheath: PVC (Polyvinyl Chloride)

Core Identification: Black with White number From 3 cores: Black with white number + green/yellow

Sheath Colour Grey

Voltage Rating: 300/500V

Temperature Rating: Fixed: -40°C to +80°C Flexed: -15°C to +70°C

Spec: VDE 0207-363-3, VDE 0482-332-1-2, VDE 819-102 (TM54),

Flame Retardant according to BS EN/IEC 60332-1-2

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### **SY LSZH Control Flexible Cable**

Used as interconnecting cable for measuring, controlling or regulation in control equipment for assembly and production lines, conveyors and for computer units. Suitable for flexible use in conditions of light mechanical stress. Can be used outdoors when protected against direct sunlight, and in dry or moist conditions indoors. The braided screen offers mechanical protection and a level of electro-magnetic shielding. The galvanized coating helps protect against corrosion. For installations where fire, smoke emissions and toxic fumes create a potential risk to life and equipment.

#### **Construct**

Conductor: Class 5 flexible copper conductor

Insulation: LSZH (Low Smoke Zero Halogen) Type TI6

Bedding: LSZH (Low Smoke Zero Halogen) Type TM7

Braiding: GSWB (Galvanized Steel Wire Braid) minimum coverage of braiding shall be 50%

Sheath: LSZH (Low Smoke Zero Halogen) Type TM7

Voltage Rating (U<sub>0</sub>/U) 300/500V

**Temperature Rating:** -15°C to +70°C

Spec: Flame Retardant according to BS EN/IEC 60332-1-2, BS EN/ IEC 60332-3-24

Low Smoke Zero Halogen according to: BS EN / IEC 61034-1

Determination of the halogen acid gas content: BS EN IEC 60574-1

Determination of acidity and conductivity: BS EN / IEC 60574-2

Determination of the halogen acid gas content: BS / EN IEC 60754-1



### **Flexible control cable with overall copper braided screening**

**LIICY-JZ Voltage: 300/500V**

These cables are flexible usage for medium mechanical tensile stress or forced movement in dry moist and wet rooms. It is suitable as control and connecting cable in machines, conveying belts, production lines, machine tools industries, progressive assembly lines, automatic handling apparatus

#### **Construct**

Conductor: Fine stranded bare copper according to IEC 60228 cl.5

Insulation: PVC core insulation

Cores identification: Black cores with printed continuous white number coding to DIN VDE 0293

Green/yellow protective earth core **\*\***(3 cores & above)

Screen: Tinned, copper wire braided

Outer sheath: PVC, Grey colour, self-extinguishing & flame retardant according to IEC 60332-1



### **A-2Y(L)2Y...ST III BD Telephone Outdoor Cable**

#### **Construct**

Solid bare copper conductor

Core insulation made of polyethylene (PE)

5 star-quads are twisted into each basic unit, which is then twisted together with the main unit to form the cable core

Paper tape wrapping

Laminated sheath with aluminium-coated plastic tape, PE outer sheath.

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### **Coaxial – RG- 50 ohm RG-58 C/U**

#### **Construct**

Cable design and electrical properties as per: M17/28-RG58 to MIL-C-17.

Designation in accordance with MIL-DTL-17 H: M17/183-00001

Inner conductor: stranded tinned copper wires 19x0.182 (0.5 mm<sup>2</sup>) Ø: 0.90 ± 0.051 mm

Insulation: PE, 2.95 mm Ø

Screen Outer conductor: braid of tinned copper wires coverage 94 % (nominal value)

Outer sheath: PVC, black

Outer diameter: 4.95 ± 0.12 mm

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### **Coaxial – RG- 50 ohm RG-214 /U**

#### **Construct**

Cable design and electrical properties as pRG214 to MIL-C-17.

Designation in accordance with MIL-DTL-17 H: M17/190-00001

Conductor Inner conductor: stranded silver plated copper wires 7x 0.76 (3.17 mm<sup>2</sup>) Ø: ca. 2.3 mm

Insulation: PE, 7.25 mm Ø

Screen Outer conductor: two braids of silvered copper wires (double screened) coverage inside: 92 %; outside: 98 % (nominal value)

Outer sheath PVC, black

Outer diameter: 10.8 ± 0.18 mm



### **Coaxial – RG 75 ohm**

RG-11 A/U outdoor

#### **Construct**

Design: Cable design and electrical properties of M17/6-RG11 to MIL-C-17.

Designation in accordance with: MIL-DTL-17 H: M17/181-00001

Conductor Inner conductor: stranded tinned copper wires 7x0.4 (0.9 mm<sup>2</sup>) Ø: ca. 1.2 mm

Insulation: PE, 7.3 mm Ø

Screen Outer conductor: braid of bare copper wires coverage 92 % (nominal value)

Outer sheath: PVC, black

Outer diameter: 12.1 ± 0.2 mm

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### **Coaxial – RG 75 ohm**

RG-59 B/U

#### **Construct**

Design: Cable design and electrical properties as per: M17/29-RG59 to MIL-C-17.

Designation in accordance with: MIL-DTL-17 H: M17/184-00001

Conductor Inner conductor: Solid bare copper clad steel wire Ø: 0.575 ± 0.025 mm

Insulation: PE, 3.7 mm Ø

Screen Outer conductor: braid of bare copper wires coverage 95 % (nominal value)

Outer sheath: PVC, black

Outer diameter: 6.15 ± 0.1 mm

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### **Coaxial – RG 100 Ohm**

RG-62 A/U

#### **Construct**

Design: Cable design and electrical properties of M17/30-RG062 to MIL-C-17.

Designation in accordance with: MIL-DTL-17 H: M17/185-00001

Conductor Inner conductor: Solid bare copper clad steel wire Ø: 0.64 ± 0.025 mm

Insulation: PE air space, (helix of PE-thread with a PE tube over it) 3.7 mm Ø

Screen Outer conductor: braid of bare copper wires coverage 96 % (nominal value)

Outer sheath: PVC, black

Outer diameter: 6.15 ± 0.18 mm



# Cable Enquiry Form

to

## SEEN JOO COMPANY PTE LTD

53 Ubi Ave 1, 01-17 Paya Ubi Ind Park  
SINGAPORE 408934  
email:sales@seenjoo.com.sg

Ph. +65 62982424  
Fax +65 68448496

www.seenjoo.com.sg

Sender \_\_\_\_\_

Contact \_\_\_\_\_

Phone \_\_\_\_\_

Fax \_\_\_\_\_

### Enquiry

No. \_\_\_\_\_

Date \_\_\_\_\_

### Requirement

\_\_\_\_\_ m  once  continuous  
yearly requirement approx. \_\_\_\_\_ m

### Delivery required

### Make-up

Coil \_\_\_\_\_ m  
 Drum

### Size

### Type of Cable

### Application

- a.)  indoor  outdoor  
b.)  stationary  for flexing  with reversed bending / torsion  
 Drag chain: speed \_\_\_\_\_ m/s Acceleration \_\_\_\_\_ m/s<sup>2</sup> Tracing range \_\_\_\_\_ m  
load  cyclic  non-cyclic  
c.) Temperatures ambient \_\_\_\_\_ °C continuous \_\_\_\_\_ °C intermitted \_\_\_\_\_ °C for \_\_\_\_\_ Min/Std

### Construction

#### 1. Conductor

- Copper  St-Cu  solid  Stranded wire ( \_\_\_\_\_ Ø mm)  
 bare  tinned  silvered  nickel-plated  \_\_\_\_\_  
No. of cores x cross section \_\_\_\_\_ x \_\_\_\_\_ mm<sup>2</sup> No. of wires x diam. \_\_\_\_\_ x \_\_\_\_\_ mm  
No. of cores x cross section \_\_\_\_\_ x \_\_\_\_\_ mm<sup>2</sup> No. of wires x diam. \_\_\_\_\_ x \_\_\_\_\_ mm  
No. of cores x cross section \_\_\_\_\_ x \_\_\_\_\_ mm<sup>2</sup> No. of wires x diam. \_\_\_\_\_ x \_\_\_\_\_ mm

#### 2. Insulation

- PVC  PE  Zell-PE  PUR  PETP  Rubber  Thermopl. rubber  Silicone  
 ETFE  FEP  PTFE  \_\_\_\_\_

#### 3. Colour-code

- black with white numbers  with protected conductor green-yellow  colours to DIN 47100  colours to VDE  
 \_\_\_\_\_

#### 4. Screening

- Single core  Pairs which core/pair \_\_\_\_\_  
 Cu-bare  Cu-tinned  Cu-silvered  
as  Braiding  Serving  Alu-Foile (St) Covering approx. \_\_\_\_\_ %  
Drain wire bare/tinned \_\_\_\_\_ mm Ø Stranded drain wire bare/tinned \_\_\_\_\_ mm Ø  
with/without protection against elec. shock, hazard under screen, with/without foil/insulation over screen

#### 5. Support Element

- Hemp  Polypropylen  galv. Steel  Kevlar  \_\_\_\_\_  
Tensile load \_\_\_\_\_ N

#### 6. Centre

\_\_\_\_\_ mm Ø  PVC  Polypropylen  \_\_\_\_\_

#### 7. Stranding

Cores in layer stranding  twisted in pair  all  \_\_\_\_\_

#### 8. Inner sheath

**yes:**  PVC  Rubber  Silicone  Fleece  Foil  \_\_\_\_\_

#### 9. Overall Screen

**yes:**  Cu-bare  Cu-tinned  Cu-silvered  
 braiding  Serving  Alu-Foil Covering \_\_\_\_\_ %  
with/without drain wire/stranded drain wire \_\_\_\_\_ mm Ø/mm<sup>2</sup> bare/tinned

#### 10. Armouring

Steel wire galv.

#### 11. Outer sheath

PVC  PUR  PETP  PE  Rubber  Thermopl. Rubber  Neoprene  
 Silicon  ETFE  FEP  PTFE  \_\_\_\_\_  
Outer Ø \_\_\_\_\_ mm Colour \_\_\_\_\_  
 Outerprinting /text) \_\_\_\_\_

### Electrical Characters

Operating voltage \_\_\_\_\_ V Capacity Cond./Cond. \_\_\_\_\_ pF/m  
Test Voltage \_\_\_\_\_ V Capacity Cond./shield. \_\_\_\_\_ pF/m

### Additional details & Preferred Brands

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

