

# КАТАЛОГ

## Продукция СВІ Telecoms



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# Copper Telecommunication Cables



CBI Electric: Aberdare ATC Telecom Cables offers both air core and filled core polyethylene insulated copper telecommunications cables with a broad range of pair sizes up to 2400 pairs for the distribution of telecommunications signals in the outside plant. Filled core copper telecommunications cables are available in designs using either solid polyethylene insulation or foamed polyethylene insulation. These copper telecommunication cables can be installed into ducts, direct buried or aerially strung to a metallic messenger wire or can come equipped with a built-in messenger wire.



Depending upon the application optional sheathing designs can provide electrical shielding necessary for proper grounding and mechanical protection against rodent and other physical damage. For more mechanical robust applications such as in mining and in railway communications networks steel wire armouring (SWA) and or steel tape is available. A black UV stabilised and weather resistant polyethylene sheath is used on all constructions for the protection against long term outdoor exposure.



CBI Electric: Aberdare ATC Telecom Cables outside plant copper telecommunications cables are IEC 60708 compliant for both standard voice frequency and data services up to 1 MHz. For state of the art digital subscriber line (xDSL) technologies a wide range of copper telecommunications cables are available compliant to IEC 62255-3 for data services up to 30 MHz.



# Copper Industrial Cables



CBI Electric: Aberdare ATC Telecom Cables offers a comprehensive range of Instrumentation and Control cables for the industrial market. Typically instrumentation cable is used in the provisioning of voice and data services, measurement, sensing and control systems through the interconnection of equipment and instrumentations. Control cable are used in industrial power or control circuits for conveying electrical signals to associated equipment and instrumentations. These cables are suitable for installation in cable trays, conduits or trench and outdoor locations.



A wide range of solid or stranded conductor, polyethylene, cross linked polyethylene (XLPE) or PVC insulated multipair and multicore industrial cables are available and engineered according to customer specific or international acceptable standards. Cores or pairs can be individually screened or overall screened to minimise cross talk and parasitic ground loop interference. Depending upon the application optional sheathing designs can include overall screening with an APL tape, steel wire armouring or steel / copper tape is available. A comprehensive range of sheathing material is available ranging from polyethylene and PVC to low oxygen index (LOI) materials and low smoke zero halogen (LSZH) options.



For critical systems and applications a wide range of intrinsically safe industrial cable is available in accordance to the specifications for the intrinsically safe system, specific customer specification or appropriate international standard. CBI Electric: Aberdare ATC Telecom Cables Industrial cables are manufactured in accordance to BS/EN 50288 and also offers UL listed instrumentation and control cable in accordance with UL 13-2250. A range of fieldbus cable is available and registered by the Fieldbus Foundation®. Thermocouple Type J and K extension cable is available on request.

Quality assurance is fundamental in the design, manufacture and testing of every CBI Electric: Aberdare ATC Telecom Cables industrial cable with customer specific quality control plans (QCP) the norm to ensure a documented rigid and controlled check list from raw material supply through the manufacturing process to final acceptance testing.

# Optical Fibre Communication Cables

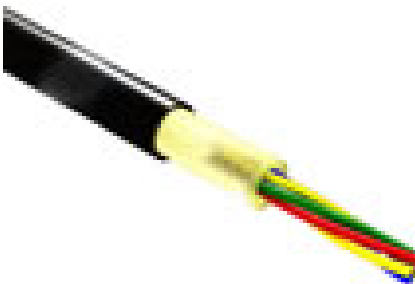
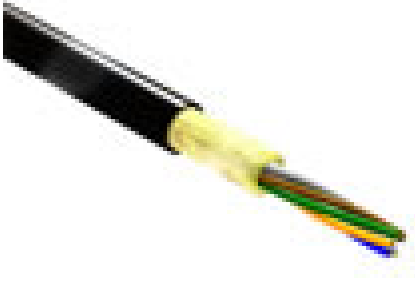
CBI Electric: Aberdare ATC Telecom Cables offers a wide range of optical fibre cable and optical fibre solutions for current and future high bandwidth telecommunications infrastructure. Through our alliance with world class international partners, Corning Optical Fiber and Draka, CBI Electric: Aberdare ATC Telecom Cables can offer tomorrows solutions today.

Our optical fibre cable range includes specific customer engineered solutions for high bandwidth terrestrial optical networks, flexible access networks and high reliability data centres. Based on the industry standard loose tube and tight buffered technologies, CBI Electric: Aberdare ATC Telecom Cables offers:

- Ruggedized Duct and Blown-optimised Duct Solutions
- Micro Duct Solutions and Micro Aerial Drop Solutions
- All Dielectric Self Support (ADSS) Solutions
- Metallic Armoured and All Dielectric Armoured Solutions
- Interfacility and Break-out Indoor Solutions

A comprehensive range of optical fibre types are available in all of our products and includes standard single mode fibre (ITU-T G.652D), low dispersion high bit rate single mode fibre (ITU-T G.655D & G.655E), high bandwidth laser optimised OM2 and OM3 multimode fibre (ITU-T G.651) and bend insensitive single mode fibre (ITU-T G.657 A1 and A2). Hybrid optical fibre cable designs are available upon request where two or more different fibre types are used in the same cable design.

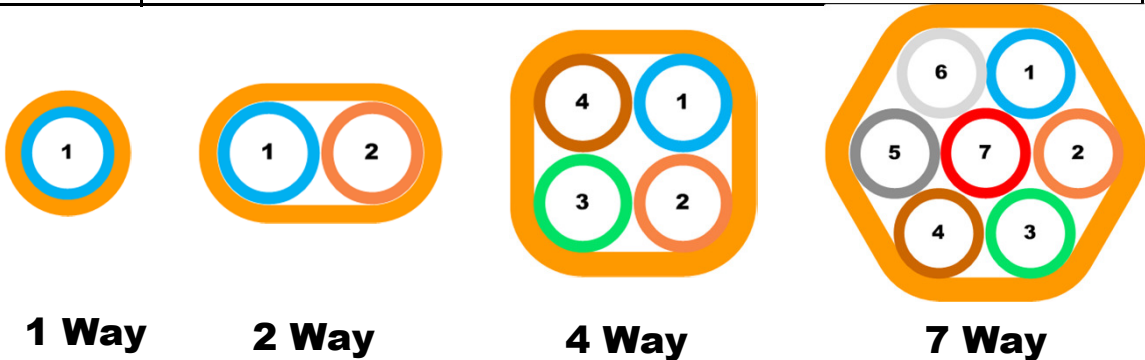
CBI Electric: Aberdare ATC Telecom Cables has an extensive test facility where all optical cable parameters can be tested in accordance to IEC-60794. Though our dedicated research and development centre optical fibre cable solutions can be engineered and tested to fit for purpose applications.



# DATA SHEET BUNDLED MICRO DUCT

## DATA SHEET : Bundled DB 10/12-Microduct

<b>1, 2, 4 and 7 x 10/12mm BUNDLED MICRO DUCT</b> Bundled-micro duct, smooth Silicon lined, High Density PE Outer Sheath <b>for</b> <b>Direct Buried Applications</b>		
<b>Application</b>		
For blown applications of micro optical fibre cables up to 7.5 mm.		
<b>Construction</b>		
Micro Duct	1 Way 2 Way 4 Way 7 Way	10/12mm bundled low friction silicon lined micro ducts. The tubes are identified by color. Other colors available on request. 1. Blue 1. Blue 2. Orange 1. Blue 2. Orange 3. Green 4. Brown 1. Blue 2. Orange 3. Green 4. Brown 5. Gray 6. White 7. Red
Outer sheath	High density polyethylene UV stabilized. Sheath Colors can be according to customer requirement Rodent Repellant can be added to outer sheath	



Typical properties:					
Micro Duct Type		1 Way	2 Way	4 Way	7 Way
Application		Direct Buried	Direct Buried	Direct Buried	Direct Buried
Nominal O.D (mm)		15	15.2 x 26.8	27.2	39.2
Min. Bend Radius (mm) 20 x O.D.		300	310	544	784
Nominal Weight (kg/km)		76	160	288	457
Maximum Installation Tension (N)		400	600	900	1200
Drum Length (m)		1000	1000	1000	1000
* Other lengths available on request					

# DATA SHEET MICRO DUCT



## DATA SHEET : Bundled 10/12-Microduct

MECHANICAL PERFORMANCE CRITERIA	
<b>1. Friction Co-efficient</b>	
<b>Test Requirement</b>	Duct Length 5 m Loop Internal Diameter 750mm of 450° Optical Fibre Cable OD 6.2mm Weight 5kg Pulling Speed 500mm/min
<b>Acceptance Criteria</b>	The calculated friction co-efficient shall be less than 0.1
<b>2. Resistance to Chemicals:</b>	
<b>Rodents and Insects:</b>	<b>Test requirements:</b> Duct Length 100mm Acid/Base Chemicals pH 2-12 Solvents Petrol, Acetone and Diesel Rodent Repellent Sheath
<b>Acceptance Criteria</b>	The duct shall withstand chemical treatment
<b>3. Impact Resistance:</b> Test Method IEC 60794-1-2 Method E4	
<b>Test Load</b>	1 Way = 6.5 Joules 2 Way = 6.5 Joules 4 Way = 6.5 Joules 7 Way = 6.5 Joules
<b>Test requirements:</b>	Duct Length 200 mm Conditioning -10°C for 3hrs Anvil 25 mm ROC Weight 3 kg Free Fall Distance 221mm No. of Impacts 4 spaced equally
<b>4. Environmental Stress Cracking:</b>	
<b>Test requirements:</b>	Strip Length 8mm wide x 38mm long No of strips 5 Chemical Teepol Blue 825 Temperature 50°C Duration of Test 2 hours
<b>Acceptance Criteria</b>	No cracks or ruptures shall be visible.
<b>5. Kink/Bending Test</b>	
<b>Test requirements:</b>	Duct Length <1000 mm Parallel Plates 20D Duration 10 min.
<b>Acceptance Criteria</b>	No Kinking, Cracking, Splitting or breaking shall occur. A Ball with a 0.80 OD should pass freely through all the tubes after a period of 10 min.
<b>6. Crush Resistance:</b> Test Method IEC 60794-1-2 Method E3	
<b>Test Load</b>	2 Way = 1000N 4 Way = 1000N 7 Way = 1000N
<b>Test requirements:</b>	Duct Length 150 mm Compressive Load 1000 N Duration of Load 1 min.
<b>Acceptance Criteria</b>	a Ball with a 0.80 OD should pass freely through all the tubes.
<b>7. Pressure Test:</b>	
<b>Test requirements:</b>	Duct Length 5000 mm Water Pressure 12 Bar Duration of Test 10 min.
<b>Acceptance Criteria</b>	Micro duct shall not burst

## **Product Marking**

InfraDuct	1 x 12/10 MD DB Duct	"year" + "unique number" + 5 digit length marking
InfraDuct	2 x 12/10 MD DB Duct	"year" + "unique number" + 5 digit length marking
InfraDuct	4 x 12/10 MD DB Duct	"year" + "unique number" + 5 digit length marking
InfraDuct	7 x 12/10 MD DB Duct	"year" + "unique number" + 5 digit length marking

# UTP CAT 5e - Solid

This cable is compliant to ISO 11801, TIA/EIA 568A and EN 50173

## Cable Construction

Conductor	24 AWG solid bare copper (0.51mm)
Insulation	Polyolefin
Pairs	4 Twisted Pairs
Pair Colour Code	Blue / White-Blue / Orange / White-Orange / Green / White-Green / Brown / White-Brown
Sheath	PVC
Fire Safety Rating	IEC 332-1
Outside Diameter Nominal	5.0mm
Weight (Kg/Km)	34
Temperature Range	0&Mac251;C to + 50&Mac251;C (Installation) -20&Mac251;C to + 70&Mac251;C (Operational)
Standard Packaging	305m Easy pull box (10,1 kg/box) (350mm x 210mm x 350mm) 500M Plastic Reels (18kg/drum) (400mm x 200mm x 160mm)

## Electrical Characteristics Standard for Category 5e

Frequency M/Hz	Attenuation dB/100m	Next dB	PSNext dB	PSELFEXT dB
1	2.1	65.3	62.3	60.8
4	4.3	56.3	53.3	48.7
10	6.6	50.3	47.3	40.8
16	8.2	47.3	44.3	36.7
20	9.2	45.8	42.8	34.7
31.25	11.8	42.9	39.9	30.9



62.5	17.1	38.4	35.4	24.8
100	22.0	35.3	32.3	20.8

### Electrical Characteristics @ 20°C

DC Resistance	93.8 Ohms/Km Maximum
Resistance Unbalance	2% Maximum
Mutual Capacitance	56 nF/Km Maximum
Capacitance Unbalance	1000 pF/Km Maximum
Skew	450 nsec/Km Maximum
Velocity of Propagation	-0.68c
Characteristic Impedance	100 Ohms $\pm$ 15% @ 1.0 Mhz - 100Mhz

# FTP CAT 5e - Solid

This cable is compliant to ISO 11801, TIA/EIA 568A and EN 50173

## Cable Construction

Conductor	24 AWG solid bare copper (0.511mm)
Insulation	Polyolefin
Foiled Pairs	4 Twisted pairs
Pair Colour Code	Blue / White-Blue, Orange / White-Orange Green / White-Green, Brown / White-Brown
Sheath	PVC
Fire Safety Rating	IEC 332-1
Outside Diameter Nominal	5.6 mm
Weight (Kg/Km)	40
Temperature Range	: 0° C to + 50° C (Installation) : -20° C to + 70° C (Operational)
Standard Packaging	500m Plastic Reels (20kg/drum) (400mm x 200mm x 160mm)

## Electrical Characteristics Standard for Category 5e

Frequency M/Hz	Attenuation dB/100m	Next dB	PSNext dB	PSELEFXT dB
1	2.1	65.3	62.3	60.8
4	4.3	56.3	53.3	48.7
10	6.6	50.3	47.3	40.8
16	8.2	47.3	44.3	36.7
20	9.2	45.8	42.8	34.7
31.25	11.8	42.9	39.9	30.9
62.5	17.1	38.4	35.4	24.8
100	22.0	35.3	32.3	20.8

## Electrical Characteristics @ 20° C

DC Resistance	93.8 Ohms/Km Maximum
Resistance Unbalance	2% Maximum
Skew	450 nsec/Km Maximum
Capacitance Unbalance	1000 pF/Km Maximum
Mutual Capacitance @ 1 kHz	56 nF/Km Maximum
Velocity of Propagation	0.68c
Characteristic Impedance 1MHz - 100MHz	100 Ohms $\pm$ 15% @ 1.0 MHz - 100 MHz

Note • Low Smoke Zero Halogen cable is also available on request

# UTP CAT 6 - Solid

This cable is compliant to ISO 11801, TIA/EIA 568A and EN 50173

Cable Construction	
Conductor	23 AWG solid bare copper (0.57mm)
Insulation	Polyolefin
Pairs	4 Twisted pairs with cross divider
Pair Colour Code	Blue / White-Blue, Orange / White-Orange Green / White-Green, Brown / White-Brown
Sheath	PVC
Fire Safety Rating	IEC 332-1
Outside Diameter Nominal	6.6 mm
Weight (Kg/Km)	52.5
Temperature Range	: 0° C to + 50° C (Installation) : -20° C to + 70° C (Operational)
Standard Packaging	305m Plastic Reels (16kg/drum) (400mm x 200mm x 160mm)

Electrical Characteristics Standard for Category 6e								
Frequency M/Hz	Attenuation dB/100m	Next dB	PSNext dB	ACR	PSACR	ELFEXT	PSELEFXT	Return Loss
1	2.0	74.3	72.3	72.3	70.3	67.8	64.8	20.0
4	3.8	65.3	63.3	61.5	59.5	55.7	52.7	23.0
8	5.4	60.8	58.8	55.4	53.4	49.7	46.7	25.0
10	6	59.3	57.3	53.3	51.3	47.8	44.8	25.0
16	7.6	56.2	54.2	48.6	46.6	43.7	40.7	25.0
20	8.5	54.8	52.8	46.3	44.3	41.7	38.0	25.0
25	9.6	53.3	51.3	43.8	41.8	39.8	36.8	25.0
31.25	10.7	51.9	49.9	41.1	39.1	37.9	34.9	23.6

62.5	15.5	47.4	45.4	31.9	29.9	31.8	28.8	21.5
100	19.9	44.3	42.3	24.4	22.4	27.8	24.8	20.1
125	22.5	42.8	40.8	20.4	18.4	25.8	22.8	19.4
200	29.2	39.8	37.8	10.6	8.6	21.7	18.7	18.0
250	33	38.3	36.3	5.3	3.3	19.8	16.8	17.3

### Electrical Characteristics @ 20°C

DC Resistance	80 Ohms/Km Maximum
Resistance Unbalance	2% Maximum
Skew	400 nsec/Km Maximum
Capacitance Unbalance	1000 pF/Km Maximum
Mutual Capacitance	42 nF/Km Maximum
Velocity of Propagation	0.68c
Characteristic Impedance 1MHz - 100MHz	100 ± 15 Ohms
Characteristic Impedance 100MHz - 250MHz	100 ± (15 + 0.05 (f-100)) Ohms

Note • Low Smoke Zero Halogen is also available on request

# UTP CAT 5e - Flexible

This cable is compliant to ISO 11801, TIA/EIA 568A and EN 50173

## Cable Construction

Conductor	24 AWG Flexible bare copper (7x0.193mm)
Insulation	Polyolefin
Pairs	4 Twisted Pairs
Pair Colour Code	Blue / White-Blue / Orange / White-Orange / Green / White-Green / Brown / White-Brown
Sheath	PVC
Fire Safety Rating	IEC 332-1
Outside Diameter Nominal	5.6mm
Weight (Kg/Km)	34
Temperature Range	0&Mac251;C to + 50&Mac251;C (Installation) -20&Mac251;C to + 70&Mac251;C (Operational)
Standard Packaging	305m Easy pull box (10,1 kg/box) (350mm x 210mm x 350mm) 500M Plastic Reels (18kg/drum) (400mm x 200mm x 160mm)

## Electrical Characteristics Standard for Category 5e

Frequency M/Hz	Attenuation dB/100m	Next dB	PSNext dB	PSELFEXT dB
1	3.15	65.3	62.3	60.8
4	6.45	56.3	53.3	48.7
10	9.90	50.3	47.3	40.8
16	12.30	47.3	44.3	36.7
20	13.80	45.8	42.8	34.7
31.25	17.70	42.9	39.9	30.9
62.5	25.65	38.4	35.4	24.8
100	33.00	35.3	32.3	20.8

## Electrical Characteristics @ 20C

DC Resistance	93.8 Ohms/Km Maximum
Resistance Unbalance	2% Maximum
Mutual Capacitance	56 nF/Km Maximum
Capacitance Unbalance	1000 pF/Km Maximum
Skew	450 nsec/Km Maximum
Velocity of Propagation	-0.68c
Characteristic Impedance	100 Ohms ±15% @ 1.0 Mhz - 100Mhz

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