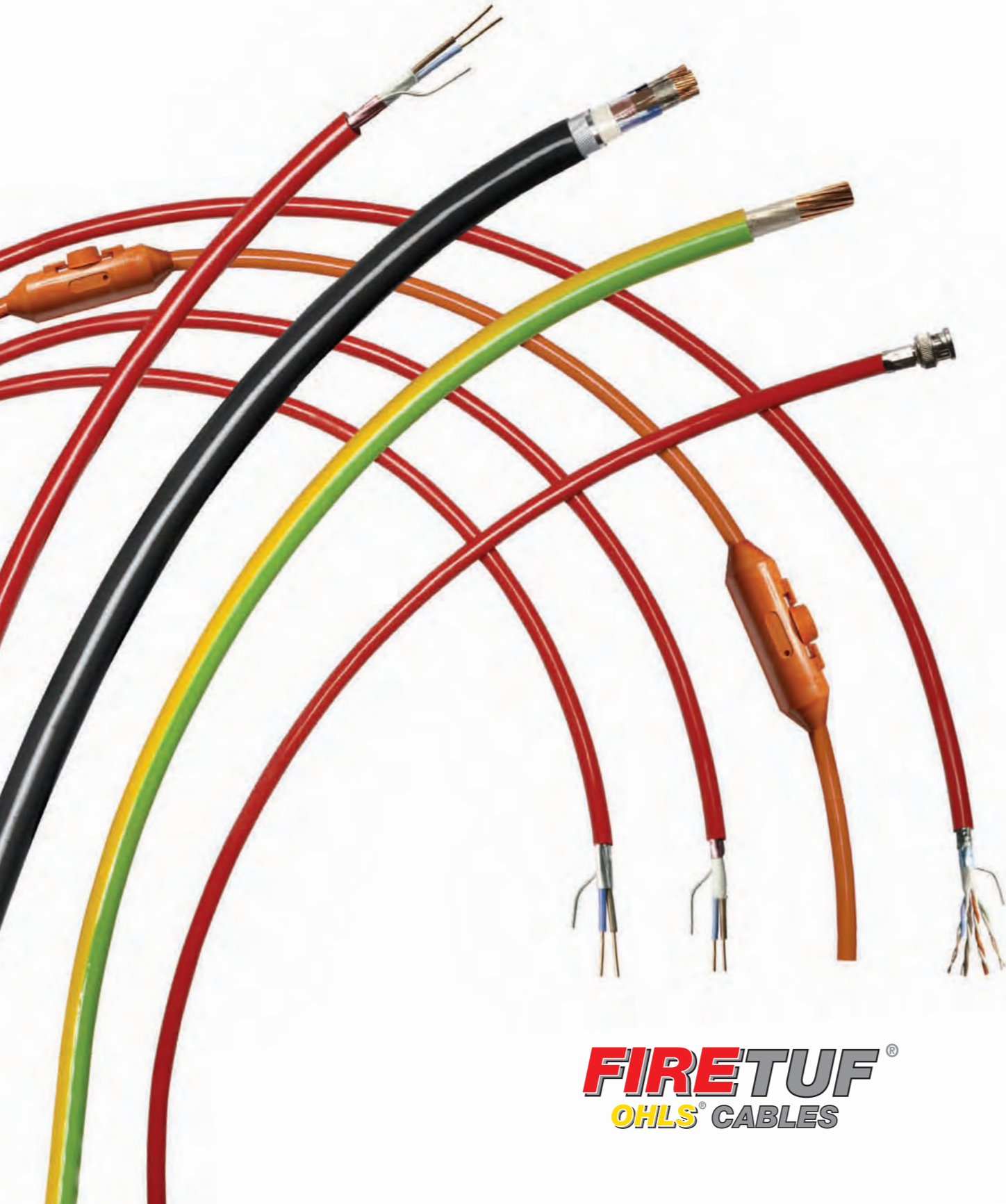




Draka

# Firetuf Cables

ZERO HALOGEN, LOW SMOKE (OHLS®) CABLE



**FIRETUF**<sup>®</sup>  
OHLS<sup>®</sup> CABLES



# Draka, the world's most trusted cable brand

When it comes to specifying fire performance cables, zero halogen building wires and power cables, you have to choose products from a company you can trust.

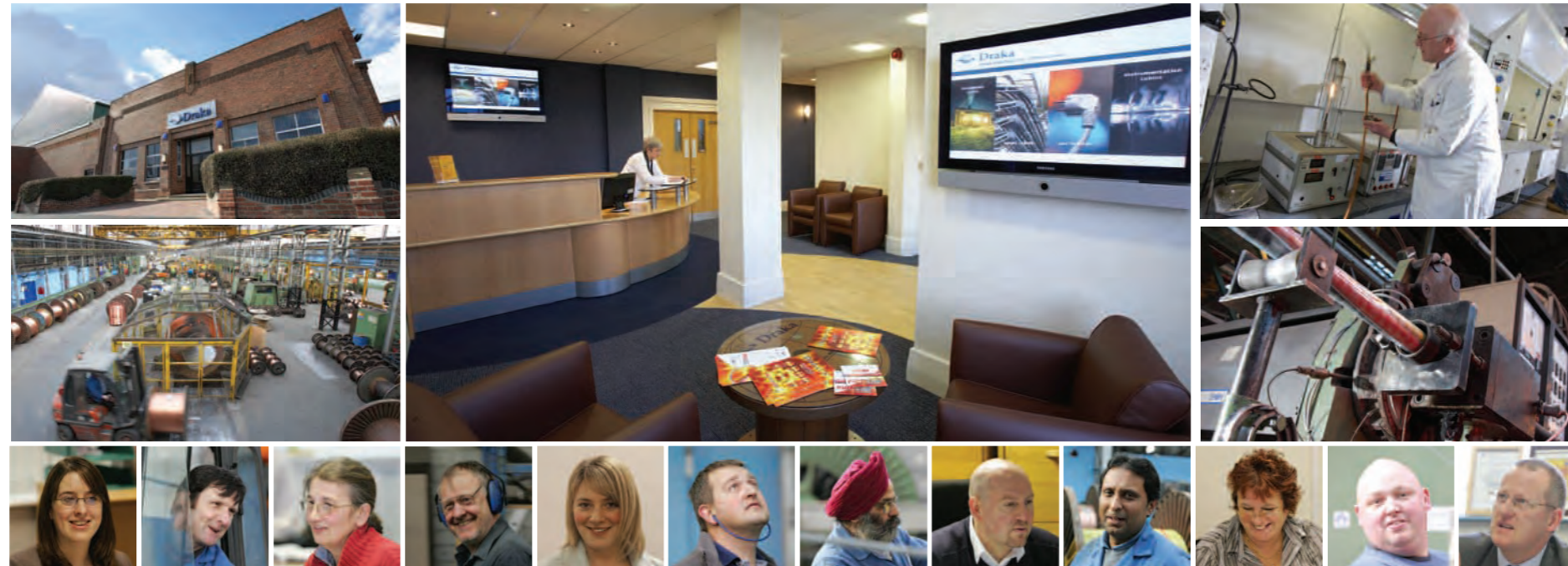


Draka is that company, an international cable manufacturer with a turnover of €1.7 billion and over 9,000 employees worldwide. As part of Draka Cableteq Low Voltage Europe, a division of Draka Holding NV, we are the leading supplier of fire performance cables, zero halogen power cables and building wires in the UK.

With over 80 years of in-depth experience, our vast product range has been developed and manufactured with leading edge technology and is backed by the resources of one of the world's major specialist cable companies.

The Group's expertise delivers a wide-ranging product portfolio including communication, low voltage and special purpose cables. In addition we have the capability to manufacture customer-specific cable types.

Part of our continuing success is down to our commitment to ongoing product development through investment in innovation. We are constantly working to improve our product range to meet your specific needs. Indeed, the development of our product range forms the cornerstone of our entire operation.

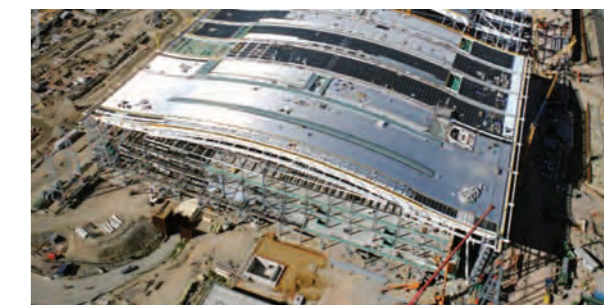


Our prestigious range of fire performance cables is produced at our purpose-built Derby site, using the latest plant and machinery, backed by comprehensive development and testing facilities. Moreover, we manufacture the internationally recognised Firetuf range of circuit integrity cables. This range covers cables which maintain essential function in the event of a fire, for the following applications:

- Fire alarm and emergency lighting
- Co-axial CCTV monitoring
- Power and data transmission

It comes as no surprise therefore, that Draka's market-leading products have been specified for a number of high profile building developments, both in the UK and other international arenas. These include Wembley Arena, the Emirates Stadium for Arsenal FC, London Underground, Channel Tunnel Rail Link, the Bullring Shopping Centre in Birmingham, Heathrow's new Terminal 5, Burj-Al-Arab Hotel in Dubai and the Petronas Twin Towers in Malaysia.

Above all, our values at Draka are not solely concerned with factories, machines and cables, but also with people. The people that produce, sell and administer our products and services, the people that buy these products and services and perhaps most important of all, the people who, without even knowing it, benefit every day from the safety and security provided by Draka products.





# Draka Firetuf Cables

## ZERO HALOGEN, LOW SMOKE (OHLS®) CABLE

At Draka, we fully understand the importance of fire performance cables. This is why we are deeply committed to a policy of ongoing product development through investment in innovation.

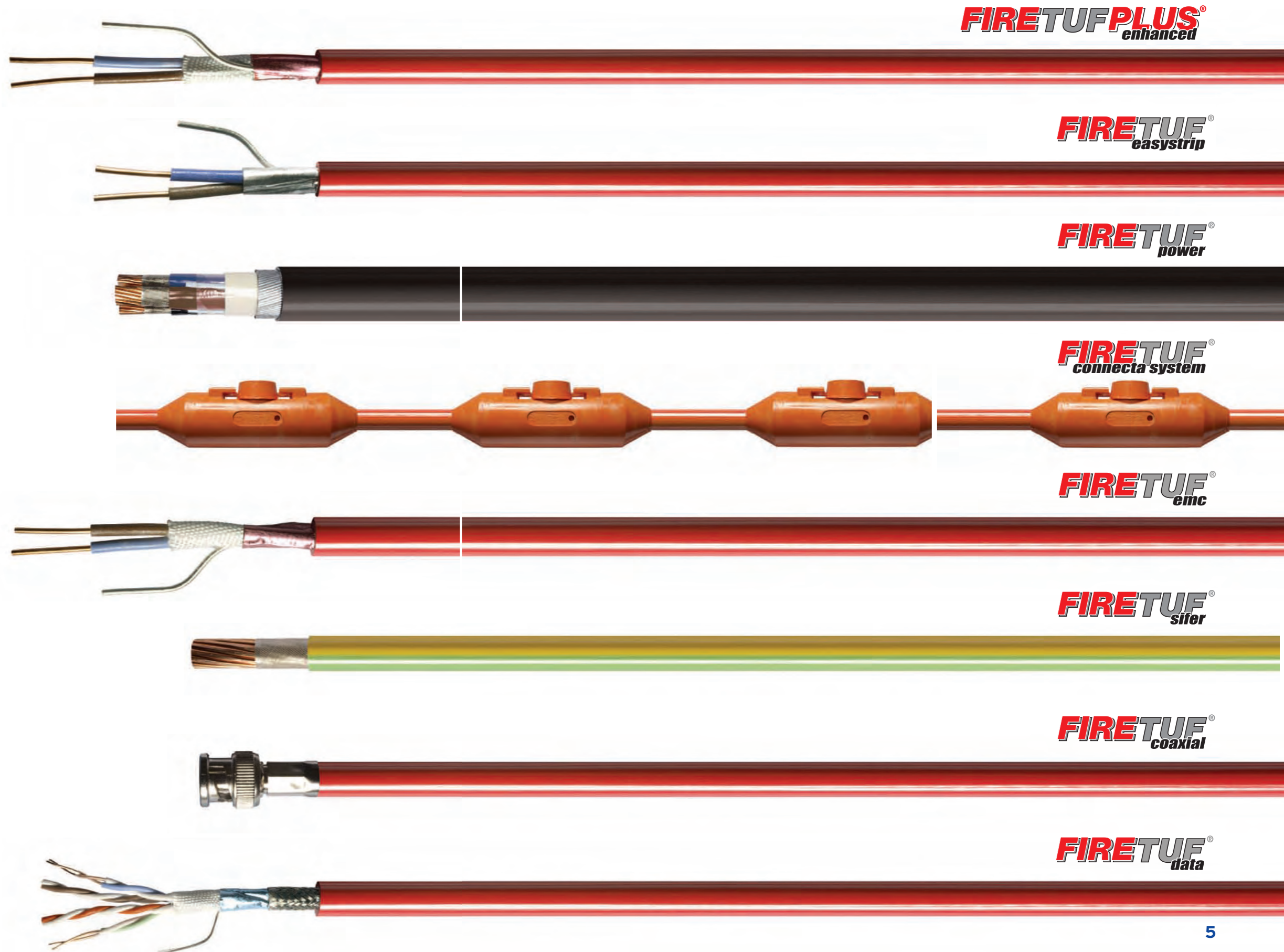
This is not just because we want our products and range to be consistently improved, so that they are better able to satisfy your needs, but because we understand that lives are at stake and that the performance and effectiveness of our products can help prevent loss of life.

In short, at Draka we know that the safety of occupants and users of public, commercial and industrial premises is of paramount importance. One factor that can play a key role in making buildings and occupants safer is the appropriate use of fire performance cables for critical safety systems, including fire alarms, emergency lighting, PA systems, CCTV systems and other emergency power supplies.

Moreover, the correct selection and installation of these vital safety cables ensures that, in the event of an emergency, systems can continue to function and people will have time to leave the building safely, as well as helping the emergency services to operate effectively.

A perfect example of how our policy of continuous innovation produces better, even more effective products, is the introduction of Firetufplus, which provides enhanced cable performance with all the benefits associated with pliable alarm cable.

Firetuf cables set the standards for others to follow.



Zero Halogen, Low Smoke (OHLS<sup>®</sup>) cable, maintaining circuit integrity when exposed to fire. Meeting the Enhanced category of BS 5839-1:2002. Manufactured to BS 7629-1. Tested and approved by LPCB and BASEC.

Firetufplus has been specially designed to meet the Enhanced requirements detailed in BS 5839-1:2002, Clause 26.2e. It therefore meets the PH120 class, and additionally meets the requirements for integrated water spray and mechanical shock also described in Clause 26.2e, and detailed in BS 8434 Part 2:2003:

60 mins - fire and mechanical impact, followed by  
60 mins - fire, mechanical impact and water

Firetufplus achieves the Enhanced performance, whilst retaining all the advantages associated with a pliable cable. These include:

- Lower termination costs
- No special tools or training
- Ease of handling and installation
- Available in long lengths
- Twisted core construction to improve signal clarity
- Suitable for use in Zone 1 and Zone 2 hazardous areas

Firetufplus achieves the Enhanced performance by application of state of the art materials technology, providing advanced resistance to fire and heat, enabling the maintenance of circuit integrity through this most onerous testing protocol.

#### Construction

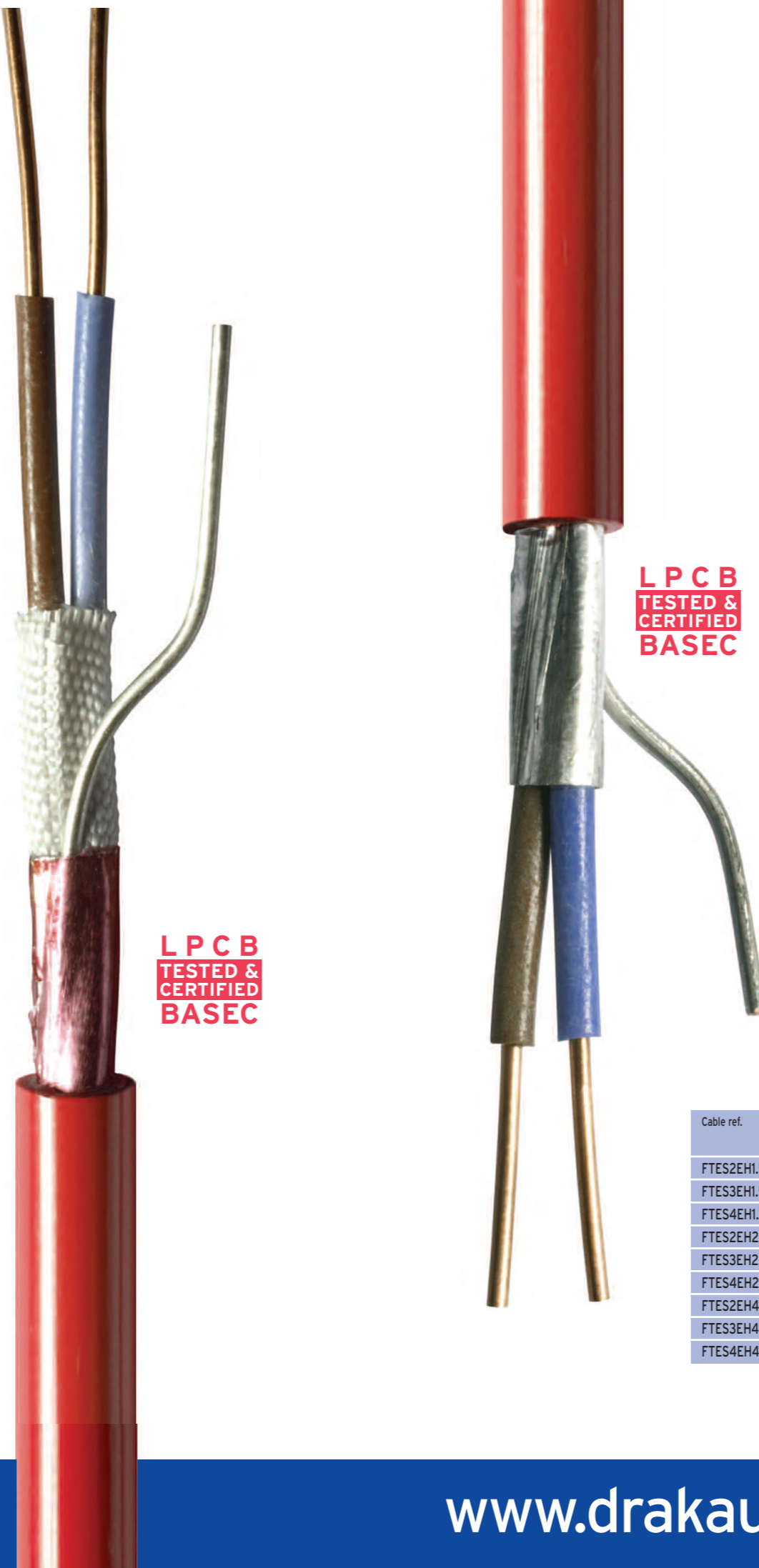
**Conductors:** Solid or stranded plain annealed copper wire.  
**Insulation:** Enhanced silicone rubber.  
**Binder:** Enhanced close weave glass tape.  
**Conductor (earth):** Solid or stranded tinned annealed copper.  
**Electrostatic screen:** Enhanced aluminium/polyester laminated tape.  
**Sheath:** Enhanced Thermoplastic Zero Halogen, Low Smoke (OHLS<sup>®</sup>) compound.

#### Physical Characteristics

**Voltage rating (U<sub>o</sub>/U):** 300/500V.  
**Operating temp:** -40°C to +90°C (The cable should not be flexed when either the ambient or cable temperature is below 0°C).  
**Min. bending radius:** 6 x overall diameter of cable.

#### Standards Achieved

**Circuit integrity:** BS 5839-1:2002 Clause 26.2e Enhanced, BS 8434-2:2003, BS EN 50200 PH120, BS 6387 C, W & Z.  
**Flame propagation:** IEC 60332-3, IEC 60332-1, BS EN 50265, BS EN 50266.  
**Acid gas emission:** IEC 60754, BS EN 50267.  
**Smoke emission:** IEC 61034, BS EN 50268.



Firetuf Easystrip Zero Halogen Low Smoke cable has been designed and manufactured in the UK to provide superior flame retardance and circuit integrity, together with optimised ease of installation characteristics. Manufactured to BS7629-1 and meeting the Standard category of BS 5839-1:2002. Tested and approved by LPCB and BASEC.

- Fastest ever sheath removal, allowing reduced termination times
- Smallest diameter and most flexible
- Easily dressable
- Smallest bending radius without deformation or cable kinking
- Reduced weight
- Twisted core construction to improve signal clarity
- Suitable for use in Zone 1 and Zone 2 hazardous areas

#### Construction

**Conductors:** Solid or stranded plain annealed copper wire.  
**Insulation:** Silicone rubber.  
**Electrostatic screen:** Aluminium/polyester laminated tape.  
**Conductor (earth):** Solid or stranded tinned annealed copper.  
**Sheath:** High performance, Thermoplastic Zero Halogen, Low Smoke (OHLS<sup>®</sup>) compound.

#### Physical Characteristics

**Voltage rating (U<sub>o</sub>/U):** 300/500V.  
**Operating temp:** -40°C to +90°C (The cable should not be flexed when either the ambient or cable temperature is below 0°C).  
**Min. bending radius:** 6 x overall diameter of cable.

#### Standards Achieved

**Circuit integrity:** BS 5839-1:2002 Clause 26.2d Standard, BS 8434-1:2003, BS EN 50200 PH30, BS 6387 C, W & Z.  
**Flame propagation:** IEC 60332-3, IEC 60332-1, BS EN 50265, BS EN 50266.  
**Acid gas emission:** IEC 60754, BS EN 50267.  
**Smoke emission:** IEC 61034, BS EN 50268.

Cable ref.	No. of cores	Conductor Class	CSA mm <sup>2</sup>	Protective earth conductor CSA mm <sup>2</sup>	Nominal overall diameter mm	Approx. nett weight kg/km
FTES2EH1.5	2	1	1.5	1.5	7.7	100
FTES3EH1.5	3	1	1.5	1.5	8.0	117
FTES4EH1.5	4	1	1.5	1.5	9.2	145
FTES2EH2.5	2	1	2.5	2.5	8.9	150
FTES3EH2.5	3	1	2.5	2.5	9.5	177
FTES4EH2.5	4	1	2.5	2.5	10.9	220
FTES2EH4.0	2	2	4	4	10.7	225
FTES3EH4.0	3	2	4	4	11.9	275
FTES4EH4.0	4	2	4	4	13.4	340

Cable ref.	No. of cores	Conductor Class	CSA mm <sup>2</sup>	Protective earth conductor CSA mm <sup>2</sup>	Nominal overall diameter mm	Approx. nett weight kg/km
FTPLUS2EH1.5	2	1	1.5	1.5	8.6	130
FTPLUS3EH1.5	3	1	1.5	1.5	9.0	135
FTPLUS4EH1.5	4	1	1.5	1.5	10.1	170
FTPLUS2EH2.5	2	1	2.5	2.5	9.9	175
FTPLUS3EH2.5	3	1	2.5	2.5	10.6	200
FTPLUS4EH2.5	4	1	2.5	2.5	11.9	250
FTPLUS2EH4.0	2	2	4	4	11.7	250
FTPLUS3EH4.0	3	2	4	4	12.8	300
FTPLUS4EH4.0	4	2	4	4	14.4	370



In airport environments, where higher than normal levels of electro magnetic radiation are present, alarm systems could be vulnerable to false alarms. Firetuf emc cables were specifically designed to meet the onerous requirements for immunity to Electro Magnetic Interference (EMI) and have been supplied for London Heathrow Terminal 5. Zero Halogen, Low Smoke (OHLS®) cable, maintaining circuit integrity when exposed to fire, meeting the Standard category of BS 5839-1:2002. Manufactured to BS 7629-1. Tested and approved by LPCB and BASEC.

These cables are suitable for installations where a fire situation may pose a major hazard and the maintenance of circuit integrity is a requirement, thereby giving increased protection to life and property. Application of the latest sheath extrusion technology and 100% cover electrostatic screen, gives Firetuf emc its unique advantages which include:

- Increased immunity to EMI
- Available in long length
- Ease of handling and installation
- Lower termination costs
- Twisted core construction to improve signal clarity
- Suitable for use in Zone 1 and Zone 2 hazardous areas

**Construction**

**Conductors:** Solid or stranded plain annealed copper wire.  
**Insulation:** Silicone rubber.  
**Binder:** Close weave glass tape.  
**Electrostatic screen:** Enhanced aluminium/polyester laminated tape.  
**Conductor (earth):** Solid or stranded tinned annealed copper.  
**Sheath:** High performance, Thermoplastic Zero Halogen, Low Smoke (OHLS®) compound.

**Physical Characteristics**

**Voltage rating (Uo/U):** 300/500V.  
**Operating temp:** -40°C to +90°C (The cable should not be flexed when either the ambient or cable temperature is below 0°C).  
**Min. bending radius:** 6 x overall diameter of cable.

**Standards Achieved**

**Circuit integrity:** BS 5839-1:2002 Clause 26.2d Standard, BS 8434-1:2003, BS EN 50200 PH30, BS 6387 C, W & Z.  
**Flame propagation:** IEC 60332-3, IEC 60332-1, BS EN 50265, BS EN 50266.  
**Acid gas emission:** IEC 60754, BS EN 50267.  
**Smoke emission:** IEC 61034, BS EN 50268.

Cable ref.	No. of cores	Conductor Class	CSA mm <sup>2</sup>	Earth CSA mm <sup>2</sup>	Nominal diameter mm	Approx. nett weight kg/km
FTEMC2EH1.5	2	1	1.5	1.5	8.3	110
FTEMC2EH2.5	2	1	2.5	2.5	9.7	170



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## CLIP & GLAND SELECTION CHART

Cable ref.	Cable ref.	No. of cores	Core area mm <sup>2</sup>	Fire resistant P-Clip	A2/A2F brass gland ref.**	Nylon OHLS® gland ref.	LUL approved glands
FTES2EH1.5		2	1.5	WP30 (WP30/2*)	M20S	251/93	251-R(LSF)
	FTPLUS2EH1.5	2	1.5	WP34 (WP30/2/3*)	M20S	251/93	251-R(LSF)
FTES3EH1.5		3	1.5	WP32	M20S	251/93	251-R(LSF)
	FTPLUS3EH1.5	3	1.5	WP37	M20S	251/93	251-R(LSF)
FTES4EH1.5		4	1.5	WP37	M20S	251/93	251-R(LSF)
	FTPLUS4EH1.5	4	1.5	WP40	M20S	251/93	251-R(LSF)
FTES2EH2.5		2	2.5	WP37	M20S	251/93	251-R(LSF)
	FTPLUS2EH2.5	2	2.5	WP40	M20S	251/93	251-R(LSF)
FTES3EH2.5		3	2.5	WP37	M20S	251/93	251-R(LSF)
	FTPLUS3EH2.5	3	2.5	WP43	M20S	252/93	252-R(LSF)
FTES4EH2.5		4	2.5	WP43	M20	252/93	252-R(LSF)
	FTPLUS4EH2.5	4	2.5	WP47	M20	252/93	252-R(LSF)
FTES2EH4.0		2	4	WP43	M20	252/93	252-R(LSF)
	FTPLUS2EH4.0	2	4	WP47	M20	252/93	252-R(LSF)
FTES3EH4.0		3	4	WP47	M20	252/93	252-R(LSF)
	FTPLUS3EH4.0	3	4	WP51	M20	254/94	254-R(LSF)
FTES4EH4.0		4	4	WP51	M25	254/94	254-R(LSF)
	FTPLUS4EH4.0	4	4	WP54	M25	254/94	254-R(LSF)
FTEMC2EH1.5	2	1.5	1.5	WP34	M20S	251/93	251-R(LSF)
FTEMC2EH2.5	2	2.5	2.5	WP37	M20S	251/93	251-R(LSF)

Clip and nylon gland references are for white, if red is required add the letter "R" after the clip or gland coding.  
 \* Clips for 2 or 3 cables.  
 \*\* For 'Enhanced' performance with Firetuf Plus, A2 brass glands should be used for through joints.  
 \*\* For Hazardous Areas, flameproof A2F brass glands should be used.

## APPROVALS AND JOINTING

All Firetuf cables are tested and Certified by LPCB and BASEC to the latest edition of appropriate Standards.



Firetuf EASYSTRIP Multicore  
LPCB Ref.No 361d



Firetuf EASYSTRIP  
BASEC Ref.No 004/004/218

BS 5839-1:2002 recommends that cables are installed without joints if possible. When through joints are used, all terminations and other accessories should be such as to minimise the probability of early failure in the event of a fire.



Appropriately jointed Firetuf cables continue to provide circuit integrity up to the full BS 5839 rating.

## CURRENT RATINGS AND ASSOCIATED VOLT DROP

BS 7629 limits maximum conductor temperature (unless enclosed) to 70°C

Phase conductor CSA mm <sup>2</sup>	Reference method 1* (Clipped direct)				Reference Method 3* (Enclosed)			
	One twin cable single phase AC or DC		One 3 or 4 core cable 3 phase		One twin cable single phase AC or DC		One 3 or 4 core cable 3 phase	
	Current Rating A	Volt Drop mV/A/m	Current Rating A	Volt Drop mV/A/m	Current Rating A	Volt Drop mV/A/m	Current Drop A	Volt Drop mV/A/m
1.5	19.5	29	17.5	25	16.5	29	15	25
2.5	27	18	24	15	23	18	20	15
4.0	36	11	32	9.5	30	11	27	9.5

\* As defined in Appendix 4 of BS 7671, the IEE Wiring Regulations, 16th Edition. Conductor operating temperature: 70°C. Ambient temperature: 30°C

**Zero Halogen, Low Smoke (OHLS®) cable with stranded copper conductors and a protective armour layer. Manufactured to BS 7846. Tested and approved by LPCB and BASEC.**

These cables offer the advantages of an armoured 600/1000 Volt rated, zero halogen, low smoke cable with circuit integrity. They are intended for use in installations where vital circuits are required to continue operation in the event of the outbreak of fire. Firetuf Power is particularly suited for use in public buildings and constructions (such as hospitals, theatres, shopping developments, tunnels, mass transit railways, oil & petrochemical plants, power stations and computer installations) where the danger to life, equipment and structures may be greatly increased in the event of a power failure due to fire.



Also available in unarmoured design. Details available upon request.

**Construction**

- Conductors:** Plain annealed stranded copper conductors. For sizes up to and including 35mm<sup>2</sup> these are circular. Shaped conductors start at 50mm<sup>2</sup> with the exception of 2 core cables where shaped conductors start at 25mm<sup>2</sup>.
- Insulation:** Mica-glass fire-resistant tapes, covered by an extruded layer of cross-linked polyethylene.
- Binder:** Polyester tape.
- Bedding:** An extruded layer of Zero Halogen, Low Smoke (OHLS®) compound.
- Armour:** Single layer of galvanised steel wires.
- Sheath:** Thermoplastic Zero Halogen, Low Smoke (OHLS®) compound.

**Physical Characteristics**

- Voltage rating (U<sub>0</sub>/U):** 600/1000V.
- Operating temp:** -40°C to +90°C (The cable should not be flexed when either the ambient or cable temperature is below 0°C).
- Min. bending radius:** 8 x overall diameter of cable.
- Note:** In the event of a fire, the increase in impedance may require consideration to the installation of larger conductor sizes, to accommodate motor starting loads and the performance of protective conductors.

**Standards Achieved**

- Circuit integrity:** IEC 60331, BS 7846 F2, BS 6387 categories C, W & Z.
- Acid gas emission:** IEC 60754, BS EN 50267.
- Flame propagation:** IEC 60332-3, BS EN 50265, BS EN 50266.
- Smoke emission:** IEC 61034, BS EN 50268.



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**Firetuf Power Technical Data**

**2 Core**

Nominal area of conductor mm <sup>2</sup>	Insulation thickness mm	Nominal armour wire dia. mm	Approx. dia. under armour mm	Approx. overall diameter mm	Approx. cable weight kg/km	Max conductor resistance		Reactance @50Hz Ω/km	Impedance AC@90°C Ω/km	Star capacitance μF/km	Max. arm. resistance at 20°C Ω/km
						DC@20°C Ω/km	AC@90°C Ω/km				
1.5*	0.6	0.9	8.7	13.1	420	12.100	15.428	0.104	15.428	0.23	10.7
2.5*	0.7	0.9	10.0	14.6	500	7.410	9.448	0.101	9.448	0.25	8.8
4*	0.7	0.9	11.1	15.7	580	4.610	5.878	0.099	5.878	0.27	7.9
6*	0.7	0.9	12.3	16.9	660	3.080	3.927	0.094	3.928	0.30	7.0
10*	0.7	0.9	14.2	19.0	830	1.830	2.333	0.093	2.335	0.32	6.0
16*	0.7	1.25	15.9	21.4	1000	1.150	1.466	0.088	1.469	0.35	3.8
25	0.9	1.25	15.7	21.4	1100	0.727	0.927	0.082	0.930	0.38	3.7
35	0.9	1.6	17.7	24.3	1550	0.524	0.668	0.077	0.673	0.42	2.5
50	1.0	1.6	20.0	26.8	1850	0.387	0.494	0.076	0.500	0.45	2.3
70	1.1	1.6	23.0	30.0	2450	0.268	0.342	0.075	0.349	0.49	2.0
95	1.1	2.0	26.1	34.1	3350	0.193	0.247	0.074	0.258	0.55	1.4
120	1.2	2.0	28.9	37.1	3900	0.153	0.196	0.072	0.209	0.57	1.3
150	1.4	2.0	31.9	40.3	4650	0.124	0.160	0.073	0.176	0.57	1.2
185	1.6	2.5	35.9	45.7	5950	0.0991	0.128	0.073	0.148	0.55	0.82
240	1.7	2.5	40.0	50.0	7350	0.0754	0.099	0.072	0.122	0.60	0.73
300	1.8	2.5	44.3	54.5	8700	0.0601	0.080	0.072	0.107	0.62	0.67
400	2.0	2.5	49.4	60.0	10750	0.0470	0.064	0.071	0.096	0.64	0.59

**3 Core**

Nominal area of conductor mm <sup>2</sup>	Insulation thickness mm	Nominal armour wire dia. mm	Approx. dia. under armour mm	Approx. overall diameter mm	Approx. cable weight kg/km	Max conductor resistance		Reactance @50Hz Ω/km	Impedance AC@90°C Ω/km	Star capacitance μF/km	Max. arm. resistance at 20°C Ω/km
						DC@20°C Ω/km	AC@90°C Ω/km				
1.5*	0.6	0.9	9.3	13.7	426	12.100	15.428	0.104	15.428	0.23	10.2
2.5*	0.7	0.9	10.6	15.2	540	7.410	9.448	0.101	9.448	0.25	8.2
4*	0.7	0.9	11.8	16.4	640	4.610	5.878	0.099	5.878	0.27	7.5
6*	0.7	0.9	13.1	17.7	740	3.080	3.927	0.094	3.925	0.30	6.6
10*	0.7	1.25	15.1	20.6	1080	1.830	2.333	0.093	2.335	0.32	4.0
16*	0.7	1.25	17.0	22.7	1310	1.150	1.466	0.088	1.469	0.35	3.6
25*	0.9	1.6	20.0	26.6	1800	0.727	0.927	0.082	0.930	0.37	2.5
35*	0.9	1.6	22.3	29.1	2200	0.524	0.668	0.077	0.673	0.42	2.3
50	1.0	1.6	22.8	29.6	2450	0.387	0.494	0.076	0.500	0.45	2.0
70	1.1	1.6	26.3	33.3	3200	0.268	0.342	0.075	0.349	0.49	1.8
95	1.1	2.0	29.9	38.1	4450	0.193	0.247	0.074	0.258	0.55	1.3
120	1.2	2.0	33.1	41.5	5300	0.153	0.196	0.072	0.209	0.57	1.2
150	1.4	2.5	37.0	46.6	6700	0.124	0.160	0.073	0.176	0.55	0.78
185	1.6	2.5	41.1	50.9	8050	0.0991	0.128	0.073	0.148	0.55	0.71
240	1.7	2.5	46.0	56.2	9950	0.0754	0.099	0.072	0.122	0.60	0.63
300	1.8	2.5	50.9	61.3	12050	0.0601	0.080	0.072	0.107	0.62	0.58
400	2.0	2.5	56.9	67.7	14800	0.0470	0.064	0.071	0.096	0.64	0.52

**4 Core**

Nominal area of conductor mm <sup>2</sup>	Insulation thickness mm	Nominal armour wire dia. mm	Approx. dia. under armour mm	Approx. overall diameter mm	Approx. cable weight kg/km	Max conductor resistance		Reactance @50Hz Ω/km	Impedance AC@90°C Ω/km	Star capacitance μF/km	Max. arm. resistance at 20°C Ω/km
						DC@20°C Ω/km	AC@90°C Ω/km				
1.5*	0.6	0.9	10.1	14.5	520	12.100	15.428	0.104	15.428	0.23	9.5
2.5*	0.7	0.9	11.6	16.2	620	7.410	9.448	0.101	9.448	0.25	7.7
4*	0.7	0.9	13.0	17.6	730	4.610	5.878	0.099	5.878	0.27	6.8
6*	0.7	1.25	14.4	19.9	990	3.080	3.927	0.094	3.925	0.30	4.3
10*	0.7	1.25	16.8	22.3	1260	1.830	2.333	0.093	2.335	0.32	3.7
16*	0.7	1.25	18.9	24.6	1640	1.150	1.466	0.088	1.469	0.35	3.2
25*	0.9	1.6	22.2	28.8	2150	0.727	0.927	0.082	0.930	0.37	2.3
35*	0.9	1.6	24.8	31.6	2650	0.524	0.668	0.077	0.673	0.42	2.0
50	1.0	1.6	26.2	33.2	3100	0.387	0.494	0.076	0.500	0.45	1.8
70	1.1	2.0	30.7	38.9	4400	0.268	0.342	0.075	0.349	0.48	1.2
95	1.1	2.0	34.5	42.9	5650	0.193	0.247	0.074	0.258	0.55	1.1
120	1.2	2.5	38.7	48.3	7250	0.153	0.196	0.072	0.209	0.55	0.76
150	1.4	2.5	42.8	52.6	8550	0.124	0.160	0.073	0.176	0.55	0.68
185	1.6	2.5	47.6	57.8	10300	0.0991	0.128	0.073	0.148	0.55	0.61
240	1.7	2.5	53.8	64.2	12900	0.0754	0.099	0.072	0.122	0.58	0.54
300	1.8	2.5	59.2	70.0	15550	0.0601	0.080	0.072	0.107	0.62	0.49
400	2.0	3.15	66.6	79.3	20250	0.0470	0.064	0.071	0.096	0.63	0.35

Shaped conductors unless otherwise stated.  
\* Circular conductors



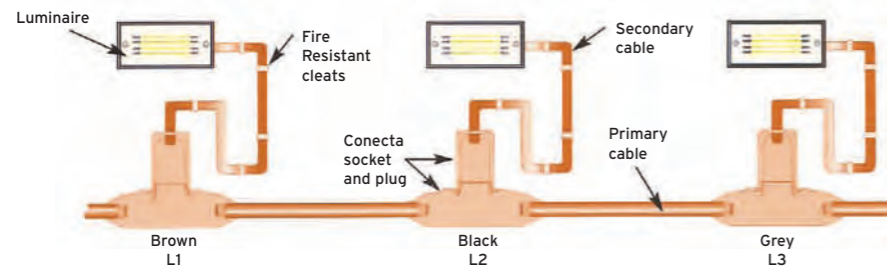
A Zero Halogen, Low Smoke (OHLS®) modular wiring system, offering time and cost saving benefits whilst delivering the highest level of safety.

The Firetuf Connecta system has been designed for ease of installation and cost effectiveness, allied to the overall safety of the system. The Connecta system provides solutions for lighting and power supplies in tunnel environments.

Based on Firetuf power or armoured OHLS® cable, Connecta is available in both fire resistant and flame retardant designs, and also offers ingress protection to IP 67.

Available in the size range 2.5mm² to 50mm² and manufactured to the bespoke requirements of the client, Connecta offers a time and cost effective solution to a variety of safety critical applications.

Every Connecta system is designed with the clients preset lengths between moulded socket outlets, which are unique to each installation. Secondary outputs are taken from the primary cables via moulded plugs to individual appliances. The system is therefore, easy to install by suitably qualified personnel and requires minimal maintenance.



The Connecta system has been installed in the Channel Tunnel Rail Link (CTRL), London Underground, Heathrow Terminal 5 Tunnels, Dublin Port Tunnel and the Singapore Mass Transit Network (MRT) amongst others. The Connecta system offers the following benefits:

- Reduced installation time
- Reduced installation costs
- Circuit integrity equivalent to BS 6387 C,W & Z
- Ingress protection to IP 67
- Minimum maintenance requirements
- System flexibility to meet clients positioning requirements
- Lightweight and compact jointing system

	Small Connecta	Large Connecta	Extra Large Connecta
Diameter (mm)	70	90	90
Length (mm)	150	220	260
Weight (Kg)	1.5	2	2.2



**LPCB**  
TESTED &  
CERTIFIED

Zero Halogen, Low Smoke (OHLS®) single core cable having enhanced circuit integrity when exposed to fire. Tested and approved by LPCB.

These cables are designed for drawing into trunking and conduit where a fire situation may pose a major hazard and the maintenance of circuit integrity is a requirement. To achieve optimum performance they should be installed in metal conduit.

Construction	
<b>Conductors:</b>	Stranded plain annealed copper wire conductor
<b>Insulation:</b>	Mica-glass fire resistant tape covered by an extruded layer of cross-linked Zero Halogen, Low Smoke (OHLS®) insulating compound

Physical Characteristics	
<b>Voltage rating (Uo/U):</b>	600/1000V.
<b>Operating temp:</b>	-40°C to +90°C (The cable should not be flexed when either the ambient or cable temperature is below 0°C).
<b>Min. bending radius:</b>	8 x overall diameter

Standards Achieved	
<b>Circuit integrity:</b>	BS 6387 categories C, W & Z (when applied to a single cable)  Exceeds IEC 60331 - 3 hours at 750°C - when the test temperature was increased to 950°C, equivalent to BS 6387 Category C. (This test was also satisfactorily applied to Sifer cable in an earthed metal conduit, as per LPCB guidance notes).
<b>Flame propagation:</b>	IEC 60332-1, BS EN 50265, IEC 60332-3, BS EN 50266.
<b>Acid gas emission:</b>	IEC 60754-1, BS EN 50267-2-1.
<b>Smoke emission:</b>	IEC 61034, BS EN 50268

A full range of insulation colours is available including green/yellow. Sheathed versions also available. Details available upon request.

Nominal area of conductor mm²	Insulation thickness mm	Mean diameter (upper limit) mm	Apprx. weight of cable kg/km	Conductor resistance Max @20°C Ω/km
1.5	0.7	3.9	32	12.10
2.5	0.8	4.6	43	7.41
4	0.8	5.1	55	4.61
6	0.8	5.6	85	3.08
10	1.0	7.1	146	1.83
16	1.0	8.1	198	1.15
25	1.2	9.8	320	0.727
35	1.2	10.9	410	0.524
50	1.4	13.4	549	0.387
70	1.4	15.2	770	0.268
95	1.6	17.6	1140	0.193
120	1.6	19.3	1425	0.153
150	1.8	21.3	1720	0.124
185	2.0	23.7	2155	0.0991
240	2.2	26.8	2900	0.0754
300	2.4	29.7	3540	0.0601
400	2.6	33.3	4410	0.0470
500	2.8	37.2	5660	0.0366
630	2.8	41.3	7140	0.0283

**Circuit Integrity Structured Wiring Alarm cable. Compatible with all known connection systems according to EN 50173.**

Based on the design for structured wiring (found in IEC 61156 and BS EN 50288), Firetuf Data cable brings together high frequency data transmission and circuit integrity in a one pair, two pair and four pair cable that will continue to transmit data even when being directly attacked by fire.

Firetuf Data has successfully passed BS 5839: 2002 test protocols. This patented design allows the continuation of data transmission in the event of a fire.

Firetuf Data has three designs: one, two and four pair construction all using the same wire size of 0.63mm, overall screened plus a drain wire and braided.

**Physical Characteristics**

Min. Installation Bend Radius:	8 x Dia.
Min. Fixed Bending Radius:	6 x Dia.
Installation Temp. Range:	0°C to 50°C.
Installed Operating Temp. Range:	-20°C to 60°C.

**Electrical Characteristics @ 20°C**

Structural Return Loss RI:	>IEC dB.
Characteristic Impedance @ 10MHz:	100±5Ω.
DC Conductor Loop Resistance:	<19Ω/100m.
Max. Resistance unbalance:	≤2%.
Nominal Velocity of Propagation:	57%.
Max. Capacitance unbalance:	1600 pF/km.
Insulation Resistance (500V):	≥5000 MΩ.km.

**Standards Achieved**

ISO/IEC 11801:1994; EN 50173:1995; EN 50288-2-1

**Circuit integrity:** BS 5839-1:2002 Clause 26.2e Enhanced  
BS 8434-2:2003  
BS EN 50200 >PH120  
IEC 60331-23  
BS 6387 C

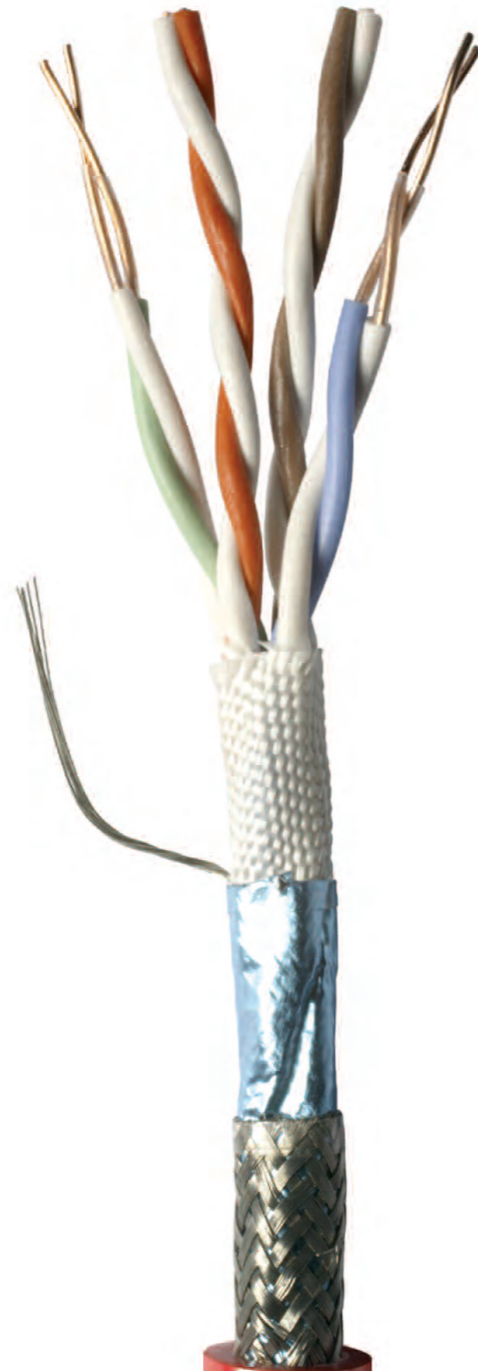
**Flame propagation:** UL 1581 VW1; IEC 60332.3

**Acid gas emission:** IEC 60754

**Smoke emission:** IEC 61034

Cable	Part No.	Nominal Diameter mm	Approx weight kg/km
1 pair	910234	6.8	48
2 pair	910244	8.1	97
4 pair	910245	10.45	122

More detailed data sheets available upon request.



**Zero Halogen, Low Smoke (OHLS®) coaxial cable for visual safety systems.**

Fire resistant 75Ω Coax similar to RG59. Ideal for CCTV, security, smoke detection and evacuation monitoring applications, where continued functionality is required during a fire situation. Due to the zero halogen low smoke construction Firetuf Coaxial is ideal for use in public, commercial and industrial environments.

**Construction**

<b>Conductor:</b>	Plain annealed copper wire.
<b>Insulation:</b>	Dual layer Polyethylene and Silicone rubber.
<b>Binder:</b>	Close weave glass tape.
<b>Screen:</b>	Two layers plain copper wire braid.
<b>Sheath:</b>	Thermoplastic Zero Halogen Low Smoke (OHLS®) compound.

**Physical Characteristics**

<b>Min. bending radius:</b>	Installation: 10 x overall diameter. Fixed: 5 x overall diameter.
<b>Temperature range:</b>	Installation: -5°C to +60°C Operating: -30°C to +70°C
<b>Conductor Diameter:</b>	0.65mm
<b>Overall Diameter:</b>	9.1mm
<b>Approximate weight:</b>	110 kg/km

**Electrical Characteristics @ 20°C**

Character impedance		Ω(ohms)	75±5
Attenuation at (nominal)	0,5Mhz	dB/100m	0.65
	1Mhz	dB/100m	0.90
	5Mhz	dB/100m	2.24
	10Mhz	dB/100m	3.35
	100Mhz	dB/100m	15.03
	300Mhz	dB/100m	32.51
Screening Attenuation	30-1000Mhz	dB	>100
	1000-2000Mhz	dB	>95
	2000-3000Mhz	dB	>89
Transfer impedance	5-30 Mhz	mΩ/m	≤5
	Velocity ratio	%	61.4
DC resistance			
	Inner conductor	Ω/km	55.3
	Outer conductor	Ω/km	3.7
Return loss			
	5-30Mhz	dB	>22
	30-470Mhz	dB	>22
	470-1000Mhz	dB	>18
	1000-3000Mhz	dB	>20
Electrical strength (1min.)			
	Dielectric	kV d.c.	2.00
	Sheath	kV d.c.	3.75

**Standards Achieved**

**Construction:** BS EN 50117-1 & draft BS EN 50117-2-4 2002, EN 50083-2/A1 screening class A

**Circuit integrity:** BS 5839-1:2002 Clause 26.2e Enhanced  
BS 8434-2:2003  
BS EN 50200 >PH120  
IEC 60331-23

**Flame propagation:** IEC 60332-3

**Acid gas emission:** IEC 60754

**Smoke emission:** IEC 601034





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**FIRETUF<sup>®</sup>**  
**OHLS<sup>®</sup> CABLES**



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