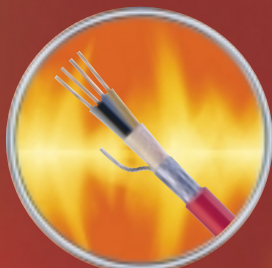


# Draka UK

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



**FIRETUF**<sup>®</sup>  
standard



**FIRETUF**<sup>®</sup>  
safer



**FIRETUF**<sup>®</sup>  
coaxial



**FIRETUF**<sup>®</sup>  
power



**FIRETUF**<sup>®</sup>  
data



**FIRETUF**<sup>®</sup>  
fibre

## **FIRETUF PLUS**<sup>®</sup> enhanced



**Draka UK**  
Industrial Cables

# Introduction

*The safety of occupants and users of public, commercial and industrial premises is of paramount importance. One important safety feature 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.*

The correct selection and installation of these vital safety cables ensures that, in the event of an emergency, essential safety systems can continue to function and allow an orderly evacuation of the premises, in addition to aiding the emergency services to deal effectively with the hazard.

The relevant Code of Practice for Design and Installation of Fire Alarm Systems, BS 5839 Part 1, has been revised and this new Code includes modified requirements for alarm cables. These are now designated as "Standard" and "Enhanced" and have been assigned new testing procedures, which are detailed in BS 8434:2003 and are based on EN50200:2000.

The new requirements of BS 5839-1:2002 include, for the first time, reference to cable 'systems'. These include through joints when employed in the installation. Such joints must now be capable of meeting the same performance requirement as the cable. For more information see back page.

The revised BS 5839-1:2002 has necessitated an updating of the relevant approvals for Draka fire alarm cables and the development of a new product, Firetufplus.

At Draka UK, we are committed to continuing product development and understand the requirements of fire performance cables. We appreciate the pressures faced by specifiers and consultants in selecting the correct cable from the wide range available. The new integrated fire test requirements of BS 5839-1:2002 represent a major step forward in performance of these products and, with the introduction of Firetufplus, Draka UK is providing enhanced cable performance with all the benefits associated with pliable alarm cable.

**FIRETUFPLUS<sup>®</sup>**  
enhanced



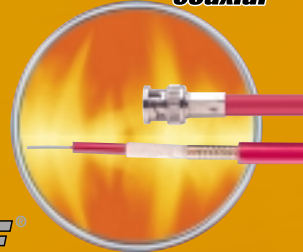
**FIRETUF<sup>®</sup>**  
standard



**FIRETUF<sup>®</sup>**  
sifer



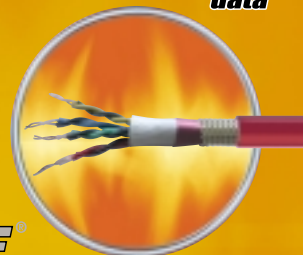
**FIRETUF<sup>®</sup>**  
coaxial



**FIRETUF<sup>®</sup>**  
power



**FIRETUF<sup>®</sup>**  
data



**FIRETUF<sup>®</sup>**  
fibre



*All illustrations show new harmonised core colours. Recognised April 2004.*

**FIRETUF<sup>®</sup>**  
OHLS CABLES

[www.drakauk.com](http://www.drakauk.com)

For further information and detailed data sheets  
please contact us on

01332 345431

Firetuf<sup>®</sup> and OHLS<sup>®</sup> are registered trade marks

# FIRETUF PLUS<sup>®</sup> enhanced

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

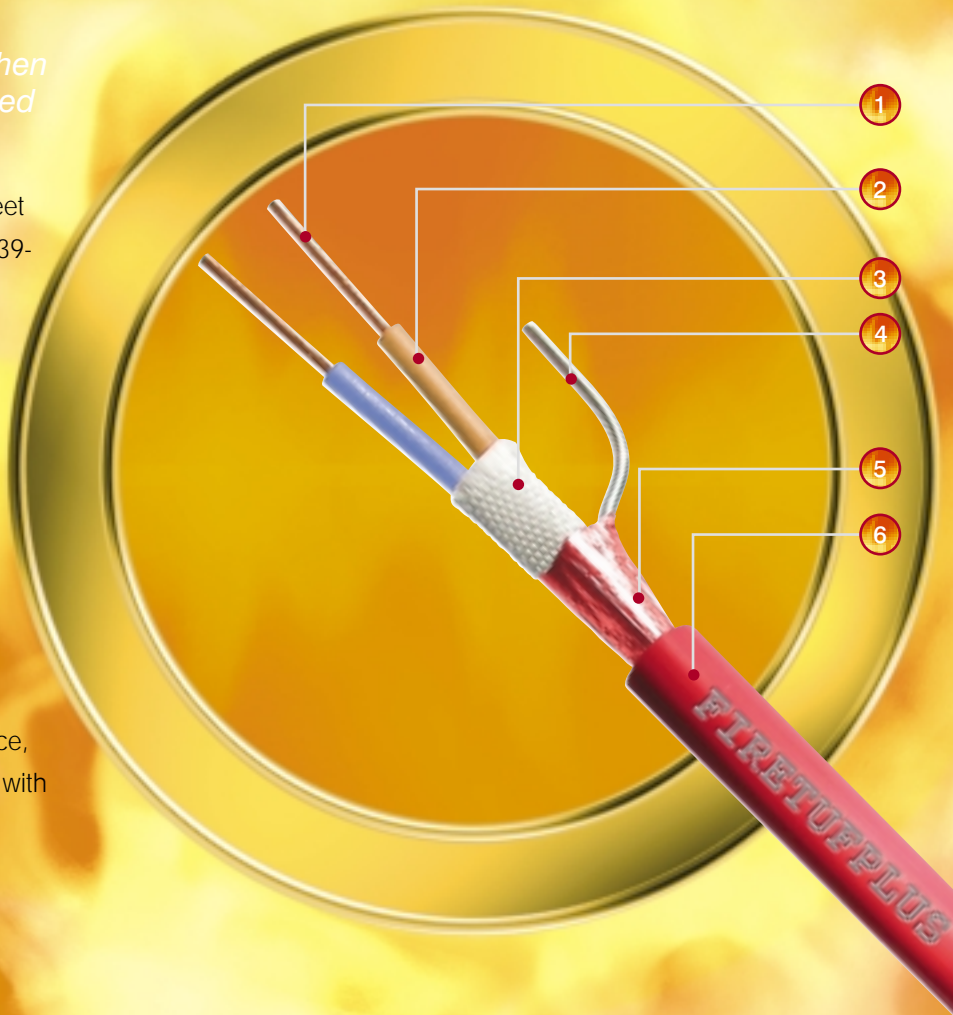
Firetufplus has been specially designed to meet the Enhanced requirements detailed in BS 5839-1:2002, Clause 26.2e. It therefore meets the PH120 class, and additionally meets the requirements for integrated water spray and mechanical shock also described in Clause 26.2e, and detailed in BS 8434 Part 2:2003. Tested and approved by LPCB (Ref 076g/01):

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

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

- 1 Conductors: Solid (Class 1) or stranded (Class 2) plain annealed copper wire to BS 6360 and IEC 60228.
- 2 Enhanced Insulation: Silicone rubber to BS 7655: Section 1.1, Type EI2.
- 3 Enhanced Binder: Close weave glass tape to BS EN 61067.
- 4 Conductor (earth): Solid or stranded tinned annealed copper to BS 6360.
- 5 Enhanced Electrostatic screen: Aluminium/polyester laminated tape.
- 6 Enhanced Sheath: 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: Passes BS 5839-1:2002 Clause 26.2e Enhanced.\*  
Passes BS 8434-2:2003.  
Passes EN 50200 PH120.  
Passes BS 6387 C, W & Z.
- Flame propagation: Passes IEC 60332-3, IEC 60332-1, BSEN 50265, BSEN 50266.
- Acid gas emission: Passes IEC 60754, BSEN 50267.
- Smoke emission: Passes IEC 61034, BSEN 50268.

Refer to page 7 for technical data.

\* For fire alarm installations, BS 5839-1:2002 now requires performance to BS 8434.

**FIRETUF<sup>®</sup>**  
**OHLS<sup>®</sup> CABLES**  
www.drakauk.com

For further information and detailed data sheets  
please contact us on

01332 345431

# FIRETUF<sup>®</sup> standard

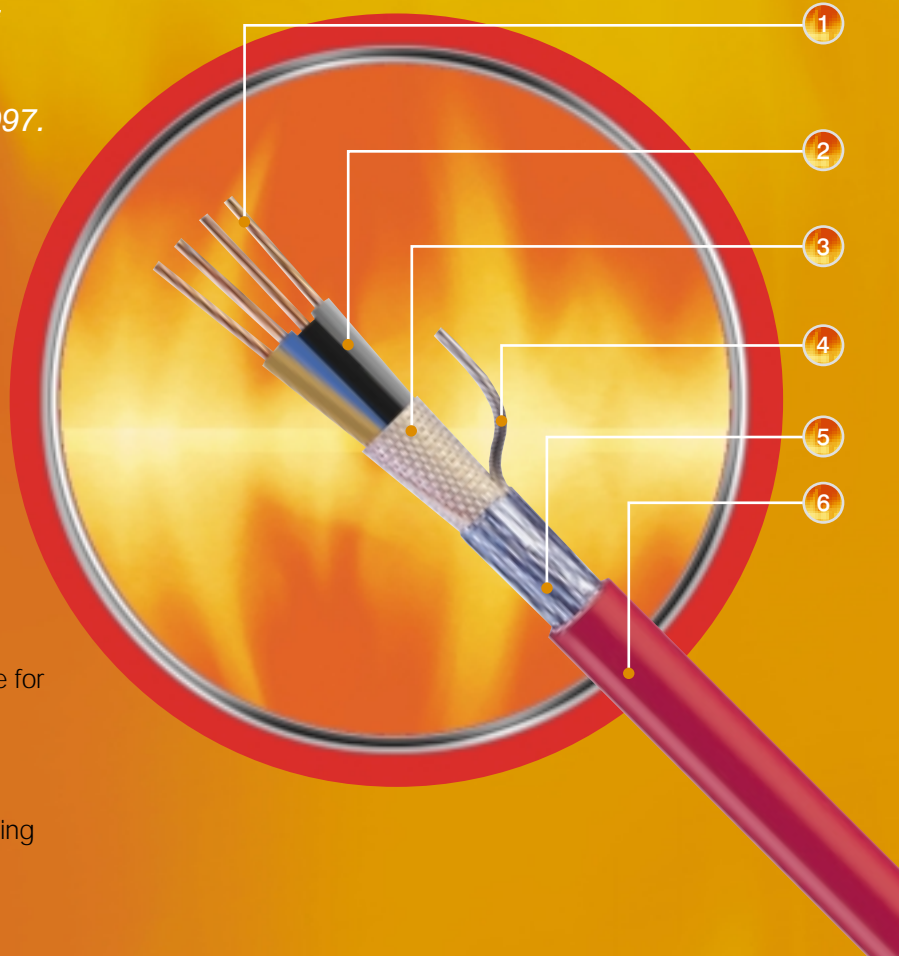
Zero Halogen, Low Smoke (OHLS<sup>®</sup>) cable, maintaining circuit integrity when exposed to fire, meeting the standard category of BS 5839-1:2002.

Manufactured to BS 7629 parts 1 & 2 1997.

Firetuf Standard cables are specifically designed to meet the standard requirements for Fire Detection and Alarm Systems in BS 5839-1:2002 and Codes of Practice for Emergency Lighting in BS 5266 Part 1. Tested and approved by LPCB (Ref 076f/01).

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, spark free cores and 100% cover electrostatic screen, make Firetuf Standard suitable for use in Zone 1 and Zone 2 hazardous areas.

Typical uses include: Analogue addressable alarm systems, public address systems, emergency lighting and voice evacuation systems.



## Construction

- 1 Conductors: Solid (Class 1) or stranded (Class 2) plain annealed copper wire to BS 6360 and IEC 60228.
- 2 Insulation: Silicone rubber to BS 7655: Section 1.1, Type E12.
- 3 Binder: Close weave glass tape to BS EN 61067.
- 4 Conductor (earth): Solid or stranded tinned annealed copper to BS 6360.
- 5 Electrostatic screen: Aluminium/polyester laminated tape.
- 6 Sheath: 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: Passes BS 5839-1:2002 Clause 26.2d Standard.\*  
 Passes BS 8434-1:2003.  
 Passes EN 50200 PH30.  
 Passes BS 6387 C, W & Z.  
 Flame propagation: Passes IEC 60332-3, IEC 60332-1, BSEN 50265, BSEN 50266.  
 Acid gas emission: Passes IEC 60754, BSEN 50267.  
 Smoke emission: Passes IEC 61034, BSEN 50268.

\* For fire alarm installations, BS 5839-1:2002 now requires performance to BS 8434.

Refer to page 7 for technical data.

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

For further information and detailed data sheets  
 please contact us on

01332 345431

www.drakauk.com

# **FIRETUF<sup>®</sup>** **sifer**

*Zero Halogen, Low Smoke (OHLS<sup>®</sup>)  
single core cable having enhanced circuit  
integrity when exposed to fire.*

These cables are designed for surface wiring where there is little risk of mechanical damage, in installations where a fire situation may pose a major hazard and the maintenance of circuit integrity is a requirement.

They are also suitable for installation in metal conduit or trunking where conditions are onerous.



*Data sheet available  
on request*

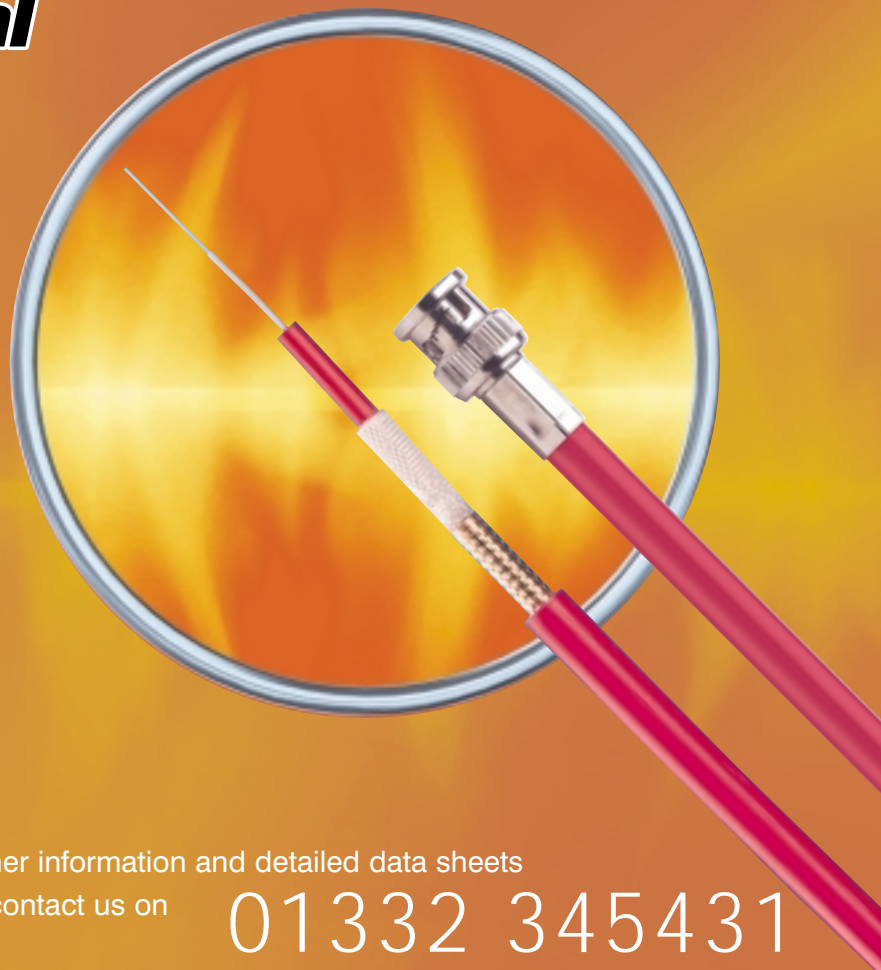


# **FIRETUF<sup>®</sup>** **coaxial**

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

Firetuf Coaxial is purpose designed to maintain the circuit integrity of high frequency safety systems, including closed circuit television and video surveillance with digitised screening capabilities (e.g. smoke detection). Due to the zero halogen, low smoke construction, Firetuf Coaxial is ideal for use in public, commercial and industrial environments.

*Data sheet available on request*



**FIRETUF<sup>®</sup>**  
**OHLS<sup>®</sup> CABLES**  
[www.drakauk.com](http://www.drakauk.com)

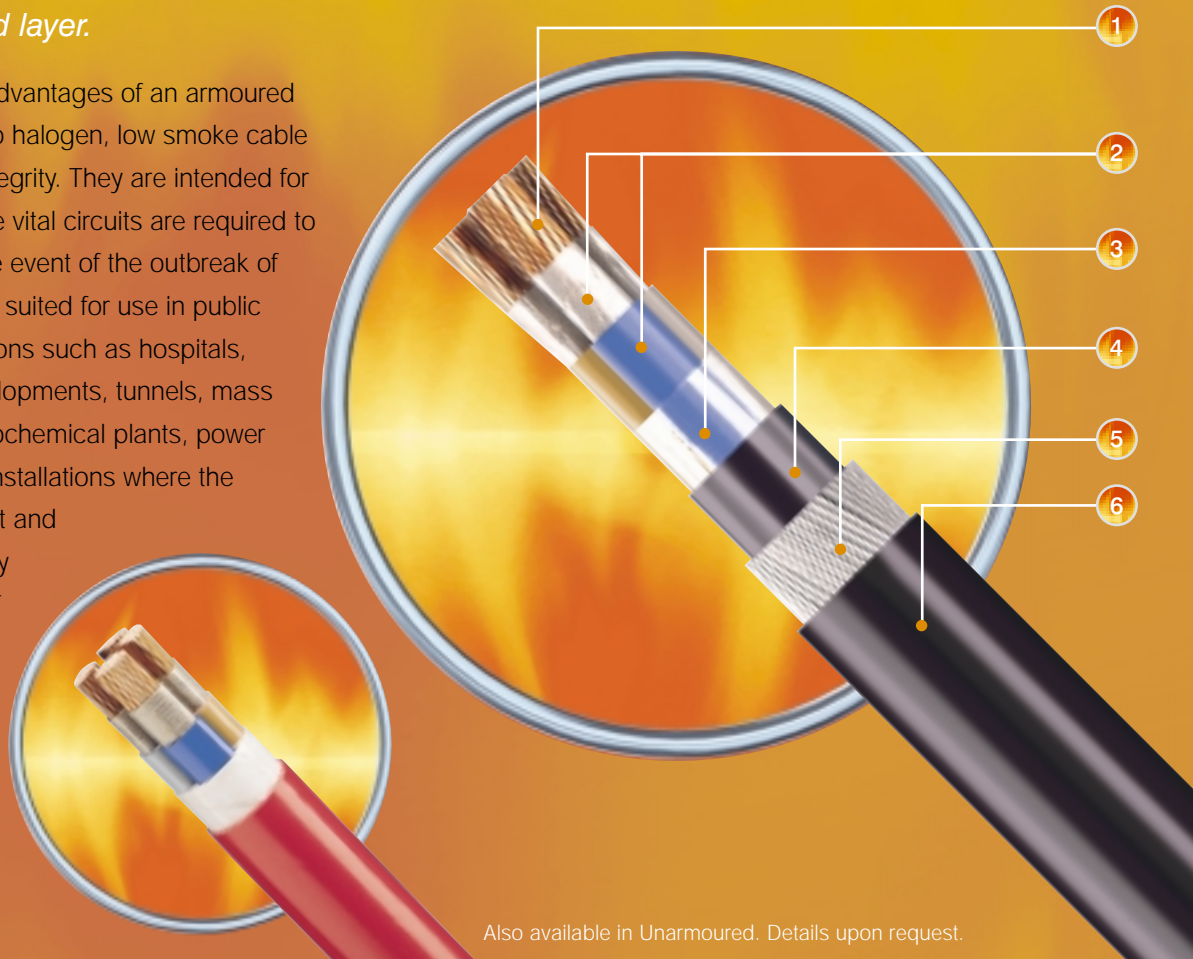
For further information and detailed data sheets  
please contact us on

**01332 345431**

# FIRETUF<sup>®</sup> power

Zero Halogen, Low Smoke (OHLS<sup>®</sup>) cable with stranded copper conductors and a protective armoured layer.

These cables offer the advantages of an armoured 600/1000 Volt rated, zero halogen, low smoke cable with enhanced 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. They are particularly suited for use in public buildings and constructions such as hospitals, theatres, shopping developments, tunnels, mass transit utilities, 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. Firetuf Power is approved by LPCB.



Also available in Unarmoured. Details upon request.

## Construction:

- 1 Conductors: Plain annealed stranded copper to BS 6360. 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>.
- 2 Insulation: Comprises mica-glass fire-resistant tapes, covered by an extruded layer of cross-linked polyethylene.
- 3 Binder: Polyester tape.
- 4 Bedding: An extruded layer of Zero Halogen, Low Smoke (OHLS) compound.
- 5 Armour: Comprises a single layer of galvanised steel wires.
- 6 Sheath: An extruded layer of Zero Halogen, Low Smoke (OHLS) compound.

## Physical Characteristics:

- Voltage rating(Uo/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: At fire temperatures the increase in impedance may require consideration to accommodate motor starting loads and the performance of protective conductors.*

## Standards Achieved:

- Circuit integrity: Passes IEC 60331 - 3 hours at 750°C.  
Passes BS 7846 F2, BS 6387 categories C, W & Z.
- Acid gas emission: Passes IEC 60754 Part 1, EN50267 2-1.
- Flame propagation: Passes IEC 60332-3, EN 50265, EN 50266.
- Smoke emission: Passes IEC 61034, EN 50268.

These cables fully comply with cable design standard BS 7846.

Refer to page 8 for technical data.

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

For further information and detailed data sheets  
please contact us on

01332 345431

www.drakauk.com

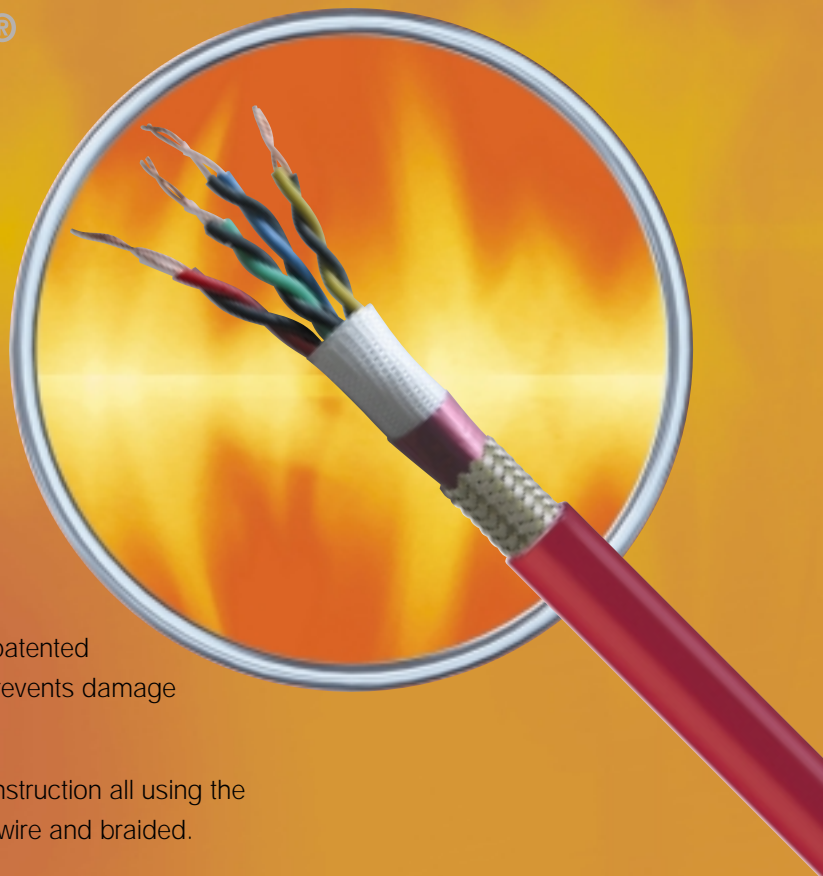
# **FIRETUF**<sup>®</sup> **data**

*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, including the 3-in-1 enhanced (BS 8434-2). A patented design construction of the copper conductor insulation prevents damage from the dynamics of the fire and heat.

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.



#### **Applicable Standards**

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

Fire Propagation Test: UL 1581 VW1; IEC 60332.3.

Cct Integrity tests: IEC 60331; IEC 62012; BS 6387 C,W & Z; BS 8434-2.

#### **Cable Properties**

Min. Installation Bend Radius: 8 x Dia.

Min. Installed Bending Radius: 4 x Dia.

Max. Installation Tension: 100N.

Min. Installed Tension: zero.

Installation Temp. Range: 0 to 50°C.

Installed Operating Temp. Range: -20 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.

# **FIRETUF**<sup>®</sup> **fibre**

## *Firetuf Fibre Fire Survivable Cable*

Construction: 4 to 216 fibres

Conforms to: IEC 60331-25 and IEC 60332-3C.

Applications: Railway Tunnels, Subways, Metro Lines, Indoor/Outdoor use, Ducts.

Meets requirements of: IEC 60794-2, IEC 60794-3, ISO/IEC 11801 2nd Edition, EN 50173:2002.

Key Features: AFR Technology, FireRes OHLS, Robustness, Rodent Protection.

## *Armoured Firetuf Fibre Fire Survivable Cable*

Construction: 6 to 96 fibres.  
OHLS technology – corrugated steel tape armoured.  
2.3mm loose tube containing 6, 8 or 12 fibres each.

Conforms to: IEC 60331-25 and IEC 60332-3.

Applications: Tunnels, difficult installations.



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

[www.drakauk.com](http://www.drakauk.com)

For further information and detailed data sheets  
please contact us on

01332 345431

# FIRETUF PLUS<sup>®</sup> enhanced

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	Capacitance core-core PF/m	Capacitance core-screen PF/m
FTPLUS2EH1.5RD	2	1	1.5	1.5	8.6	130	102	180
FTPLUS3EH1.5RD	3	1	1.5	1.5	9.0	135	102	180
FTPLUS4EH1.5RD	4	1	1.5	1.5	10.1	170	102	180
FTPLUS2EH2.5RD	2	1	2.5	2.5	9.9	175	115	205
FTPLUS3EH2.5RD	3	1	2.5	2.5	10.6	200	115	205
FTPLUS4EH2.5RD	4	1	2.5	2.5	11.9	250	115	205
FTPLUS2EH4RD	2	2	4	4	11.7	250	125	230
FTPLUS3EH4RD	3	2	4	4	12.8	300	125	230
FTPLUS4EH4RD	4	2	4	4	14.4	370	125	230

Further conductor sizes available, details upon request.

# FIRETUF<sup>®</sup> standard

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	Capacitance core-core PF/m	Capacitance core-screen PF/m
FTZ2EH1.0	2	1	1.0	1.0	7.0	83	100	175
FTZ3EH1.0	3	1	1.0	1.0	7.3	95	100	175
FTZ4EH1.0	4	1	1.0	1.0	8.2	115	100	175
FTZ7EH1.0	7	1	1.0	1.0	10.5	175	100	175
FTZ12EH1.0	12	1	1.0	1.0	13.5	275	100	175
FTZ19EH1.0	19	1	1.0	1.0	15.7	405	100	175
FTZ2EH1.5	2	1	1.5	1.5	7.9	110	102	180
FTZ3EH1.5	3	1	1.5	1.5	8.3	128	102	180
FTZ4EH1.5	4	1	1.5	1.5	9.5	160	102	180
FTZ7EH1.5	7	1	1.5	1.5	12.2	250	102	180
FTZ12EH1.5	12	1	1.5	1.5	15.7	390	102	180
FTZ19EH1.5	19	1	1.5	1.5	18.2	560	102	180
FTZ2EH2.5	2	1	2.5	2.5	9.3	160	115	205
FTZ3EH2.5	3	1	2.5	2.5	9.9	190	115	205
FTZ4EH2.5	4	1	2.5	2.5	11.3	235	115	205
FTZ7EH2.5	7	1	2.5	2.5	14.6	375	115	205
FTZ12EH2.5	12	1	2.5	2.5	19.5	610	115	205
FTZ19EH2.5	19	1	2.5	2.5	22.8	900	115	205
FTZ2EH4.0	2	2	4.0	4.0	11.1	243	125	230
FTZ3EH4.0	3	2	4.0	4.0	12.2	297	125	230
FTZ4EH4.0	4	2	4.0	4.0	13.8	365	125	230

Further conductor sizes available, details upon request.



## Clip & Gland Selection Chart

Firetuf cable ref.	Firetufplus cable ref.	No. of cores	Core area mm <sup>2</sup>	Fire resistant P-Clip	A2 brass gland ref.**	Nylon OHLS <sup>®</sup> gland ref.	LUL approved glands
FTZ2EH1.0		2	1.0	WP34	M20S	251/93	251-R [LSF]
FTZ2EH1.5	FTPLUS2EH1.5	2	1.5	WP34 (WP34/2/3*)	M20S	251/93	251-R [LSF]
FTZ2EH2.5	FTPLUS2EH2.5	2	2.5	WP40 (WP38/2/3*)	M20S	251/93	251-R [LSF]
FTZ3EH1.0		3	1.0	WP34	M20S	251/93	251-R [LSF]
FTZ3EH1.5	FTPLUS3EH1.5	3	1.5	WP37/3*	M20S	251/93	251-R [LSF]
FTZ3EH2.5	FTPLUS3EH2.5	3	2.5	WP43	M20S	251/93 / 252/93	251-R [LSF]
FTZ4EH1.0		4	1.0	WP37/3*	M20S	251/93	251-R [LSF]
FTZ4EH1.5	FTPLUS4EH1.5	4	1.5	WP43	M20	251/93	251-R [LSF]
FTZ4EH2.5	FTPLUS4EH2.5	4	2.5	WP47	M20	251/93 / 252/93	252-R [LSF]

Clips and nylon glands are white, if red are required add the letter "R" after the clip or gland coding.

\* Clips for 2 or 3 cables. \*\* For 'enhanced' performance with Firetufplus A2 brass glands should be used for through joints.

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

www.drakauk.com

For further information and detailed data sheets  
please contact us on

01332 345431

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



Firetufplus  
LPCB Ref.No 076g/01



Firetuf Standard  
LPCB Ref.No 076f/01

## 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 AC@90°C Ω/km	Impedance AC@90°C Ω/km	Star capacitance μF/km	Gross cross-sect. area of arm. mm <sup>2</sup>	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	15	10.7
*2.5	0.7	0.9	10.0	14.6	500	7.410	9.448	0.101	9.448	0.25	17	8.8
*4	0.7	0.9	11.1	15.7	580	4.610	5.878	0.099	5.878	0.27	19	7.9
*6	0.7	0.9	12.3	16.9	660	3.080	3.927	0.094	3.928	0.30	22	7.0
*10	0.7	0.9	14.2	19.0	830	1.830	2.333	0.093	2.335	0.32	26	6.0
*16	0.7	1.25	15.9	21.4	1000	1.150	1.466	0.088	1.469	0.35	41	3.8
25	0.9	1.25	15.7	21.4	1100	0.727	0.927	0.082	0.930	0.38	42	3.7
35	0.9	1.6	17.7	24.3	1550	0.524	0.668	0.077	0.673	0.42	62	2.5
50	1.0	1.6	20.0	26.8	1850	0.387	0.494	0.076	0.500	0.45	68	2.3
70	1.1	1.6	23.0	30.0	2450	0.268	0.342	0.075	0.349	0.49	80	2.0
95	1.1	2.0	26.1	34.1	3350	0.193	0.247	0.074	0.258	0.55	113	1.4
120	1.2	2.0	28.9	37.1	3900	0.153	0.196	0.072	0.209	0.57	125	1.3
150	1.4	2.0	31.9	40.3	4650	0.124	0.160	0.073	0.176	0.57	138	1.2
185	1.6	2.5	35.9	45.7	5950	0.0991	0.128	0.073	0.148	0.55	191	0.82
240	1.7	2.5	40.0	50.0	7350	0.0754	0.099	0.072	0.122	0.60	215	0.73
300	1.8	2.5	44.3	54.5	8700	0.0601	0.080	0.072	0.107	0.62	235	0.67
400	2.0	2.5	49.4	60.0	10750	0.0470	0.064	0.071	0.096	0.64	265	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 AC@90°C Ω/km	Impedance AC@90°C Ω/km	Star capacitance μF/km	Gross cross-sect. area of arm. mm <sup>2</sup>	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	16	10.2
*2.5	0.7	0.9	10.6	15.2	540	7.410	9.448	0.101	9.448	0.25	19	8.2
*4	0.7	0.9	11.8	16.4	640	4.610	5.878	0.099	5.878	0.27	21	7.5
*6	0.7	0.9	13.1	17.7	740	3.080	3.927	0.094	3.925	0.30	23	6.6
*10	0.7	1.25	15.1	20.6	1080	1.830	2.333	0.093	2.335	0.32	39	4.0
*16	0.7	1.25	17.0	22.7	1310	1.150	1.466	0.088	1.469	0.35	44	3.6
25**	0.9	1.6	20.0	26.6	1800	0.727	0.927	0.082	0.930	0.37	62	2.5
35**	0.9	1.6	22.3	29.1	2200	0.524	0.668	0.077	0.673	0.42	70	2.3
50	1.0	1.6	22.8	29.6	2450	0.387	0.494	0.076	0.500	0.45	78	2.0
70	1.1	1.6	26.3	33.3	3200	0.268	0.342	0.075	0.349	0.49	90	1.8
95	1.1	2.0	29.9	38.1	4450	0.193	0.247	0.074	0.258	0.55	128	1.3
120	1.2	2.0	33.1	41.5	5300	0.153	0.196	0.072	0.209	0.57	141	1.2
150	1.4	2.5	37.0	46.6	6700	0.124	0.160	0.073	0.176	0.55	201	0.78
185	1.6	2.5	41.1	50.9	8050	0.0991	0.128	0.073	0.148	0.55	220	0.71
240	1.7	2.5	46.0	56.2	9950	0.0754	0.099	0.072	0.122	0.60	250	0.63
300	1.8	2.5	50.9	61.3	12050	0.0601	0.080	0.072	0.107	0.62	269	0.58
400	2.0	2.5	56.9	67.7	14800	0.0470	0.064	0.071	0.096	0.64	304	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 AC@90°C Ω/km	Impedance AC@90°C Ω/km	Star capacitance μF/km	Gross cross-sect. area of arm. mm <sup>2</sup>	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	17	9.5
*2.5	0.7	0.9	11.6	16.2	620	7.410	9.448	0.101	9.448	0.25	20	7.7
*4	0.7	0.9	13.0	17.6	730	4.610	5.878	0.099	5.878	0.27	23	6.8
*6	0.7	1.25	14.4	19.9	990	3.080	3.927	0.094	3.925	0.30	36	4.3
*10	0.7	1.25	16.8	22.3	1260	1.830	2.333	0.093	2.335	0.32	43	3.7
*16	0.7	1.25	18.9	24.6	1640	1.150	1.466	0.088	1.469	0.35	49	3.2
25**	0.9	1.6	22.2	28.8	2150	0.727	0.927	0.082	0.930	0.37	70	2.3
35**	0.9	1.6	24.8	31.6	2650	0.524	0.668	0.077	0.673	0.42	80	2.0
50	1.0	1.6	26.2	33.2	3100	0.387	0.494	0.076	0.500	0.45	90	1.8
70	1.1	2.0	30.7	38.9	4400	0.268	0.342	0.075	0.349	0.48	131	1.2
95	1.1	2.0	34.5	42.9	5650	0.193	0.247	0.074	0.258	0.55	147	1.1
120	1.2	2.5	38.7	48.3	7250	0.153	0.196	0.072	0.209	0.55	206	0.76
150	1.4	2.5	42.8	52.6	8550	0.124	0.160	0.073	0.176	0.55	230	0.68
185	1.6	2.5	47.6	57.8	10300	0.0991	0.128	0.073	0.148	0.55	255	0.61
240	1.7	2.5	53.8	64.2	12900	0.0754	0.099	0.072	0.122	0.58	289	0.54
300	1.8	2.5	59.2	70.0	15550	0.0601	0.080	0.072	0.107	0.62	319	0.49
400	2.0	3.15	66.6	79.3	20250	0.0470	0.064	0.071	0.096	0.63	452	0.35

Shaped conductors unless otherwise stated. \* Circular, non-compacted, conductors. \*\* Compacted circular conductors. Details of unarmoured range available upon request.



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



Firetuf Power  
LPCB Ref.No 361b/04

# Features & benefits



## PLIABILITY

Ease of bending and reduced manual effort when manoeuvring cable is the key feature of Firetufplus Enhanced and Firetuf Standard, enabling the cable to be easily installed.



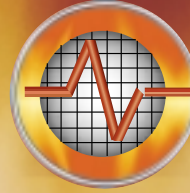
## MINIMUM NUMBER OF COMPONENTS

All that's needed to correctly terminate Firetufplus and Firetuf Standard is a single gland, with no need for additional sealants, pots or shrouds.



## NO SPECIAL COSTLY TOOLS

Firetufplus and Firetuf Standard require no specialised and expensive tools, all you need are standard electrician's tools.



## SCREENING ~ EMC

With its 100% coverage and metal screen in contact with a full size earth conductor, Firetufplus and Firetuf Standard are suitable for use in areas where Electro-Magnetic Interference (EMI) is a threat.



## SPEED OF INSTALLATION

Firetufplus and Firetuf Standard are high quality fire safety cables with unique performance characteristics. This user friendly pliable cable allows reduced installation time and fewer costly man hours.



## LONG RUN LENGTHS REDUCES WEAK LINKS

We are able to offer considerably longer lengths compared to mineral insulated cable, this leads to fewer joints and hence fewer points of weakness in the overall system.



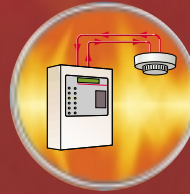
## DATA TRANSMISSION

To improve signal clarity and transmission rates, Firetufplus and Firetuf Standard have a twisted core construction for improved performance.



## SUITABLE FOR BOTH ZONE 1 AND ZONE 2

Firetufplus, Firetuf Standard and armoured cables when installed with the appropriate terminations are suitable for Zone 1 & 2 applications.



## SUITABLE FOR ANALOGUE ADDRESSABLE ALARMS

Firetufplus and Firetuf Standard are ideal for use in modern analogue addressable alarm systems and is independently witnessed by Lloyds Register for suitability.



## DOES NOT PROPAGATE FLAME

State of the art Zero Halogen, Low Smoke material technology helps minimise the production of flaming debris and therefore reduces the likelihood of propagating a fire.



## BESPOKE CONSTRUCTION CAPABILITIES

The entire range of Firetuf cables can be manufactured to suit a variety of system and installation requirements, including multipair, multicore, armoured and stranded versions. The sheath colour can also be customised.



## ZERO HALOGEN, LOW SMOKE (OHLs®) SHEATH

All Firetuf cables are manufactured using a Zero Halogen, Low Smoke compound. This ensures that both toxic and acidic gases and smoke generation are minimised, making the cables ideal for public, commercial and industrial environments.

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.



Mineral joints fail in a relatively short time when exposed to fire.



Firetuf joints continue to provide circuit integrity up to the full appropriate BS 5839 rating.



BS EN ISO 9001 Cert. No. CS1 - 094/001 Derby  
BS EN ISO 9001 Cert. No. CS2 - 094/004 Leeds  
BS EN ISO 9001 Cert. No. CS1 - 094 Washington

250504F50K

## Draka UK Ltd, Industrial Cables

Alfreton Road, Derby, DE21 4AE, United Kingdom  
Tel: +44 (0)1332 345431 Fax: +44 (0)1332 331237  
email: industrial@drakauk.com

[www.drakauk.com](http://www.drakauk.com)



**Draka UK**  
Industrial Cables