TFKable

Connecting globally

FLAME-X 950

TELE-FONIKA KABLE SA (DMCC Branch)

is the Regional Middle East Sales Office of Tele-Fonika Kable S.A. from Poland, 4-th largest manufacturer of electric cables and wires in Europe who supplies its products to GCC states (UAE, Saudi Arabia, Kuwait, Qatar, Oman and Bahrain) and other countries in Middle and Far East Region.

TELE-FONIKA Kable SA (DMCC Branch) was established in June 2015 to support the sales and marketing activity of TF Kable as well as to ensure prompt and professional service to our customers, provided by our specialized and experienced team.

We are located in Dubai's central business location Jumeirah Lake Towers (JLT) on Dubai-Abu Dhabi highway at main Almas Tower (Cluster A), which is also an operating place of DMCC Free-zone & Licensing authority.

Our strengths

We are constantly developing our business in GCC States, rest of Middle East and India with specialized products dedicated for Oil&Gas, Mining, Marine Industry, Railways / underground Metros and Energy sector. We are also closely cooperating with authorized distributors who keep the stock of our fast moving items, such as Flexible HO7RN-F, Fire Resistant cables (Flame-X 950) or shipboard cables to react immediately for market needs.

Factory Approvals

Our Flame-X 950 fire resistant cables are designed for life saving, fire fighting and detection systems, so it is critically important these cables are designed and manufactured in internationally approved laboratories. You can trust TELE-FONIKA Kable, as our factory management system is approved to IS09001 for Quality, ISO14001 for Environmental and OHSAS for Health & Safety.

Certificates

For your safety and peace of mind, our Flame-X 950 fire resistant cables have been tested, verified and approved by the independent third party laboratories of BASEC and LPCB (UK) and also approved by Civil Defence Authorities of GCC countries.

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Experience and competence of the TELE-FONIKA Kable Group

Leading producer of cables and cable systems

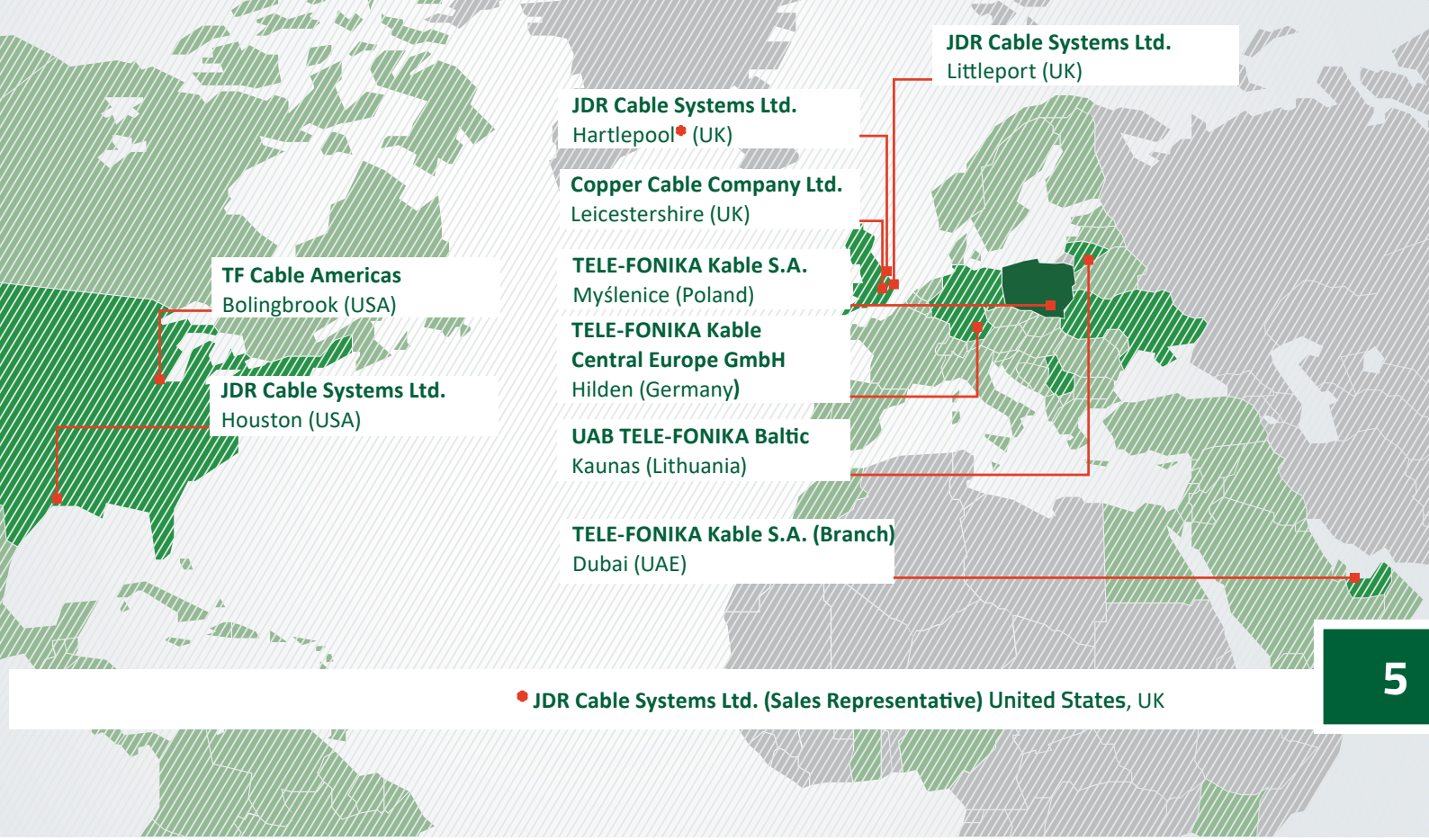
The TELE-FONIKA Kable Group has been present on the domestic and international cable industry market for more than 25 years. A stable development strategy based on full diversification of outlets enabled the strenghtening of the position of our company among world's leading cable companies with significant development potential.

Services and products provided by TFKable Group have numerous applications in the most important industry sectors – they include more than 25,000 proven standard constructions. Furthermore, they include specialist assortment tailored to the individual needs of business partners.

Additionally, our production facilities (in Poland, Serbia and Ukraine), the Bukowno-Poland recycling plant and commercial companies (responsible for the geo-regional distribution of products) demonstrate a significant development potential. This is also true in the case of our modern fire test laboratory in Krakow-Wielicka plant, which performs several hundred flammability pre-tests annually, and a laboratory of high and extra high voltages in Bydgoszcz.

As a result of implementation of our growth strategy, in August 2017 TFK.Group acquired JDR Cable Systems Ltd, the leading manufacturer of submarine umbilicals and power cables to the global offshore energy industry.

In the world's harshest environments and ever-increasing water depths, JDR's world-leading products and services bring power and control to offshore oil, gas and renewable energy systems.



JDR Cable Systems Ltd. (Sales Representative) United States, UK

Kraków-Wielicka plant – it produces cables and wires with voltage ranging from 1kV to 30kV, including rubber insulation, used in the extractive industry and wind farms; halogen-free cables and conductors (installed inside buildings); and signaling and control cables for special applications

Kraków-Bieżanów plant – production of overhead lines from alloyed aluminum, silver plated copperconductors for railway traction networks, made on robotic technology lines

Bydgoszcz plant – the largest production center for medium, high and extra high voltage cables in Europe

Myślenice plant – production of copper and fiber optic telecommunication cables, computer cables and car cables

Zajecar plant (Serbia) – production of low and medium voltage cables, signaling and control cables, telecommunication cables, as well as halogen-free cables and wires

Chernihiv plant (Ukraine) – production of non- flammable (N) HXH and N2XH cables, self-supporting AsXSn overhead cables, aluminum and copper wires up to 1kV, including assembly wires

Bukowno-Poland plant (recycling of cable waste) – it has the recycling capacity of approx. 10 thousand tons of cable waste per year. This allows for the recovery of fractions from individual materials with purity of over 99.5%

Fire Test Laboratory in the Krakow-Wielicka production plant – it is equipped with apparatus that enables to conduct research ranging from basic tests of flame spreading on individual samples to flame spreading tests on bundles. Furthermore, it is equipped for testing density of emitted fumes and emission of corrosive gases

Laboratory of High and Extreme Voltages in the production plant in Bydgoszcz – equipped with 4 Faraday cages (three for routine testing and one for cables and cable systems testing) along with a stroke generator and its own research field for qualification tests with 500kV testing systems and 5000A heating transformer sets

JDR Cable Systems – As a result of acquiring JDR Cable Systems Limited, TFKable has expanded its assets with two UK production Facilities. JDR manufactures submarine power cables as well as subsea umbilical cables consisting of components for power distribution, data transfer, monitoring and remote control, of offshore facilities. Additionally, our sales portfolio has been extended by offshore installation and maintenance services, located in JDR's service centres in the United States, UK, ensuring constant support for our business partners.

Supporting work safety system & improving quality in production processes.

THINK™ QUALITY THINK™ SAFETY

BS 6387, IEC 60331-21
Cert No. 814c

FLAME-X 950 SERIES 1

(FLAME-X 950 Single) **450/750V, 600/1000V**

Based on EN 50525-3-41, BS 8592:2016, BS 6387

Single core non-sheathed fire resistant cable having low emission of smoke and corrosive gases when affected by fire

CONSTRUCTION

Conductors:	Circular or compacted circular, stranded, annealed copper conductor, class 2 acc. to BS EN 60228
Primary insulation:	Fire resistant mica tape with a glass cloth
Insulation:	Special thermosetting LSOH compound of EI5 type acc. to BS EN 50363-5

CHARACTERISTICS

Core identification:	Green/yellow, blue, black, brown, grey, red, yellow. Other colours are available on special request.
Maximum conductor operating temperature:	+90°C
Lowest installation temperature:	-5°C
Maximum short-circuit conductor temperature:	+250°C
Minimum bending radius:	6 × D D – overall diameter of the cable

FLAME-X 950 SERIES 1

(Flame-X 950 Single) **450/750 V, 600/1000V**

Fire performance

Fire resistance:	IEC 60331-21 BS EN 60331-3 BS 6387[1)]	Circuit integrity - tested 90 min. at 950°C Circuit integrity – tested 120min. at 830°C Category **C** – resistance to fire: 3 h at 950°C Category **W** – resistance to fire with water: 15 min at 650°C plus 15 min with water spray Category **Z** – resistance to fire with mechanical shock: 15 min at 950°C
Flame propagation:	BS EN 60332-1-2	
Smoke density:	BS EN 61034-2	
Corrosive and acid gases emission:	BS EN 60754-1[2)] BS EN 60754-2[2)]	HCl content < 0.5% pH ≥ 4.3 & conductivity ≤ 10 µSmm^{-1}

[1)] Category C, W, Z for cables up to and including 95 mm2. Category C for cables above and including 120 mm^2.
[2)] BS EN 60754-1 & BS EN 60754-2 standards replace BS EN 50267-2-1

Applications

For use in fixed installations, where cable is protected by conduit or trunking.
Fire resistant cables intended to provide circuit integrity in case of fire.

Standard length cable packing:	100 m in coils or on spools, or 500 m on drums. Other forms of packing and delivery are available on request.

Approvals

LPCB for fire tests	1,5 mm^2 to 500 mm^2 single-core

FLAME-X 950 SERIES 1

(Flame-X 950 Single) **450/750 V, 600/1000V**

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Technical and Electrical Characteristics

Nominal cross-sectional area of conductor	Radial thickness of insulation	Approximate overall diameter	Approximate net weight	Maximum resistance of conductor at temperature 20°C
mm²	**mm**	**mm**	**mm**	**Ω/km**
1.5	0.7	3.90	25.3	12.1
2.5	0.8	4.60	38	7.41
4	0.8	5.10	53	4.61
6	0.8	5.40	71	3.08
10	1.0	6.70	116	1.83
16	1.0	7.80	173	1.15
25	1.2	9.60	270	0.727
35	1.2	10.60	361	0.524
50	1.4	12.30	490	0.387
70	1.4	13.70	683	0.268
95	1.6	16.10	942	0.193
120	1.6	17.50	1171	0.153
150	1.8	19.50	1445	0.124
185	2.0	21.40	1800	0.0991
240	2.2	24.3	2338	0.0754
300*	2.4	26.50	2918	0.0601
400*	2.6	29.60	3766	0.0470
500*	2.8	33.20	4810	0.0366

FLAME-X 950 SERIES 1

(Flame-X 950 Single) **450/750 V, 600/1000V**

Current Ratings and Voltage Drop

Nominal cross-sectional area of conductor	Short circuit current ratings (1 sec)	Current Rating* Two cables, single phase A.C. or D.C.	Current Rating* Three or four cables, three phase A.C.	Voltage Drop** Two cables D.C.	Voltage Drop** Two cables, single phase A.C.	Voltage Drop** Three or four cables, three phase A.C.
mm²	**Amps**	**Amps**	**Amps**	**mV/A/m**	**mV/A/m**	**mV/A/m**
1.5	210	22	19	31	31	27
2.5	350	30	26	19	19	16
4	570	40	35	12	12	10
6	850	51	45	7.9	7.9	6.8
10	1400	71	63	4.7	4.7	4.0
16	2200	95	85	2.9	2.9	2.5
25	3600	126	111	1.85	1.90	1.65
35	5000	156	138	1.35	1.35	1.15
50	6800	189	168	0.99	1.05	0.90
70	9800	240	214	0.68	0.75	0.65
95	13600	290	259	0.49	0.58	0.50
120	17200	336	299	0.39	0.48	0.42
150	21100	375	328	0.32	0.43	0.37
185	26500	426	370	0.25	0.37	0.32
240	34900	500	433	0.190	0.33	0.29
300	43700	573	493	0.155	0.31	0.27
400	55900	683	584	0.120	0.29	0.25
500	70600	783	666	0.093	0.28	0.24

* Installation reference method 3 (enclosed in conduit on a wall or in trunking etc.,) as per BS 7671, Appendix 4, Conductor operating temperature 90°C, Ambient temperature 30°C

** Installation reference methods 3 and 4 (enclosed in conduit, etc., in or on a wall) as per BS 7671, Appendix 4, Conductor operating temperature 90°C, Ambient temperature 30°C

FLAME-X 950 SERIES 1

(Flame-X 950 Single) **450/750V, 600/1000V**

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Correction Factors for Ambient Temperature

Ambient Temperature, °C	25	30	35	40	45	50	55	60	65	70	75	80	85
Correction Factor	1.02	1.00	0.96	0.91	0.87	0.82	0.76	0.71	0.65	0.58	0.50	0.41	0.29

Correction Factors for Groups

Number of Circuits	2	3	4	5	6	7	8	9	10	12	14	16	18
Correction Factor	0.80	0.70	0.65	0.60	0.57	0.54	0.52	0.50	0.48	0.45	0.43	0.41	0.39

BS 7846
Cert No. 1354e

FLAME-X 950 SERIES 2

(Flame-X 950 Standard) **300/500V**

BS 7629-1, BS 6387, BS 5839-1

Fire resistant screened cables having low emission of smoke and corrosive gases when affected by fire

CONSTRUCTION

Conductors:	Plain annealed copper solid class 1 (for 1 - 2.5 mm^2) and stranded class 2 (for 4 mm^2) acc. to BS EN 60228
Uninsulated circuit protective conductor:	Tinned annealed copper of the same nominal cross-sectional area and of the same class as the insulated conductors
Drain wire:	Tinned annealed copper wires class 2 acc. to BS EN 60228 (for cables with 7, 12, 19 – cores)
Insulation:	Special cross-linked heat resistant compound type EI2 acc. to BS EN 50363-1
Optional binder:	Non hygroscopic halogen free tape
Screen:	Aluminium/polyester laminated tape and uninsulated circuit protective conductor or drain wire
Outer sheath:	Thermoplastic zero halogen low smoke compound type LTS 3 acc. to BS 7655-6.1
Colour of sheath:	Red or white (other colours are permissible when agreed with the manufacturer)
Core identification:	2 core + ECC: brown, blue 3 core + ECC: brown, black, grey 4 core + ECC: blue, brown, black, grey 7, 12, 19 – core + Drain wire: numbering or for identification by colour: in each layer: brown (starting core), black (reference core)

CHARACTERISTICS

Maximum conductor operating temperature:	+70°C
Minimum operating temperature (for fixed application) after installation without movement:	-40°C
Lowest installation temperature:	0°C
Maximum short-circuit conductor temperature:	+250°C
Minimum bending radius:	6 × D; (D - overall cable diameter)

FLAME-X 950 SERIES 2

(Flame-X 950 Standard) **300/500V**

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Fire performance

Resistance to fire:	BS 6387 Category **C** – resistance to fire: 3 h at 950°C (IEC 60331) Category **W** – resistance to fire with water: 15 min at 650°C plus 15 min with water spray Category **Z** – resistance to fire with mechanical shock: 15 min at 950°C BS EN 50200 Class PH120 (resistance to fire, with mechanical shock: 120min) BS 5839-1:2002 Clause 26.2d
Flame propagation:	BS EN 60332-1-2, BS EN 60332-3-24
Smoke density:	BS EN 61034-2
Gases evolved during combustion:	BS EN 60754-1 HCl content < 0.5% BS EN 60754-2 pH ≥ 4.3 & conductivity ≤ 10 μSmm^{-1}

Applications

Installations emergency lighting and evacuation systems, fire and smoke detection systems, air-conditioning and alarm systems, automatic elevator doors, computer control rooms, offshore and marine emergency systems, emergency evacuation communicators.

Standard length cable packing:	500 or 1,000 m on drums. Other forms of packing and delivery are available on request.

Approvals

LPCB	1.0 mm^2 – 2-core, 1.5, 2.5, 4 mm^2 – 2-core, 3-core, 4-core, 1.5, 2.5 mm^2 – 7-core, 12-core, 1.5 mm^2 – 19-core
BASEC	1.0 mm^2 – 2-core, 1.5, 2.5, 4 mm^2 – 2-core, 3-core, 4-core, 1.5, 2.5 mm^2 – 7-core, 12-core, 1.5 mm^2 – 19-core

FLAME-X 950 SERIES 2

(Flame-X 950 Standard) **300/500V**

Technical and Electrical Characteristics

Number and cross-sectional area of conductor	Conductor class	Nominal cross-sectional area of protective conductor ECC	Approximate overall diameter	Approximate net weight of cables	Maximum conductor resistance at temperature 20°C	Maximum ECC conductor resistance at 20°C
n × mm²		**mm²**	**mm**	**kg/km**	**Ω/km**	**Ω/km**
2 × 1 RE + ECC	1	1	6.9	65	18.1	18.2
2 × 1.5 RE + ECC	1	1.5	7.8	86	12.1	12.2
2 × 1.5 RM + ECC*	2	1.5	8.2	91	12.1	12.2
2 × 2.5 RE + ECC	1	2.5	9.2	126	7.41	7.56
2 × 2.5 RM + ECC*	2	2.5	9.7	134	7.41	7.56
2 × 4 RM + ECC	2	4	10.9	187	4.61	4.70
2 × 6 RM + ECC*	2	6	12.0	251	3.08	3.11
3 × 1 RE + ECC**	1	1	7.3	81	18.1	18.2
3 × 1.5 RE + ECC	1	1.5	8.3	108	12.1	12.2
3 × 2.5 RE + ECC	1	2.5	9.7	160	7.41	7.56
3 × 4 RM + ECC	2	4	11.6	239	4.61	4.70
4 × 1 RE + ECC**	1	1	8.2	102	18.1	18.2
4 × 1.5 RE + ECC	1	1.5	9.5	138	12.1	12.2
4 × 1.5 RM + ECC*	1	1.5	10.2	147	12.1	12.2
4 × 2.5 RE + ECC	1	2.5	11.5	205	7.41	7.56
4 × 4 RM + ECC	2	4	14.6	310	4.61	4.70

* based on norm. without certificate ** without standards

FLAME-X 950 SERIES 2

(Flame-X 950 Standard) **300/500V**

Technical and Electrical Characteristics

Number and cross-sectional area of conductor	Conductor class	Nominal cross-sectional area of drain wire	Approximate overall diameter	Approximate net weight of cables	Maximum conductor resistance at 20°C	Maximum drain wire resistance at 20°C
n × mm²		**mm²**	**mm**	**kg/km**	**Ω/km**	**Ω/km**
7 × 1 RE**	1	0.5	10.4	150	18.1	36.7
7 × 1.5 RE	1	0.5	12.0	207	12.1	36.7
7 × 2.5 RE	1	0.5	13.9	300	7.41	36.7
12 × 1 RE**	1	0.5	13.6	247	18.1	36.7
12 × 1.5 RE	1	0.5	15.5	333	12.1	36.7
12 × 2.5 RE	1	0.5	18.3	496	7.41	36.7
19 × 1 RE*	1	0.5	15.7	356	18.1	36.7
19 × 1.5 RE	1	0.5	18.1	496	12.1	36.7

* based on norm. without certificate ** without standards

Current ratings and voltage drop

Ambient air temperature: 30°C. Conductor operating temperature: 70°C.
Installation as specified in Appendix 4 of BS 7671 IEE Wiring Regulations

FLAME-X 950 SERIES 2

(Flame-X 950 Standard) **300/500V**

Reference Method 1

(clipped direct)

Nominal area of conductor	1 two core cable* single phase A.C. or D.C.		1 three-core or 1 four-core cable*. three-phase A.C.	
	Current rating	Volts drop per ampere par metre	Current rating	Volts drop per ampere par metre
mm²	**A**	**mV/m**	**A**	**mV/m**
1.0	15	44	13.5	38
1.5	19.5	29	17.5	25
2.5	27	18	24	15
4.0	36	11	32	9.5
6.0	46	7.3	41	6.4

Reference Method 3

(enclosed in conduit on a wall or ceiling, or in trunking)

Nominal area of conductor	1 two core cable* single phase A.C. or D.C.		1 three-core or 1 four-core cable*. three-phase A.C.	
	Current rating	Volts drop per ampere par metre	Current rating	Volts drop per ampere par metre
mm²	**A**	**mV/m**	**A**	**mV/m**
1.0	13	44	11.5	38
1.5	16.5	29	15	25
2.5	23	18	20	15
4.0	30	11	27	9.5
6.0	38	7.3	34	6.4

* with protective conductor

Rating factors for ambient temperature

Ambient temperature, °C	25	30	35	40	45	50
Rating factor	1.03	1.00	0.94	0.87	0.79	0.71

BS 7846
Cert No. 1354f

FLAME-X 950 SERIES 2E

(Flame-X 950 Enhanced) **300/500V**

BS 7629-1, BS 6387, BS 5839-1

"Enhanced" grade fire resistant electric cables having low emission of smoke and corrosive gases when affected by fire

CONSTRUCTION

Conductors:	Plain annealed copper solid class 1 (for 1 - 2.5 mm^2) and stranded class 2 (for 4 mm^2) acc. to BS EN 60228 and special request
Primary insulation:	Fire resistant mica tape with a glass cloth
Insulation:	Special cross-linked heat resistant compound type EI2 acc. to BS EN 50363-1
Screen:	Helically applied aluminium / polyester tape and uninsulated circuit protective conductor
Uninsulated circuit protective conductor:	Tinned annealed copper conductor of the same nominal cross-sectional area and of the same class as the insulated conductors
Outer sheath:	Thermoplastic zero halogen low smoke compound type LTS 3 acc. to BS 7655-6.1
Colour of sheath:	Red or white. Other colours are available on special request.
Core identification:	2 core + ECC: brown, blue 3 core + ECC: brown, black, grey 4 core + ECC: blue, brown, black, grey

CHARACTERISTICS

Maximum conductor operating temperature:	+70°C
Minimum operating temperature (for fixed application) after installation without movement:	-40°C
Lowest installation temperature:	0°C
Maximum short-circuit conductor temperature:	+250°C
Minimum bending radius:	6 × D; (D - overall cable diameter)

FLAME-X 950 SERIES 2e
(Flame-X 950 Enhanced) **300/500V**

Fire performance

Resistance to fire:	Complies with the PH 120 ENHANCED fire resistant cable described in Clause 26.2 of BS 5839-1 BS 6387 Category **C** – resistance to fire: 3 h at 950°C (IEC 60331) Category **W** – resistance to fire with water: 15 min at 650°C plus 15 min with water spray Category **Z** – resistance to fire with mechanical shock: 15 min at 950°C EN 50200 - PH 120 BS 8434-2 - 120 min
Flame propagation:	BS EN 60332-1-2, BS EN 60332-3-24
Smoke density:	BS EN 61034-2
Gases evolved during combustion:	BS EN 60754-1) HCl content < 0.5% BS EN 60754-22 pH ≥ 4.3 & conductivity ≤ 10 $\mu Sm m^{-1}$

Applications (Flame-X 950 2E)

For use in installations emergency lighting and evacuation systems, fire and smoke detection systems, air-conditioning and alarm systems, automatic elevator doors, computer control rooms, emergency evacuation communicators. Recommended for systems, in particular building types, in which cables might need to operate correctly during a fire for periods in excess of those normally required for single phase evacuation of a building. Cables can be used in buildings higher than 30 m, with four or more evacuation zones.

Standard length cable packing	500 or 1,000 m on drums. Other forms of packing and delivery are available on request.

Approvals

LPCB	1.0 mm2 – 2-core, 1.5, 2.5, 4 mm2 – 2-core, 3-core, 4-core
BASEC	1.0 mm2 – 2-core, 1.5, 2.5, 4 mm2 – 2-core, 3-core, 4-core

FLAME-X 950 SERIES 2e

(Flame-X 950 Enhanced) **300/500V**

Technical and Electrical Characteristics

Number and cross-sectional area of conductor	Conductor class	Nominal cross-sectional area of protective conductor ECC	Approximate overall diameter	Approximate net weight of cables	Maximum conductor resistance at 20°C	Maximum ECC conductor resistance at 20°C
n × mm²		**mm²**	**mm**	**kg/km**	**Ω/km**	**Ω/km**
2 × 1 RE + ECC	1	1	8.1	77	18.1	18.2
2 × 1.5 RE + ECC	1	1.5	9.0	99	12.1	12.2
2 × 1.5 RM + ECC*	2	1.5	9.4	104	12.1	12.2
2 × 2.5 RE + ECC	1	2.5	10.4	142	7.41	7.56
2 × 2.5 RM + ECC*	2	2.5	10.9	148	7.41	7.56
2 × 4 RM + ECC	2	4	12.1	202	4.61	4.70
3 × 1 RE + ECC**	1	1	8.6	96	18.1	18.2
3 × 1.5 RE + ECC	1	1.5	9.6	126	12.1	12.2
3 × 2.5 RE + ECC	1	2.5	11.0	180	7.41	7.56
3 × 4 RM + ECC	2	4	12.9	258	4.61	4.70
4 × 1 RE + ECC**	1	1	9.5	121	18.1	18.2
4 × 1.5 RE + ECC	1	1.5	10.8	159	12.1	12.2
4 × 2.5 RE + ECC	1	2.5	12.8	230	7.41	7.56
4 × 2.5 RM + ECC*	2	2.5	13.7	242	7.41	7.56
4 × 4 RM + ECC	2	4	15.9	333	4.61	4.70

* based on norm, without certificate ** without standards

Current ratings and voltage drop

Ambient air temperature: 30°C. Conductor operating temperature: 70°C.
Installation as specified in Appendix 4 of BS 7671 IEE Wiring Regulations

FLAME-X 950 SERIES 2e
(Flame-X 950 Enhanced) **300/500V**

Reference Method 1
(clipped direct)

Nominal area of conductor	1 two core cable* single phase A.C. or D.C.		1 three-core or 1 four-core cable*. three-phase A.C.	
	Current rating	Volts drop per ampere par metre	Current rating	Volts drop per ampere par metre
mm²	**A**	**mV/m**	**A**	**mV/m**
1.0	15	44	13.5	38
1.5	19.5	29	17.5	25
2.5	27	18	24	15
4.0	36	11	32	9.5

Reference Method 3
(enclosed in conduit on a wall or ceiling, or in trunking)

Nominal area of conductor	1 two core cable* single phase A.C. or D.C.		1 three-core or 1 four-core cable*. three-phase A.C.	
	Current rating	Volts drop per ampere par metre	Current rating	Volts drop per ampere par metre
mm²	**A**	**mV/m**	**A**	**mV/m**
1.0	13	44	11.5	38
1.5	16.5	29	15	25
2.5	23	18	20	15
4.0	30	11	27	9.5

* with protective conductor

Rating factors for ambient temperature

Ambient temperature, °C	25	30	35	40	45	50
Rating factor	1.03	1.00	0.94	0.87	0.79	0.71

Correction factors for groups

Number of cables in grouping	2	3	4	5	6	7	8	9	10
Rating factor	0.80	0.70	0.65	0.60	0.57	0.54	0.52	0.50	0.48

BS 6387, IEC 60331-21
Cert No. 1354b, 1354d

FLAME-X 950 SERIES 3

600/1000V

Based on BS 7846, BS 6387

Fire resistant security power cable having low emission of smoke and corrosive gases when affected by fire

CONSTRUCTION

Conductors:	Circular, circular compacted or shaped, stranded, annealed copper conductor, class 2 acc. to BS EN 60228
Primary insulation:	A suitable wrapping of mica tape with a glass cloth
Insulation:	Cable 1 to 16 mm^2 - special thermosetting low smoke zero halogen compound type EI5 acc. to BS 50363-5 Cable 25 to 1,000 mm^2 - cross-linked polyethylene (XLPE) of GP8 type acc. to BS 7655-1.3
Bedding:	Special low smoke zero halogen filling compound (only 2, 3, 4 cores)
Outer sheath:	Thermoplastic LSOH compound of LTS1 type acc. to BS 7655-6.1

CHARACTERISTICS

Nominal voltage:	0.6/1kV	
Colour of sheath:	Black. Other colours are available on special request.	
Core identification:	with green-yellow	without green-yellow
	1 core: green-yellow	black
	2 core: -	brown, blue
	3 core: green-yellow, blue, brown	brown, black, grey
	4 core: green-yellow, brown, black, grey	blue, brown, black, grey
Maximum conductor operating temperature:	+90°C	
Lowest installation temperature:	0°C	
Minimum operating temperature after installation without movement:	-40°C	
Maximum short-circuit conductor temperature:	+250°C	
Minimum bending radius:	6 × D for cables with circular copper conductors and 8 × D for cables with shaped copper conductors; D – overall diameter of the cable	

FLAME-X 950 SERIES 3
600/1000V

Fire performance

Fire resistance: (additional TF test)	BS 7846 p. 17.4.2	Category **F2**
	IEC 60331-21	Circuit integrity - tested 90 min. at 950°C
	BS 6387[1)]	Category **C** – resistance to fire: 3 h at 950°C
		Category **W** – resistance to fire with water: 15 min at 650°C plus 15 min with water spray
BS EN 60754-22) pH ≥ 4.3 & conductivity ≤ 10 µSmm-1		Category **Z** – resistance to fire with mechanical shock: 15 min at 950°C
Flame propagation:	BS EN 60332-1-2	
	BS EN 60332-3-24	
Smoke density:	BS EN 61034-2	
Corrosive and acid gases emission:	BS EN 60754-1[2)]	HCl content < 0.5%
	BS EN 60754-2[2)]	pH ≥ 4.3 & conductivity ≤ 10 µSmm^{-1}

1) Category C, W, Z for cables up to and including 50mm2. Category C for cables above and including 300mm2
2) BS EN 60754-1 & BS EN 60754-2 standards replace BS EN 50267-2-1

Applications

Fire resistant cables for use in fixed installations in industrial areas, public buildings (as for example power plants, hospitals, shopping centres, theatres) and similar applications where maintenance of power supply during a fire is required for a defined period of time.

Standard length cable packing	500 or 1,000 m on drums. Other forms of packing and delivery are available on request.

Approvals

LPCB	1 mm^2 to 1000 mm^2 1-core and 1 mm^2 to 16 mm^2 2-core, 3-core, 4-core

FLAME-X 950 SERIES 3
600/1000V

Technical and Electrical Characteristics

Number and CSA of conductor	Nominal thickness of insulation	Nominal thickness of bedding	Nominal thickness of outer sheath	Approx. overall diameter	Approx. net weight of cables	Maximum conductor resistance at 20°C	Current rating single-phase A.C. or D.C.*		Voltage Drop D.C.*	Voltage Drop single-phase A.C.*	Short circuit rating (1 sec)
							Clipped direct	Free Air			
n × mm²	**mm**	**mm**	**mm**	**mm**	**kg/km**	**Ω/km**	**Amp**	**Amp**	**mV/A/m**	**mV/A/m**	**kA**
1 × 1 RM	0.7	-	1.4	6.4	53	18.1	19	-	46	46	0.14
1 × 1.5 RM	0.7	-	1.4	6.7	61	12.1	25	-	31	31	0.21
1 × 2.5 RM	0.7	-	1.4	7.2	74	7.41	34	-	19	19	0.35
1 × 4 RM	0.7	-	1.4	7.7	93	4.61	46	-	12	12	0.57
1 × 6 RM	0.7	-	1.4	8	113	3.08	59	-	7.9	7.9	0.85
1 × 10 RM	0.7	-	1.5	9.1	162	1.83	81	-	4.7	4.7	1.4
1 × 16 RM	0.7	-	1.5	10.2	225	1.15	109	-	2.9	2.9	2.2
1 × 25 RM	0.9	-	1.6	12.2	325	0.727	143	135	1.85	1.85	3.5
1 × 35 RM	0.9	-	1.7	13.4	426	0.524	176	169	1.35	1.35	5
1 × 50 RM	0.9	-	1.8	15.1	563	0.387	228	207	0.99	1	7.1
1 × 70 RM	1.1	-	1.9	16.9	777	0.268	298	268	0.68	0.71	10
1 × 95 RM	1.1	-	2	19.1	1042	0.193	355	328	0.49	0.52	13.5
1 × 120 RM	1.2	-	2.1	20.9	1294	0.153	413	383	0.39	0.43	17.1
1 × 150 RM	1.4	-	2.2	23.1	1586	0.124	476	444	0.32	0.36	21.4
1 × 185 RM	1.6	-	2.4	25.4	1971	0.099	545	510	0.25	0.3	26.4
1 × 240 RM	1.7	-	2.6	28.3	2527	0.075	644	607	0.19	0.25	34.3
1 × 300 RM	1.8	-	2.6	30.5	3120	0.060	743	703	0.155	0.22	42.9
1 × 400 RM	2	-	2.8	34	4013	0.047	868	823	0.12	0.2	57.2
1 × 500 RM	2.2	-	3	38	5109	0.037	990	946	0.093	0.185	71.5
1 × 630 RM	2.4	-	3.2	43	6477	0.028	1130	1088	0.072	0.175	90.1
1 × 800 RM	2.6	-	3.4	48.1	8163	0.022	1288	1214	0.056	0.17	114.4
1 × 1000 RM	2.8	-	3.6	52	10100	0.018	1443	1349	0.045	0.165	134

FLAME-X 950 SERIES 3
600/1000V

Technical and Electrical Characteristics

Number and CSA of conductor	Nominal thickness of insulation	Nominal thickness of bedding	Nominal thickness of outer sheath	Approx. overall diameter	Approx. net weight of cables	Maximum conductor resistance at 20°C	Current rating single-phase A.C. or D.C.*		Voltage Drop D.C.*	Voltage Drop single-phase A.C.*	Short circuit rating (1 sec)
							Clipped direct	Free Air			
n × mm²	**mm**	**mm**	**mm**	**mm**	**kg/km**	**Ω/km**	**Amp**	**Amp**	**mV/A/m**	**mV/A/m**	**kA**
2 × 1 RM	0.7	0.8	1.4	11.7	185	18.1	19	21	46	46	0.14
2 × 1.5 RM	0.7	0.8	1.4	12.2	208	12.1	24	26	31	31	0.21
2 × 2.5 RM	0.7	0.8	1.4	13.1	249	7.41	33	36	19	19	0.35
2 × 4 RM	0.7	0.8	1.4	14.1	304	4.61	45	49	12	12	0.57
2 × 6 RM	0.7	0.8	1.4	14.9	361	3.08	58	63	7-Sep	7.9	0.85
2 × 10 RM	0.7	0.8	1.5	16.9	497	1.83	80	86	4.7	4.7	1.4
2 × 16 RM	0.7	0.8	1.5	18.9	670	1.15	107	115	2.9	2.9	2.2
3 × 1 RM	0.7	0.8	1.4	12.2	203	18.1	17	18	-	40	0.14
3 × 1.5 RM	0.7	0.8	1.4	12.8	231	12.1	22	23	-	27	0.21
3 × 2.5 RM	0.7	0.8	1.4	13.8	281	7.41	30	32	-	16	0.35
3 × 4 RM	0.7	0.8	1.4	14.9	350	4.61	40	42	-	10	0.57
3 × 6 RM	0.7	0.8	1.4	15.7	423	3.08	52	54	-	6.8	0.85
3 × 10 RM	0.7	0.8	1.5	17.8	593	1.83	71	75	-	4	1.4
3 × 16 RM	0.7	0.8	1.6	20.2	826	1.15	96	100	-	2.5	2.2

FLAME-X 950 SERIES 3
600/1000V

Technical and Electrical Characteristics

Number and CSA of conductor	Nominal thickness of insulation	Nominal thickness of bedding	Nominal thickness of outer sheath	Approx. overall diameter	Approx. net weight of cables	Maximum conductor resistance at 20°C	Current rating single-phase A.C. or D.C.*		Voltage Drop D.C.*	Voltage Drop single-phase A.C.*	Short circuit rating (1 sec)
							Clipped direct	Free Air			
n × mm²	**mm**	**mm**	**mm**	**mm**	**kg/km**	**Ω/km**	**Amp**	**Amp**	**mV/A/m**	**mV/A/m**	**kA**
4 × 1 RM	0.7	0.8	1.4	13.2	233	18.1	17	18	-	40	0.14
4 × 1.5 RM	0.7	0.8	1.4	13.9	268	12.1	22	23	-	27	0.21
4 × 2.5 RM	0.7	0.8	1.4	14.9	328	7.41	30	32	-	16	0.35
4 × 4 RM	0.7	0.8	1.4	16.2	414	4.61	40	42	-	10	0.57
4 × 6 RM	0.7	0.8	1.5	17.2	513	3.08	52	54	-	6.8	0.85
4 × 10 RM	0.7	0.8	1.5	19.4	718	1.83	71	76	-	4	1.4
4 × 16 RM	0.7	0.8	1.6	22.1	1010	1.15	96	100	-	2.5	2.2

* current ratings acc. to BS 7671 table 4E1A, 4E1B, 4E2A, 4E2B

Rating factors for air temperature

Ambient air temperature, °C	25	30	35	40	45	50	55	60
Rating factors	1.02	1.0	0.96	0.91	0.87	0.82	0.76	0.71

BS 7846
Cert No. 814d; 1354c

FLAME-X 950 SERIES 4

600/1000V

BS 7846 - F2

Armoured fire resistant electric power and control cable having low emission of smoke and corrosive gases when affected by fire

CONSTRUCTION

Conductors:	Circular, circular compacted or sectoral shaped, stranded, annealed copper conductor, class 2 acc. to BS EN 60228
Primary insulation:	A suitable wrapping of mica tape with a glass cloth
Insulation:	Cross-linked polyethylene (XLPE) of GP8 type acc. to BS 7655-1.3
Bedding:	Special low smoke zero halogen (LSOH) compound
Armour:	Single layer of galvanized steel wires applied helically over the bedding
Outer sheath:	Thermoplastic halogen free compound (LSOH) of LTS1 type acc. to BS 7655-6.1

CHARACTERISTICS

Colour of sheath:	Black. Other colours are available on special request.
Core identification:	2 – core: brown, blue 3 – core: brown, black, grey 4 – core: blue, brown, black, grey
Maximum conductor operating temperature:	+90°C
Lowest installation temperature:	0°C
Minimum operating temperature after installation without movement:	-40°C
Maximum short-circuit conductor temperature:	+250°C
Fire resistance:	Category F2 acc. to BS 7846, BS 6387 – Category C, W, Z
Flame propagation:	BS EN 60332-1-2, EN 60332-3-24
Low smoke emission:	BS EN 61034-2
Low corrosive and acid gas emission:	BS EN 60754-1, HCl content < 0.5% BS EN 60754-2 pH ≥ 4.3 & conductivity ≤ 10 µSmm-1
Minimum bending radius:	6 × D for cables with circular copper conductors and 8 × D for cables with shaped copper conductors; D – overall diameter of the cable

FLAME-X 950 SERIES 4
600/1000V

Applications

Fire resistant armoured cables for use in fixed installations in industrial areas, public buildings (as for example power plants, hospitals, shopping centres, theatres) and similar applications where maintenance of power supply during a fire is required for a defined period of time.

Standard length cable packing:	500 or 1000 m on drums. Other forms of packing and delivery are available on request.

Approvals

BASEC	25 mm^2 to 400 mm^2 2-core, 3-core, 4-core and 1,5 mm^2 to 16 mm^2 2-core, 3-core, 4-core
LPCB	1,5 mm^2 to 400 mm^2 2-core, 3-core, 4-core and 1,5 mm^2 to 16 mm^2 2-core, 3-core, 4-core

FLAME-X 950 SERIES 4
600/1000V

Technical and Electrical Characteristics

Number and CSA of conductor	Nominal thickness of insulation	Nominal thickness of outer sheath	Nominal diameter of armour wires	Approx. overall diameter	Approx. net weight of cables	Maximum conductor resistance at 20°C	Current rating single-phase A.C. or D.C. *		Voltage Drop D.C.*	Voltage Drop single-phase A.C.*
							Clipped direct	Free Air		
n × mm²	**mm**	**mm**	**mm**	**mm**	**kg/km**	**Ω/km**	**Amp**	**Amp**	**mV/A/m**	**mV/A/m**
2 × 1.5 RM	0.6	1.3	0.9	13.2	349	12.1	27	29	31.0	31.0
2 × 2.5 RM	0.7	1.4	0.9	14.7	423	7.41	36	39	19.0	19.0
2 × 4 RM	0.7	1.4	0.9	15.7	494	4.61	49	52	12.0	12.0
2 × 6 RM	0.7	1.4	0.9	16.5	558	3.08	62	66	7.9	7.9
2 × 10 RM	0.7	1.5	0.9	18.5	716	1.83	85	90	4.7	4.7
2 × 16 RM	0.7	1.5	1.25	21.2	1038	1.15	110	115	2.9	2.9
2 × 25 RM	0.9	1.6	1.25	25.1	1374	0.727	146	152	1.85	1.90
2 × 35 RM	0.9	1.7	1.6	28.5	1867	0.524	180	188	1.35	1.35
2 × 35 RM	0.9	1.7	1.6	23.8	1443	0.524	180	188	1.35	1.35
2 × 50 SM	1.0	1.8	1.6	26.0	1763	0.387	219	228	0.98	1.00
2 × 70 SM	1.1	1.9	1.6	29.8	2313	0.268	279	291	0.67	0.69
2 × 95 SM	1.1	2.0	2.0	32.8	3107	0.193	338	354	0.49	0.52
2 × 120 SM	1.2	2.1	2.0	35.5	3720	0.153	392	410	0.39	0.42
2 × 150 SM	1.4	2.2	2.0	38.4	4405	0.124	451	472	0.31	0.35
2 × 185 SM	1.6	2.4	2.5	43.1	5642	0.0991	515	539	0.25	0.29
2 × 240 SM	1.7	2.5	2.5	46.9	6940	0.0754	607	636	0.195	0.24
2 × 300 SM	1.8	2.6	2.5	52.6	8467	0.0601	698	732	0.155	0.21

FLAME-X 950 SERIES 4
600/1000V

Technical and Electrical Characteristics

Number and CSA of conductor	Nominal thickness of insulation	Nominal thickness of outer sheath	Nominal diameter of armour wires	Approx. overall diameter	Approx. net weight of cables	Maximum conductor resistance at 20°C	Short circuit current rating	Current rating three phase A.C.*		Voltage Drop three phase A.C.*
								Clipped direct	Free Air	
n × mm²	**mm**	**mm**	**mm**	**mm**	**kg/km**	**Ω/km**	**Amp**	**Amp**	**Amp**	**mV/A/m**
3 × 1.5 **RM**	0.6	1.3	0.9	13.8	379	12.1	210	23	25	27.0
3 × 2.5 **RM**	0.7	1.4	0.9	15.4	468	7.41	350	31	33	16.0
3 × 4 **RM**	0.7	1.4	0.9	16.5	547	4.61	570	42	44	10.0
3 × 6 **RM**	0.7	1.4	0.9	17.3	632	3.08	850	53	56	6.8
3 × 10 **RM**	0.7	1.5	1.25	20.1	948	1.83	1400	73	78	4.0
3 × 16 **RM**	0.7	1.6	1.25	22.5	1221	1.15	2200	94	99	2.5
3 × 25 **RM**	0.9	1.7	1.6	27.8	1824	0.727	3575	124	131	1.65
3 × 35 **RM**	0.9	1.8	1.6	30.3	2236	0.524	5005	154	162	1.15
3 × 35 **SM**	0.9	1.8	1.6	27.7	1942	0.524	5005	154	162	1.15
3 × 50 **SM**	1.0	1.8	1.6	30.1	2389	0.387	7150	187	197	0.87
3 × 70 **SM**	1.1	1.9	1.6	33.7	3132	0.268	10010	238	251	0.60
3 × 95 **SM**	1.1	2.1	2.0	38.2	4302	0.193	13585	289	304	0.45
3 × 120 **SM**	1.2	2.2	2.0	41.5	5160	0.153	17160	335	353	0.37
3 × 150 **SM**	1.4	2.3	2.5	46.7	6552	0.124	21450	386	406	0.30
3 × 185 **SM**	1.6	2.4	2.5	50.6	7812	0.0991	26455	441	463	0.26
3 × 240 **SM**	1.7	2.6	2.5	55.5	9756	0.0754	34320	520	546	0.21
3 × 300 **SM**	1.8	2.7	2.5	60.4	11788	0.0601	42900	599	628	0.185
3 × 400 **SM**	2.0	2.9	2.5	67.2	14987	0.047	57200	673	728	0.165

FLAME-X 950 SERIES 4
600/1000V

Technical and Electrical Characteristics

Number and CSA of conductor	Nominal thickness of insulation	Nominal thickness of outer sheath	Nominal diameter of armour wires	Approx. Overall diameter	Approx. Net weight of cables	Maximum conductor resistance at 20°C	Short circuit current rating	Current rating three phase A.C.*		Voltage Drop Three phase A.C.*
								Clipped direct	Free Air	
n × mm²	**mm**	**mm**	**mm**	**mm**	**kg/km**	**Ω/km**	**Amp**	**Amp**	**Amp**	**mV/A/m**
4 × 1.5 **RM**	0.6	1.3	0.9	14.8	424	12.1	210	23	25	27.0
4 × 2.5 **RM**	0.7	1.4	0.9	16.5	526	7.41	350	31	33	16.0
4 × 4 **RM**	0.7	1.4	0.9	17.8	632	4.61	570	42	44	10.0
4 × 6 **RM**	0.7	1.5	1.25	19.5	852	3.08	850	53	56	6.8
4 × 10 **RM**	0.7	1.5	1.25	21.7	1096	1.83	1400	73	78	4.0
4 × 16 **RM**	0.7	1.6	1.25	24.4	1446	1.15	2200	94	99	2.5
4 × 25 **RM**	0.9	1.7	1.6	30.2	2161	0.727	3575	124	131	1.65
4 × 35 **RM**	0.9	1.8	1.6	32.9	2675	0.524	5005	154	162	1.15
4 × 35 **SM**	0.9	1.8	1.6	30.6	2408	0.524	5005	154	162	1.15
4 × 50 **SM**	1.0	1.9	1.6	33.6	3013	0.387	7150	187	197	0.87
4 × 70 **SM**	1.1	2.1	2.0	39.1	4285	0.268	10010	238	251	0.60
4 × 95 **SM**	1.1	2.2	2.0	42.8	5449	0.193	13585	289	304	0.45
4 × 120 **SM**	1.2	2.3	2.5	48.1	7000	0.153	17160	335	353	0.37
4 × 150 **SM**	1.4	2.4	2.5	52.1	8303	0.124	21450	386	406	0.30
4 × 185 **SM**	1.6	2.6	2.5	56.8	10020	0.0991	26455	441	463	0.26
4 × 240 **SM**	1.7	2.7	2.5	62.6	12562	0.0754	34320	520	546	0.21
4 × 300 **SM**	1.8	2.9	2.5	67.6	15154	0.0601	42900	599	628	0.185
4 × 400 **SM**	2.0	3.2	3.15	77.4	19892	0.047	57200	673	728	0.165

* acc to BS 7671 table 4E4A & 4E4B

BS 7846
Cert No. 1354a

MAX +90°C | UV | RoHS | F120

FLAME-X 950 SERIES 6

600/1000V

BS 7846 - F120

Armoured fire resistant electric power and control cable having low emission of smoke and corrosive gases when affected by fire

CONSTRUCTION

Conductors:	Circular, circular compacted (RM) or shaped stranded (SM), annealed copper conductor, class 2 acc. to BS EN 60228
Primary insulation:	Fire resistant mica tape with a glass cloth
Insulation:	Cross-linked polyethylene (XLPE) of GP8 type acc. to BS 7655-1.3
Cable core:	Insulated conductors twisted together wrapped by fire resistance tape (optional also by polyester film)
Bedding:	Thermoplastic zero halogen low smoke compound (LSOH) wrapped by fire resistance tape
Armour:	Galvanized steel wires applied helically (optional polyester film over the armour)
Outer sheath:	Thermoplastic zero halogen low smoke compound of LTS1 type acc. to BS 7655-6.1

CHARACTERISTICS

Colour of sheath:	Black. Other colours are available on special request.
Core identification:	2 – core: brown, blue 3 – core: brown, black, grey 4 – core: blue, brown, black, grey
Maximum conductor operating temperature	+90°C
Lowest installation temperature:	0°C
Minimum operating temperature after installation without movement:	-40°C
Maximum short-circuit conductor temperature:	+250°C
Minimum bending radius:	6 × D for cables with circular copper conductors 8 × D for cables with shaped copper conductors D – overall diameter

FLAME-X 950 SERIES 6
600/1000V

Fire performance

Fire resistance:	BS 8491	Category F120
	BS 8519	Category 1, 2 and 3
Flame propagation:	BS EN 60332-1-2	
	BS EN 60332-3-24	
Smoke density:	BS EN 61034-2	
Corrosive and acid gases emission:	BS EN 60754-1[1)]	HCl content < 0.5%
	BS EN 60754-2[1)]	pH ≥ 4.3 & conductivity ≤ 10 $\mu Sm m^{-1}$

1) BS EN 60754-1 & BS EN 60754-2 standards replace BS EN 50267-2-1

Applications

Enhanced fire resistant armoured cables for use in life safety and fire fighting systems of public buildings (hospitals, shopping centres, theatres, stadiums) and similar applications where maintenance of power supply during a fire is critical.

Standard length cable packing:	500 or 1000 m on drums. Other forms of packing and delivery are available on request.

Approvals

BASEC	4 mm^2 to 16 mm^2 3-core, 4-core and 25 mm^2 to 400 mm^2 2-core, 3-core, 4-core;
LPCB	4 mm^2 to 16 mm^2 3-core, 4-core and 25 mm^2 to 400 mm^2 3-core, 4-core

FLAME-X 950 SERIES 6
600/1000V

Technical and Electrical Characteristics

Number and CSA of conductor	Nominal thickness of insulation	Nominal thickness of outer sheath	Nominal diameter of armour wires	Approx. overall diameter	Approx. net weight of cables	Maximum conductor resistance at 20°C	Current rating single-phase A.C. or D.C. *		Voltage Drop D.C.*	Voltage Drop single-phase A.C.*
							Clipped direct	Free Air		
n × mm²	**mm**	**mm**	**mm**	**mm**	**kg/km**	**Ω/km**	**Amp**	**Amp**	**mV/A/m**	**mV/A/m**
2 × 4 RM	0.7	1.4	1.25	20.1	712	4.61	49	52	12.0	12.0
2 × 6 RM	0.7	1.4	1.25	20.1	744	3.08	62	66	7.9	7.9
2 × 10 RM	0.7	1.5	1.25	20.9	839	1.83	85	90	4.7	4.7
2 × 16 RM	0.7	1.5	1.25	22.9	1027	1.15	110	115	2.9	2.9
2 × 25 RM	0.9	1.6	1.25	26.4	1425	0.727	146	152	1.85	1.90
2 × 35 RM	0.9	1.7	1.6	29.8	1929	0.524	180	188	1.35	1.35
2 × 50 SM	1.0	1.8	1.6	27.1	1963	0.387	219	228	0.98	1.00
2 × 70 SM	1.1	1.9	1.6	31.0	2552	0.268	279	291	0.67	0.69
2 × 95 SM	1.1	2.0	2.0	34.0	3392	0.193	338	354	0.49	0.52
2 × 120 SM	1.2	2.1	2.0	36.5	4014	0.153	392	410	0.39	0.42
2 × 150 SM	1.4	2.2	2.0	39.5	4717	0.124	451	472	0.31	0.35
2 × 185 SM	1.6	2.4	2.5	44.3	6069	0.0991	515	539	0.25	0.29
2 × 240 SM	1.7	2.5	2.5	48.1	7390	0.0754	607	636	0.195	0.24
2 × 300 SM	1.8	2.6	2.5	52.1	8772	0.0601	698	732	0.155	0.21
2 × 400 SM	2.0	2.8	2.5	59.6	11120	0.047	787	847	0.120	0.19

FLAME-X 950 SERIES 6
600/1000V

Technical and Electrical Characteristics

Number and CSA of conductor	Nominal thickness of insulation	Nominal thickness of outer sheath	Nominal diameter of armour wires	Approx. overall diameter	Approx. net weight of cables	Maximum conductor resistance at 20°C	Short circuit current rating	Current rating three phase A.C.*		Voltage Drop three phase A.C.*
								Clipped direct	Free Air	
n × mm²	**mm**	**mm**	**mm**	**mm**	**kg/km**	**Ω/km**	**Amp**	**Amp**	**Amp**	**mV/A/m**
3 × 4 RM	0.7	1.4	1.25	20.2	832	4.61	570	42	44	10.0
3 × 6 RM	0.7	1.4	1.25	20.1	803	3.08	850	53	56	6.8
3 × 10 RM	0.7	1.5	1.25	21.8	985	1.83	1400	73	78	4.0
3 × 16 RM	0.7	1.6	1.25	24.2	1241	1.15	2200	94	99	2.5
3 × 25 RM	0.9	1.7	1.6	29.1	1930	0.727	3575	124	131	1.65
3 × 35 RM	0.9	1.8	1.6	31.6	2328	0.524	5005	154	162	1.15
3 × 50 SM	1.0	1.8	1.6	31.2	2629	0.387	7150	187	197	0.87
3 × 70 SM	1.1	1.9	1.6	34.9	3394	0.268	10010	238	251	0.60
3 × 95 SM	1.1	2.1	2.0	39.4	4617	0.193	13585	289	304	0.45
3 × 120 SM	1.2	2.2	2.0	42.5	5486	0.153	17160	335	353	0.37
3 × 150 SM	1.4	2.3	2.5	47.9	7003	0.124	21450	386	406	0.30
3 × 185 SM	1.6	2.4	2.5	51.8	8352	0.0991	26455	441	463	0.26
3 × 240 SM	1.7	2.6	2.5	56.8	10299	0.0754	34320	520	546	0.21
3 × 300 SM	1.8	2.7	2.5	61.6	12262	0.0601	42900	599	628	0.185
3 × 400 SM	2.0	2.9	2.5	68.9	15520	0.0470	57200	673	728	0.165

FLAME-X 950 SERIES 6
600/1000V

Technical and Electrical Characteristics

Number and CSA of conductor	Nominal thickness of insulation	Nominal thickness of outer sheath	Nominal diameter of armour wires	Approx. overall diameter	Approx. net weight of cables	Maximum conductor resistance at 20°C	Short circuit current rating	Current rating three phase A.C.*		Voltage Drop Three phase A.C.*
								Clipped direct	Free Air	
n × mm²	**mm**	**mm**	**mm**	**mm**	**kg/km**	**Ω/km**	**Amp**	**Amp**	**Amp**	**mV/A/m**
4 × 4 RM	0.7	1.4	1.25	20.1	869	4.61	570	42	44	10.0
4 × 6 RM	0.7	1.5	1.25	21.2	906	3.08	850	53	56	6.8
4 × 10 RM	0.7	1.5	1.25	23.4	1140	1.83	1400	73	78	4.0
4 × 16 RM	0.7	1.6	1.25	26.1	1466	1.15	2200	94	99	2.5
4 × 25 RM	0.9	1.7	1.6	31.5	2261	0.727	3575	124	131	1.65
4 × 35 RM	0.9	1.8	1.6	34.2	2752	0.524	5005	154	162	1.15
4 × 50 SM	1.0	1.9	1.6	34.7	3271	0.387	7150	187	197	0.87
4 × 70 SM	1.1	2.1	2.0	40.3	4605	0.268	10010	238	251	0.60
4 × 95 SM	1.1	2.2	2.0	44.0	5789	0.193	13585	289	304	0.45
4 × 120 SM	1.2	2.3	2.5	49.3	7460	0.153	17160	335	353	0.37
4 × 150 SM	1.4	2.4	2.5	53.3	8785	0.124	21450	386	406	0.30
4 × 185 SM	1.6	2.6	2.5	58.0	10528	0.0991	26455	441	463	0.26
4 × 240 SM	1.7	2.7	2.5	63.8	13141	0.0754	34320	520	546	0.21
4 × 300 SM	1.8	2.9	2.5	68.8	15622	0.0601	42900	599	628	0.185
4 × 400 SM	2.0	3.2	3.15	79.1	20575	0.0470	57200	673	728	0.165

* acc to BS 7671 table 4E4A & 4E4B

Certificates issued by LPCB

Type	Series 1	Series 2	Series 2e	Series 3	Series 4	Series 6
No	814c	1354e	1354f	1354b 1354d	814d 1354c	1354a

Applications Flame-X 950 cables

Low Smoke Zero Halogen Fire Resistant Flame-X 950 types can be used for applications where SAFETY of human is top priority, especially where sophisticated systems are provided, example:

- Mass Transit Systems,
- High rise buildings
- Confined locations (e.g underground metro stations)
- Schools & Hospitals
- Shopping Malls
- Other places with a large concentration of people

Installation and Storage recommendation:

Flame-X 950 Fire Resistant cables are very important for human life protection. That is why they need to be stored and installed with special care and attention.
We recommend:

- Cables shall be stored indoor and special care shall be taken when temperature rises above 45 deg C
- Cables shall not be exposed to direct sunlight for considerable period of time before installation.
- Preferably the installation shall be done during morning hours when the ambient temperature is low (applicable for Middle East conditions)
- Cables shall not be installed when ambient temperature is below 0 Deg. C
- During installation it is necessary to keep right bending radius. It cannot exceed value as per technical specification, at any point.
- Wire/Rope shall not be used directly on cable sheath for pulling
- Special attention is recommended when cable is pulled on cable tray.
- Rollers and bends shall not have any sharpness that can make damage,
- Flame-X 950 cables and wires shall be installed together with special compatible LSZH, fire performance equipment (joints, boxes) at installation site.

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