

FIRE RESISTANT CABLES





CONNECTION
ANALYSIS
DATA
SEARCHING
VERIFICATION
CODING
SENDING



Erse Kablo, established in 1996, is a manufacturer of weak current cables operating with an excellent service approach by combining its experience and success in the sector with the concepts of “quality, service and sustainability”.

Erse operates in its head office and modern manufacturing facilities in Istanbul and takes care of the satisfaction of all its stakeholders with its products, quality service and confidence. It carries out its manufacturing and logistics operations with modern and quality service approach in its facilities in Silivri, İstanbul founded on a total area of 25.000 m² consisting of a closed area of 20.000 m².

Erse's product range includes coaxial, signal control, fire resistant, telecommunication, data transmission, control and special cables. Erse has an extending vision with the brands of Ervital, **Ervital Fire Safe Cable** and **Ervital Fire Safe Gold Cable** in the fire resistant product groups, **Erflex** in the control cables group, **Erline** in the lan cables group; and it has strengthened its market power with these brands.

Erse together with its R&D department of professional engineer staff offers solutions for the customer expectations. It carries out successfully the product and quality-oriented studies by following innovations.

Erse has a manufacturing approach that meets the requirements of national and international standards and total quality consciousness are taken into consideration at every stage in manufacturing; and it supports this approach through the personal development and technical training that is organized in order to provide sustainable quality, improve the quality system and increase employee competence.

Erse has developed and certified “**Integrated Management System**” (ISO 9001, ISO 14001, ISO 45001) within the framework of a work approach complying with the environment consciousness and the quality standards since its establishment. **ISO 10002 Customer Satisfaction Management** certificate is based on the importance of customer satisfaction within the framework of corporate values. Manufacturing the products based on national and international standards, Erse has the product certificates in the norms of “**TSE, VDE, MPA, LPCB, REACH, RoHS, CE (LVD, CPR) and SASO**”.

Erse is the solution partner of the infrastructure, construction, industry sectors with its domestic marketing, sales and export structures. Keeping the leadership position in the Turkish market, the brand has a widespread and extensive sales network through its strong domestic dealer system along with especially İstanbul Head Office, Ankara, Bursa, İzmir, Antalya, Samsun and Adana Regional Sales Representatives.

Having experience in the foreign markets, Erse has a significant position with its exports to all over Europe, especially England and Germany; over 50 countries in Asia, Middle East and Gulf Regions. Besides, Erse plays an active role in the development and change of international trade through all its export operations.

All domestic/foreign customers who prefer Erse are guaranteed by the “**Product Liability Insurance**” and protected against the physical and material damages that may arise from the products manufactured. Thus, it has once again proved that it gives the importance to customer satisfaction and quality service values.

Believing that success will be reached only with a vision that is adopted and internalized by the entire institution, Erse Kablo continues to lead the sector through its customer relations and service-oriented work approach that meet the demands as soon as possible with the products with high added value at national and international quality standards. Combining its technological power in manufacturing with the dynamism and experience of its employees, it is distinguished in the sector with the brand image which creates value and supports continuous development.

GENERAL INFORMATION ABOUT FIRE RESISTANT CABLES

Fire resistant cables are able to carry energy and signal under fire for the minimum periods specified in standards and regulations.

The first to prevent and reduce the loss of life and property that may arise from fire is to eliminate or reduce the factors that may cause fire. It should not be forgotten that the golden rule for protection from fires is to prevent fire rather than extinguish it. Literature reveals that taking fire safety measures is easier and less costly than fire extinguishing. In order to minimize the fire hazard as much as possible and to intervene in the fire quickly, it is necessary to consider a series of measures during the design phase of the buildings, to apply them during the construction period and to ensure their functionality during the operation period.

Fire resistant cables are the ones that carry energy and signals to the emergency safety circuits that must work during a fire for the safety of people in public buildings, for the protection of valuable goods and devices and facilitating fire response.

Halogen free flame retardant cables which is safe against fire, due to their nature, can delay the flame spread during a fire that will occur in the building, do not emit toxic and corrosive gas, and their smoke density is low. However, it cannot be used in electrical circuits (emergency safety circuits) where insulation continuity is required. The cables of these circuits should have the characteristics of fire resistant cables, and at the same time, maintain the continuity of the electricity transmission for a certain period of time during fire.

To summarize; fire resistant cables are able to carry energy and signal under fire for the minimum periods specified in standards and regulations.

In case of fire, the sheath materials of the cables are one of the most important layers because they are the first contact point with flame and temperature. Likewise, under-sheath protection layers should also have similar properties.

However, for the continuity of the cable function during fire, it is important that the insulation materials do not melt and dissolve under the flame, prevent short circuit by remaining on the metal conductor and maintain the electrical transmission.

Today, in addition to the use of customized silicone rubbers for the insulation of fire-resistant cables, natural or artificial mica-based tapes can be wrapped on the conductor to ensure function continuity during fire. Taping with mica is the most typical solution, it allows the use of different insulation materials permitted by the standards since the fire resistance is provided by the tape. Silicone rubber, on the other hand, is currently the most commonly used solution, as it simplifies and speeds installation thanks to easy peeling and lack of tape.

Additionally, various windings made of high temperature resistant materials are used to prevent the insulations from being exposed to direct flame. For this purpose, mica, glass fiber or their versions coated with some polymers may be preferred.

IDENTIFICATION SYMBOLS OF FIRE RESISTANT CABLES

Identification symbols of fire resistant cables according to DIN VDE standards

N	According to VDE - standard
(N)	On the basis of VDE - standard
JE	Installation cables and wire for industrial electronic
Li	Stranded wire conductor
H	Halogen free compound
HX	Cross-linked halogen free compound
C	Concentric screen with copper conductor
(St)	Metal foil screen
R	Armour/Braid of galvanised steel wire
Bd	Laid up in bundles
RE	Single-wire conductor (Class-1)
RM	Multiple-wire conductor (Class-2)
OZ	Black insulation+Without Green/Yellow earthing core
JZ	Black insulation+Green/Yellow earthing core
OB	Colour code insulation+Without Green/Yellow earthing core
JB	Colour code insulation+With Green/Yellow earthing core
FE180	Circuit integrity under rated voltage, at least 750 °C flame, according to IEC 60331-21 /-23 /-25. The numbers after the term FE express the time in minutes.
PH120	Circuit integrity under rated voltage, at least 830 °C flame and 25 kg impact, according to EN 50200 and EN IEC 60331-1. The numbers after the PH term represent time in minutes.
E30/E90	According to DIN 4102-12 standard, it is the testing of the system in a closed room where the flame reaching up to 1000 °C is applied with all components (trays, cable ducts, clips ...). In other words, it is functional integrity. The numbers after the term E express the time in minutes.



APPLICATION AREAS

Airports, Tunnels & Subways, Industrial Plants,
Skyscrapers, Hospitals, Administrative Constructions,
Educational Institutions, Cinema & Theater Halls,
Shopping Malls, Hotel & Congress Centers, Housing Estates



FIRE RESISTANT SIGNAL CONTROL CABLES

10 ERVITAL JE-H(St)H...Bd FE180/PH120/E30

12 ERVITAL JE-H(St)H...Bd FE180/PH120/E90

14 ERVITAL JE-H(St)HRH...Bd FE180/PH120

16 ERVITAL JE-HH...Bd FE180/PH120

18 ERVITAL LIHH FE180/PH120

20 ERVITAL LIHCH FE180/PH120/E30

22 ERVITAL LIHCH FE180/PH120/E90

24 ERVITAL LIH(St)H FE180/PH120

26 ERVITAL LIH(St)CH FE180/PH120

Fire Resistant Cable

ERVITAL JE-H(St)H...Bd FE180/PH120/E30



VDE 0815 / TS 13767 / DIN 4102-12

FLAME RETARDANT CHARACTERISTIC/LOW SMOKE EMISSION/WITHOUT POISONED AND CORROSIVE GASES
CIRCUIT INTEGRITY 180 MINUTES/CIRCUIT INTEGRITY WITH MECHANICAL SHOCK PH120/
FUNCTIONAL INTEGRITY E30

APPLICATION

- In places where electro-magnetic interference and influence exists
- Indoors where people are densely populated
- Instrumentation and control engineering
- Industrial electronics
- Computers and office machines
- Indoor communication systems
- Indoor sound systems
- In places where human life and valuable materials and equipment need to be protected

CONSTRUCTION

Conductor	EN 60228 Class 1 Electrolytic Copper
Insulation	EN 50363 Cross-linked Ceramic Forming Polymer Compound
Colour Code	VDE 0815
Stranding	2 pair star quad, more than 2 pairs groups in layers
Wrapping	Pes Tape + Glass Fibre Tape
Screen	Tinned Copper Drain Wire + Al-Pes Tape
Sheath	EN 50290-2-27 HFFR Compound
Sheath Colour	RAL 3000 Red or RAL 2003 Orange

TECHNICAL CHARACTERISTICS

Insulation Resistance (min)	Mutual Capacitance @800Hz	Operating Voltage	Min. Bending Radius	Test Voltage		Temperature Range
				Core/Core	Core/Screen	
100MΩxkm	120nF/km	225V	10x Cable Ø	0,8mm: 500V ≥1mm: 1000V	2000 V	- 30°C - +70°C (Temp. for stationary condition) - 5°C - +50°C (Temp. for moving condition) * +90°C (Max. Permissible Operating Temperature at Conductor) ** Permissible short-circuit temperature 250 °C

FIRE PERFORMANCE TESTS

Flame Retardant	Flame Propagation	Smoke Density	Corrosiveness Combustion Gases	Halogen Free	Circuit Integrity (FE180)	Circuit Integrity With Shock (PH120)	Functional Integrity (E30)
EN 60332-1-2	EN IEC 60332-3-24	EN 61034-2	EN 60754-2	EN 60754-1	IEC 60331-23/-21	EN 50200	DIN 4102-12

Fire Resistant Cable

ERVITAL JE-H(St)H...Bd FE180/PH120/E30

Cross Section	Overall Diameter (mm)	Approx Weight (kg/km)	Loop Resistance (Ω /km)	Product Code
1x2x0,8+0,8 mm	5.2	40	73.2	MDER0093001000800
2x2x0,8+0,8 mm	5.9	65	73.2	MDER0093002000800
4x2x0,8+0,8 mm	8.7	110	73.2	MDER0093004000800
8x2x0,8+0,8 mm	15.2	285	73.2	MDER0093008000800
12x2x0,8+0,8 mm	15.9	315	73.2	MDER0093012000800
1x2x1+0,8 mm	5.6	55	44.6	MDER0093001001020
2x2x1+0,8 mm	6.3	80	44.6	MDER0093002001020
4x2x1+0,8 mm	9.4	140	44.6	MDER0093004001020
1x2x1,5 mm ² +0,8 mm	6.8	75	24.6	MDER0093001001500
2x2x1,5 mm ² +0,8 mm	7.8	115	24.6	MDER0093002001500
4x2x1,5 mm ² +0,8 mm	12.6	235	24.6	MDER0093004001500
1x2x2,5 mm ² +0,8 mm	8.8	120	15.1	MDER0093001002500
2x2x2,5 mm ² +0,8 mm	10.1	195	15.1	MDER0093002002500

Fire Resistant Cable

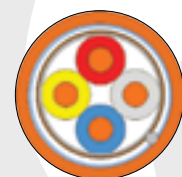
ERVITAL JE-H(St)H...Bd FE180/PH120/E90



Efectis

VDE 0815 / DIN 4102-12

FLAME RETARDANT CHARACTERISTIC/LOW SMOKE EMISSION/WITHOUT POISONED AND CORROSIVE GASES
CIRCUIT INTEGRITY 180 MINUTES/CIRCUIT INTEGRITY WITH MECHANICAL SHOCK PH120/
FUNCTIONAL INTEGRITY E90



APPLICATION

- In places where electro-magnetic interference and influence exists
- Indoors where people are densely populated
- Instrumentation and control engineering
- Industrial electronics
- Computers and office machines
- Indoor communication systems
- Indoor sound systems
- In places where human life and valuable materials and equipment need to be protected

CONSTRUCTION

Conductor	EN 60228 Class 1 Electrolytic Copper
Insulation	EN 50363 Cross-linked Ceramic Forming Polymer Compound
Colour Code	VDE 0815
Stranding	2 pair star quad, more than 2 pairs groups in layers
Wrapping	Pes Tape + Glass Fibre Tape
Screen	Tinned Copper Drain Wire + Al-Pes Tape
Sheath	EN 50290-2-27 HFFR Compound
Sheath Colour	RAL 3000 Red or RAL 2003 Orange

TECHNICAL CHARACTERISTICS

Insulation Resistance (min)	Mutual Capacitance @800Hz	Operating Voltage	Min. Bending Radius	Test Voltage		Temperature Range
				Core/Core	Core/Screen	
100MΩxkm	120nF/km	225V	10x Cable Ø	0,8mm: 500V ≥1,0mm: 1000V	2000 V	- 30°C - +70°C (Temp. for stationary condition) - 5°C - +50°C (Temp. for moving condition) * +90°C (Max.Permissible Operating Temperature at Conductor) ** Permissible short-circuit temperature 250 °C

FIRE PERFORMANCE TESTS

Flame Retardant	Flame Propagation	Smoke Density	Corrosiveness Combustion Gases	Halogen Free	Circuit Integrity (FE180)	Circuit Integrity With Shock (PH120)	Functional Integrity (E90)
EN 60332-1-2	EN IEC 60332-3-24	EN 61034-2	EN 60754-2	EN 60754-1	IEC 60331-23/-21	EN 50200	DIN 4102-12

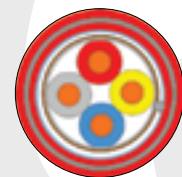
Fire Resistant Cable

ERVITAL JE-H(St)H...Bd FE180/PH120/E90

Cross Section	Overall Diameter (mm)	Approx Weight (kg/km)	Loop Resistance (Ω /km)	Product Code
1x2x0,8+0,8 mm	6	55	73.2	MDER0094001000800
2x2x0,8+0,8 mm	6.7	75	73.2	MDER0094002000800
4x2x0,8+0,8 mm	9.4	120	73.2	MDER0094004000800
8x2x0,8+0,8 mm	15.2	285	73.2	MDER0094008000800
12x2x0,8+0,8 mm	15.9	315	73.2	MDER0094012000800
1x2x1+0,8 mm	6.4	65	44.6	MDER0094001001020
2x2x1+0,8 mm	7.2	90	44.6	MDER0094002001020
4x2x1+0,8 mm	10.2	160	44.6	MDER0094004001020
1x2x1,5 mm ² +0,8 mm	8	95	24.6	MDER0094001001500
2x2x1,5 mm ² +0,8 mm	9.2	145	24.6	MDER0094002001500
4x2x1,5 mm ² +0,8 mm	12.6	235	24.6	MDER0094004001500
1x2x2,5 mm ² +0,8 mm	8.8	120	15.1	MDER0094001002500
2x2x2,5 mm ² +0,8 mm	10.1	195	15.1	MDER0094002002500

Fire Resistant Cable

ERVITAL JE-H(St)HRH...Bd FE180/PH120



VDE 0815

FLAME RETARDANT CHARACTERISTIC/LOW SMOKE EMISSION/WITHOUT POISONED AND CORROSIVE GASES
CIRCUIT INTEGRITY 180 MINUTES/CIRCUIT INTEGRITY WITH MECHANICAL SHOCK PH120

APPLICATION

- Indoors where people are densely populated
In places where there is electromagnetic interference
- Instrumentation and control engineering
 - Industrial electronics
 - For signal transmission
 - Indoor communication systems
 - In safety and fire alarm systems
 - In places where human life and valuable materials and equipment need to be protected
 - In places where mechanical strength is required

CONSTRUCTION

Conductor	EN 60228 Class 1 Electrolytic Copper
Insulation	EN 50363 Cross-linked Ceramic Forming Polymer Compound
Colour Code	VDE 0815
Stranding	2 pair star quad, more than 2 pairs groups in layers
Wrapping	Pes Tape + Glass Fibre Tape
Screen	Tinned Copper Drain Wire + Al-Pes Tape
Inner Sheath	EN 50290-2-27 HFFR Compound
Armour	Galvanized Steel Wire Braid
Outer Sheath	EN 50290-2-27 HFFR Compound
Sheath Colour	RAL 2003 Orange or RAL 3000 Red

TECHNICAL CHARACTERISTICS

Insulation Resistance (min)	Mutual Capacitance @800Hz	Operating Voltage	Min. Bending Radius	Test Voltage		Temperature Range
				Core/Core	Core/Screen	
100MΩxkm	120nF/km	225V	12x Cable Ø	0,8mm: 500V ≥1,0mm: 1000V	2000 V	- 30°C - +70°C (Temp. for stationary condition) - 5°C - +50°C (Temp. for moving condition) * +90°C (Max. Permissible Operating Temperature at Conductor) ** Permissible short-circuit temperature 250 °C

FIRE PERFORMANCE TESTS

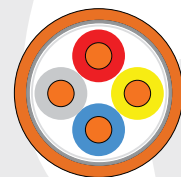
Flame Retardant	Flame Propagation	Smoke Density	Corrosiveness Combustion Gases	Halogen Free	Circuit Integrity (FE180)	Circuit Integrity With Shock (PH120)
EN 60332-1-2	EN IEC 60332-3-24	EN 61034-2	EN 60754-2	EN 60754-1	IEC 60331-23/-21	EN 50200

ERVITAL JE-H(St)HRH...Bd FE180/PH120

Cross Section	Overall Diameter (mm)	Approx Weight (kg/km)	Loop Resistance (Ω /km)	Product Code
1x2x0,8+0,8 mm	9.2	145	73.2	MDER0127001000800
2x2x0,8+0,8 mm	9.9	180	73.2	MDER0127002000800
1x2x1+0,8 mm	9.6	165	44.6	MDER0127001001020
2x2x1+0,8 mm	10.3	200	44.6	MDER0127002001020
1x2x1,5 mm ² +0,8 mm	10.8	200	24.6	MDER0127001001500
2x2x1,5 mm ² +0,8 mm	12	270	24.6	MDER0127002001500
1x2x2,5 mm ² +0,8 mm	12.6	275	15.1	MDER0127001002500
2x2x2,5 mm ² +0,8 mm	13.9	360	15.1	MDER0127002002500

Fire Resistant Cable

ERVITAL JE-HH...Bd FE180/PH120



VDE 0815

FLAME RETARDANT CHARACTERISTIC/LOW SMOKE EMISSION/WITHOUT POISONED AND CORROSIVE GASES
CIRCUIT INTEGRITY 180 MINUTES/CIRCUIT INTEGRITY WITH MECHANICAL SHOCK PH120

APPLICATION

- Indoors where people are densely populated
- Instrumentation and control engineering
- Industrial electronics
- Computers and office machines
- Indoor communication systems
- Indoor sound systems
- In places where human life and valuable materials and equipment need to be protected

CONSTRUCTION

Conductor	EN 60228 Class 1 Electrolytic Copper
Insulation	EN 50363 Cross-linked Ceramic Forming Polymer Compound
Colour Code	VDE 0815
Stranding	2 pair star quad, more than 2 pairs groups in layers
Wrapping	Glass Fibre Tape+Pes Tape
Sheath	EN 50290-2-27 HFFR Compound
Sheath Colour	RAL 3000 Red or RAL 2003 Orange

TECHNICAL CHARACTERISTICS

Insulation Resistance (min)	Mutual Capacitance @800Hz	Operating Voltage	Min. Bending Radius	Test Voltage Core/Core	Temperature Range
100MΩxkm	120nF/km	225V	10x Cable Ø	0,8mm: 500V ≥1,0mm: 1000V	- 30°C - +70°C (Temp. for stationary condition) - 5°C - +50°C (Temp. for moving condition) * +90°C (Max.Permissible Operating Temperature at Conductor) ** Permissible short-circuit temperature 250 °C

FIRE PERFORMANCE TESTS

Flame Retardant	Flame Propagation	Smoke Density	Corrosiveness Combustion Gases	Halogen Free	Circuit Integrity (FE180)	Circuit Integrity With Shock (PH120)
EN 60332-1-2	EN IEC 60332-3-24	EN 61034-2	EN 60754-2	EN 60754-1	IEC 60331-23/-21	EN 50200

ERVITAL JE-HH...Bd FE180/PH120

Cross Section	Overall Diameter (mm)	Approx Weight (kg/km)	Loop Resistance (Ω /km)	Product Code
1x2x0,8 mm	5.5	40	73.2	MDER0126001000800
2x2x0,8 mm	6.2	65	73.2	MDER0126002000800
4x2x0,8 mm	8.6	105	73.2	MDER0126004000800
1x2x1 mm	5.9	55	44.6	MDER0126001001020
2x2x1 mm	6.6	80	44.6	MDER0126002001020
4x2x1 mm	9.3	135	44.6	MDER0126004001000
1x2x1,5 mm ²	7.1	75	24.6	MDER0126001001500
2x2x1,5 mm ²	8.1	120	24.6	MDER0126002001500
4x2x1,5 mm ²	12.5	235	24.6	MDER0126004001500
1x2x2,5 mm ²	8.7	115	15.1	MDER0126001002500
2x2x2,5 mm ²	10	185	15.1	MDER0126002002500

Fire Resistant Cable

ERVITAL LIHH FE180/PH120



TS 13734 / VDE 0812

FLAME RETARDANT CHARACTERISTIC/LOW SMOKE EMISSION/WITHOUT POISONED AND CORROSIVE GASES
CIRCUIT INTEGRITY 180 MINUTES/CIRCUIT INTEGRITY WITH MECHANICAL SHOCK PH120

APPLICATION

Indoors where people are densely populated

- Instrumentation and control engineering
- Industrial electronics
- For signal transmission
- Indoor communication systems
- In safety and fire alarm systems
- In places where human life and valuable materials and equipment need to be protected

CONSTRUCTION

Conductor	EN 60228 Class 5 Stranded Electrolytic Copper
Insulation	EN 50363-1 E12 Cross-linked Ceramic Forming Polymer Compound
Colour Code	DIN 47100 or Black with white numbered
Stranding	In layers of optimum pitch
Wrapping	Glass Fibre Tape+Pes Tape
Sheath	EN 50290-2-27 HFFR Compound
Sheath Colour	RAL 2003 Orange

TECHNICAL CHARACTERISTICS

Insulation Resistance (min)	Mutual Capacitance @800Hz	Operating Voltage	Min. Bending Radius	Test Voltage Core/Core	Temperature Range
200M Ω xkm	120nF/km	500V	7,5x Cable \varnothing	$\leq 1 \text{ mm}^2$: 1200V $\geq 1,5 \text{ mm}^2$: 2000V	- 30°C - +70°C (Temp. for stationary condition) - 5°C - +50°C (Temp. for moving condition) * +90°C (Max.Permissible Operating Temperature at Conductor) ** Permissible short-circuit temperature 250 °C

FIRE PERFORMANCE TESTS

Flame Retardant	Flame Propagation	Smoke Density	Corrosiveness Combustion Gases	Halogen Free	Circuit Integrity (FE180)	Circuit Integrity With Shock (PH120)
EN 60332-1-2	EN IEC 60332-3-24	EN 61034-2	EN 60754-2	EN 60754-1	IEC 60331-23/-21	EN 50200

Fire Resistant Cable

ERVITAL LIHH FE180/PH120

Cross Section	Overall Diameter (mm)	Approx Weight (kg/km)	Conductor Resistance (Ω /km)	Product Code
2x0,5	5.3	35	39	MDER0095002000500
3x0,5	5.6	45	39	MDER0095003000500
4x0,5	6	60	39	MDER0095004000500
5x0,5	6.5	70	39	MDER0095005000500
6x0,5	7	80	39	MDER0096006000500
7x0,5	7	85	39	MDER0096007000500
8x0,5	7.5	95	39	MDER0096008000500
2x0,75	5.7	45	26	MDER0095002000750
3x0,75	6	60	26	MDER0095003000750
4x0,75	6.5	70	26	MDER0095004000750
5x0,75	7	85	26	MDER0095005000750
6x0,75	7.8	105	26	MDER0096006000750
7x0,75	7.8	110	26	MDER0096007000750
8x0,75	8.4	125	26	MDER0096008000750
2x1	6.1	55	19.5	MDER0095002001000
3x1	6.4	70	19.5	MDER0095003001000
4x1	7	85	19.5	MDER0095004001000
5x1	7.8	105	19.5	MDER0095005001000
6x1	8.4	120	19.5	MDER0096006001000
7x1	8.4	125	19.5	MDER0096007001000
8x1	9	145	19.5	MDER0096008001000
2x1,5	6.9	70	13.3	MDER0095002001500
3x1,5	7.3	90	13.3	MDER0095003001500
4x1,5	8.1	110	13.3	MDER0095004001500
5x1,5	8.9	140	13.3	MDER0095005001500
6x1,5	9.6	165	13.3	MDER0096006001500
7x1,5	9.6	175	13.3	MDER0096007001500
8x1,5	10.6	210	13.3	MDER0096008001500
2x2,5	7.9	95	7.98	MDER0095002002500
3x2,5	8.3	125	7.98	MDER0095003002500
4x2,5	9.1	160	7.98	MDER0095004002500
5x2,5	9.9	195	7.98	MDER0095005002500
6x2,5	11	235	7.98	MDER0096006002500
7x2,5	11	250	7.98	MDER0096007002500
8x2,5	11.9	295	7.98	MDER0096008002500

Fire Resistant Cable

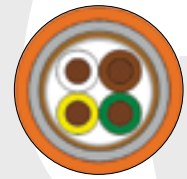
ERVITAL LIHCH FE180/PH120/E30



Efectis

VDE 0812 / VDE 0815 / TS 13734 / DIN 4102-12

FLAME RETARDANT CHARACTERISTIC/LOW SMOKE EMISSION/WITHOUT POISONED AND CORROSIVE GASES
CIRCUIT INTEGRITY 180 MINUTES/CIRCUIT INTEGRITY WITH MECHANICAL SHOCK PH120/
FUNCTIONAL INTEGRITY E30



APPLICATION

- Indoors where people are densely populated
In places where there is electromagnetic interference
- Instrumentation and control engineering
 - Industrial electronics
 - For signal transmission
 - Indoor communication systems
 - In safety and fire alarm systems
 - In places where human life and valuable materials and equipment need to be protected

CONSTRUCTION

Conductor	EN 60228 Class 5 Stranded Electrolytic Copper
Insulation	EN 50363 Cross-linked Ceramic Forming Polymer Compound
Colour Code	DIN 47100 or Black with white numbered
Stranding	In layers of optimum pitch
Wrapping	Pes Tape+Glass Fibre Tape
Screen	Tinned Copper Braid
Sheath	EN 50290-2-27 HFFR Compound
Sheath Colour	RAL 2003 Orange

TECHNICAL CHARACTERISTICS

Insulation Resistance (min)	Mutual Capacitance @800Hz	Operating Voltage	Min. Bending Radius	Test Voltage Core/Core	Temperature Range
200M Ω xkm	120nF/km	500V	7,5x Cable \varnothing	$\leq 1 \text{ mm}^2$: 1200V $\geq 1,5 \text{ mm}^2$: 2000V	- 30°C - +70°C (Temp. for stationary condition) - 5°C - +50°C (Temp. for moving condition) * +90°C (Max. Permissible Operating Temperature at Conductor) ** Permissible short-circuit temperature 250 °C

FIRE PERFORMANCE TESTS

Flame Retardant	Flame Propagation	Smoke Density	Corrosiveness Combustion Gases	Halogen Free	Circuit Integrity (FE180)	Circuit Integrity With Shock (PH120)	Functional Integrity (E30)
EN 60332-1-2	EN IEC 60332-3-24	EN 61034-2	EN 60754-2	EN 60754-1	IEC 60331-23/-21	EN 50200	DIN 4102-12

Fire Resistant Cable

ERVITAL LIHCH FE180/PH120/E30

Cross Section	Overall Diameter (mm)	Approx Weight (kg/km)	Conductor Resistance (Ω /km)	Product Code
2x0,5	5.7	45	39	MDER0100002000500
3x0,5	6	60	39	MDER0100003000500
4x0,5	6.4	65	39	MDER0100004000500
5x0,5	6.9	80	39	MDER0100005000500
6x0,5	7.4	90	39	MDER0101006000500
7x0,5	7.4	95	39	MDER0101007000500
8x0,5	8.1	110	39	MDER0101008000500
2x0,75	6.1	55	26	MDER0100002000750
3x0,75	6.4	65	26	MDER0100003000750
4x0,75	6.9	80	26	MDER0100004000750
5x0,75	7.4	95	26	MDER0100005000750
6x0,75	8.2	115	26	MDER0101006000750
7x0,75	8.2	120	26	MDER0101007000750
8x0,75	8.8	135	26	MDER0101008000750
2x1	6.5	65	19.5	MDER0100002001000
3x1	6.8	80	19.5	MDER0100003001000
4x1	7.4	95	19.5	MDER0100004001000
5x1	8.2	115	19.5	MDER0100005001000
6x1	8.8	135	19.5	MDER0101006001000
7x1	8.8	140	19.5	MDER0101007001000
8x1	9.4	165	19.5	MDER0101008001000
2x1,5	7.3	80	13.3	MDER0100002001500
3x1,5	7.9	105	13.3	MDER0100003001500
4x1,5	8.5	125	13.3	MDER0100004001500
5x1,5	9.3	150	13.3	MDER0100005001500
6x1,5	10	180	13.3	MDER0101006001500
7x1,5	10	190	13.3	MDER0101007001500
8x1,5	11	220	13.3	MDER0101008001500
2x2,5	8.3	105	7.98	MDER0100002002500
3x2,5	8.7	135	7.98	MDER0100003002500
4x2,5	9.5	170	7.98	MDER0100004002500
5x2,5	10.5	215	7.98	MDER0100005002500
6x2,5	11.4	255	7.98	MDER0101006002500
7x2,5	11.4	275	7.98	MDER0101007002500
8x2,5	12.3	310	7.98	MDER0101008002500

Fire Resistant Cable

ERVITAL LIHCH FE180/PH120/E90



Efectis

VDE 0812 / VDE 0815 / DIN 4102-12

FLAME RETARDANT CHARACTERISTIC/LOW SMOKE EMISSION/WITHOUT POISONED AND CORROSIVE GASES
CIRCUIT INTEGRITY 180 MINUTES/CIRCUIT INTEGRITY WITH MECHANICAL SHOCK PH120/
FUNCTIONAL INTEGRITY E90

APPLICATION

- Indoors where people are densely populated
In places where there is electromagnetic interference
- Instrumentation and control engineering
 - Industrial electronics
 - For signal transmission
 - Indoor communication systems
 - In safety and fire alarm systems
 - In places where human life and valuable materials and equipment need to be protected

CONSTRUCTION

Conductor	EN 60228 Class 5 Stranded Electrolytic Copper
Insulation	EN 50363 Cross-linked Ceramic Forming Polymer Compound
Colour Code	DIN 47100 or Black with white numbered
Stranding	In layers of optimum pitch
Wrapping	Pes Tape+Glass Fibre Tape
Screen	Tinned Copper Braid
Sheath	EN 50290-2-27 HFFR Compound
Sheath Colour	RAL 2003 Orange

TECHNICAL CHARACTERISTICS

Insulation Resistance (min)	Mutual Capacitance @800Hz	Operating Voltage	Min. Bending Radius	Test Voltage Core/Core	Temperature Range
100MΩxkm	120nF/km	500V	7,5x Cable Ø	≤1 mm ² : 1200V ≥1,5mm ² : 2000V	- 30°C - +70°C (Temp. for stationary condition) - 5°C - +50°C (Temp. for moving condition) * +90°C (Max. Permissible Operating Temperature at Conductor) ** Permissible short-circuit temperature 250 °C

FIRE PERFORMANCE TESTS

Flame Retardant	Flame Propagation	Smoke Density	Corrosiveness Combustion Gases	Halogen Free	Circuit Integrity (FE180)	Circuit Integrity With Shock (PH120)	Functional Integrity (E90)
EN 60332-1-2	EN IEC 60332-3-24	EN 61034-2	EN 60754-2	EN 60754-1	IEC 60331-23/-21	EN 50200	DIN 4102-12

Fire Resistant Cable

ERVITAL LIHCH FE180/PH120/E90

Cross Section	Overall Diameter (mm)	Approx Weight (kg/km)	Conductor Resistance (Ω /km)	Product Code
2x0,5	5.7	45	39	MDER0102002000500
3x0,5	6	55	39	MDER0102003000500
4x0,5	6.4	65	39	MDER0102004000500
5x0,5	6.9	80	39	MDER0102005000500
6x0,5	7.4	90	39	MDER0103006000500
7x0,5	7.4	90	39	MDER0103007000500
8x0,5	8.1	110	39	MDER0103008000500
2x0,75	6.1	55	26	MDER0102002000750
3x0,75	6.4	65	26	MDER0102003000750
4x0,75	6.9	80	26	MDER0102004000750
5x0,75	7.4	95	26	MDER0102005000750
6x0,75	8.2	115	26	MDER0103006000750
7x0,75	8.2	115	26	MDER0103007000750
8x0,75	8.8	130	26	MDER0103008000750
2x1	6.5	65	19.5	MDER0102002001000
3x1	6.8	75	19.5	MDER0102003001000
4x1	7.4	95	19.5	MDER0102004001000
5x1	8.2	115	19.5	MDER0102005001000
6x1	8.8	130	19.5	MDER0103006001000
7x1	8.8	140	19.5	MDER0103007001000
8x1	9.4	160	19.5	MDER0103008001000
2x1,5	7.3	80	13.3	MDER0102002001500
3x1,5	7.9	100	13.3	MDER0102003001500
4x1,5	8.5	120	13.3	MDER0102004001500
5x1,5	9.3	150	13.3	MDER0102005001500
6x1,5	10	180	13.3	MDER0103006001500
7x1,5	10	185	13.3	MDER0103007001500
8x1,5	11	220	13.3	MDER0103008001500
2x2,5	8.3	105	7.98	MDER0102002002500
3x2,5	8.7	135	7.98	MDER0102003002500
4x2,5	9.5	170	7.98	MDER0102004002500
5x2,5	10.5	215	7.98	MDER0102005002500
6x2,5	11.4	250	7.98	MDER0103006002500
7x2,5	11.4	270	7.98	MDER0103007002500
8x2,5	12.3	305	7.98	MDER0103008002500

Fire Resistant Cable

ERVITAL LIH(St)H FE180/PH120



TS 13734 / VDE 0812

FLAME RETARDANT CHARACTERISTIC/LOW SMOKE EMISSION/WITHOUT POISONED AND CORROSIVE GASES
CIRCUIT INTEGRITY 180 MINUTES/CIRCUIT INTEGRITY WITH MECHANICAL SHOCK PH120

APPLICATION

- Indoors where people are densely populated
In places where there is electromagnetic interference
- Instrumentation and control engineering
 - Industrial electronics
 - For signal transmission
 - Indoor communication systems
 - In safety and fire alarm systems
 - In places where human life and valuable materials and equipment need to be protected

CONSTRUCTION

Conductor	EN 60228 Class 5 Stranded Electrolytic Copper
Insulation	EN 50363-1 E12 Cross-linked Ceramic Forming Polymer Compound
Colour Code	DIN 47100 or Black with white numbered
Stranding	In layers of optimum pitch
Wrapping	Pes Tape+Glass Fibre Tape
Screen	Tinned Copper Drain Wire + Al-Pes-Tape
Sheath	EN 50290-2-27 HFFR Compound
Sheath Colour	RAL 2003 Orange

TECHNICAL CHARACTERISTICS

Insulation Resistance (min)	Mutual Capacitance @800Hz	Operating Voltage	Min. Bending Radius	Test Voltage Core/Core	Temperature Range
200M Ω xkm	120nF/km	500V	7,5x Cable \varnothing	$\leq 1 \text{ mm}^2$: 1200V $\geq 1,5 \text{ mm}^2$: 2000V	- 30°C - +70°C (Temp. for stationary condition) - 5°C - +50°C (Temp. for moving condition) * +90°C (Max.Permissible Operating Temperature at Conductor) ** Permissible short-circuit temperature 250 °C

FIRE PERFORMANCE TESTS

Flame Retardant	Flame Propagation	Smoke Density	Corrosiveness Combustion Gases	Halogen Free	Circuit Integrity (FE180)	Circuit Integrity With Shock (PH120)
EN 60332-1-2	EN IEC 60332-3-24	EN 61034-2	EN 60754-2	EN 60754-1	IEC 60331-23/-21	EN 50200

Fire Resistant Cable

ERVITAL LIH(St)H FE180/PH120

Cross Section	Overall Diameter (mm)	Approx Weight (kg/km)	Conductor Resistance (Ω /km)	Product Code
2x0,5	5.4	40	39	MDER0106002000500
3x0,5	5.7	45	39	MDER0106003000500
4x0,5	6.1	60	39	MDER0106004000500
5x0,5	6.6	70	39	MDER0106005000500
6x0,5	7.1	85	39	MDER0107006000500
7x0,5	7.1	85	39	MDER0107007000500
8x0,5	7.8	100	39	MDER0107008000500
2x0,75	5.8	55	26	MDER0106002000750
3x0,75	6.1	65	26	MDER0106003000750
4x0,75	6.6	75	26	MDER0106004000750
5x0,75	7.1	90	26	MDER0106005000750
6x0,75	7.9	110	26	MDER0107006000750
7x0,75	7.9	110	26	MDER0107007000750
8x0,75	8.5	125	26	MDER0107008000750
2x1	6.2	60	19.5	MDER0106002001000
3x1	6.5	75	19.5	MDER0106003001000
4x1	7.1	90	19.5	MDER0106004001000
5x1	7.9	110	19.5	MDER0106005001000
6x1	8.5	130	19.5	MDER0107006001000
7x1	8.5	135	19.5	MDER0107007001000
8x1	9.1	160	19.5	MDER0107008001000
2x1,5	7	75	13.3	MDER0106002001500
3x1,5	7.4	95	13.3	MDER0106003001500
4x1,5	8.2	120	13.3	MDER0106004001500
5x1,5	9	145	13.3	MDER0106005001500
6x1,5	9.7	175	13.3	MDER0107006001500
7x1,5	9.7	180	13.3	MDER0107007001500
8x1,5	10.7	215	13.3	MDER0107008001500
2x2,5	8	100	7.98	MDER0106002002500
3x2,5	8.4	130	7.98	MDER0106003002500
4x2,5	9.2	165	7.98	MDER0106004002500
5x2,5	10	205	7.98	MDER0106005002500
6x2,5	11.1	245	7.98	MDER0107006002500
7x2,5	11.1	265	7.98	MDER0107007002500
8x2,5	12	300	7.98	MDER0107008002500

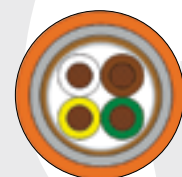
Fire Resistant Cable

ERVITAL LIH(St)CH FE180/PH120



TS 13734 / VDE 0812

FLAME RETARDANT CHARACTERISTIC/LOW SMOKE EMISSION/WITHOUT POISONED AND CORROSIVE GASES
CIRCUIT INTEGRITY 180 MINUTES/CIRCUIT INTEGRITY WITH MECHANICAL SHOCK PH120



APPLICATION

- Indoors where people are densely populated
In places where there is electromagnetic interference
- Instrumentation and control engineering
 - Industrial electronics
 - For signal transmission
 - Indoor communication systems
 - In safety and fire alarm systems
 - In places where human life and valuable materials and equipment need to be protected

CONSTRUCTION

Conductor	EN 60228 Class 5 Stranded Electrolytic Copper
Insulation	EN 50363-1 E12 Cross-linked Ceramic Forming Polymer Compound
Colour Code	DIN 47100 or Black with white numbered
Stranding	In layers of optimum pitch
Wrapping	Pes Tape+Glass Fibre Tape
Screen	Al-Pes Tape + Tinned Copper Braid
Sheath	EN 50290-2-27 HFFR Compound
Sheath Colour	RAL 2003 Orange

TECHNICAL CHARACTERISTICS

Insulation Resistance (min)	Mutual Capacitance @800Hz	Operating Voltage	Min. Bending Radius	Test Voltage Core/Core	Temperature Range
200M Ω xkm	120nF/km	500V	7,5x Cable \varnothing	$\leq 1 \text{ mm}^2$: 1200V $\geq 1,5 \text{ mm}^2$: 2000V	- 30°C - +70°C (Temp. for stationary condition) - 5°C - +50°C (Temp. for moving condition) * +90°C (Max.Permissible Operating Temperature at Conductor) ** Permissible short-circuit temperature 250 °C

FIRE PERFORMANCE TESTS

Flame Retardant	Flame Propagation	Smoke Density	Corrosiveness Combustion Gases	Halogen Free	Circuit Integrity (FE180)	Circuit Integrity With Shock (PH120)
EN 60332-1-2	EN IEC 60332-3-24	EN 61034-2	EN 60754-2	EN 60754-1	IEC 60331-23/-21	EN 50200

Fire Resistant Cable

ERVITAL LIH(St)CH FE180/PH120

Cross Section	Overall Diameter (mm)	Approx Weight (kg/km)	Conductor Resistance (Ω /km)	Product Code
2x0,5	5.7	45	39	MDER0104002000500
3x0,5	6.1	60	39	MDER0104003000500
4x0,5	6.4	70	39	MDER0104004000500
5x0,5	6.9	80	39	MDER0104005000500
6x0,5	7.4	95	39	MDER0105006000500
7x0,5	7.4	95	39	MDER0105007000500
8x0,5	8.1	110	39	MDER0105008000500
2x0,75	6.1	60	26	MDER0104002000750
3x0,75	6.4	70	26	MDER0104003000750
4x0,75	6.9	80	26	MDER0104004000750
5x0,75	7.4	95	26	MDER0104005000750
6x0,75	8.2	115	26	MDER0105006000750
7x0,75	8.2	120	26	MDER0105007000750
8x0,75	8.8	135	26	MDER0105008000750
2x1	6.5	65	19.5	MDER0104002001000
3x1	6.8	80	19.5	MDER0104003001000
4x1	7.4	95	19.5	MDER0104004001000
5x1	8.2	115	19.5	MDER0104005001000
6x1	8.8	135	19.5	MDER0105006001000
7x1	8.8	140	19.5	MDER0105007001000
8x1	9.4	165	19.5	MDER0105008001000
2x1,5	7.3	80	13.3	MDER0104002001500
3x1,5	7.9	105	13.3	MDER0104003001500
4x1,5	8.5	125	13.3	MDER0104004001500
5x1,5	9.3	160	13.3	MDER0104005001500
6x1,5	10	185	13.3	MDER0105006001500
7x1,5	10	190	13.3	MDER0105007001500
8x1,5	11	225	13.3	MDER0105008001500
2x2,5	8.3	110	7.98	MDER0104002002500
3x2,5	8.7	135	7.98	MDER0104003002500
4x2,5	9.5	175	7.98	MDER0104004002500
5x2,5	10.5	220	7.98	MDER0104005002500
6x2,5	11.4	255	7.98	MDER0105006002500
7x2,5	11.4	275	7.98	MDER0105007002500
8x2,5	12.3	315	7.98	MDER0105008002500



FIRE RESISTANT ENERGY CABLES

30 ERVITAL (N)HXH FE180/PH120/E30

32 ERVITAL (N)HXH FE180/PH120/E90

34 ERVITAL (N)HXCH FE180/PH120/E30

36 ERVITAL (N)HXCH FE180/PH120/E90

38 ERVITAL NHXH FE180/PH120/E90

40 ERVITAL NHXCH FE180/PH120/E90

42 ERVITAL NHXMH FE180/PH120

Fire Resistant Cable

ERVITAL (N)HXH FE180/PH120/E30



Efectis

HD 604 S1 (Part 5-H) / DIN 4102-12

FLAME RETARDANT CHARACTERISTIC / LOW SMOKE EMISSION / WITHOUT POISONED AND CORROSIVE GASSES
CIRCUIT INTEGRITY FE180 / CIRCUIT INTEGRITY WITH MECHANICAL SHOCK PH120 / FUNCTIONAL INTEGRITY E30

APPLICATION

Used as a power and control cable

- Machine and equipment that are required to continue its function during a fire (emergency elevators, fire water pumps etc.)
- Ventilation systems are which are connected to fire alarm system
- In emergency lighting at fire escape exits
- Emergency power supplies
- In places where human life and valuable materials and equipment need to be protected

CONSTRUCTION

Conductor	EN 60228 Class 1 & 2 Electrolytic Copper
Insulation	HD 604 S1 HIC Cross-linked Ceramic Forming Polymer Compound
Colour Code	HD 308 S2
Stranding	In layers of optimum lay-length
Bedding	HFFR Compound
Sheath	HD 604 S1 HM4 HFFR Compound
Sheath Colour	RAL 2003 Orange

TECHNICAL CHARACTERISTICS

Operating Voltage	Min. Bending Radius	Test Voltage Core/Core	Temperature Range
0,6/1 kV	15 x Cable Ø for single core cables 12 x Cable Ø for multicore cables	4000V	- 40°C - +90°C (Temp. for stationary condition) - 5°C - +50°C (Temp. for moving condition) * +90°C (Max. Permissible Operating Temperature at Conductor) ** Permissible short-circuit temperature 250 °C

FIRE PERFORMANCE TESTS

Flame Retardant	Flame Propagation	Smoke Density	Corrosiveness Combustion Gases	Halogen Free	Circuit Integrity (FE180)	Circuit Integrity With Shock (PH120)	Functional Integrity (E30)
EN 60332-1-2	EN IEC 60332-3-24	EN 61034-2	EN 60754-2	EN 60754-1	IEC 60331-21	EN 50200 IEC 60331-1	DIN 4102-12

Fire Resistant Cable

ERVITAL (N)HXH FE180/PH120/E30

Cross Section	Overall Diameter (mm)	Approx Weight (kg/km)	Conductor Resistance (Ω /km)	Product Code
2x1,5	7.7	105	12.1	MDER0117002001500
3x1,5	8.2	125	12.1	MDER0116003001500
4x1,5	9	150	12.1	MDER0116004001500
5x1,5	9.9	190	12.1	MDER0116005001500
7x1,5	10.9	235	12.1	MDER0118007001500
2x2,5	8.9	145	7.41	MDER0117002002500
3x2,5	9.4	180	7.41	MDER0116003002500
4x2,5	10.3	215	7.41	MDER0116004002500
5x2,5	11.6	280	7.41	MDER0116005002500
7x2,5	12.6	345	7.41	MDER0118007002500
2x4	10	200	4.61	MDER0117002004000
3x4	10.8	250	4.61	MDER0116003004000
4x4	11.9	310	4.61	MDER0116004004000
5x4	13.2	385	4.61	MDER0116005004000
2x6	11.6	280	3.08	MDER0117002006000
3x6	12.3	340	3.08	MDER0116003006000
4x6	13.6	425	3.08	MDER0116004006000
5x6	15	525	3.08	MDER0116005006000
2x10	14	430	1.83	MDER0117002010000
3x10	15	545	1.83	MDER0116003010000
4x10	16.8	700	1.83	MDER0116004010000
5x10	18.6	855	1.83	MDER0116005010000
1x16	8.9	220	1.15	MDER0064001016000
3x16	18.7	825	1.15	MDER0116003016000
4x16	20.6	1035	1.15	MDER0116004016000
5x16	22.8	1270	1.15	MDER0116005016000
1x25	10.3	325	0.727	MDER0064001025000
3x25	21.9	1210	0.727	MDER0116003025000
4x25	24.2	1530	0.727	MDER0116004025000
5x25	27.1	1905	0.727	MDER0116005025000
1x35	11.7	435	0.524	MDER0064001035000
3x35	24.6	1595	0.524	MDER0116003035000
4x35	27.7	2065	0.524	MDER0116004035000
5x35	30.7	2545	0.524	MDER0116005035000
1x50	13.3	585	0.387	MDER0064001050000
3x50	28.5	2165	0.387	MDER0116003050000
4x50	31.8	2770	0.387	MDER0116004050000
5x50	35.3	3420	0.387	MDER0116005050000

Product codes could be changed according to OB or JB core colors.

Fire Resistant Cable

ERVITAL (N)HXH FE180/PH120/E90



Efectis

HD 604 S1 (Part 5-H) / DIN 4102-12

FLAME RETARDANT CHARACTERISTIC / LOW SMOKE EMISSION / WITHOUT POISONED AND CORROSIVE GASSES
CIRCUIT INTEGRITY FE180 / CIRCUIT INTEGRITY WITH MECHANICAL SHOCK PH120 / FUNCTIONAL INTEGRITY E90

APPLICATION

Used as a power and control cable

- Machine and equipment that are required to continue its function during a fire (emergency elevators, fire water pumps etc.)
- Ventilation systems are which are connected to fire alarm system
- In emergency lighting at fire escape exits
- Emergency power supplies
- In places where human life and valuable materials and equipment need to be protected

CONSTRUCTION

Conductor	EN 60228 Class 1 & 2 Electrolytic Copper
Insulation	HD 604 S1 HIC Cross-linked Ceramic Forming Polymer Compound
Colour Code	HD 308 S2
Stranding	In layers of optimum lay-length
Bedding	HFFR Compound
Sheath	HD 604 S1 HM4 HFFR Compound
Sheath Colour	RAL 2003 Orange

TECHNICAL CHARACTERISTICS

Operating Voltage	Min. Bending Radius	Test Voltage Core/Core	Temperature Range
0,6/1 kV	15 x Cable Ø for single core cables 12 x Cable Ø for multicore cables	4000V	- 40°C - +90°C (Temp. for stationary condition) - 5°C - +50°C (Temp. for moving condition) * +90°C (Max. Permissible Operating Temperature at Conductor) ** Permissible short-circuit temperature 250 °C

FIRE PERFORMANCE TESTS

Flame Retardant	Flame Propagation	Smoke Density	Corrosiveness Combustion Gases	Halogen Free	Circuit Integrity (FE180)	Circuit Integrity With Shock (PH120)	Functional Integrity (E90)
EN 60332-1-2	EN IEC 60332-3-24	EN 61034-2	EN 60754-2	EN 60754-1	IEC 60331-21	EN 50200 IEC 60331-1	DIN 4102-12

Fire Resistant Cable

ERVITAL (N)HXH FE180/PH120/E90

Cross Section	Overall Diameter (mm)	Approx Weight (kg/km)	Conductor Resistance (Ω /km)	Product Code
2x1,5	7.7	105	12.1	MDER0048002001500
3x1,5	8.2	125	12.1	MDER0049003001500
4x1,5	9	150	12.1	MDER0049004001500
5x1,5	9.9	185	12.1	MDER0049005001500
7x1,5	10.9	230	12.1	MDER0050007001500
2x2,5	8.9	145	7.41	MDER0048002002500
3x2,5	9.4	175	7.41	MDER0049003002500
4x2,5	10.3	215	7.41	MDER0049004002500
5x2,5	11.6	275	7.41	MDER0049005002500
7x2,5	12.6	335	7.41	MDER0050007002500
2x4	10	200	4.61	MDER0048002004000
3x4	10.8	245	4.61	MDER0049003004000
4x4	11.9	305	4.61	MDER0049004004000
5x4	13.2	380	4.61	MDER0049005004000
2x6	11.6	275	3.08	MDER0048002006000
3x6	12.3	335	3.08	MDER0049003006000
4x6	13.6	420	3.08	MDER0049004006000
5x6	15	520	3.08	MDER0049005006000
2x10	14	425	1.83	MDER0048002010000
3x10	15	535	1.83	MDER0049003010000
4x10	16.8	690	1.83	MDER0049004010000
5x10	18.6	845	1.83	MDER0049005010000
1x16	8.9	215	1.15	MDER0045001016000
3x16	18.7	815	1.15	MDER0049003016000
4x16	20.6	1025	1.15	MDER0049004016000
5x16	22.8	1260	1.15	MDER0049005016000
1x25	10.3	320	0.727	MDER0045001025000
3x25	21.9	1190	0.727	MDER0049003025000
4x25	24.2	1510	0.727	MDER0049004025000
5x25	27.1	1885	0.727	MDER0049005025000
1x35	11.7	430	0.524	MDER0045001035000
3x35	24.6	1580	0.524	MDER0049003035000
4x35	27.7	2040	0.524	MDER0049004035000
5x35	30.7	2520	0.524	MDER0049005035000
1x50	13.3	580	0.387	MDER0045001050000
3x50	28.5	2140	0.387	MDER0049003050000
4x50	31.8	2745	0.387	MDER0049004050000
5x50	35.3	3385	0.387	MDER0049005050000

Product codes could be changed according to OB or JB core colors.

Fire Resistant Cable

ERVITAL (N)HXCH FE180/PH120/E30



Efectis

HD 604 S1 (Part 5-H) / DIN 4102-12

FLAME RETARDANT CHARACTERISTIC / LOW SMOKE EMISSION / WITHOUT POISONED AND CORROSIVE GASSES
CIRCUIT INTEGRITY FE180 / CIRCUIT INTEGRITY WITH MECHANICAL SHOCK PH120 / FUNCTIONAL INTEGRITY E30

APPLICATION

Used as a power and control cable

- Machine and equipment that are required to continue its function during a fire (emergency elevators, fire water pumps etc.)
- Ventilation systems are which are connected to fire alarm system
- In emergency lighting at fire escape exits
- Emergency power supplies
- In places where human life and valuable materials and equipment need to be protected

CONSTRUCTION

Conductor	EN 60228 Class 1 & 2 Electrolytic Copper
Insulation	HD 604 S1 HIC Cross-linked Ceramic Forming Polymer Compound
Colour Code	HD 308 S2
Stranding	In layers of optimum lay-length
Bedding	HFFR Compound
Screen	Spirally wrapped round copper wires with counter helix of copper tape
Sheath	HD 604 S1 HM4 HFFR Compound
Sheath Colour	RAL 2003 Orange

TECHNICAL CHARACTERISTICS

Operating Voltage	Min. Bending Radius	Test Voltage Core/Core	Temperature Range
0,6/1 kV	15 x Cable Ø for single core cables 12 x Cable Ø for multicore cables	4000V	- 40°C - +90°C (Temp. for stationary condition) - 5°C - +50°C (Temp. for moving condition) * +90°C (Max. Permissible Operating Temperature at Conductor) ** Permissible short-circuit temperature 250 °C

FIRE PERFORMANCE TESTS

Flame Retardant	Flame Propagation	Smoke Density	Corrosiveness Combustion Gases	Halogen Free	Circuit Integrity (FE180)	Circuit Integrity With Shock (PH120)	Functional Integrity (E30)
EN 60332-1-2	EN IEC 60332-3-24	EN 61034-2	EN 60754-2	EN 60754-1	IEC 60331-21	EN 50200 IEC 60331-1	DIN 4102-12

Fire Resistant Cable

ERVITAL (N)HXCH FE180/PH120/E30

Cross Section	Overall Diameter (mm)	Approx Weight (kg/km)	Conductor Resistance (Ω /km)	Product Code
2x1,5/1,5	9.8	160	12.1	MDER0123002001510
3x1,5/1,5	10.2	180	12.1	MDER0123003001510
4x1,5/1,5	10.9	210	12.1	MDER0123004001510
5x1,5/1,5	11.9	250	12.1	MDER0123005001510
7x1,5/1,5	13.1	310	12.1	MDER0125007001510
2x2,5/2,5	10.8	205	7.41	MDER0123002002520
3x2,5/2,5	11.5	240	7.41	MDER0123003002520
4x2,5/2,5	12.5	290	7.41	MDER0123004002520
5x2,5/2,5	13.6	340	7.41	MDER0123005002520
7x2,5/2,5	14.8	425	7.41	MDER0125007002520
2x4/4	12	280	4.61	MDER0123002004030
3x4/4	12.8	330	4.61	MDER0123003004030
4x4/4	13.9	395	4.61	MDER0123004004030
5x4/4	15.2	475	4.61	MDER0123005004030
2x6/6	13.6	380	3.08	MDER0123002006040
3x6/6	14.3	440	3.08	MDER0123003006040
4x6/6	15.6	530	3.08	MDER0123004006040
5x6/6	17	640	3.08	MDER0123005006040
2x10/10	16	570	1.83	MDER0123002010050
3x10/10	17	690	1.83	MDER0123003010050
4x10/10	18.8	850	1.83	MDER0123004010050
5x10/10	20.6	1025	1.83	MDER0123005010050
2x16/16	20.2	895	1.15	MDER0123002016060
3x16/16	21.3	1055	1.15	MDER0123003016060
4x16/16	23.4	1280	1.15	MDER0123004016060
5x16/16	25.8	1545	1.15	MDER0123005016060
2x25/16	23	1185	0.727	MDER0123002025060
3x25/16	24.7	1460	0.727	MDER0123003025060
4x25/16	27.2	1800	0.727	MDER0123004025060
5x25/16	29.7	2165	0.727	MDER0123005025060
2x35/16	26	1525	0.524	MDER0123002035060
3x35/16	27.6	1875	0.524	MDER0123003035060
4x35/16	30.3	2320	0.524	MDER0123004035060
5x35/16	33.5	2825	0.524	MDER0123005035060
2x50/25	29.2	2025	0.387	MDER0123002050070
3x50/25	31.1	2505	0.387	MDER0123003050070
4x50/25	34.2	3110	0.387	MDER0123004050070
5x50/25	37.9	3790	0.387	MDER0123005050070

Product codes could be changed according to OB or JB core colors.

Fire Resistant Cable

ERVITAL (N)HXCH FE180/PH120/E90



Efectis

HD 604 S1 (Part 5-H) / DIN 4102-12

FLAME RETARDANT CHARACTERISTIC / LOW SMOKE EMISSION / WITHOUT POISONED AND CORROSIVE GASSES
CIRCUIT INTEGRITY FE180 / CIRCUIT INTEGRITY WITH MECHANICAL SHOCK PH120 / FUNCTIONAL INTEGRITY E90

APPLICATION

Used as a power and control cable

- Machine and equipment that are required to continue its function during a fire (emergency elevators, fire water pumps etc.)
- Ventilation systems are which are connected to fire alarm system
- In emergency lighting at fire escape exits
- Emergency power supplies
- In places where human life and valuable materials and equipment need to be protected
- In places where there is electromagnetic interference

CONSTRUCTION

Conductor	EN 60228 Class 1 & 2 Electrolytic Copper
Insulation	HD 604 S1 HIC Cross-linked Ceramic Forming Polymer Compound
Colour Code	HD 308 S2
Stranding	In layers of optimum lay-length
Bedding	HFFR Compound
Screen	Spirally wrapped round copper wires with counter helix of copper tape
Sheath	HD 604 S1 HM4 HFFR Compound
Sheath Colour	RAL 2003 Orange

TECHNICAL CHARACTERISTICS

Operating Voltage	Min. Bending Radius	Test Voltage Core/Core	Temperature Range
0,6/1 kV	15 x Cable Ø for single core cables 12 x Cable Ø for multicore cables	4000V	- 40°C - +90°C (Temp. for stationary condition) - 5°C - +50°C (Temp. for moving condition) * +90°C (Max. Permissible Operating Temperature at Conductor) ** Permissible short-circuit temperature 250 °C

FIRE PERFORMANCE TESTS

Flame Retardant	Flame Propagation	Smoke Density	Corrosiveness Combustion Gases	Halogen Free	Circuit Integrity (FE180)	Circuit Integrity With Shock (PH120)	Functional Integrity (E90)
EN 60332-1-2	EN IEC 60332-3-24	EN 61034-2	EN 60754-2	EN 60754-1	IEC 60331-21	EN 50200 IEC 60331-1	DIN 4102-12

Fire Resistant Cable

ERVITAL (N)HXCH FE180/PH120/E90

Cross Section	Overall Diameter (mm)	Approx Weight (kg/km)	Conductor Resistance (Ω /km)	Product Code
2x1,5/1,5	9.8	160	12.1	MDER0059002001510
3x1,5/1,5	10.2	180	12.1	MDER0059003001510
4x1,5/1,5	10.9	205	12.1	MDER0059004001510
5x1,5/1,5	11.9	245	12.1	MDER0059005001510
7x1,5/1,5	13.1	305	12.1	MDER0061007001510
2x2,5/2,5	10.8	205	7.41	MDER0059002002520
3x2,5/2,5	11.5	235	7.41	MDER0059003002520
4x2,5/2,5	12.5	285	7.41	MDER0059004002520
5x2,5/2,5	13.6	335	7.41	MDER0059005002520
7x2,5/2,5	14.8	420	7.41	MDER0061007002520
2x4/4	12	280	4.61	MDER0059002004030
3x4/4	12.8	325	4.61	MDER0059003004030
4x4/4	13.9	390	4.61	MDER0059004004030
5x4/4	15.2	465	4.61	MDER0059005004030
2x6/6	13.6	380	3.08	MDER0059002006040
3x6/6	14.3	440	3.08	MDER0059003006040
4x6/6	15.6	525	3.08	MDER0059004006040
5x6/6	17	630	3.08	MDER0059005006040
2x10/10	16	565	1.83	MDER0059002010050
3x10/10	17	685	1.83	MDER0059003010050
4x10/10	18.8	840	1.83	MDER0059004010050
5x10/10	20.6	1015	1.83	MDER0059005010050
2x16/16	20.2	880	1.15	MDER0059002016060
3x16/16	21.3	1045	1.15	MDER0059003016060
4x16/16	23.4	1270	1.15	MDER0059004016060
5x16/16	25.8	1530	1.15	MDER0059005016060
3x25/16	24.7	1450	0.727	MDER0059003025060
4x25/16	27.2	1785	0.727	MDER0059004025060
5x25/16	29.7	2140	0.727	MDER0059005025060
3x35/16	27.6	1860	0.524	MDER0059003035060
4x35/16	30.3	2300	0.524	MDER0059004035060
5x35/16	33.5	2805	0.524	MDER0059005035060
3x50/25	31.1	2485	0.387	MDER0059003050070
4x50/25	34.2	3080	0.387	MDER0059004050070
5x50/25	37.9	3760	0.387	MDER0059005050070

Product codes could be changed according to OB or JB core colors.

Fire Resistant Cable

ERVITAL NHXH FE180/PH120/E90



Efectis

VDE 0266 / DIN 4102-12

FLAME RETARDANT CHARACTERISTIC / LOW SMOKE EMISSION / WITHOUT POISONED AND CORROSIVE GASSES
CIRCUIT INTEGRITY FE180 / CIRCUIT INTEGRITY WITH MECHANICAL SHOCK PH120 / FUNCTIONAL INTEGRITY E90

APPLICATION

Used as a power and control cable

- Machine and equipment that are required to continue its function during a fire (emergency elevators, fire water pumps etc.)
- Ventilation systems which are connected to fire alarm system
- In emergency lighting at fire escape exits
- Emergency power supplies
- In places where human life and valuable materials and equipment need to be protected
- In places where there is electromagnetic interference

CONSTRUCTION

Conductor	EN 60228 Class 1 & 2 Electrolytic Copper
Insulation	Mica Tape + VDE 0266 HX11 Cross-linked HFFR Compound
Colour Code	HD 308 S2
Stranding	In layers of optimum lay-length
Bedding	HFFR Compound
Sheath	VDE 0276-604 HM4 HFFR Compound
Sheath Colour	RAL 2003 Orange

TECHNICAL CHARACTERISTICS

Operating Voltage	Min. Bending Radius	Test Voltage Core/Core	Temperature Range
0,6/1 kV	15 x Cable Ø for single core cables 12 x Cable Ø for multicore cables	4000V	- 40°C - +90°C (Temp. for stationary condition) - 5°C - +50°C (Temp. for moving condition) * +90°C (Max. Permissible Operating Temperature at Conductor) ** Permissible short-circuit temperature 250 °C

FIRE PERFORMANCE TESTS

Flame Retardant	Flame Propagation	Smoke Density	Corrosiveness Combustion Gases	Halogen Free	Circuit Integrity (FE180)	Circuit Integrity With Shock (PH120)	Functional Integrity (E90)
EN 60332-1-2	EN IEC 60332-3-24	EN 61034-2	EN 60754-2	EN 60754-1	IEC 60331-21	EN 50200 IEC 60331-1	DIN 4102-12

Fire Resistant Cable

ERVITAL NHXH FE180/PH120/E90

Cross Section	Overall Diameter (mm)	Approx Weight (kg/km)	Conductor Resistance (Ω /km)	Product Code
1x70	16.1	850	0.268	MDER0131001070000
1x95	18	1140	0.193	MDER0131001095000
1x120	19.8	1405	0.153	MDER0131001120000
1x150	21.4	1705	0.124	MDER0131001150000
1x185	23.6	2130	0.0991	MDER0131001185000
1x240	26.7	2755	0.0754	MDER0131001240000
1x300	29.7	3440	0.0601	MDER0131001300000
1x400	29.5	4050	0.047	MDER0131001400000
3x70	34.4	3155	0.268	MDER0131003070000
3x95	38.7	4195	0.193	MDER0131003095000
3x120	42.6	5165	0.153	MDER0131003120000
3x150	46.6	6295	0.124	MDER0131003150000
3x185	51.3	7810	0.0991	MDER0131003185000
3x240	58.2	10105	0.0754	MDER0131003240000
3x70+35	35.8	3555	0,268/0,524	MDER0137004070080
3x95+50	40.8	4785	0,193/0,387	MDER0137004095090
3x120+70	45.2	6000	0,153/0,268	MDER0137004120100
3x150+70	48.3	7035	0,124/0,268	MDER0137004150100
3x185+95	53.6	8855	0,0991/0,193	MDER0137004185110
3x240+120	60.4	11385	0,0754/0,153	MDER0137004240120
4x70	38	4000	0.268	MDER0131004070000
4x95	43	5355	0.193	MDER0131004095000
4x120	47.5	6630	0.153	MDER0131004120000
4x150	51.7	8045	0.124	MDER0131004150000
4x185	57.2	10035	0.0991	MDER0131004185000
4x240	65	13005	0.0754	MDER0131004240000
4x300	72.3	16110	0.0601	MDER0132004300000
5x70	42.2	4945	0.268	MDER0132005070000
5x95	47.9	6635	0.193	MDER0132005095000
5x120	52.8	8210	0.153	MDER0132005120000
5x150	57.6	9980	0.124	MDER0132005150000
5x185	63.6	12425	0.0991	MDER0132005185000

Product codes could be changed according to OB or JB core colors.

Fire Resistant Cable

ERVITAL NHXCH FE180/PH120/E90



Efectis

VDE 0266 / DIN 4102-12

FLAME RETARDANT CHARACTERISTIC / LOW SMOKE EMISSION / WITHOUT POISONED AND CORROSIVE GASSES
CIRCUIT INTEGRITY FE180 / CIRCUIT INTEGRITY WITH MECHANICAL SHOCK PH120 / FUNCTIONAL INTEGRITY E90

APPLICATION

Used as a power and control cable

- Machine and equipment that are required to continue its function during a fire (emergency elevators, fire water pumps etc.)
- Ventilation systems are which are connected to fire alarm system
- In emergency lighting at fire escape exits
- Emergency power supplies
- In places where human life and valuable materials and equipment need to be protected
- In places where there is electromagnetic interference

CONSTRUCTION

Conductor	EN 60228 Class 1 & 2 Electrolytic Copper
Insulation	Mica Tape + VDE 0266 HX11 Cross-linked HFFR Compound
Colour Code	HD 308 S2
Stranding	In layers of optimum lay-length
Inner Sheath	HFFR Compound
Screen	Spirally wrapped round copper wires with counter helix of copper tape
Sheath	VDE 0276-604 HM4 HFFR Compound
Sheath Colour	RAL 2003 Orange

TECHNICAL CHARACTERISTICS

Operating Voltage	Min. Bending Radius	Test Voltage Core/Core	Temperature Range
0,6/1 kV	15 x Cable Ø for single core cables 12 x Cable Ø for multicore cables	4000V	- 40°C - +90°C (Temp. for stationary condition) - 5°C - +50°C (Temp. for moving condition) * +90°C (Max. Permissible Operating Temperature at Conductor) ** Permissible short-circuit temperature 250 °C

FIRE PERFORMANCE TESTS

Flame Retardant	Flame Propagation	Smoke Density	Corrosiveness Combustion Gases	Halogen Free	Circuit Integrity (FE180)	Circuit Integrity With Shock (PH120)	Functional Integrity (E90)
EN 60332-1-2	EN IEC 60332-3-24	EN 61034-2	EN 60754-2	EN 60754-1	IEC 60331-21	EN 50200 IEC 60331-1	DIN 4102-12

Fire Resistant Cable

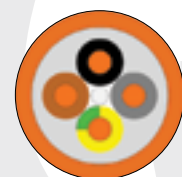
ERVITAL NHXCH FE180/PH120/E90

Cross Section	Overall Diameter (mm)	Approx Weight (kg/km)	Conductor Resistance (Ω /km)	Product Code
3x70/35	36.6	3540	0.268	MDER0133003070080
3x95/50	41.8	4750	0.193	MDER0133003095090
3x120/70	45.7	5920	0.153	MDER0133003120100
3x150/70	49.7	7060	0.124	MDER0133003150100
3x185/95	55.2	8840	0.0991	MDER0133003185110
3x240/120	62.3	11425	0.0754	MDER0133003240120
3x300/150	68.9	14205	0.0601	MDER0133003300130
4x70/35	40.4	4410	0.268	MDER0133004070080
4x95/50	46.1	5925	0.193	MDER0133004095090
4x120/70	50.6	7390	0.153	MDER0133004120100
4x150/70	54.8	8815	0.124	MDER0133004150100
4x185/95	61.1	11080	0.0991	MDER0133004185110
4x240/120	68.9	14295	0.0754	MDER0133004240120
5x70/35	44.6	5355	0.268	MDER0133005070080
5x95/50	51	7220	0.193	MDER0133005095090
5x120/70	55.9	8990	0.153	MDER0133005120100
5x150/70	60.7	10765	0.124	MDER0133005150100
5x185/95	67.5	13370	0.0991	MDER0134005185110

Product codes could be changed according to OB or JB core colors.

Fire Resistant Cable

ERVITAL NHXMH FE180/PH120



TSEK 328 / VDE 0250-214

FLAME RETARDANT CHARACTERISTIC/LOW SMOKE EMISSION/WITHOUT POISONED AND CORROSIVE GASES
CIRCUIT INTEGRITY 180 MINUTES/CIRCUIT INTEGRITY WITH MECHANICAL SHOCK PH120

APPLICATION

Used as a power and control cable

- Machine and equipment that are required to continue its function during a fire (emergency elevators, fire water pumps etc.)
- Ventilation systems are which are connected to fire alarm system
- In emergency lighting at fire escape exits
- Emergency power supplies
- In places where human life and valuable materials and equipment need to be protected
- In places where there is electromagnetic interference

CONSTRUCTION

Conductor	EN 60228 Class 1 or Class 2 Electrolytic Copper
Insulation	EN 50363-1 EI2 Cross-linked Ceramic Forming Polymer Compound
Colour Code	HD 308 S2
Stranding	In layers of optimum pitch
Bedding	HFFR Compound
Sheath	DIN VDE 0207-24 HM2 Compound
Sheath Colour	RAL 2003 Orange

TECHNICAL CHARACTERISTICS

Operating Voltage	Min. Bending Radius	Test Voltage Core/Core	Temperature Range
300/500 V	12x Cable Ø	2000V	- 40°C - +70°C (Temp. for stationary condition) * +90°C (Max. Permissible Operating Temperature at Conductor) ** Permissible short-circuit temperature 250 °C

FIRE PERFORMANCE TESTS

Flame Retardant	Flame Propagation	Smoke Density	Corrosiveness Combustion Gases	Halogen Free	Circuit Integrity (FE180)	Circuit Integrity With Shock (PH120)
EN 60332-1-2	EN IEC 60332-3-24	EN 61034-2	EN 60754-2	EN 60754-1	IEC 60331-21	EN 50200

Fire Resistant Cable

ERVITAL NHXMH FE180/PH120

Cross Section	Overall Diameter (mm)	Approx Weight (kg/km)	Conductor Resistance (Ω /km)	Product Code
2x1,5	9.2	140	12.1	MDER0139002001500
3x1,5	9.6	165	12.1	MDER0139003001500
4x1,5	10.3	190	12.1	MDER0139004001500
5x1,5	11	220	12.1	MDER0140005001500
2x2,5	10	180	7.41	MDER0139002002500
3x2,5	10.5	210	7.41	MDER0140003002500
4x2,5	11.2	245	7.41	MDER0139004002500
5x2,5	12.1	295	7.41	MDER0140005002500
2x4	11.2	235	4.61	MDER0139002004000
3x4	11.8	285	4.61	MDER0139003004000
4x4	13.1	350	4.61	MDER0139004004000
5x4	14.5	435	4.61	MDER0140005004000
2x6	12.2	300	3.08	MDER0139002006000
3x6	13.2	380	3.08	MDER0139003006000
4x6	14.7	475	3.08	MDER0139004006000
5x6	15.9	570	3.08	MDER0140005006000
2x10	15.2	485	1.83	MDER0139002010000
3x10	16	590	1.83	MDER0139003010000
4x10	17.4	725	1.83	MDER0139004010000
5x10	18.8	875	1.83	MDER0140005010000
2x16	17.6	665	1.15	MDER0139002016000
3x16	19	845	1.15	MDER0139003016000
4x16	20.6	1040	1.15	MDER0139004016000
5x16	22.9	1285	1.15	MDER0140005016000
2x25	21	985	0.727	MDER0139002025000
3x25	22.6	1255	0.727	MDER0139003025000
4x25	25.1	1595	0.727	MDER0139004025000
5x25	27.3	1925	0.727	MDER0140005025000
2x35	23.8	1315	0.524	MDER0139002035000
3x35	25.2	1650	0.524	MDER0139003035000
4x35	27.5	2060	0.524	MDER0139004035000
5x35	30.4	2540	0.524	MDER0140005035000

Product codes could be changed according to OB or JB core colors.



FIRE SAFE CABLES

46 ERVITAL FIRE SAFE GOLD CABLE

48 ERVITAL FIRE SAFE CABLE



Fire Resistant Cable

ERVITAL FIRE SAFE GOLD CABLE



BS 7629-1:2015

FLAME RETARDANT CHARACTERISTIC / LOW SMOKE EMISSION / WITHOUT POISONED AND CORROSIVE GASSES / CIRCUIT INTEGRITY 180 MINUTES / CIRCUIT INTEGRITY WITH SHOCK PH 120 / AND WITH WATER ANNEX-E / CWZ ACCORDING TO BS STANDARDS

APPLICATION

Used as a power and control cable

- In emergency lighting
- In fire detection
- In fire alarm system circuits
- In places where human life and valuable materials and equipment need to be protected

Typical application standards are:

BS 5839-1, BS 5839-9, BS 5266-1, BS 8519 (Cat-1)

CONSTRUCTION

Conductor	EN 60228 Class 1 (RE) & 2 (RM) Electrolytic Copper
Insulation	EN 50363-1 E12 Cross-linked Ceramic Forming Polymer Compound
Colour Code	2-core : Brown, Blue or Brown, Brown
	3-core : Brown, Black, Grey
	4-core : Blue, Brown, Black, Grey
Stranding	Cores shall be laid up using the sequence of colours specified
Screen	Copolymer laminated aluminium tape with the metallic element in contact with the uninsulated circuit protective conductor which is the same section and class as the insulated conductors
Sheath	BS 7655-6.1 LTS3 type HFFR Compound
Sheath Colour	RAL 3000 Red Other applicable colors:
	RAL 2003 Orange, RAL 9005 Black, RAL 9010 White

TECHNICAL CHARACTERISTICS

Operating Voltage	Min. Bending Radius	Test Voltage		Temperature Range
		Core/Core	Core/Screen	
300/500 V	6x Cable Ø	2000V	2000 V	- 30°C - +70°C (Temp. for stationary condition) - 5°C - +50°C (Temp. for moving condition) * +90°C (Max. Permissible Operating Temperature at Conductor) ** Permissible short-circuit temperature 250 °C

FIRE PERFORMANCE TESTS

Flame Retardant	Flame Propagation	Smoke Density	Corrosiveness Combustion Gases	Halogen Free	Circuit Integrity (FE180)	Circuit Integrity With Shock (PH120)	Circuit Integrity With Shock and Water spray Test	Circuit Integrity Test (CWZ)
EN 60332-1-2	EN IEC 60332-3-22	EN 61034-2	EN 60754-2	EN 60754-1	IEC 60331-21	EN 50200	EN 50200 ANNEX-E	BS 6387

Fire Resistant Cable

ERVITAL FIRE SAFE GOLD CABLE

Cross Section	Overall Diameter (mm)	Approx Weight (kg/km)	Conductor Resistance (Ω /km)	Product Code
2x1 (RE)	6.9	80	18.1	MDER029700200100R
2x1,5 (RE)	7.9	105	12.1	MDER029700200150R
3x1,5 (RE)	8.3	130	12.1	MDER029700300150R
4x1,5 (RE)	9.3	165	12.1	MDER029700400150R
2x2,5 (RE)	9.3	160	7.41	MDER029700200250R
3x2,5 (RE)	9.8	195	7.41	MDER029700300250R
4x2,5 (RE)	10.9	240	7.41	MDER029700400250R
2x4 (RE)	10.3	210	4.61	MDER029700200400R
3x4 (RE)	10.9	270	4.61	MDER029700300400R
4x4 (RE)	12.1	330	4.61	MDER029700400400R
2x4 (RM)	10.9	215	4.61	MDER030000200400R
3x4 (RM)	11.5	275	4.61	MDER030000300400R
4x4 (RM)	12.8	340	4.61	MDER030000400400R

Fire Resistant Cable

ERVITAL FIRE SAFE CABLE



FLAME RETARDANT CHARACTERISTIC / LOW SMOKE EMISSION / WITHOUT POISONED AND CORROSIVE GASSES /
CIRCUIT INTEGRITY 180 MINUTES / CIRCUIT INTEGRITY WITH SHOCK PH 120 / CWZ ACCORDING TO BS STANDARDS

APPLICATION

Used as a power and control cable

- In emergency lighting
- In fire detection
- In fire alarm system circuits
- In places where human life and valuable materials and equipment need to be protected

CONSTRUCTION

Conductor	EN 60228 Class 1 (RE) & 2 (RM) Electrolytic Copper
Insulation	EN 50363-1 E12 Cross-linked Ceramic Forming Polymer Compound
Colour Code	2-core : Brown, Blue or Brown, Brown
	3-core : Brown, Black, Grey
	4-core : Blue, Brown, Black, Grey
Stranding	Cores shall be laid up using the sequence of colours specified
Wrapping	Pes Tape
Screen	Al-Pes Tape + Tinned Copper Drain Wire (min. 0,5 mm ²)
Sheath	EN 50290-2-27 HFFR Compound
Sheath Colour	RAL 3000 Red Other applicable colors:
	RAL 2003 Orange, RAL 9005 Black, RAL 9010 White

TECHNICAL CHARACTERISTICS

Operating Voltage	Min. Bending Radius	Test Voltage		Temperature Range
		Core/Core	Core/Screen	
300/500 V	6x Cable Ø	2000V	2000 V	- 30°C - +70°C (Temp. for stationary condition) - 5°C - +50°C (Temp. for moving condition) * +90°C (Max. Permissible Operating Temperature at Conductor) ** Permissible short-circuit temperature 250 °C

FIRE PERFORMANCE TESTS

Flame Retardant	Flame Propagation	Smoke Density	Corrosiveness Combustion Gases	Halogen Free	Circuit Integrity (FE180)	Circuit Integrity With Shock (PH120)	Circuit Integrity Test (CWZ)
EN 60332-1-2	EN IEC 60332-3-24	EN 61034-2	EN 60754-2	EN 60754-1	IEC 60331-21	EN 50200	BS 6387

Fire Resistant Cable

ERVITAL FIRE SAFE CABLE

Cross Section	Overall Diameter (mm)	Approx Weight (kg/km)	Conductor Resistance (Ω /km)	Product Code
2x1 (RE)	6	65	18.1	MDER079700200100R
2x1,5 (RE)	7	85	12.1	MDER079700200150R
3x1,5 (RE)	7.6	110	12.1	MDER079700300150R
4x1,5 (RE)	8.3	130	12.1	MDER079700400150R
2x1,5 (RM)	7.4	85	12.1	MDER139700200150R
3x1,5 (RM)	8	115	12.1	MDER139700300150R
4x1,5 (RM)	9	145	12.1	MDER139700400150R
2x2,5 (RE)	9	120	7.41	MDER079700200250R
3x2,5 (RE)	9.1	165	7.41	MDER079700300250R
4x2,5 (RE)	10.1	205	7.41	MDER079700400250R
2x2,5 (RM)	8.8	120	7.41	MDER139700200250R
3x2,5 (RM)	9.5	165	7.41	MDER139700300250R
4x2,5 (RM)	10.6	210	7.41	MDER139700400250R

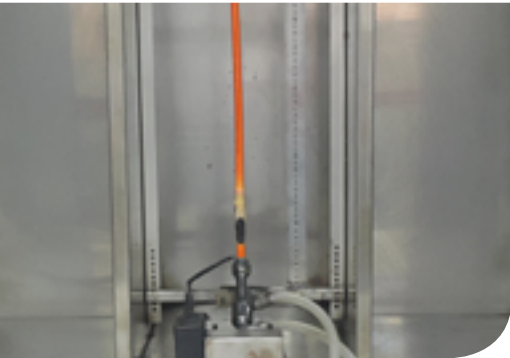


FIRE PERFORMANCE TEST TECHNICAL INFORMATIONS

52	EN 60332-1-2
52	EN IEC 60332-3-21 – Category A F/R
53	EN IEC 60332-3-22 – Category A
53	EN IEC 60332-3-23 – Category B
54	EN IEC 60332-3-24 – Category C
54	EN IEC 60332-3-25 – Category D
55	EN 60754-1
55	EN 60754-2
56	EN 61034-2
56	EN 60331-21
57	EN 50200
57	EN 50200 Annex E
58	BS 6387 - CAT C
58	BS 6387 - CAT W
59	BS 6387 - CAT Z
59	DIN 4102-12

FIRE PERFORMANCE TEST TECHNICAL INFORMATIONS

EN 60332-1-2 Test for vertical flame propagation for a single insulated wire or cable - Procedure for 1 kW pre-mixed flame



It is aimed to save time by greatly reducing the spread of fire.

It is expected that a single cable exposed to flame will self-extinguish or the flame will not progress.

- Tested on a single insulated wire or a single piece of cable.
- The diameter of the sample to be tested and the test time are given below.
(D: Diameter of test sample mm)

D < 20 mm; 60 seconds

25 < D < 50 mm; 120 seconds

50 < D < 75 mm; 240 seconds

D > 75 mm; 480 seconds

- The test sample prepared with a length of 600 ± 25 mm is fixed in vertical position with the help of supports in horizontal position at both ends.
- The distance between the bottom point of the horizontally positioned upper support and the upper point of the lower support is 550 mm.
- The blue conical part of the flame coming out of the burner is hit the test sample which is vertically fixed at an angle of $45^\circ \pm 2$ and the contact point of the flame to the test sample and the bottom point of the upper support are positioned to be 475 ± 5 mm.

- It is tested in a test chamber whose height is 1200 ± 5 mm, depth 450 ± 25 mm and width 300 ± 25 mm.
- In order to pass the test, the distance from point bottom of the upper support to upper onset of charring must be greater than 50 mm.
- In order to pass the test, the distance of the charring from point bottom of the upper support must not be in excess of 540 mm.
- In order to pass the test, the distance from the upper onset of charring to the lower onset of charring must not be in excess of 425 mm.

EN IEC 60332-3-21 – Category A F/R Test for vertical flame spread of vertically-mounted bunched wires or cables 20,5kW



It is aimed to save time by greatly reducing the spread of fire.

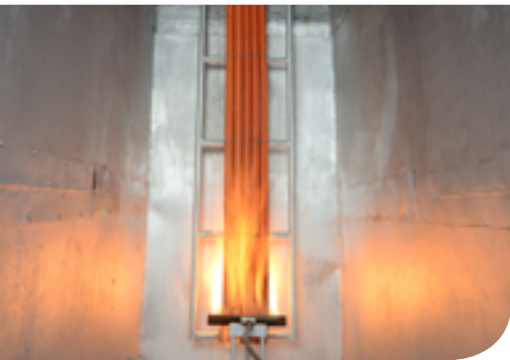
Multiple cables exposed to flame are expected to self-extinguish or the flame will not progress.

- Tested on bunched multiple cable pieces.
- Tested on power cables with at least one conductor larger than 35 mm^2 .
- The test pieces should be at least 3500 mm.
- The number of test pieces should meet the nominal total non-metallic volume of the cable, corresponding to a test piece of $7L / \text{m}$ of the cable.
- The pieces to be tested are connected to the standard ladder type (500 ± 5 mm x 3500 ± 10 mm) with steel or copper wire, provided that there are at least 4 test pieces.
- There should be at least 2 test pieces at the back of the ladder.
- The distance between each test piece should be 0.5 times the diameter of a single cable test piece, but should not exceed 20 mm.

- If the number of pieces to be tested is more than 4 pieces, each additional piece in a row should alternatively be mounted to the front of the ladder and then to the back.
- A ladder with the pieces is placed in the test chamber whose height is 4000 ± 100 mm, depth 2000 ± 100 mm and width 1000 ± 100 mm.
- The distance between the burner and the ladder on which test pieces are mounted is 75 ± 5 mm.
- The test time should be applied for 40 minutes and the flame source is turned off and than the flame and charring is expected to end within 60 minutes.
- In order to pass the test, the charring in the cables mounted on both sides of the ladder should not exceed 2500 mm from the lower end of the burner.

FIRE PERFORMANCE TEST TECHNICAL INFORMATIONS

EN IEC 60332-3-22 – Category A Test for vertical flame spread of vertically- mounted bunched wires or cables 20,5kW



It is aimed to save time by greatly reducing the spread of fire. Multiple cables exposed to flame are expected to self-extinguish or the flame will not progress.

- Tested on bunched multiple cable pieces.
- Cables with at least one conductor larger than 35 mm^2 are tested on a standard ladder or wide ladder, while cables with a conductor of 35 mm^2 or less are mounted at the front of the ladder using a standard ladder.
- The distance between each test piece of cables with at least one conductor larger than 35 mm^2 shall be 0.5 times the diameter of a single cable test piece, but should not exceed 20 mm.
- Cables with conductors of 35 mm^2 or less are mounted at the front of the standard ladder in contact with each other.
- For cables with conductors of 35 mm^2 or less, if the layers form more than the center (within 300 mm of the ladder center), the layers are mounted by centering one on top of the other.
- The test pieces should be at least 3500 mm.
- The number of pieces to be tested must be at least 2.
- The number of test pieces should meet the nominal total non-metallic volume of the cable, corresponding to a test piece of $7\text{L} / \text{m}$ of the cable.
- The pieces to be tested are mounted on the standard ladder type ($500 \pm 5 \text{ mm} \times 3500 \pm 10 \text{ mm}$) and ($800 \pm 5 \text{ mm} \times 3500 \pm 10 \text{ mm}$) wide ladder type with steel or copper wire.

- A ladder with the pieces is placed in the test chamber whose height is $4000 \pm 100 \text{ mm}$, depth $2000 \pm 100 \text{ mm}$ and width $1000 \pm 100 \text{ mm}$.
- The distance between the burner and the ladder on which test pieces are mounted is $75 \pm 5 \text{ mm}$.
- If testing is done with a wide ladder, 2 burners are used.
- The test time should be applied for 40 minutes and the flame source is turned off and than the flame and charring is expected to end within 60 minutes.
- In order to pass the test, the charring in the cables mounted on the front of the ladder should not exceed 2500 mm from the lower end of the burner.

EN IEC 60332-3-23 – Category B Test for vertical flame spread of vertically- mounted bunched wires or cables 20,5kW

It is aimed to save time by greatly reducing the spread of fire. Multiple cables exposed to flame are expected to self-extinguish or the flame will not progress.

- Tested on bunched multiple cable pieces.
- Cables with at least one conductor larger than 35 mm^2 are tested by mounting at the front of the standard ladder.
- The distance between each test piece of cables with at least one conductor larger than 35 mm^2 shall be 0.5 times the diameter of a single cable test piece, but should not exceed 20 mm.
- Cables with conductors of 35 mm^2 or less are mounted at the front of the standard ladder in contact with each other.
- For cables with conductors of 35 mm^2 or less, if the layers form more than the center (within 300 mm of the ladder center), the layers are mounted by centering one on top of the other.
- The test pieces should be at least 3500 mm.
- The number of pieces to be tested must be at least 2.
- The number of test pieces should meet the nominal total non-metallic volume of the cable, corresponding to a test piece of $3.5\text{L}/\text{m}$ of the cable.
- The test pieces are mounted to the standard ladder type ($500 \pm 5 \text{ mm} \times 3500 \pm 10 \text{ mm}$) with steel or copper wire.

- A ladder with the pieces is placed in the test chamber whose height is $4000 \pm 100 \text{ mm}$, depth $2000 \pm 100 \text{ mm}$ and width $1000 \pm 100 \text{ mm}$.
- The distance between the burner and the ladder with test pieces is $75 \pm 5 \text{ mm}$.
- The test time should be applied for 40 minutes and the flame source is turned off and than the flame and charring is expected to end within 60 minutes.
- In order to pass the test, the charring in the cables mounted on the front of the ladder should not exceed 2500 mm from the lower end of the burner.

FIRE PERFORMANCE TEST TECHNICAL INFORMATIONS

EN IEC 60332-3-24 – Category C Test for vertical flame spread of vertically- mounted bunched wires or cables 20,5kW



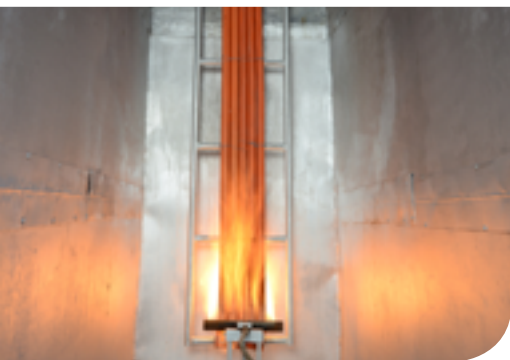
It is aimed to save time by greatly reducing the spread of fire.

Multiple cables exposed to flame are expected to self-extinguish or the flame will not progress.

- Tested on bunched multiple cable pieces.
- Cables with at least one conductor larger than 35 mm^2 are tested by mounting at the front of the standard ladder.
- The distance between each test piece of cables with at least one conductor larger than 35 mm^2 shall be 0.5 times the diameter of a single cable test piece, but should not exceed 20 mm.
- Cables with conductors of 35 mm^2 or less are mounted at the front of the standard ladder in contact with each other.
- For cables with conductors of 35 mm^2 or less, if the layers form more than the center (within 300 mm of the ladder center), the layers are mounted by centering one on top of the other.
- The test pieces should be at least 3500 mm.
- The number of pieces to be tested must be at least 2.
- The number of test pieces should meet the nominal total non-metallic volume of the cable, corresponding to a test piece of 1.5L/m.
- The test pieces are mounted to the standard ladder type ($500 \pm 5 \text{ mm} \times 3500 \pm 10 \text{ mm}$) with steel or copper wire.

- A ladder with the pieces is placed in the test chamber whose height is $4000 \pm 100 \text{ mm}$, depth $2000 \pm 100 \text{ mm}$ and width $1000 \pm 100 \text{ mm}$.
- The distance between the burner and the ladder with test pieces is $75 \pm 5 \text{ mm}$.
- The test time should be applied for 20 minutes and the flame source is turned off and than the flame and charring is expected to end within 60 minutes.
- In order to pass the test, the charring in the cables mounted on the front of the ladder should not exceed 2500 mm from the lower end of the burner.

EN IEC 60332-3-25 – Category D Test for vertical flame spread of vertically- mounted bunched wires or cables 20,5kW



It is aimed to save time by greatly reducing the spread of fire.

Multiple cables exposed to flame are expected to self-extinguish or the flame will not progress.

- Tested on bunched multiple cable pieces.
- Cables with conductors of 35 mm^2 and less or cables of 12 mm and smaller in diameter are mounted on the front of the standard ladder in contact with each other.
- If the layers are formed outside the center (within 300 mm of the ladder center), they are mounted by centering on top of each other.
- The test pieces should be at least 3500 mm.
- The number of pieces to be tested must be at least 2.
- The number of test pieces should meet the nominal total non-metallic volume of the cable, corresponding to a test piece of 0.5L/m.
- The test pieces to be tested are mounted to the standard ladder type ($500 \pm 5 \text{ mm} \times 3500 \pm 10 \text{ mm}$) with steel or copper wire.

- A ladder with the pieces is placed in the test chamber whose height is $4000 \pm 100 \text{ mm}$, depth $2000 \pm 100 \text{ mm}$ and width $1000 \pm 100 \text{ mm}$.
- The distance between the burner and the ladder on which test pieces are mounted is $75 \pm 5 \text{ mm}$.
- The test time should be applied for 20 minutes and the flame source is turned off and than the flame and charring is expected to end within 60 minutes.
- In order to pass the test, the charring in the cables mounted on the front of the ladder should not exceed 2500 mm from the lower end of the burner.

Fire Resistant Cable

FIRE PERFORMANCE TEST TECHNICAL INFORMATIONS

EN 60754-1 Determination of the halogen acid gas content



It is aimed to reduce the harmful effects to living life and the environment during or after the fire. Especially, the presence of chlorine gas released during fire is undesirable.

- The sample is taken by shredding the non-metallic part of the cable to be tested into 750 ± 250 mg small pieces.
- The combustion boat is weighed and the conditioned samples are distributed evenly to the combustion boat, the difference is taken after the last weighing.
- The empty combustion boat is placed in the middle of the quartz glass tube.
- The empty combustion boat is heated to a temperature of $800 \text{ }^\circ\text{C} \pm 10$, with regular (linear) temperature increases for 40 ± 5 minutes. The target temperature is maintained for 20 ± 1 minutes.
- The combustion boat containing the test sample is placed in the middle of the quartz glass tube.
- After cooling to ambient temperature, testing is carried out with 200 ml prepared solution without sample.
- The blank test end will be the red endpoint for the endpoint titration.
- The test made by the blank is tested with the same method with the sample.
- End of test with sample, end point will be red end point for titration.
- The test with the sample is repeated 3 times.

▪ If the average of the test amounts made with the sample is $\geq 5\text{mg/g}$ (0.5%), the individual measured amounts should not deviate from the mean by $\pm 10\%$.

EN 60754-2 Determination of Acidity and Conductivity Test (by pH measurement)



It is aimed to reduce the harmful effects to living life and the environment during or after the fire. Especially, the presence of chlorine gas released during fire is undesirable.

- The sample is taken by shredding the non-metallic part of the cable to be tested into 1000 ± 5 mg small pieces.
- The combustion boat is weighed and the conditioned samples are distributed evenly to the combustion boat, the difference is taken after the last weighing.
- The combustion boat with the test sample is placed in the middle of the quartz glass tube.
- The distance between the exit end of the effective heating area of the combustion boat and the combustion boat should be 300 mm.
- The temperature of the combustion boat at this location should not be less than $935 \text{ }^\circ\text{C}$.
- If it is towards the air outlet direction, it should not be less than $900 \text{ }^\circ\text{C}$.
- Combustion process is 30 ± 1 minutes on certain air flow rate.
- Liquids with specific properties determined as 450 ml are completed with 1000 ml.
- pH value should not be less than 4,3.
- Conductivity value should not exceed $10 \mu\text{S} / \text{mm}$.

Fire Resistant Cable

FIRE PERFORMANCE TEST TECHNICAL INFORMATIONS

EN 61034-2 Measurement of Smoke Density of Cables Burning Under Certain Conditions



It is aimed to facilitate escape by increasing visibility during fire.

- A bunch is prepared with 7 test pieces for cables with a cable diameter less than 5 mm but greater than 1 mm.
- The number of bunches is prepared as $N_2 = 15/D$.
- For each bunch, 7 test pieces are twisted up to 20 x cable diameter and 30 x cable diameter.
- It is connected with a wire at 10 cm in the center and on each side of the center.
- For non-circular cables, if the ratio of the major axis to the minor axis is 3 or less, the minor axis is used as the cable diameter.
- For non-circular cables, if the ratio of the major axis to the minor axis is between 3 and 5, it is used as the half of the cable circumference.
- For cables with cable diameter 5 mm and larger (D cable diameter mm);

$D > 40$ mm; number of pieces in bunch is 1

$20 < D \leq 40$ mm; number of pieces in bunch is 2

$10 < D \leq 20$ mm; number of pieces in bunch is 3

$5 < D \leq 10$ mm; bundle number of pieces is N_i ; $N_i = 45 / D$

- The solution prepared in specified dimensions is used as a flame source and the distance between the test piece and the burning tray positioned horizontally should be 150 ± 5 mm.
- In the test chamber whose height is 3000 ± 30 mm, depth 3000 ± 30 mm and width is 3000 ± 30 mm, a fan that activates the smoke generated during the test, a shield that reduces the effect of the air flow formed in the test room on the flame source and 2150 ± 100 mm from the test room floor. The light intensity between a light source mutually centered at a height and photocell is tested.
- Test time is 40 minutes.
- Light intensity should be at least 60%.

IEC 60331-21 Circuit Integrity of Cables with Rated Voltage up to 0.6 / 1kV (including 1kV) IEC 60331-23 Circuit Integrity of Electric Data Cables IEC 60331-25 Circuit Integrity of Fiber Optic Cables



It is aimed to keep the cable working during the fire and to save time.

- A cable sample of approximately 1200 mm is tested.
- The sample to be tested is mounted on clamps and supports. (One end of the cable is suspended in the clamp only).
- Cable diameter ≤ 10 mm; 5 rings
- Cable diameter > 10 mm; 2 rings
- The cable sample to be tested is passed through the ring with an inner diameter of 150 mm.
- The flame source is located at least 200 mm from the test cell floor and 300 mm to any of the side walls.
- The flame source is fixed at a distance of 45 mm from the test sample and 70 ± 10 mm below the lower end of the test sample.
- It is provided with 3-phase star-connected or single-phase transformers that can maintain the highest leakage current from the test voltage.
- Current is obtained by connecting an appropriate charge and indicator device (lamp) to each conductor or group of conductors at the other end of the sample. (0.25A)
- In single, two or three phase cables, each phase conductor is connected to the separate phase of the transformers output with a 2 A fuse or circuit breaker with equivalent characteristics on each phase.

- Flame source and voltage are applied at the same time.
- Test temperature should be at least 750°C .
- The flame application time is continued for 90 minutes and the flame source is cut and the voltage application is continued for 15 minutes.
- Usually, 180 minutes of flame and voltage application is required. The flame application time is continued for 180 minutes and the flame source is cut and the voltage application is continued for 24 minutes.
- In order to pass the test, no fuse must be blown and the conductors must not be physically broken after the circuit breaker is activated.
- If the test result does not meet the above criteria, 2 more tests are performed.
- The 2 tests to be made must meet the above mentioned criteria.

Fire Resistant Cable

FIRE PERFORMANCE TEST TECHNICAL INFORMATIONS

EN 50200 Test for resistance to fire of unprotected small cables for use in emergency circuits (Mechanical Shock Circuit Integrity)

EN IEC 60331-1 (EN 50362) Test for resistance to fire of larger unprotected power and control cables for use in emergency circuits (Mechanical Shock Circuit Integrity)



It is aimed to keep the cable working during the fire and to save time.

- Tested on cables with cable diameter ≤ 20 mm.
- A sample cable of approximately 1200 mm is tested.
- The sample is tested by mounting on a plate made of non-metallic and fire resistant material with 900 ± 100 mm long, 300 ± 50 mm wide and 10 ± 2 mm thick.
- The cable piece to be tested is bent in a U shape and fixed to the plate with metal holders with a distance between ends of 475 ± 10 mm and a height of 200 mm.
- The flame source should be positioned horizontally at a distance of 40 ± 2 mm from the test wall, and the distance between the flame source and the center lines of the thermocouple, the same vertical distance below the base line of the cable.
- It is provided with 3-phase star-connected or single-phase transformers that can maintain the highest leakage current from the test voltage.
- Current is obtained by connecting an appropriate charge and indicator device (lamp) to each conductor or group of conductors at the other end of the sample. (0.25A)
- In single, two or three phase cables, each phase conductor is connected to the separate phase of the transformers output with a 2 A fuse or circuit breaker with equivalent characteristics on each phase.

- Test temperature is minimum 830° and maximum 870° C.
- During the test, a rated voltage is applied to the cable and a mechanical shock is applied to the wall with a force of 25 kg every 5 minutes at an angle of 60° .
- In order to pass the test, no fuse must be blown and the conductors must not be physically broken after the circuit breaker is activated.
- Maintaining the voltage within the time specified in the standard of the cable, i.e. provided that the conductor does not break, the lamp does not go out, no fuse blows or circuit breaker cuts; it is considered to have the characteristics of ensuring circuit integrity. Usually 120 minutes strength is required.
- If the test result does not meet the above criteria, 2 more tests are performed.
- The 2 tests to be carried out must meet the above mentioned criteria.

EN IEC 60331-1 test is aimed to keep the cable working during the fire and to save time.

- Tested on cables with cable diameter ≥ 20 mm.
- Fulfills the requirements of EN 50200.

EN 50200 Annex E Test for resistance to fire of unprotected small cables for use in emergency circuits (Optional Water Spray Protocol)



- The water spray should be started 15 minutes after EN50200 test start and while flame and shock are still applied.
- 15 minutes-water application should continue until the end of the test.
- It takes 30 minutes in total.
- In order for the test to be successful, no fuse must be blown and the conductors must not be physically broken after the circuit breaker is activated.
- If the test result does not meet the above criteria, 2 more tests are performed.
- The 2 tests to be made must meet the above mentioned criteria.

Fire Resistant Cable

FIRE PERFORMANCE TEST TECHNICAL INFORMATIONS

BS 6387 Rated Voltage Up to 0.6 / 1kV (Including 1kV) Fire Resistance Test of Cables to Protect Circuit Integrity in Fire Conditions CAT C



- Tested on cables with cable diameter ≤ 20 mm
 - Approximately 1200 mm cable sample is tested.
 - The sample to be tested is mounted on clamps and supports (One end of the cable is only suspended in the clamp).
 - The cable sample to be tested is passed through the ring with an inner diameter of 150 mm.
 - The flame source is vertically positioned 75 mm away from the test sample.
 - It is provided with 3-phase star connected or single-phase transformers that can maintain the highest leakage current from the test voltage.
 - Current is obtained by connecting an appropriate charge and indicator device (lamp) to each conductor or group of conductors at the other end of the sample. (0.25A)
 - In single, two or three phase cables, each phase conductor is connected to the separate phase of the transformers output with a 2 A fuse or circuit breaker with equivalent characteristics on each phase.
 - Flame source and voltage are applied simultaneously.
 - Test temperature should be at least 950 ± 40 ° C.
 - Flame application time ≥ 180 minutes.
 - In order to pass the test, no fuse must be blown and the conductors must not be physically broken after the circuit breaker is activated.
- If the test result does not meet the above mentioned criteria, 2 more tests are performed.
- The 2 tests to be made must meet the above mentioned criteria.

BS 6387 Rated Voltage Up to 0,6 / 1kV (Including 1kV) Fire Resistance Test of Cables to Protect Circuit Integrity in Fire Conditions CAT W

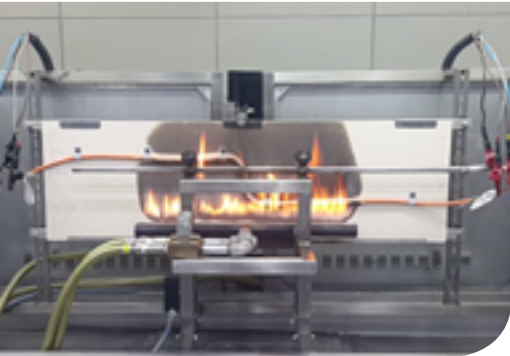


- Tested on cables with cable diameter ≤ 20 mm.
 - Approximately 1500 mm cable sample is tested.
 - The sample to be tested is mounted on a metal support consisting of two steel strips of 25 ± 1 mm width, 1150 ± 25 mm long and 5.5 ± 1 mm thick, by means of $200 \text{ mm} \pm 10$ copper clips between them.
 - The flame source is positioned as 40 ± 2 mm vertically and 20 ± 2 mm horizontally to the test sample.
 - It is provided with 3-phase star-connected or single-phase transformers that can maintain the highest leakage current from the test voltage.
 - Current is obtained by connecting an appropriate charge and indicator device (lamp) to each conductor or group of conductors at the other end of the sample. (0.25A)
 - In single, two or three phase cables, each phase conductor is connected to the separate phase of the transformers output with a 2 A fuse or circuit breaker with equivalent characteristics on each phase.
- Flame source and voltage are applied at the same time.
- Test temperature should be at least 650 ± 40 ° C.
- Flame application time ≥ 30 minutes.
- At the 15th minute, flame water spray should be started.
- In order to pass the test, no fuse must be blown and the conductors must not be physically broken after the circuit breaker is activated.
- If the test result does not meet the above criteria, 2 more tests are performed.
- The 2 tests to be made must meet the above mentioned criteria.

Fire Resistant Cable

FIRE PERFORMANCE TEST TECHNICAL INFORMATIONS

BS 6387 Rated Voltage Up to 0,6 / 1kV (Including 1kV) Fire Resistance Test of Cables to Protect Circuit Integrity in Fire Conditions CAT Z



It is aimed to keep the cable working during the fire and to save time.

- Tested on cables with cable diameter ≤ 20 mm.
- Approximately 1200 mm cable sample is tested.
- The sample is tested by mounting on a plate made of non-metallic and fire resistant material with the dimensions of 900 ± 100 mm long, 300 ± 5 mm wide and 9 ± 0.5 mm thick.
- The test piece is fixed with metal clips between 150 mm and 200 mm.
- to the Z shape.
- It is provided with 3-phase star-connected or single-phase transformers that can maintain the highest leakage current from the test voltage.
- Current is obtained by connecting an appropriate charge and indicator device (lamp) to each conductor or group of conductors at the other end of the sample. (0.25A)
- In single, two or three phase cables, each phase conductor is connected to the separate phase of the transformers output with a 2 A fuse or circuit breaker with equivalent characteristics on each phase.
- Flame source and voltage are applied at the same time.
- Test temperature should be at least 950 ± 40 ° C.

- Flame application time ≥ 15 minutes.
- Mechanical shock is applied at an angle of 60° once every 30 seconds.
- In order to pass the test, no fuse must be blown and the conductors must not be physically broken after the circuit breaker is activated.
- If the test result does not meet the above criteria, 2 more tests are performed.
- The 2 tests to be made must meet the above mentioned criteria.

DIN 4102-12 Rated Voltage Up to 1kV (Including 1kV) Fire Resistance of Electrical Cable Systems Required to Protect Circuit Integrity (Function Continuity)



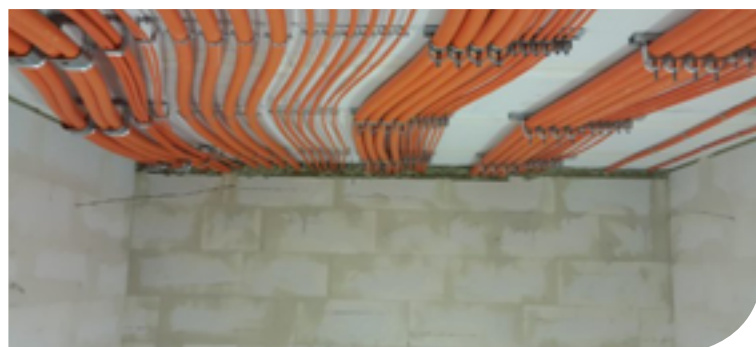
It is aimed to keep the cable working during the fire and to save time.

- It is tested in a furnace chamber whose dimensions are at least 2000 mm x 3000 mm x 2500 mm.
- The cable samples to be tested must be at least 3000 mm in the furnace.
- Tray and ladder test equipments of 300 x 3000 mm and 400 x 3000 mm and various cable holders cables are laid.
- In addition to the total weight of the cable, weight is added to the tray and ladders used in the test, up to the maximum permissible weight that the tray and ladder material can carry according to their technical specifications.
- When the trays and ladders used in the test are positioned on the horizontal plane inside the furnace, the suspension support points are mounted at 1200 mm.
- Trays and ladders are added at half the distance between two supports.
- Test temperature must be 1006° C immediately after 90 minutes.
- In order to pass the test, no fuse must be blown and the conductors must not be physically broken after the circuit breaker is activated.

Function Protection E30 ≥ 30 minutes

Function Protection E60 ≥ 60 minutes

Function Protection E90 ≥ 90 minutes



Are You Interested in Erse Kablo's Approved Products, Solutions and Test Videos?



Visit our home page:

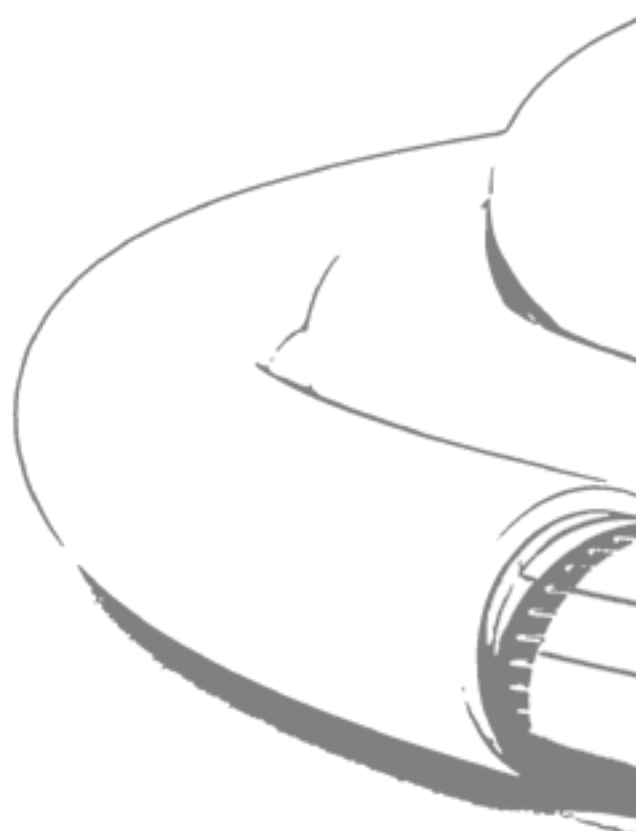
ersekablo.com.tr

Keep in Touch!

 **YouTube** / [ersekablo](https://www.youtube.com/ersekablo)







 **ERVITAL**



ERSE FIRE RESISTANT CABLES



ERSE KABLO SAN & TİC. A.Ş.

Head Office

Halil Rifat Paşa Mh. Yüzer Havuz Sk. No: 5-9
Şişli, İstanbul / Turkey

T. +90 (212) 320 26 80 (pbx) **F.** +90 (212) 320 26 84

Factory

Ortaköy Sanayi Bölgesi Elif Sk. No:12
Silivri, İstanbul / Turkey

T. +90 (212) 734 37 00 (pbx) **F.** +90 (212) 734 37 01