

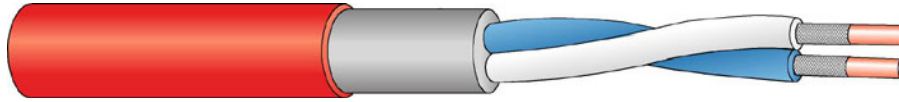
REKA
C A B L E S



FLAMEREX

Fire-resistant Cables

FIRE RESISTANT, HALOGEN FREE FIRE ALARM CABLE



Applications

For fixed installation, when signal input must be operational, even under fire. UV-resistant, can be installed indoors and outdoors. Used plastic materials are halogenfree, non-corrosive and according to RoHs directive 2011/65/EU.

Construction:

SS 424 16 16 and SFS 5545 applicable parts

Fire class :

F4B according to SS 424 14 75, EN 60332-3-23

Fire resistant:

Operation under fire according to EN 50200 and IEC 60331-21, -2

Conductor:

Circular, solid copper (EN 60228 class 1)

Insulation:

Mica-tape and halogen free polyethylene (PE)

Pair identification:

1x2x1: white/blue

10x2x1: white/blue, white/orange, white/green, white/brown, white/grey, Red/blue, red/orange, red/green, red/brown, red/grey

Inner covering:

Halogen free filling compound

Outer sheath:

Red, halogen free polyolefin compound

Temperature range:

Installation temperature min. -15 °C
Operating temperature max. +70 °C

Installations properties:

Bending radius during installation min. 15 x D
Bending radius at final installation min. 10 x D (D= overall diameter)
Maximum pulling force when pulling the conductor A x 50 N/mm²
and A x 20 N/mm² with the cable stocking (A= total area of conductors)

Electrical properties: (vid 20 °C)

Pair resistance max. 49 Ω/km
Pair capacitance with 800 Hz 70 nF/km
Attenuation with 800 Hz 80 dB/km
Insulation resistance min. 1000 M Ω/km

Product code	Size	Standard lenght	Outer diameter	Weight
		m	mm	kg/100 m
1702350	1x2x1	T 150 Bobin	8,5	8,5
1702350	1x2x1	T 500 K6	8,5	8,5
1702351	10x2x1	T 500 K10	22	41

FIRE RESISTANT, HALOGEN FREE INSTALLATION CABLE



Applications

For fixed installation, when electrical supply must be operational, even under fire.

UV-resistant, can be installed indoors and outdoors.

Used plastic materials are halogenfree, non-corrosive and according to RoHs directive 2011/65/EU.

Construction:

SFS 5545

Fire class :

F4B according to SS 424 14 75, EN 60332-3-23

Fire resistant:

Operation under fire according EN 50200, EN 50362 and IEC 60331-21, -1, -2

Conductor:

1,5 - 2,5 mm² circular, solid copper (EN 60228 class 1)

6 - 10 mm² circular, stranded copper (EN 60228 class 2)

Insulation:

Mica-tape and cross linked polyethylene (XLPE)

Core identification:

2 core: blue, brown

3 core: yellow/green, blue, brown

4 core: yellow/green, blue, brown, black (1,5 – 2,5 mm²)

4 core: yellow/green, brown, black, grey (6 – 10 mm²)

5 core: yellow/green, blue, brown, black, grey

Inner covering:

Halogen free filling compound

Outer sheath:

Red, halogen free polyolefin compound

Temperature range:

Installation temperature min. -15 °C

Operating temperature max. +90 °C

Short circuit temperature max. +250 °C

Installations properties:

Bending radius during installation min. 12 x D

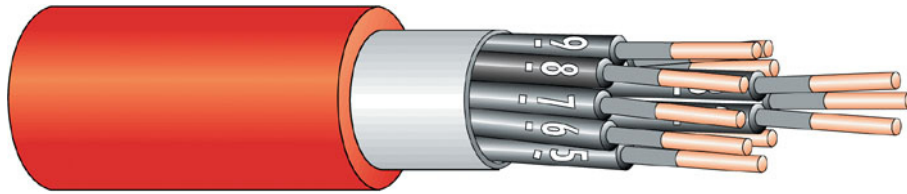
Bending radius at final installation min. 8 x D (D= overall diameter)

Maximum pulling force when pulling the conductor A x 50 N/mm²

and A x 20 N/mm² with the cable stocking (A= total area of conductors)

Product code	Size	Standard length	Outer diameter	Weight	Conductor resistance in +20°C
		m	mm	kg/100 m	Ω/km
1145205	2x1,5	T 500 K7	11	17	12,1
1145210	2x2,5	T 500 K7	13	22	7,41
1145220	2x6	T 500 K8	15	37	3,08
1145256	3G1,5	T 500 K7	12	19	12,1
1145261	3G2,5	T 500 K7	13	24	7,41
1145271	3G6	T 500 K9	17	44	3,08
1145276	3G10	T 500 K10	20	64	1,83
1145257	4G1,5	T 500 K7	13	22	12,1
1145262	4G2,5	T 500 K8	14	29	7,41
1145258	5G1,5	T 500 K8	14	26	12,1
1145263	5G2,5	T 500 K8	15	34	7,41
1145273	5G6	T 500 K10	20	64	3,08
1145278	5G10	T 500 K11	24	98	1,83

FIRE RESISTANT, HALOGEN FREE CONTROL CABLE



Applications

For fixed installation, when control signal must be operational, even under fire. UV-resistant, can be installed indoors and outdoors. Used plastic materials are halogenfree, non-corrosive and according to RoHs directive 2011/65/EU.

Construction: SFS 5545

Fire class : F4B according to SS 424 14 75, EN 60332-3-23

Fire resistant: Operation under fire according EN 50200, EN 50362 and IEC 60331-21, -1, -2

Conductor: 1,5 - 2,5 mm² circular, solid copper (EN 60228 class 1)
6 - 10 mm² circular, stranded copper (EN 60228 class 2)

Insulation: Mica-tape and cross linked polyethylene (XLPE)

Core identification: Black cores with white number

Inner covering: Halogen free filling compound

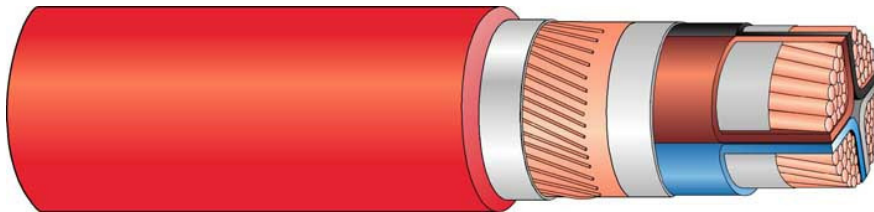
Outer sheath: Red, halogen free polyolefin compound

Temperature range: Installation temperature min. -15 °C
Operating temperature max. +90 °C
Short circuit temperature max. +250 °C

Installations properties: Bending radius during installation min. 12 x D
Bending radius at final installation min. 8 x D (D= overall diameter)
Maximum pulling force when pulling the conductor A x 50 N/mm²
and A x 20 N/mm² with the cable stocking (A= total area of conductors)

Product code	Size	Standard length m	Outer diameter mm	Weight kg/100 m	Conductor resistance in +20°C Ω/km
1145581	7x1,5	T 500 K8	14	28	12,1
1145585	12x1,5	T 500 K10	19	48	12,1
1145587	19x1,5	T 500 K11	22	68	12,1
1145591	27x1,5	T 500 K12	26	95	12,1
1145596	7x2,5	T 500 K10	17	45	7,41
1145598	12x2,5	T 500 K11	21	70	7,41
1145599	19x2,5	T 500 K12	25	96	7,41
1145607	27x2,5	T 500 K14	31	135	7,41

FIRE RESISTANT, HALOGEN FREE EMC-POWER CABLE



Applications

For fixed installation, when power supply must be operational, even under fire. UV-resistant, can be installed indoors and outdoors. Used plastic materials are halogen free, non-corrosive and according to RoHs directive 2011/65/EU.

Construction: SFS 5547

Fire class: F4B according to SS 424 14 75, EN 60332-3-23

Fire resistant: Operation under fire according to EN 50200, EN 50362 and IEC 60331-21, -1, -2

Conductor: 1,5 - 6 mm² circular, solid copper (EN 60228 class 1)
10 - 70 mm² circular, stranded copper (EN 60228 class 2)
95 - 240 mm² sector shaped, stranded copper (EN 60228 class 2)

Insulation: Mica-tape and cross linked polyethylene (XLPE)

Core identification: blue, brown, black, grey

Inner covering: Halogen free filling compound

EMC-shielding: Copper tape

Concentric conductor: Copper wires

Outer sheath: Red, halogen free polyolefin compound

Temperature range: Installation temperature min. -15 °C
Operating temperature max. +90 °C
Short circuit temperature max. +250 °C

Installations properties: Bending radius during installation min. 12 x D
Bending radius at final installation min. 8 x D (D= overall diameter)
Maximum pulling force when pulling the conductor A x 50 N/mm², not over 20 000 N and A x 20 N/mm² with the cable stocking, not over 8 000 N (A= total area of conductors)

Product code	Size	Standard length m	Outer diameter mm	Weight kg/100 m	Conductor resistance in +20°C Ω/km	Screen resistance in +20°C Ω/km
1146660	4x1,5/1,5	T 500 K8	15	29	12,1	12,1
1146661	4x2,5/2,5	T 500 K9	16	36	7,41	7,41
1146663	4x6/6	T 500 K10	19	60	3,08	3,08
1146664	4x10/10	T 500 K11	22	90	1,83	1,83
1146665	4x16/16	T 500 K12	29	130	1,15	1,15
1146666	4x25/16	T 500 K14	30	180	0,727	1,15
1146667	4x35/16	T 500 K14	30	200	0,524	1,15
1146668	4x50/25	T 500 K18	35	270	0,387	0,727
1146669	4x70/35	T 500 K20	38	295	0,268	0,524
1146670	4x95/50	T 500 K20	42	480	0,193	0,387
1146671	4x120/70	T 500 K22	47	600	0,153	0,268
1146672	4x150/70	T 500 K22	50	725	0,124	0,268
1146673	4x185/95	T 500 K26	58	930	0,0991	0,193
1146674	4x240/120	T 500 K26	63	1190	0,0754	0,153

FLAMEREX FIRE RESISTANT CABLES

Flamerex FRHF is a common name for Reka's fire resistant cables. These cables are specially designed for maintaining security function, signal and energy supply in fire and after for vital importance functions.

Flamerex cables are halogen free, non corrosive, UV-protected, and self-extinguishing in bunch.

Cable construction has big influence for that. Flamerex outer sheath and filling material are halogen free thermoplastic polyolefine compound. Core insulation is cross linked polyethylene and the last layer above copper is mica-tape.

Mica-tape is non-flammable insulation material, which prevents short circuits between phases and earth.

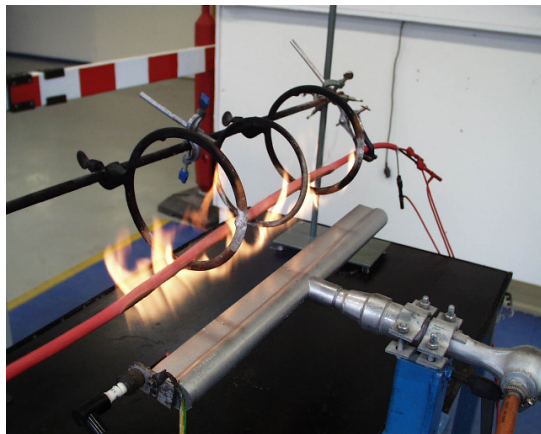
Mica has very good insulation properties. Burned cable is mechanically weak and therefore all supporting constructions must be also fire resistant or unburnable material. There is not possible to use aluminium, because it will smell even in 600 °C. That's why cable canals and ladders and fixing materials must be steel. Connection boxes must be ceramic or other unburnable material. Simple, fire resistant cable installation with unburnable installation material is optimal.

Functioning in fire, has tested according to EN 50200, EN 50362 and IEC 60331-21, IEC 60331-1, IEC 60331-2.

Test according to IEC 60331-21, fire alone at a flame temperature of at least 750°C. Cable alone is installed horizontal position to the test rack and nominal voltage is on. Propane burner is burning the cable 90 min with flame temperature 750°C. Interruptions or short circuits are not allowed during the test.

Test according to EN 50200, EN 50362 and IEC 60331-1, IEC 60331-2, fire with shock at temperature of at least 830°C. Cable is installed to the test wall with minimum bending radius and nominal voltage is on. Propane burner is burning the cable 90 min with flame temperature 830°C. Shock-producing device impact the ladder regular.

Interruptions or short circuits are not allowed during the test. Cables with outer diameter under 20 mm are tested according to EN 50200, IEC 60331-2 and over 20 mm are tested according to EN 50362, IEC 60331-1.



IEC 60331-21 Normal test



IEC 60331-2 and EN 50200 Shock test

Flamerex FRHF is fire resistant, halogen free and UV-resistant cable, which maintains operative function under and after the fire. For secure important energy and signal feeding. For buildings, where is lot of people and evacuation takes for a long time. For industry, where needed non corrosive gases and low smoke density cables.

Flamerex FRHF-EMC cables are suitable for connection between frequency converter and motor on variable speed drive systems. Cable gives an excellent screen against electromagnetic radiation from the cable.

Flamerex FRHF benefits in fire, competing with PVC-cables.

Lower fire spreading gives more time for rescuing people and avoid material damages.

Lower smoke density helps visibility in fire place and gives possibility to rescue.

Halogen freedom minimize corrosion damages in electronic, machines and building constructions.

Halogen freedom and low toxicity minimize risk for aspiration damages

Fire properties for Flamerex FRHF

SS 424 17 75

Class F4B

EN 50200, EN 50362 and

IEC 60331-21, -1, -2

Fire resistant

EN 60332-3-23 IEC 60332-3-23

Self-extinguishing and flame retardant even, when the cables are installed in bunches

EN 50267 IEC 60754

Halogen free, non-corrosive gases

EN 61034 IEC 61034

Low smoke density

EN 50289-1-6

Electromagnetic performance (FRHF-EMC)

FIRE CLASS F1, F2, F3 and F4

Cables fire classes can be divided into three fire spreading classes.
Swedish standard describes those with: F1, F2 and F4 according SS 424 14 75.

FIRE CLASS F1

No demands. Cable spreads fire and is not self-extinguishing. Cables in this fire class are usually used in soil.

FIRE CLASS F2

Cable is flame retardant. Cable alone doesn't spread fire. Testing method EN 60332-1-2 is equivalent with IEC 60332-1-2. Vertical 600 mm long cable will be burned with 1 kW propane gas burner. Burning time is from 1 minute to 8 minutes, which is depending cable diameter. Cable must extinguish itself, after the burner has extinguished. Cable damages will be measured.

F3

Cable is flame retardant. Cable alone doesn't spread fire. Old swedish testing method, where the cable is installed to a vertical tube. Liquid fuel will be burned below this tube. Testing method is no longer valid, cancelled SS 4241419:2002 (GENELEC HD 605S1/A2:2001).

FIRE CLASS F4

Cables are flame retardant. Cables in bunch doesn't spread fire. Testing method according to EN 60332-3 series are equivalent with IEC 60332-3 series. There is four standard category: F4A F/R is most and F4D is less demanding. Cables are installed to the vertical bunch in 3,5 m long ladder. The bunch will be burned from the bottom, with 20 kW propane gas burner. The fire is not allowed to proceed over 2,5 m high and the cable bunch must be self-extinguishing.

F4-class cables are used in places where fire spreading must be stopped. Mostly halogen freedom is supplementary demanding.

F4A F/R

Testing method according to EN 60332-3-21 (IEC 60332-3-21). There must be 7 liter/m burning material, flame application time 40 minutes. (Over 35mm² installation front and rear of the ladder)

F4A

Testing method according to EN 60332-3-22 (IEC 60332-3-22). There must be 7 liter/m burning material, flame application time 40 minutes. (Under 35mm² installation front of the ladder)

F4B

Testing method according to EN 60332-3-23 (IEC 60332-3-23). There must be 3,5 liter/m burning material, flame application time 40 minutes.

F4C

Testing method according to EN 60332-3-24 (IEC 60332-3-24). There must be 1,5 liter/m burning material, flame application time 20 minutes.

F4D

Testing method according to EN 60332-3-25 (IEC 60332-3-25). There must be 0,5 liter/m burning material, flame application time 20 minutes

REKA

C A B L E S

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