



ramcro

special cables



FIRE CABLES



ABOUT COMPANY



Ramcro was founded in 1979, as a family Company producing Special Cables. Family Croci owns 100% of Ramcro S.p.a.. In over 42 years Ramcro successfully expanded its presence in different countries and in a few different but important segments: Oil & Gas, Fire, Railway Signal & Control, BMS, and Optical Cables.

Ramcro production capacity is 4.000 Km/Month and 50.000 Km/Year. Production dpt is 18.000 sqm, of which 3.000 sqm on stock, allowing outstanding very high flexibility in delivery, with also 1.300 sqm of offices and 750 sqm for Laboratory.

Ramcro Laboratory provides any certificates of tests run following major international specifications and it is certified ISO 17025. It is also recognized by the international body as a "Third part Laboratory". Ramcro solves any kind of technical issue in the area of the cable, assuring the Client's satisfaction thanks to high quality and personalized solutions, improving the Client's efficiency and optimizing its processes. Ramcro offers extremely flexible solutions and a complete range of services, even tailor-made, based on outstanding worldwide experience.

Excellence You Can Trust: Ramcro Special Cables

At Ramcro, quality is not just a promise — it's a proven standard. With over 40 years of experience in the design and production of special cables, we are proud to be recognized as one of the few companies in the industry to operate an in-house laboratory accredited to ISO/IEC 17025.

This prestigious accreditation sets us apart. While many rely on third-party laboratories for compliance certificates, Ramcro is directly certified, ensuring the highest level of technical competence, precision, and reliability in every test we perform. Our laboratory doesn't just verify conformity — it defines it.

What does this mean for you?

Unmatched Quality Control: Every cable is tested under the strictest international standards, guaranteeing performance, safety, and durability.

Faster Time to Market: With internal testing capabilities, we reduce lead times and respond quickly to your needs.

Full Traceability & Transparency: From raw materials to final product, every step is monitored and documented with certified accuracy.

Innovation with Confidence: Our R&D team works hand-in-hand with our lab to develop cutting-edge solutions tailored to your most demanding applications.

Choose Ramcro — where certified excellence meets engineering innovation.



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CERTIFICATE

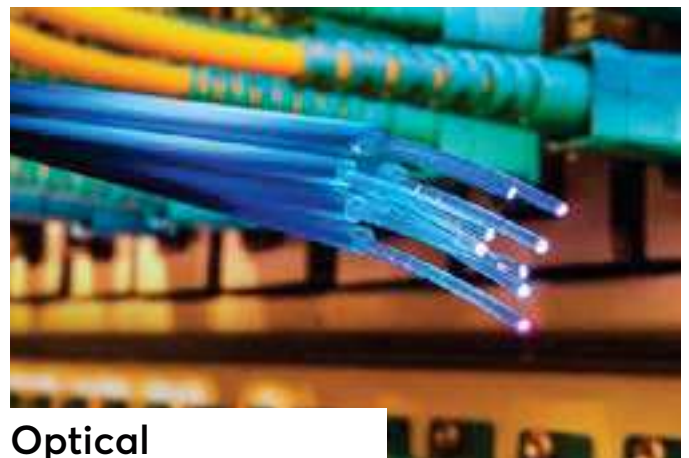


ISO/IEC 17025:2017



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APPLICATIONS



FIRE ALARM CABLE

FIRE RESISTANT CABLE

FIRE-RESISTANT DATA LAN CABLE

FIBER OPTICAL FIRE-RESISTANT CABLE

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Fire Planet

TYPE: SOLID

BS 6387:2013 Cat. C-W-Z

CONSTRUCTION

Multi-Core, Solid CU, Silicon Rubber-Insulation, Collective Screen, LSZH-Sheath.

Conductor:

Plain annealed copper wire, Solid

Insulation:

Special mix silicon rubber

Wrapping:

at least 1 layer of plastic tape 0,023 mm

Collective Screen:

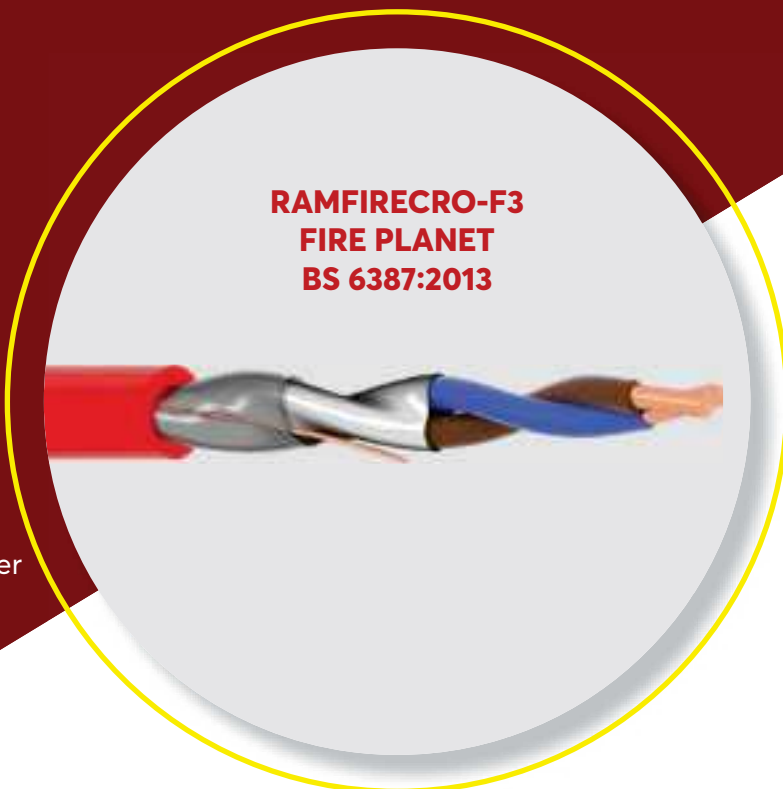
0,026 mm Aluminium / PETP tape over copper drain wire

Outer Sheath:

Thermoplastic Low Smoke, Halogen Free

Sheath Colour:

Red or White



IDENTIFICATION OF CORE

2 Core ● ●
3 Core ● ● ●
4 Core ● ● ● ●
up/from 5 cores: Black Numbered

ELECTRICAL DATA

Insulation Resistance @ 20°C:

> 200 MOhm*Km

Test Voltage Core-Core:

2000 V

Test Voltage Core-Screen:

2000 V

Mutual Capacitance:

< 150 nF/km

Inductance:

< 1 mH/km

Operating Voltage:

300/500 V

Reference Standard & Fire Performance Test

- BS 6387:2013 Cat. C-W-Z
- IEC 60754-1:2014
- EN 61034-2:2005
- EN 50200:2015 (Class PH120)
- EN 50200:2015 Annex E (30 mins)
- EN 60754-2:2014
- BS 5266-1

CPR Classification

CPR version available in B2ca

Temperature Range

During Operation:

-30°C up to +180°C

During Installation:

-5°C up to +50°C

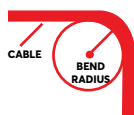


568a/02

Fire Resistant



Min. Bending Radius



8 x cable diameter

Low Smoke Halogen free



Note: Information subject to confirmation

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CABLE PRINTING

RAMFIRECRO-F3 - FIRE PLANET – LSZH – LPCB 568a/02 – EN 60754-1:2014 – BS 6387:2013 (CWZ) – EN 50200:2015 PH120 – EN 50200:2015 ANNEX E - EN 61034-2:2005 – 300/500V – CONDxAREA + E BATCH N. + MADE IN ITALY

DIMENSIONAL DATA

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAR0211HFESL-F3(IE)	2x1.00	6.1	54
SAR0311HFESP-F3(IE)	3x1.00	6.3	71
SAR0411HFESQ-F3(IE)	4x1.00	6.9	91
SAR0511HFESD-F3(IE)	5x1.00	7.8	113
SAR0711HFESD-F3(IE)	7x1.00	8.4	147
SAR1211HFESD-F3(IE)	12x1.00	11	238
SAR1911HFESD-F3(IE)	19x1.00	12.8	357
SAR0214HFESL-F3(IE)	2x1.50*	6.6*	67
SAR0314HFESP-F3(IE)	3x1.50*	6.8*	88
SAR0414HFESQ-F3(IE)	4x1.50*	7.4*	111
SAR0514HFESD-F3(IE)	5x1.50	8.3	138
SAR0714HFESD-F3(IE)	7x1.50	9	181
SAR1214HFESD-F3(IE)	12x1.50	11.8	296
SAR1914HFESD-F3(IE)	19x1.50	14.2	461
SAR0218HFESL-F3(IE)	2x2.50*	7.4*	89
SAR0318HFESP-F3(IE)	3x2.50*	7.7*	123
SAR0418HFESQ-F3(IE)	4x2.50*	8.4*	157
SAR0518HFESD-F3(IE)	5x2.50	9.2	191
SAR0718HFESD-F3(IE)	7x2.50	10.1	254
SAR1218HFESD-F3(IE)	12x2.50	13.2	418
SAR1918HFESD-F3(IE)	19x2.50	16	654

*Cables certified by LPCB BRE GLOBAL

*if the cables are with a WHITE outer sheath the RAMCRO CODE will change in: SAR____HCESL-F3(IE)

Fire Planet

TYPE: STRANDED

BS 6387:2013 Cat. C-W-Z

CONSTRUCTION

Multi-Core, Stranded CU, Silicon Rubber-Insulation, Collective Screen, LSZH-Sheath.

Conductor:

Plain annealed copper wire, 7 strand

Insulation:

Special mix silicon rubber

Wrapping:

at least 1 layer of plastic tape 0,023 mm

Collective Screen:

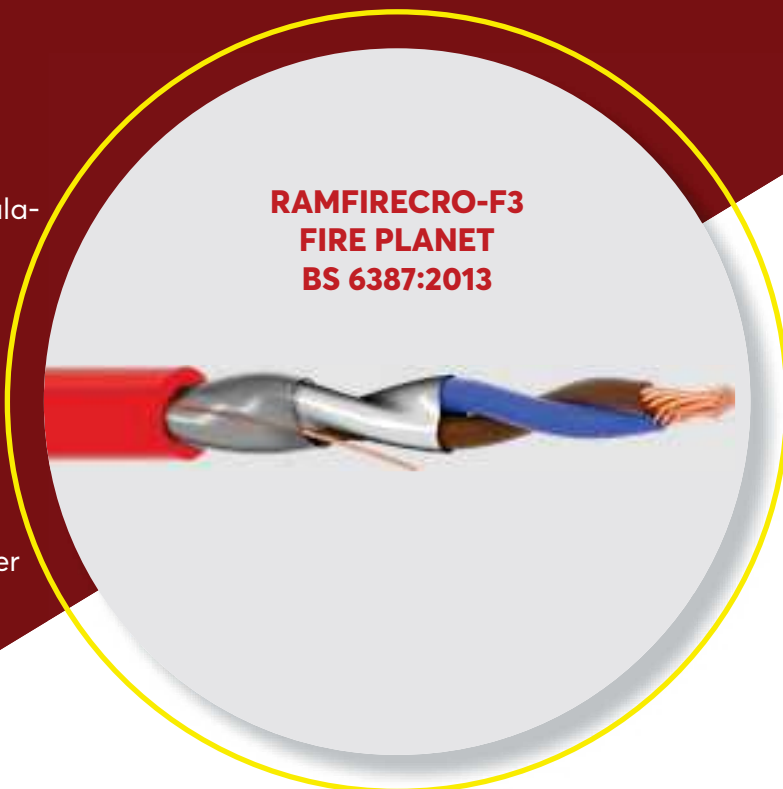
0,026 mm Aluminium / PETP tape over copper drain wire

Outer Sheath:

Thermoplastic Low Smoke, Halogen Free

Sheath Colour:

Red or White



IDENTIFICATION OF CORE

2 Core 
3 Core 
4 Core 

up/from 5 cores: Black Numbered

ELECTRICAL DATA

Insulation Resistance @ 20°C:

> 200 MOhm*Km

Test Voltage Core-Core:

2000 V

Test Voltage Core-Screen:

2000 V

Mutual Capacitance:

< 150 nF/km

Inductance:

< 1 mH/km

Operating Voltage:

300/500 V

Reference Standard & Fire Performance Test

- BS 6387:2013 Cat. C-W-Z
- IEC 60754-1:2014
- EN 61034-2:2005
- EN 50200:2015 (Class PH120)
- EN 50200:2015 Annex E (30 mins)
- EN 60754-2:2014
- BS 5266-1

CPR Classification

CPR version available in B2ca

Temperature Range

During Operation:

-30°C up to +180°C

During Installation:

-5°C up to +50°C

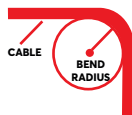


568a/02

Fire Resistant



Min. Bending Radius



8 x cable diameter

Low Smoke Halogen free



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Note: Information subject to confirmation

CABLE PRINTING

RAMFIRECRO-F3 - FIRE PLANET - LSZH - LPCB 568a/02 - EN 60754-1:2014 - BS 6387:2013 (CWZ) - EN 50200:2015 PH120 - EN 50200:2015 ANNEX E - EN 61034-2:2005 - 300/500V - CONDxAREA + E BATCH N. + MADE IN ITALY

DIMENSIONAL DATA

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAS0210HFESL-F3(IE)	2x1.00	6.5	59
SAS0310HFESP-F3(IE)	3x1.00	6.6	76
SAS0410HFESQ-F3(IE)	4x1.00	7.2	95
SAS0510HFESD-F3(IE)	5x1.00	8.1	118
SAS0710HFESD-F3(IE)	7x1.00	8.8	154
SAS1210HFESD-F3(IE)	12x1.00	11.5	248
SAS0215HFESL-F3(IE)	2x1.50*	7.0*	72
SAS0315HFESP-F3(IE)	3x1.50*	7.2*	95
SAS0415HFESQ-F3(IE)	4x1.50*	8.1*	123
SAS0515HFESD-F3(IE)	5x1.50	8.8	148
SAS0715HFESD-F3(IE)	7x1.50	9.6	196
SAS1215HFESD-F3(IE)	12x1.50	12.6	319
SAS1915HFESD-F3(IE)	19x1.50	15.2	498
SAS0225HFESL-F3(IE)	2x2.50*	8.1*	101
SAS0325HFESP-F3(IE)	3x2.50*	8.3*	135
SAS0425HFESQ-F3(IE)	4x2.50*	9.1*	170
SAS0525HFESD-F3(IE)	5x2.50	9.9	207
SAS0725HFESD-F3(IE)	7x2.50	10.8	277
SAS1225HFESD-F3(IE)	12x2.50	14.7	470
SAS1925HFESD-F3(IE)	19x2.50	17.2	713
SAS0240HFESL-F3(IE)	2x4.00*	10.0*	151
SAS0340HFESP-F3(IE)	3x4.00*	10.2*	205
SAS0440HFESQ-F3(IE)	4x4.00*	11.0*	252

* Cables certified by LPCB BRE GLOBAL

* If the cables are with a WHITE outer sheath the RAMCRO CODE will change in: SAS____HCESL-F3(IE)

Standard Fire Sun

TYPE: SOLID

BS 7629-1:2015

CONSTRUCTION

Multi-Core, Solid CU, Silicon Rubber-Insulation, Collective Screen, LSZH-Sheath

Construction:

Plain annealed copper wire, solid

Insulation:

Special mix silicon rubber

Wrapping:

at least 1 layer of plastic tape 0,023 mm

Collective Screen:

0,026 mm Aluminium / PETP tape over tinned copper drain wire

Outer Sheath:

Thermoplastic Low Smoke, Halogen Free

Sheath Colour:

Red or White

**RAMFIRECRO-F3
STANDARD FIRE SUN
BS 7629-1:2015**



IDENTIFICATION OF CORE

2 Core ● ●

3 Core ● ● ●

4 Core ● ● ● ●

up/from 5 cores: Black Numbered

ELECTRICAL DATA

Insulation Resistance @ 20°C:

> 200 MOhm*Km

Test Voltage Core-Core:

2000 V

Test Voltage Core-Screen:

2000 V

Mutual Capacitance:

< 150 nF/km

Inductance:

< 1 mH/km

Operating Voltage:

300/500 V

Reference Standard

- BS 7629-1:2015 (Standard 60)
- BS 6387:2013 (CWZ)
- EN 50200:2015 (Class PH60**/PH120)
- EN 50200: 2015 Annex E (30 mins)
- BS 5839-1:2013 (Clause 26.2d Standard)
- EN 60754-2:2014
- BS 5266-1

CPR Classification

CPR version available in B2ca

Temperature Range

During Operation:

-30°C up to +180°C

During Installation:

-5°C up to +50°C



PRODUCT MARKETING LICENCE N. 25A/901

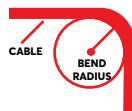
568c/02

Enquiry for BASEC
APPROVED cable versions

Fire Resistant



Min. Bending Radius



8 x cable
diameter

Low Smoke Halogen free



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Note: Information subject to confirmation

Standard Fire Sun

LPCB 568c/02

TYPE: SOLID

BS 7629-1:2015

CABLE PRINTING

RAMCRO ITALY - RAMFIRECRO-F3 STANDARD FIRE SUN - FIRE RESISTANT ELECTRIC CABLE - LSZH - 300/500V - BS 7629-1:2015 STANDARD 60 - BS 6387:2013 CWZ - CONDxAR-EA + E - (Year of manufacture) H - LPCB 568c/02 - MADE IN ITALY + batch n° + METER MARKING

DIMENSIONAL DATA

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAR0211HFESL-F3PH120	2x1.00*	6.4*	66
SAR0311HFESP-F3PH120	3x1.00	6.5	83
SAR0411HFESQ-F3PH120	4x1.00	7.1	101
SAR0511HFESD-F3PH120	5x1.00	7.8	120
SAR0711HFESD-F3PH120	7x1.00	8.4	155
SAR1211HFESD-F3PH120	12x1.00	11.2	251
SAR1911HFESD-F3PH120	19x1.00	13	370
SAR0214HFESL-F3PH120	2x1.50*	7.3*	88
SAR0314HFESP-F3PH120	3x1.50*	7.4*	111
SAR0414HFESQ-F3PH120	4x1.50*	8.1*	137
SAR0514HFESD-F3PH120	5x1.50	8.8	162
SAR0714HFESD-F3PH120	7x1.50	9.6	211
SAR1214HFESD-F3PH120	12x1.50	12.9	342
SAR1914HFESD-F3PH120	19x1.50	15.1	510
SAR0218HFESL-F3PH120	2x2.50*	8.6*	129
SAR0318HFESP-F3PH120	3x2.50*	8.7*	166
SAR0418HFESQ-F3PH120	4x2.50*	9.6*	205
SAR0518HFESD-F3PH120	5x2.50	10.7	251
SAR0718HFESD-F3PH120	7x2.50	11.7	326
SAR1218HFESD-F3PH120	12x2.50	15.4	523
SAR1918HFESD-F3PH120	19x2.50	18.1	787

*Cables certified by LPCB BRE GLOBAL and BASEC.

** Cables certified by BASEC are EN 50200:2015 PH60

Note: If the cables are with a WHITE outer sheath the RAMCRO CODE will change in: SAR____HCESL-F3PH120

Note: Information subject to confirmation



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Standard Fire Sun

TYPE: STRANDED

BS 7629-1:2015

CONSTRUCTION

Multi-Core, Stranded CU, Silicon Rubber-Insulation, Collective Screen, LSZH-Sheath

Construction:

Plain annealed copper wire, 7 Strands

Insulation:

Special mix silicon rubber

Wrapping:

at least 1 layer of plastic tape 0,023 mm

Collective Screen:

0,026 mm Aluminium / PETP tape over tinned copper drain wire

Outer Sheath:

Thermoplastic Low Smoke, Halogen Free

Sheath Colour:

Red or White

RAMFIRECRO-F3 STANDARD FIRE SUN BS 7629-1:2015



Reference Standard

- BS 7629-1:2015 (Standard 60)
- BS 6387:2013 (CWZ)
- EN 50200:2015 (Class PH30/PH120)
- EN 50200: 2015 Annex E (30 mins)
- BS 5839-1:2013 (Clause 26.2d Standard)
- EN 60754-2:2014
- BS 5266-1

CPR Classification

CPR version available in B2ca

Temperature Range

During Operation:

-30°C up to +180°C

During Installation:

-5°C up to +50°C



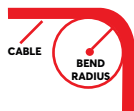
Enquiry for BASEC
APPROVED cable versions

568c/02

Fire Resistant



Min. Bending Radius



8 x cable
diameter

Low Smoke Halogen free



IDENTIFICATION OF CORE

2 Core



3 Core



4 Core



up/from 5 cores: Black Numbered

ELECTRICAL DATA

Insulation Resistance @ 20°C:

> 200 MOhm*Km

Test Voltage Core-Core:

2000 V

Test Voltage Core-Screen:

2000 V

Mutual Capacitance:

< 150 nF/km

Inductance:

< 1 mH/km

Operating Voltage:

300/500 V



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Note: Information subject to confirmation

CABLE PRINTING

RAMCRO ITALY - RAMFIRECRO-F3 STANDARD FIRE SUN - FIRE RESISTANT ELECTRIC CABLE - LSZH - 300/500V - BS 7629-1:2015 STANDARD 60 - BS 6387:2013 CWZ - CONDxAR-EA + E - Year of manufacture H - LPCB 568c/02 - MADE IN ITALY + batch n° + METER MARKING

DIMENSIONAL DATA

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAS0210HFESL-F3PH120	2x1.00*	6.4*	66
SAS0310HFESP-F3PH120	3x1.00	6.5	83
SAS0410HFESQ-F3PH120	4x1.00	7.1	101
SAS0510HFESD-F3PH120	5x1.00	7.8	120
SAS0710HFESD-F3PH120	7x1.00	8.4	155
SAS1210HFESD-F3PH120	12x1.00	11.2	251
SAS1910HFESD-F3PH120	19x1.00	13	370
SAS0215HFESL-F3PH120	2x1.50*	7.3*	88
SAS0315HFESP-F3PH120	3x1.50*	7.4*	111
SAS0415HFESQ-F3PH120	4x1.50*	8.1*	137
SAS0515HFESD-F3PH120	5x1.50	8.8	162
SAS0715HFESD-F3PH120	7x1.50	9.6	211
SAS1215HFESD-F3PH120	12x1.50	12.9	342
SAS1915HFESD-F3PH120	19x1.50	15.1	510
SAS0225HFESL-F3PH120	2x2.50*	8.6*	129
SAS0325HFESP-F3PH120	3x2.50*	8.7*	166
SAS0425HFESQ-F3PH120	4x2.50*	9.6*	205
SAS0525HFESD-F3PH120	5x2.50	10.7	251
SAS0725HFESD-F3PH120	7x2.50	11.7	326
SAS1225HFESD-F3PH120	12x2.50	15.4	523
SAS1925HFESD-F3PH120	19x2.50	18.1	787
SAS0240HFESL-F3PH120	2x4.00*	10.6*	190
SAS0340HFESP-F3PH120	3x4.00*	11.0*	250
SAS0440HFESQ-F3PH120	4x4.00*	12.0*	306
SAS0540HFESD-F3PH120	5x4.00	13.1	364

*Cables certified by LPCB BRE GLOBAL

*if the cables are with a WHITE outer sheath the RAMCRO CODE will change in: SAS____HCESEL-F3PH120

Enhanced Fire Star

TYPE: SOLID

BS 7629-1:2015 - EN 50200:2015
PH 120 – BS 8434-2:2003

CONSTRUCTION

Multi-Core, Solid CU, Mica+XLPE/Silicon Rubber -Insulation, Collective Screen, LSZH-Sheath

Conductor:

Plain annealed copper wire, solid

Insulation:

MICA+XLPE & Special mix silicon rubber

Wrapping:

at least 1 layer of plastic tape 0,023 mm

Collective Screen:

0,026 mm Aluminium / PETP tape over tinned copper CC core (same size of conductors)

Outer Sheath:

Thermoplastic Low Smoke, Halogen Free

Sheath Colour:

Red or White

RAMFIRECRO-F3
ENHANCED FIRE STAR
BS 7629-1:2015



IDENTIFICATION OF CORE

2 Core ● ●
3 Core ● ● ●
4 Core ● ● ● ●
up/from 5 cores: Black Numbered

ELECTRICAL DATA

Insulation Resistance @ 20°C:

> 200 MOhm*Km

Test Voltage Core-Core:

2000 V

Test Voltage Core-Screen:

2000 V

Mutual Capacitance:

< 150 nF/km

Inductance:

< 1 mH/km

Operating Voltage:

300/500 V

Reference Standard

- BS 7629-1:2015 Enhanced 120
- EN 50200:2015 (Class PH120)
- BS 8434-2:2003+A2:2009 (120 mins)
- BS 5839-1:2013 (Clause 26.2e Enhanced)
- BS 6387:2013 Category CWZ
- EN 60332-3-24:2009

CPR Classification

EN 50575:2016 - Ca s1a, d0, a1

Temperature Range

During Operation:

-30°C up to +180°C

During Installation:

-5°C up to +50°C

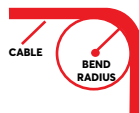


568j/01

Fire Resistant



Min. Bending Radius



8 x cable diameter

Low Smoke Halogen free



ramcro.com

Note: Information subject to confirmation

Enhanced Fire Star

LPCB 568j/01

TYPE: SOLID

BS 7629-1:2015 - EN 50200:2015
PH 120 – BS 8434-2:2003

CABLE PRINTING

RAMCRO ITALY - RAMFIRECRO-F3 FIRE STAR - FIRE RESISTANT ELECTRIC CABLE - LSZH - 300/500V - BS 7629-1:2015 ENHANCED 120 - BS 6387:2013 CWZ - EN 60332-3-24:2009 - CONDxAREA + E - Year of Manufacturing H - LPCB 568j/01 - MADE IN ITALY - BATCH N°

DIMENSIONAL DATA

RAMCRO CODE	FORMATION	OUTER	WEIGHT
	[n° x mm2]	DIAMETER [mm]	[kg/km]
SAR0211HFEOL-F3EN120	2x1.00	9.8	121
SAR0311HFEOP-F3EN120	3x1.00	10.4	152
SAR0411HFEOQ-F3EN120	4x1.00	11.7	194
SAR0511HFEOD-F3EN120	5x1.00	12.8	231
SAR0711HFEOD-F3EN120	7x1.00	14.2	304
SAR1211HFEOD-F3EN120	12x1.00	18.9	491
SAR1911HFEOD-F3EN120	19x1.00	22.6	743
SAR0214HFEOL-F3EN120	2x1.50*	10.3*	139
SAR0314HFEOP-F3EN120	3x1.50*	10.9*	178
SAR0414HFEOQ-F3EN120	4x1.50*	12.2*	226
SAR0514HFEOD-F3EN120	5x1.50	13.4	269
SAR0714HFEOD-F3EN120	7x1.50	14.8	355
SAR1214HFEOD-F3EN120	12x1.50	19.9	574
SAR1914HFEOD-F3EN120	19x1.50	23.7	871
SAR0218HFEOL-F3EN120	2x2.50*	11.3*	184
SAR0318HFEOP-F3EN120	3x2.50*	12.0*	236
SAR0418HFEOQ-F3EN120	4x2.50*	13.4*	298
SAR0518HFEOD-F3EN120	5x2.50	14.6	354
SAR0718HFEOD-F3EN120	7x2.50	16.2	467
SAR1218HFEOD-F3EN120	12x2.50	21.9	767
SAR1918HFEOD-F3EN120	19x2.50	26.1	1159

*Cables certified by LPCB BRE GLOBAL

*If the cables are with a WHITE outer sheath the RAMCRO CODE will change in: SAR__HCEOL-F3EN120

Note: Information subject to confirmation



ramcro.com

Enhanced Fire Star

TYPE: STRANDED

BS 7629-1:2015 - EN 50200:2015

PH 120 – BS 8434-2:2003

CONSTRUCTION

Multi-Core, Stranded CU, Mica+XLPE/Silicon Rubber -Insulation, Collective Screen, LSZH-Sheath

Conductor:

Plain annealed copper wire, 7 Strands

Insulation:

MICA+XLPE & Special mix silicon rubber

Wrapping:

at least 1 layer of plastic tape 0,023 mm

Collective Screen:

0,026 mm Aluminium / PETP tape over tinned copper CC core (same size of conductors)

Outer Sheath:

Thermoplastic Low Smoke, Halogen Free

Sheath Colour:

Red or White

**RAMFIRECRO-F3
ENHANCED FIRE STAR
BS 7629-1:2015**



IDENTIFICATION OF CORE

2 Core ● ●

3 Core ● ● ●

4 Core ● ● ● ●

up/from 5 cores: Black Numbered

ELECTRICAL DATA

Insulation Resistance @ 20°C:

> 200 MOhm*Km

Test Voltage Core-Core:

2000 V

Test Voltage Core-Screen:

2000 V

Mutual Capacitance:

< 150 nF/km

Inductance:

< 1 mH/km

Operating Voltage:

300/500 V

Reference Standard

- BS 7629-1:2015 Enhanced 120
- EN 50200:2015 (Class PH120)
- BS 8434-2:2003+A2:2009 (120 mins)
- BS 5839-1:2013 (Clause 26.2e Enhanced)
- BS 6387:2013 Category CWZ
- EN 60332-3-24:2009

CPR Classification

EN 50575:2016 - Cca s1a, d0, a1

Temperature Range

During Operation:

-30°C up to +180°C

During Installation:

-5°C up to +50°C

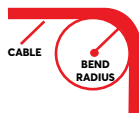


568j/01

Fire Resistant



Min. Bending Radius



8 x cable diameter

Low Smoke Halogen free



ramcro.com

Note: Information subject to confirmation

Enhanced Fire Star

LPCB 568j/01

TYPE: STRANDED

BS 7629-1:2015 - EN 50200:2015
PH 120 – BS 8434-2:2003

CABLE PRINTING

RAMCRO ITALY - RAMFIRECRO-F3 FIRE STAR - FIRE RESISTANT ELECTRIC CABLE - LSZH - 300/500V - BS 7629-1:2015
ENHANCED 120 - BS 6387:2013 CWZ - EN 60332-3-24:2009
- CONDxAREA + E - Year of Manufacturing H - LPCB 568j/01
- MADE IN ITALY - BATCH N°

DIMENSIONAL DATA

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAS0210HFESL-F3(IE)	2x1.00	6.5	59
SAS0310HFESP-F3(IE)	3x1.00	6.6	76
SAS0410HFESQ-F3(IE)	4x1.00	7.2	95
SAS0510HFESD-F3(IE)	5x1.00	8.1	118
SAS0710HFESD-F3(IE)	7x1.00	8.8	154
SAS1210HFESD-F3(IE)	12x1.00	11.5	248
SAS0215HFESL-F3(IE)	2x1.50*	7.0*	72
SAS0315HFESP-F3(IE)	3x1.50*	7.2*	95
SAS0415HFESQ-F3(IE)	4x1.50*	8.1*	123
SAS0515HFESD-F3(IE)	5x1.50	8.8	148
SAS0715HFESD-F3(IE)	7x1.50	9.6	196
SAS1215HFESD-F3(IE)	12x1.50	12.6	319
SAS1915HFESD-F3(IE)	19x1.50	15.2	498
SAS0225HFESL-F3(IE)	2x2.50*	8.1*	101
SAS0325HFESP-F3(IE)	3x2.50*	8.3*	135
SAS0425HFESQ-F3(IE)	4x2.50*	9.1*	170
SAS0525HFESD-F3(IE)	5x2.50	9.9	207
SAS0725HFESD-F3(IE)	7x2.50	10.8	277
SAS1225HFESD-F3(IE)	12x2.50	14.7	470
SAS1925HFESD-F3(IE)	19x2.50	17.2	713
SAS0240HFESL-F3(IE)	2x4.00*	10.0*	151
SAS0340HFESP-F3(IE)	3x4.00*	10.2*	205
SAS0440HFESQ-F3(IE)	4x4.00*	11.0*	252

*Cables certified by LPCB BRE GLOBAL

*If the cables are with a WHITE outer sheath the RAMCRO CODE will change in: SAR_HCEOL-F3EN120

Note: Information subject to confirmation



ramcro.com





Fire Safe

TYPE: SOLID

IEC 60331-21:1999

CONSTRUCTION

Multi-Core, Solid CU, Silicon Rubber-Insulation, Collective Screen, LSZH-Sheath

Conductor:

Plain annealed copper wire, solid

Insulation:

Special mix silicon rubber

Wrapping:

at least 1 layer of plastic tape 0,023 mm

Collective Screen:

0,026 mm Aluminium / PETP tape over copper drain wire

Outer Sheath:

Thermoplastic Low Smoke, Halogen Free

Sheath Colour:

Red or White

RAMFIRECRO-F3

FIRE SAFE

IEC 60331-21:1999



IDENTIFICATION OF CORE

2 Core ● ●

3 Core ● ● ●

4 Core ● ● ● ●

up/from 5 cores: Black Numbered

ELECTRICAL DATA

Insulation Resistance @ 20°C:

> 200 MOhm*Km

Test Voltage Core-Core:

2000 V

Test Voltage Core-Screen:

2000 V

Mutual Capacitance:

< 150 nF/km

Inductance:

< 1 mH/km

Operating Voltage:

300/500 V

Reference Standard

- IEC 60331-21:1999
- EN 60754-1:2014
- EN 61034-2:2005

CPR Classification

CPR version available in B2ca

Temperature Range

During Operation:

-30°C up to +180°C

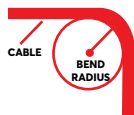
During Installation:

-5°C up to +50°C

Fire Resistant



Min. Bending Radius



8 x cable diameter

Low Smoke Halogen free



ramcro.com

Note: Information subject to confirmation

Fire Safe

TYPE: SOLID

IEC 60331-21:1999

CABLE PRINTING

RAMFIRECRO-F3 FIRE SAFE RS485 - FIRE RESISTANT
CONDxAREA mmq +E - LSZH - IEC 60331-21:1999 1 1/2 H 750
- EN 60754-1:2014 - EN 61034-2: 2005 - 300/500 V - batch
n° - meter marking - MADE IN ITALY

DIMENSIONAL DATA

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAR0211HFEEL-F3	2x1.00	6.8	62
SAR0311HFEEP-F3	3x1.00	7.2	80
SAR0411HFEEQ-F3	4x1.00	7.9	100
SAR0511HFEED-F3	5x1.00	9	128
SAR0711HFEED-F3	7x1.00	9.8	165
SAR1211HFEED-F3	12x1.00	12.7	264
SAR1911HFEED-F3	19x1.00	15.2	407
SAR0214HFEEL-F3	2x1.50	7.3	73
SAR0314HFEEP-F3	3x1.50	7.7	97
SAR0414HFEEQ-F3	4x1.50	8.4	122
SAR0514HFEED-F3	5x1.50	9.6	156
SAR0714HFEED-F3	7x1.50	10.4	203
SAR1214HFEED-F3	12x1.50	13.6	329
SAR1914HFEED-F3	19x1.50	16.3	508
SAR0218HFEEL-F3	2x2.50	8.1	98
SAR0318HFEEP-F3	3x2.50	8.6	131
SAR0418HFEEQ-F3	4x2.50	9.8	177
SAR0518HFEED-F3	5x2.50	10.7	213
SAR0718HFEED-F3	7x2.50	11.6	282
SAR1218HFEED-F3	12x2.50	15.7	476
SAR1918HFEED-F3	19x2.50	18.7	734

* If the cables are with a WHITE outer sheath the RAMCRO CODE will change in: SAS____HCESL-F3

Note: Information subject to confirmation



ramcro.com

Fire Safe

TYPE: STRANDED
IEC 60331-21:1999

CONSTRUCTION

Multi-Core, Stranded CU, Silicon Rubber- Insulation, Collective Screen, LSZH-Sheath

Formation:

Plain annealed copper wire, 7 Strands

Insulation:

Special mix silicon rubber

Wrapping:

at least 1 layer of plastic tape 0,023 mm

Collective Screen:

0,026 mm Aluminium / PETP tape over copper drain wire

Outer Sheath:

Thermoplastic Low Smoke, Halogen Free

Sheath Colour:

Red or White

RAMFIRECRO-F3 -
FIRE SAFE
IEC 60331-21:1999



IDENTIFICATION OF CORE

2 Core ● ●

3 Core ● ● ●

4 Core ● ● ● ●

up/from 5 cores: Black Numbered

ELECTRICAL DATA

Insulation Resistance @ 20°C:

> 200 MOhm*Km

Test Voltage Core-Core:

2000 V

Test Voltage Core-Screen:

2000 V

Mutual Capacitance:

< 150 nF/km

Inductance:

< 1 mH/km

Operating Voltage:

300/500 V

Reference Standard

- IEC 60331-21:1999
- EN 60754-1:2014
- EN 61034-2:2005

CPR Classification

CPR version available in B2ca

Temperature Range

During Operation:

-30°C up to +180°C

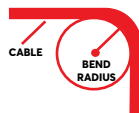
During Installation:

-5°C up to +50°C

Fire Resistant



Min. Bending Radius



8 x cable diameter

Low Smoke Halogen free



ramcro.com

Note: Information subject to confirmation

Fire Safe

TYPE: STRANDED

IEC 60331-21:1999

CABLE PRINTING

RAMFIRECRO-F3 FIRE SAFE RS485 - FIRE RESISTANT
CONDxAREA mmq +E - LSZH - IEC 60331-21:1999 1 1/2 H 750
- EN 60754-1:2014 - EN 61034-2: 2005 - 300/500 V - batch
n° - meter marking - MADE IN ITALY

DIMENSIONAL DATA

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAS0210HFEEL-F3	2x1.00	7.1	64
SAS0310HFEEP-F3	3x1.00	7.5	83
SAS0410HFEEQ-F3	4x1.00	8.2	104
SAS0510HFEED-F3	5x1.00	9.4	133
SAS0710HFEED-F3	7x1.00	10.2	172
SAS1210HFEED-F3	12x1.00	13.3	276
SAS1910HFEED-F3	19x1.00	15.9	424
SAS0215HFEEL-F3	2x1.50	7.6	77
SAS0315HFEEP-F3	3x1.50	8.1	102
SAS0415HFEEQ-F3	4x1.50	9.3	137
SAS0515HFEED-F3	5x1.50	10.1	165
SAS0715HFEED-F3	7x1.50	11	215
SAS1215HFEED-F3	12x1.50	14.8	362
SAS1915HFEED-F3	19x1.50	17.2	537
SAS0225HFEEL-F3	2x2.50	8.3	103
SAS0325HFEEP-F3	3x2.50	9.4	147
SAS0425HFEEQ-F3	4x2.50	10.3	186
SAS0525HFEED-F3	5x2.50	11.3	224
SAS0725HFEED-F3	7x2.50	12.3	297
SAS1225HFEED-F3	12x2.50	16.6	502
SAS1925HFEED-F3	19x2.50	19.8	773

*If the cables are with a WHITE outer sheath the part RAMCRO CODE will change in: SAR____HCEEL-F3

Note: Information subject to confirmation



ramcro.com

Fire Ground

TYPE: MULTI STRAND

BS 6387:2013 Cat. C-W-Z

CONSTRUCTION

Multi-Core, Multistrand CU, Silicon Rubber-Insulation, Steel Wire Armour, LSZH-Sheath.

Conductor:

Plain annealed copper wire, Multistrand

Insulation:

Special mix silicon rubber

Inner Sheath:

Thermoplastic Low Smoke, Halogen Free

Wrapping:

at least 1 layer of plastic tape 0,023 mm

Armour:

Galvanized steel wire

Outer Sheath:

Thermoplastic Low Smoke,
Halogen Free

Sheath Colour:

Red



IDENTIFICATION OF CORE

2 Core ● ● or Black Numbered
up/from 3 cores: Black Numbered

ELECTRICAL DATA

Insulation Resistance @ 20°C:

> 200 MOhm*Km

Test Voltage Core-Core:

5000 V

Mutual Capacitance:

< 150 nF/km

Inductance:

< 1 mH/km

Operating Voltage:

600/1000 V

Reference Standard

- BS 6387:2013 Cat. C-W-Z
- EN 60754-1:2014
- EN 61034-2:2005+A1:2013
- EN 60754-2:2014
- EN 60332-3-24:2009
- EN 60332-1-2:2004

CPR Classification

CPR version available in B2ca

Temperature Range

During Operation:

-30°C up to +180°C

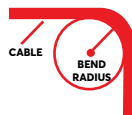
During Installation:

-5°C up to +50°C

Fire Resistant



Min. Bending Radius



8 x cable
diameter

Power Cable



ramcro.com

Note: Information subject to confirmation

Fire Ground

TYPE: MULTI STRAND

BS 6387:2013 Cat. C-W-Z

CABLE PRINTING

RAMFIRECRO -F3 - FIRE GROUND - LSZH - BS 6387:2013
CWZ - IEC 60332-3-24:2009 - IEC 60332-1-2:2004 - 0,6/1 kV -
CONDxAREA mmq - CU/Sil/LSZH/SWA/LSZH - ARMoured
- MADE IN ITALY + BATCH N.

DIMENSIONAL DATA

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SSS0215AFESH-F3(FG)	2x1.50	14.2	373
SSS0315AFESP-F3(FG)	3x1.50	14.3	395
SSS0415AFESQ-F3(FG)	4x1.50	15.1	440
SSS0515AFESD-F3(FG)	5x1.50	16.6	563
SSS0225AFESH-F3(FG)	2x2.50	16.2	530
SSS0325AFESP-F3(FG)	3x2.50	16.4	566
SSS0425AFESQ-F3(FG)	4x2.50	17.3	635
SSS0525AFESD-F3(FG)	5x2.50	18.3	709
SSS0240AFESL-F3(FG)	2x4.00	17.1	592
SSS0340AFESP-F3(FG)	3x4.00	17.3	640
SSS0440AFESQ-F3(FG)	4x4.00	18.3	725
SSS0540AFESD-F3(FG)	5x4.00	19.4	815
SSS0260AFESL-F3(FG)	2x6.00	18.6	716
SSS0360AFESP-F3(FG)	3x6.00	18.8	786
SSS0460AFESQ-F3(FG)	4x6.00	20.0**	902
SSS0560AFESD-F3(FG)	5x6.00	22.0**	1132
SSS0211AFESL-F3(FG)	2x10.00	20.6**	910
SSS0311AFESP-F3(FG)	3x10.00	20.9**	1021
SSS0411AFESQ-F3(FG)	4x10.00	23.1**	1303
SSS0511AFESD-F3(FG)	5x10.00	24.6**	1492
SSS0216AFESL-F3(FG)	2x16.00	24.1**	1306
SSS0316AFESP-F3(FG)	3x16.00	24.4**	1479
SSS0416AFESQ-F3(FG)	4x16.00	26.2**	1737
SSS0516AFESD-F3(FG)	5x16.00	28.3**	2022
SSS0227AFESL-F3(FG)	2x25.00	26.1**	1627
SSS0327AFESP-F3(FG)	3x25.00	26.5**	1888
SSS0427AFESQ-F3(FG)	4x25.00	28.8**	2266
SSS0527AFESD-F3(FG)	5x25.00	31.2**	2663

** The Ramfirecro-F3 FIRE GROUND range with diameters greater than 20mm were tested in accordance with clause 17.4.2 annex L BS 7846:2015

*** If the cables are with a WHITE outer sheat the RAMCRO CODE will change in : SSS____ACESL-F3(FG)

Note: Information subject to confirmation



ramcro.com

Fire Moon Enhanced

TYPE: SOLID

EN 50200:2015 Class PH 120

CONSTRUCTION

Multi-Core, Solid or Stranded CU, Silicon Rubber -Insulation, Collective Screen, LSZH-Sheath

Conductor:

Plain annealed copper wire, Solid or stranded

Insulation:

Special mix silicon rubber

Wrapping:

at least 1 layer of plastic tape 0,023 mm

Collective Screen:

0,026 mm Aluminium / PETP tape over Tinned copper drain wire

Outer Sheath:

Thermoplastic Low Smoke, Halogen Free

Sheath Colour:

Red or White

**RAMFIRECRO-F3
FIRE MOON ENHANCED
EN 50200:2015 PH120**



IDENTIFICATION OF CORE

2 Core ● ●

3 Core ● ● ●

4 Core ● ● ● ●

up/from 5 cores: Black Numbered

ELECTRICAL DATA

Insulation Resistance @ 20°C:

> 200 MOhm*Km

Test Voltage Core-Core:

5000 V

Test Voltage Core-Screen:

5000 V

Mutual Capacitance:

< 150 nF/km

Inductance:

< 1 mH/km

Operating Voltage:

600/1000 V

Reference Standard

- EN 50200:2015 (Class PH120)
- IEC 60754-1:2014
- EN 61034-2:2005+A1:2013

CPR Classification

CPR version available in B2ca

Temperature Range

During Operation:

-30°C up to +180°C

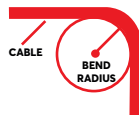
During Installation:

-5°C up to +50°C

Fire Resistant



Min. Bending Radius



8 x cable
diameter

Low Smoke Halogen free



ramcro.com

Note: Information subject to confirmation

Fire Moon Enhanced

TYPE: SOLID

EN 50200:2015 Class PH 120

CABLE PRINTING

RAMFIRECRO – F3 ENHANCED – FIRE MOON – LSZH - EN 50200:2015 PH120 0.6/1 kV - CONDxAREA mmq + E - Year of manufacture - BATCH N. + MADE IN ITALY + METER MARKING.

DIMENSIONAL DATA- SOLID VERSION (BARE COPPER CL.1)

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAR0211IF-WFA10210	2x1.00	8.0	81
SAR0311IF-WFA10210	3x1.00	8.5	101
SAR0411IF-WFA10210	4x1.00	9.2	124
SAR0214IF-WFA10215	2x1.50	8.7	97
SAR0214IF-WFA10215	3x1.50	9.2	124
SAR0214IF-WFA10215	4x1.50	10	153
SAR0218IF-WFA10225	2x2.50	9.7	126
SAR0218IF-WFA10225	3x2.50	10.2	166
SAR0218IF-WFA10225	4x2.50	11.1	207

DIMENSIONAL DATA- STRANDED VERSION (BARE COPPER CL.2)

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]
SAS0210IF-WFA10210	2x1.00	8.3	84	18.8
SAS0310IF-WFA10210	3x1.00	8.8	106	18.8
SAS0410IF-WFA10210	4x1.00	9.5	129	18.8
SAS0215IF-WFA10215	2x1.50	9.0	102	12.6
SAS0215IF-WFA10215	3x1.50	9.5	130	12.6
SAS0215IF-WFA10215	4x1.50	10.4	161	12.6
SAS0225IF-WFA10225	2x2.50	10.1	133	7.7
SAS0225IF-WFA10225	3x2.50	10.7	174	7.7
SAS0225IF-WFA10225	4x2.50	11.7	218	7.7

*if the cables are with a WHITE outer sheath the RAMCRO CODE will change in: SAS_____IC-WFA_____

Note: Information subject to confirmation



ramcro.com

Fire Italy

TYPE: STRANDED

EN 50200:2015 Class PH 30

CONSTRUCTION

Multi-Core, Multistrand CU, Silicon Rubber-Insulation, Collective Screen, LSZH-Sheath

Conductor:

Plain annealed copper wire, stranded

Insulation:

Special mix silicon rubber

Wrapping:

at least 1 layer of plastic tape 0,023 mm

Collective Screen:

0,026 mm Aluminium / PETP tape over Tinned copper drain wire

Outer Sheath:

Thermoplastic Low Smoke, Halogen Free

Sheath Colour:

Red or White

**RAMFIRECRO-F3
FIRE ITALY
EN 50200:2015 PH 30**



IDENTIFICATION OF CORE

2 Core ● ●

ELECTRICAL DATA

Insulation Resistance @ 20°C:

> 200 MOhm*Km

Test Voltage Core-Core:

2000 V

Test Voltage Core-Screen:

2000 V

Mutual Capacitance:

< 150 nF/km

Inductance:

< 1 mH/km

Operating Voltage:

100/100 V

Reference Standard

- EN 50200:2015 (Class PH30)
- IEC 60754-1:2014
- EN 61034-2:2005+A1:2013

CPR Classification

EN 50575:2016 - C_{CA} s1b, d1, a1

Temperature Range

During Operation:

-30°C up to +180°C

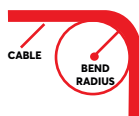
During Installation:

-5°C up to +50°C

Fire Resistant



Min. Bending Radius



8 x cable
diameter

Low Smoke Halogen free



ramcro.com

Note: Information subject to confirmation

CABLE PRINTING

RAMFIRECRO-F3 - FIRE ITALY - LSZH - EN 50200:2015 PH30
- IEC 61034-2:2005 - EN 60754-1:2014 - CONDxAREA sqmm +
BATCH + METER MARKING + MADE IN ITALY

DIMENSIONAL DATA

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAS0210HFESL-F3FG4	2x1.00*	7.6*	67
SAS0215HFESL-F3FG4	2x1.50*	8.6*	88
SAS0225HFESL-F3FG4	2x2.50*	10.1*	129

*if the cables are with a WHITE outer sheath the part RAMCRO CODE will change in: SAR_____HCESL-F3FG4

Fire Italy

TYPE: STRANDED

CEI 20-105; V2 - FG29OHM16 PH120

CONSTRUCTION

Multi-Conductor, Ceramizing Silicone G29,
Shielded, LSZH-Sheath M16

Conductor:

Annealed red copper, Cl.5

Insulation:

Ceramizing Silicone - G29

Wrapping:

at least 1 layer of plastic tape 0,023 mm

Collective Screen:

0,026 mm Aluminium / PETP tape over
Tinned copper drain wire

Outer Sheath:

Compound LSZH - M16

Sheath Colour:

Red or Purple



IDENTIFICATION OF CORE

2 Core ● ●

4 Core ● ● ○ ●

ELECTRICAL DATA

Insulation Resistance @ 20°C:

> 200 MOhm*Km

Test Voltage Core-Core:

2000 V

Test Voltage Core-Screen:

2000 V

Mutual Capacitance:

< 100 pF/km

Inductance:

< 1 mH/km

Operating Voltage:

100/100 V

Reference Standard

- CEI 20-105;V2
- UNI 9795
- EN 50200 PH 120
- CEI EN 60332-3-25

CPR Classification

EN 50575:2016 - C_{ca} s1b, d1, a1

Temperature Range

During Operation:

-30° C up to +180°C

Fixed Installation:

-30° C up to +75°C

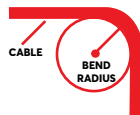
During Installation:

-5° C up to +50°C

Fire Resistant



Min. Bending Radius



8 x cable
diameter

Italian Market



ramcro.com

Note: Information subject to confirmation

CABLE PRINTING

RAMCRO RAMFIRECRO-F3- FIRE ITALY -CEI 20-105 FG-29OHM16 2x1.00 mmq EN 50200 PH120 CPR Cca s1b, d1, a1 - 100/100V U₀=400 V BATCH + MM/YY

DIMENSIONAL DATA

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAS0250HFYSH-F3FG29	2 x 0.50	5,6	46
SAS0275HFYSH-F3FG29	2 x 0.75	6,3	57
SAS0210HFYSH-F3FG29	2 x 1.00	6,6	63
SAS0215HFYSH-F3FG29	2 x 1.50	7,6	82
SAS0225HFYSH-F3FG29	2 x 2.50	9,2	122
SAS0240HFYSH-F3FG29	2 x 4.00	10,5	163
SAS0260HFYSH-F3FG29	2 x 6.00	11,6	213
SAS0450HFYSX-F3FG29	4 x 0.50	6,2	66
SAS0475HFYSX-F3FG29	4 x 0.75	7,0	85
SAS0410HFYSX-F3FG29	4 x 1.00	7,2	96
SAS0415HXYSH-F3FG29	4 x 1.50	8,7	134
SAS0425HXYSH-F3FG29	4 x 2.50	10,5	209

EVAC CABLES for voice evacuation systems

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAS0250HXYSH-F3FG29	2 x 0.50	5,6	46
SAS0275HXYSH-F3FG29	2 x 0.75	6,3	57
SAS0210HXYSH-F3FG29	2 x 1.00	6,6	63
SAS0215HXYSH-F3FG29	2 x 1.50	7,6	82
SAS0225HXYSH-F3FG29	2 x 2.50	9,2	122
SAS0240HXYSH-F3FG29	2 x 4.00	10,5	163
SAS0260HXYSH-F3FG29	2 x 6.00	11,6	213
SAS0450HXYSH-F3FG29	4 x 0.50	6,2	66
SAS0475HXYSH-F3FG29	4 x 0.75	7,0	85
SAS0410HXYSH-F3FG29	4 x 1.00	7,2	96
SAS0415HXYSH-F3FG29	4 x 1.50	8,7	134
SAS0425HXYSH-F3FG29	4 x 2.50	10,5	209

Fire Italy

TYPE: STRANDED

CEI 20-105; V2 - FG29OM16 PH120

CONSTRUCTION

Multi-Conductor, Ceramizing Silicone G29
LSZH-Sheath M16

Conductor:

Annealed red copper, Cl.5

Insulation:

Ceramizing Silicone - G29

Outer Sheath:

Compound LSZH - M16

Sheath Colour:

Red or Purple

**RAMFIRECRO-F3
FIRE ITALY
CEI 20-105 FG29OM16**



IDENTIFICATION OF CORE

2 Core ● ●
4 Core ● ● ○ ●

ELECTRICAL DATA

Insulation Resistance @ 20°C:

> 200 MOhm*Km

Test Voltage Core-Core:

2000 V

Test Voltage Core-Screen:

2000 V

Mutual Capacitance:

< 100 pF/km

Inductance:

< 1 mH/km

Operating Voltage:

100/100 V

Reference Standard

- CEI 20-105;V2
- UNI 9795
- EN 50200:2015 PH120
- CEI EN 60332-3-25

CPR Classification

EN 50575:2016 - C_{CA} s1b, d1, a1

Temperature Range

During Operation:

-30°C up to +180°C

Fixed Installation:

-30°C up to +75°C

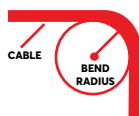
During Installation:

-5°C up to +50°C

Fire Resistant



Min. Bending Radius



8 x cable
diameter

Italian Market



ramcro.com

Note: Information subject to confirmation

CABLE PRINTING

RAMCRO RAMFIRECRO-F3 - FIRE ITALY - CEI 20-105
FG29OM16 CONDxAREA mmq EN 50200:2015 PH120 CPR
Cca s1b, d1, a1 - 100/100 V Uo=400 V BATCH + MM/YY

EVAC CABLES for voice evacuation systems-Red Colour

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SSS0250HFYSH-F3FG29	2 x 0.50	5,5	50
SSS0275HFYSH-F3FG29	2 x 0.75	6,2	64
SSS0210HFYSH-F3FG29	2 x 1.00	6,4	72
SSS0215HFYSH-F3FG29	2 x 1.50	7,5	99
SSS0225HFYSH-F3FG29	2 x 2.50	9,0	150
SSS0240HFYSH-F3FG29	2 x 4.00	10,4	201
SSS0260HFYSH-F3FG29	2 x 6.00	11,6	266
SSS0450HFYSX-F3FG29	4 x 0.50	6,1	68
SSS0475HFYSX-F3FG29	4 x 0.75	6,9	89
SSS0410HFYSX-F3FG29	4 x 1.00	7,1	102
SSS0415HFYSX-F3FG29	4 x 1.50	8,3	140
SSS0425HFYSX-F3FG29	4 x 2.50	10,4	230

EVAC CABLES for voice evacuation systems- Purple colour

RAMCRO CODE	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SSS0250HXYSH-F3FG29	5,5	50
SSS0275HXYSH-F3FG29	6,2	64
SSS0210HXYSH-F3FG29	6,4	72
SSS0215HXYSH-F3FG29	7,5	99
SSS0225HXYSH-F3FG29	9,0	150
SSS0240HXYSH-F3FG29	10,4	201
SSS0260HXYSH-F3FG29	11,6	266
SSS0450HXYSX-F3FG29	6,1	68
SSS0475HXYSX-F3FG29	6,9	89
SSS0410HXYSX-F3FG29	7,1	102
SSS0415HXYSX-F3FG29	8,3	140
SSS0425HXYSX-F3FG29	10,4	230

Fire Italy

TYPE: STRANDED

CEI 20-105;V2 - FTE29OHM16 PH120

CONSTRUCTION

Multi-Conductor, Multiwire CU, Mica+XLPE insulation, Shielded, LSZH-Sheath

Conductor:

Annealed red copper, Cl.5

Insulation:

Mica + XLPE Tape

Wrapping:

at least 1 layer of plastic tape 0,023 mm

Collective Screen:

0,026 mm Aluminium / PETP tape over Tinned copper drain wire

Outer Sheath:

Compound LSZH

Sheath Colour:

Red or Purple



IDENTIFICATION OF CORE

2 Core ● ●
4 Core ● ● ○ ●

ELECTRICAL DATA

Insulation Resistance @ 20°C:

> 1000 MOhm*Km

Test Voltage Core-Core:

2000 V

Mutual Capacitance:

< 70 pF/km

Inductance:

< 1 mH/km

Operating Voltage:

100/100 V

Reference Standard

- CEI 20-105;V2
- UNI 9795
- CEI 20-36 PH 120
- EN 50200 PH 120
- CEI EN 60332-3-25

CPR Classification

EN 50575:2016 - C_{ca} s1b, d1, a1

Temperature Range

During Operation:

-30°C up to +180°C

Fixed Installation:

-30°C up to +75°C

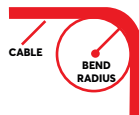
During Installation:

-5°C up to +50°C

Fire Resistant



Min. Bending Radius



8 x cable
diameter

Italian Market



ramcro.com

Note: Information subject to confirmation

CABLE PRINTING

RAMCRO RAMFIRECRO-F3 FIRE ITALY CEI 20-105
FTE29OHM16 CONDxAREA mmq EN 50200:2015 PH120 CPR
Cca s1b, d1, a1 - 100/100 V Uo=400 V + BATCH + MM/YY

EVAC CABLE for voice evacuation systems- Red Colour

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAS0250HFYOH-F3FTE29	2x0.50	7,0	61
SAS0275HFYOH-F3FTE29	2x0.75	7,5	69
SAS0210HFYOH-F3FTE29	2x1.00	7,8	76
SAS0215HFYOH-F3FTE29	2x1.50	8,6	95
SAS0225HFYOH-F3FTE29	2x2.50	9,6	126
SAS0240HFYOH-F3FTE29	2x4.00	11,1	170
SAS0260HFYOH-F3FTE29	2x6.00	12,6	230
SAS0450HFYOX-F3FTE29	4x0.50	7,8	89
SAS0475HFYOX-F3FTE29	4x0.75	8,4	105
SAS0410HFYOX-F3FTE29	4x1.00	8,8	122
SAS0415HFYOX-F3FTE29	4x1.50	9,6	148
SAS0425HFYOX-F3FTE29	4x2.50	11,0	213

EVAC CABLE for voice evacuation systems- Purple Colour

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAS0250HXYOH-F3FTE29	2x0.50	7,0	61
SAS0275HXYOH-F3FTE29	2x0.75	7,5	69
SAS0210HXYOH-F3FTE29	2x1.00	7,8	76
SAS0215HXYOH-F3FTE29	2x1.50	8,6	95
SAS0225HXYOH-F3FTE29	2x2.50	9,6	126
SAS0240HXYOH-F3FTE29	2x2.50	11,1	170
SAS0260HXYOH-F3FTE29	2x2.50	12,6	230
SAS0450HXYOX-F3FTE29	4x0.50	7,8	89
SAS0475HXYOX-F3FTE29	4x0.75	8,4	105
SAS0410HXYOX-F3FTE29	4x1.00	8,8	122
SAS0415HXYOX-F3FTE29	4x1.50	9,6	148
SAS0425HXYOX-F3FTE29	4x2.50	11,0	213

Fire Italy

TYPE: STRANDED

CEI 20-105- FTE29OM16 PH120

CONSTRUCTION

Multi-Core, Multistrand CU, Silicon Rubber-Insulation, Collective Screen, LSZH-Sheath

Conductor:

Plain annealed copper wire, Multistrand

Insulation:

Mica Tape + Cross Liked Polyethylene - XLPE

Wrapping:

at least 1 layer of plastic tape 0,023 mm

Outer Sheath:

Thermoplastic Low Smoke, Halogen Free

Sheath Colour:

Red or Violet

**RAMFIRECRO-F3
FIRE ITALY
CEI 20-105:V2 FTE29OM16**



IDENTIFICATION OF CORE

2 Core ● ●
4 Core ● ● ○ ●

ELECTRICAL DATA

Insulation Resistance @ 20°C:

> 200 MOhm*Km

Test Voltage Core-Core:

2000 V

Test Voltage Core-Screen:

2000 V

Mutual Capacitance:

< 150 nF/km

Inductance:

< 1 mH/km

Operating Voltage:

100/100 V

Reference Standard

- CEI 20-105
- UNI 9795
- CEI 20-36 PH 120
- EN 50200 PH 120
- CEI EN 60332-3-25

Temperature Range

During Operation:

-30°C up to +180°C

Fixed Installation:

-30°C up to +75°C

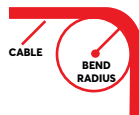
During Installation:

-5°C up to +50°C

Fire Resistant



Min. Bending Radius



8 x cable
diameter

Italian Market



ramcro.com

Note: Information subject to confirmation

CABLE PRINTING

RAMFIRECRO-F3 - FIRE ITALY- CEI 20-105 FTE4OHM1 PH120
mmq UNI 9795 CEI 20-36/4-0 PH120 CEI EN 60332-3-25 -
100/100 V - U₀=400 V + BATCH + MM/YY

EVAC CABLE for voice evacuation systems- Red Colour

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SSS0250HFYOH-F3FTE29	2x0.50	6,9	59
SSS0275HFYOH-F3FTE29	2x0.75	7,4	67
SSS0210HFYOH-F3FTE29	2x1.00	7,7	74
SSS0215HFYOH-F3FTE29	2x1.50	8,5	93
SSS0225HFYOH-F3FTE29	2x2.50	9,5	124
SSS0240HFYOH-F3FTE29	2x4.00	11,0	168
SSS0260HFYOH-F3FTE29	2x6.00	12,5	228
SSS0450HFYOX-F3FTE29	4x0.50	7,7	87
SSS0475HFYOX-F3FTE29	4x0.75	8,3	103
SSS0410HFYOX-F3FTE29	4x1.00	8,7	120
SSS0415HFYOX-F3FTE29	4x1.50	9,5	146
SSS0425HFYOX-F3FTE29	4x2.50	10,9	211

EVAC CABLE for voice evacuation systems- Purple Colour

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SSS0250HXYOH-F3FTE29	2x0.50	6,9	59
SSS0275HXYOH-F3FTE29	2x0.75	7,4	67
SSS0210HXYOH-F3FTE29	2x1.00	7,7	74
SSS0215HXYOH-F3FTE29	2x1.50	8,5	93
SSS0225HXYOH-F3FTE29	2x2.50	9,5	124
SSS0240HXYOH-F3FTE29	2x2.50	11,0	168
SSS0260HXYOH-F3FTE29	2x2.50	12,5	228
SSS0450HXYOX-F3FTE29	4x0.50	7,7	87
SSS0475HXYOX-F3FTE29	4x0.75	8,3	103
SSS0410HXYOX-F3FTE29	4x1.00	8,7	120
SSS0415HXYOX-F3FTE29	4x1.50	9,5	146
SS0425HXYOX-F3FTE29	4x2.50	10,9	211

Fire Italy armoured

TYPE: STRANDED

CEI 20-105- FTE320HAM16 PH120

CONSTRUCTION

Multi-Core, Multistrand CU, MICA+XLPE,
Collective Screen, armoured SWB, M16 LSZH-
Sheath

Conductor:

Plain annealed copper wire, Multistrand

Insulation:

Mica Tape + Cross Liked Polyethylene - XLPE

Wrapping:

at least 1 layer of plastic tape

Shield:

Alu/PET tape + Tinned Drain Wire

Inner Sheath:

Thermoplastic Low Smoke, Halogen Free

Armouring:

Steel Wire Braid SWB

Outer Sheath:

Thermoplastic Low Smoke, Halogen Free

Sheath Colour:

Red or Violet

IDENTIFICATION OF CORE

2 Core ● ●
4 Core ● ● ○ ●

ELECTRICAL DATA

Insulation Resistance @ 20°C:

> 200 MOhm*Km

Test Voltage Core-Core:

2000 V

Test Voltage Core-Screen:

2000 V

Mutual Capacitance:

< 100 nF/km

Inductance:

< 1 mH/km

Operating Voltage:

100/100 V

**RAMFIRECRO-F3
FIRE ITALY
CEI 20-105:V2 FTE320HAM16**



Reference Standard

- CEI 20-105
- UNI 9795
- EN 50200 PH 120
- CEI EN 60332-3-25
- EN 50575:2016

Temperature Range

During Operation:

-5°C up to +50°C

Fixed Installation:

-30°C up to +75°C

During Installation:

-5°C up to +50°C

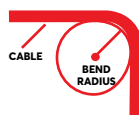
CPR Version

B2ca, s1a,d1,a1

Fire Resistant



Min. Bending Radius



8 x cable
diameter

Italian Market



ramcro.com

Note: Information subject to confirmation

CABLE PRINTING

<meterMarking> RAMCRO - FTE32OHAM16 100/100V PH120
[cond]x[sez] B2ca s1a, d1, a1 CEI UNEL 35336 - U_o=400 V -
<YEAR> - RAMFIRECRO-F3 - CEI 20-105 - <batch>

EVAC CABLE for voice evacuation systems- Red Colour

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAS0215WFYOH-F3FTE	2x1.50	11,5	250
SAS0225WFYOH-F3FTE	2x2.50	13,2	321
SAS0240WFYOH-F3FTE	2x4.00	14,3	370
SAS0260WFYOH-F3FTE	2x6.00	15,6	450
SAS0415WFYOH-F3FTE	4x1.50	12,3	312
SAS0425WFYOH-F3FTE	4x4.00	14,6	420

**Version unshielded available on request

EVAC CABLE for voice evacuation systems- Purple Colour

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAS0215WXYSH-F3G32	2x1.50	12,3	270 250
SAS0225WXYSH-F3G32	2x2.50	13,6	330 321
SAS0240WXYSH-F3G32	2x4.00	15,1	395 370
SAS0260WXYSH-F3G32	2x6.00	16,6	482 450
SAS0415WXYSH-F3G32	4x1.50	13,6	356 312
SAS0425WXYSH-F3G32	4x2.50	14,7	432 420

Fire Italy armoured

TYPE: STRANDED

CEI 20-105- FG32OHAM16

PH120

CONSTRUCTION

Multi-Core, Multistrand CU, Silicone Rubber, ,
Collective Screen, armoured SWB, M16 LSZH-
Sheath

Conductor:

Plain annealed copper wire, Multistrand

Insulation:

Silicon Rubber :
at least 1 layer of plastic tape

Shield:

Alu/PET tape + Tinned Drain Wire

Inner Sheath:

Thermoplastic Low Smoke, Halogen Free

Armouring:

Steel Wire Braid SWB

Outer Sheath:

Thermoplastic Low Smoke Halogen Free

Sheath Colour:

Red or Violet

IDENTIFICATION OF CORE

2 Core ● ●

4 Core ● ● ○ ●

ELECTRICAL DATA

Insulation Resistance @ 20°C:

> 200 MOhm*Km

Test Voltage Core-Core:

2000 V

Test Voltage Core-Screen:

2000 V

Mutual Capacitance:

< 100 nF/km

Inductance:

< 1 mH/km

Operating Voltage:

100/100 V

**RAMFIRECRO-F3
FIRE ITALY
CEI 20-105:V2 FG32OHAM16**



Reference Standard

- CEI 20-105
- UNI 9795
- EN 50200 PH 120
- CEI EN 60332-3-25
- EN 50575:2016

Temperature Range

During Operation:

-5°C up to +50°C

Fixed Installation:

-30°C up to +75°C

During Installation:

-5°C up to +50°C

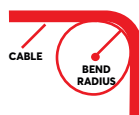
CPR Version

B2ca, s1a,d1,a1

Fire Resistant



Min. Bending Radius



8 x cable
diameter

Italian Market



ramcro.com

Note: Information subject to confirmation

CABLE PRINTING

<meterMarking> RAMCRO - FG32OHAM16 100/100V PH120
[cond]x[sez] B2ca s1a, d1, a1 CEI UNEL 35336 - U_o=400 V -
<YEAR> - RAMFIRECRO-F3 - CEI 20-105 - <batch>

EVAC CABLE for voice evacuation systems- Red Colour

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAS0215WFYSH-F3G32	2x1.50	11,5	250
SAS0225WFYSH-F3G32	2x2.50	13,2	321
SAS0240WFYSH-F3G32	2x4.00	14,3	370
SAS0260WFYSH-F3G32	2x6.00	15,6	450
SAS0415WFYSH-F3G32	4x1.50	12,3	312
SAS0425WFYSH-F3G32	4x4.00	14,6	420

**Version unshielded available on request

EVAC CABLE for voice evacuation systems- Purple Colour

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAS0215WXYSH-F3G32	2x1.50	12,3	250
SAS0225WXYSH-F3G32	2x2.50	13,6	321
SAS0240WXYSH-F3G32	2x4.00	15,1	370
SAS0260WXYSH-F3G32	2x6.00	16,6	450
SAS0415WXYSH-F3G32	4x1.50	13,6	312
SAS0425WXYSH-F3G32	4x2.50	14,7	420

**Version unshielded available on request

FIRE RESISTANT CABLE





RFC - F3/RF90 - sd - sa - f1 - f2

TYPE: SOLID

NBN 713-020 Add.3

CONSTRUCTION

Multi-Pairs, Solid CU, Silicon Rubber-Insulation, Collective Screen, LSZH-Sheath

Conductor:

Plain annealed copper wire, Solid

Insulation:

Special Mix Silicon Rubber

Collective Screen:

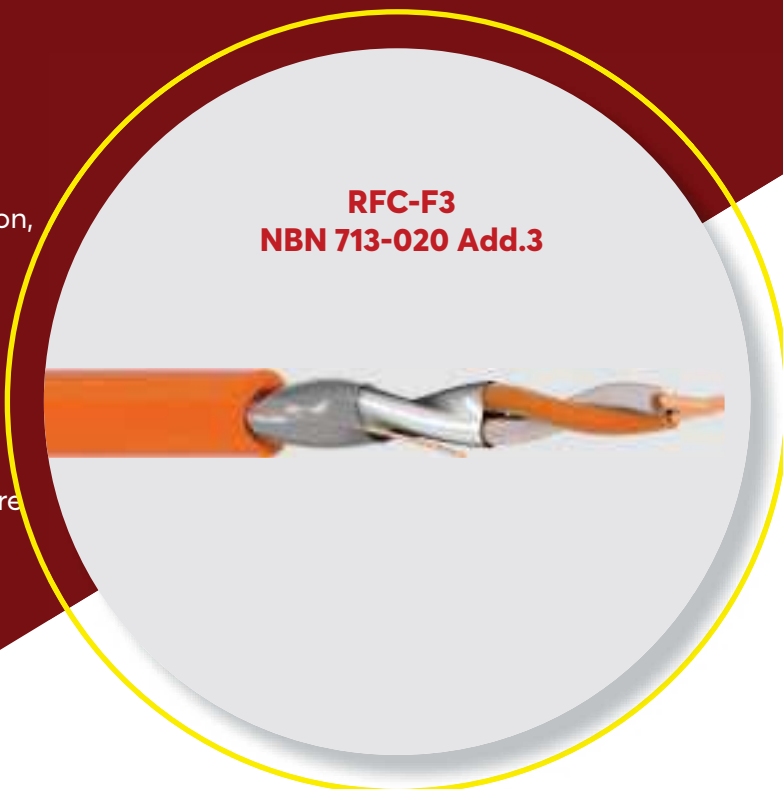
Aluminium / PETP tape over copper drain wire

Outer Sheath:

Thermoplastic Low Smoke, Halogen Free

Sheath Colour:

Orange



RFC-F3
NBN 713-020 Add.3

IDENTIFICATION OF CORE

- 1 Pair: ● ○
- 2 Pair: ● ●
- 3 Pair: ● ● ●

ELECTRICAL DATA

Insulation Resistance @ 20°C:

> 200 MOhm*Km

Test Voltage Core-Core:

2000 V

Test Voltage Core-Screen:

2000 V

Mutual Capacitance:

< 150 nF/km

Inductance:

< 1 mH/km

Operating Voltage:

100/100 V

Reference Standard

- NBN 713-020 Add.3
- EN 50200:2015
- NBN C 30-004 F2 FR2
- IEC 60332-21
- IEC 60332-1

On Request

- Armor in Double Steel Tape (STA)
- Armor in Steel Wire Armour (SWA)
- Conductor Multistrand, Class 5

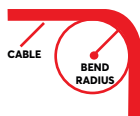
Temperature Range

Fixed Installation:
-30°C up to +180°C
During Installation:
-5°C up to +50°C

Fire Resistant



Min. Bending Radius



8 x cable
diameter

Belgian Market



Low Smoke Halogen free



ramcro.com

Note: Information subject to confirmation

RFC - F3/RF90 - sd - sa - f1 - f2

TYPE: SOLID

NBN 713-020 Add.3

CABLE PRINTING

RFC-F3 RF90 IEC 60331-21 / NBN 713-020 Add.3 / NBN C30-004 LSZH SA-ST-SD

F1-F2 1X2X0.90 mm + E SAM0109HUEL-F3(BE) - <batch> -
MADE IN ITALY - Meter Marking

DIMENSIONAL DATA

RAMCRO CODE	FORMATION	OUTER	WEIGHT
	[n° x mm]	DIAMETER [mm]	[kg/km]
SAM0109HUEL-F3(BE)	1x2x0.90	5.9	44
SAM0209HUEL-F3(BE)	2x2x0.90	8.9	83
SAM0309HUEL-F3(BE)	3x2x0.90	9.5	109
SAM0509HUEL-F3(BE)	5x2x0.90	11.6	146
SAM0709HUEL-F3(BE)	7x2x0.90	13.0	174
SAM1009HUEL-F3(BE)	10x2x0.90	16.6	215
SAM1509HUEL-F3(BE)	15x2x0.90	19.4	283

Note: Information subject to confirmation



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RFC - F3/RF90 - sd - sa - f1 - f2

TYPE: SOLID

NBN 713-020 Add.3

CONSTRUCTION

Multi-Core, Solid CU, Silicon Rubber-Insulation, LSZH-Sheath

Conductor:

Plain annealed copper wire, Solid

Insulation:

Special Mix Silicon Rubber

Outer Sheath:

Thermoplastic Low Smoke, Halogen Free

Sheath Colour:

Orange



IDENTIFICATION OF CORE

In acc. to HD 308

ELECTRICAL DATA

Insulation Resistance @ 20°C:

> 200 MOhm*Km

Test Voltage Core-Core:

2000 V

Test Voltage Core-Screen:

2000 V

Mutual Capacitance:

< 150 nF/km

Inductance:

< 1 mH/km

Operating Voltage:

300/500 V

Reference Standard

- NBN 713-020 Add.3
- EN 50200:2015
- NBN C 30-004 F2 FR2
- IEC 60332-21
- IEC 60332-1

On Request

- Armor in Double Steel Tape (STA)
- Armor in Steel Wire Armour (SWA)
- Conductor Multistrand, Class 5

Temperature Range

Fixed Installation:

-30°C up to +180°C

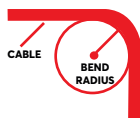
During Installation:

-5°C up to +50°C

Fire Resistant



Min. Bending Radius



8 x cable
diameter

Belgian Market



Low Smoke Halogen free



ramcro.com

Note: Information subject to confirmation

RFC - F3/RF90 - sd - sa - f1 - f2

TYPE: SOLID

NBN 713-020 Add.3

CABLE PRINTING

RFC-F3 RF90 IEC 60331-21 / NBN 713-020
Add.3 / NBN C30-004 LSZH SA-ST-SD
F1-F2 2X1.50 mm2 SSR0214HUELL-F3(BE) -
<batch> - MADE IN ITALY - Meter Marking

DIMENSIONAL DATA

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SSR0214HUEL-F3(BE)	2x1.50	8.0	88
SSR0414HUEL-F3(BE)	4x1.50	9.2	115
SSR0514HUEL-F3(BE)	5x1.50	10.2	139
SSR0714HUEL-F3(BE)	7x1.50	11.2	183
SSR1214HUEL-F3(BE)	12x1.50	14.6	99
SSR1914HUEL-F3(BE)	19x1.50	17.4	133
SSR0218HUEL-F3(BE)	2x2.50	8.8	174
SSR0418HUEL-F3(BE)	4x2.50	10.1	211
SSR0518HUEL-F3(BE)	5x2.50	11.3	148
SSR0718HUEL-F3(BE)	7x2.50	12.4	201
SSR1218HUEL-F3(BE)	12x2.50	16.3	263
SSR1918HUEL-F3(BE)	19x2.50	19.4	320

Note: Information subject to confirmation



ramcro.com

Telramfeu

TYPE: SOLID

NF C32-070 CAT. CR1-C1 & C2

CONSTRUCTION

Multi-Core, Solid CU, Silicon Rubber-Insulation, Collective Screen, LSZH-Sheath

Conductor:

Plain annealed copper wire, Solid

Insulation:

Special Mix Silicon Rubber

Collective Screen:

Aluminium / PETP tape over copper drain wire

Outer Sheath:

Thermoplastic Low Smoke, Halogen Free

Sheath Colour:

Orange

TELAMFEU
NF C32-070 CAT. CR1-C1 & C2



IDENTIFICATION OF CORE

1 Pair: ● ○

2 Pair: ● ●

3 Pair: ● ● ●

ELECTRICAL DATA

Insulation Resistance @ 20°C:

> 200 MOhm*Km

Test Voltage Core-Core:

2000 V

Test Voltage Core-Screen:

2000 V

Mutual Capacitance:

< 150 nF/km

Inductance:

< 1 mH/km

Operating Voltage:

100/170 V

Reference Standard

- NF C32-070 CAT. CR1-C1 & C2
- EN 50200
- NF C32-310

On Request

- Armor in Double Steel Tape (STA)
- Armor in Steel Wire Armour (SWA)
- Conductor Multistrand, Class 5

Temperature Range

Fixed Installation:

-30°C up to +180°C

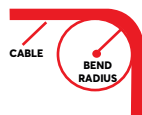
During Installation:

-5°C up to +50°C

Fire Resistant



Min. Bending Radius



8 x cable
diameter

French Market



Low Smoke Halogen free



CABLE PRINTING

RAMFIRECRO-F3 TELRAMFEU ARMOURED - 1X2X0.9 mm - 170/300 V - repond aux exigences du CR1/C1 - Batch - Meter Marking

DIMENSIONAL DATA

RAMCRO CODE	FORMATION [n° x mm]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAM0109HUESX-F3TEL	1x2x0.90	5.7	44
SAM0209HUESX-F3TEL	2x2x0.90	8.7	83
SAM0309HUESX-F3TEL	3x2x0.90	9.3	109
SAM0409HUESX-F3TEL	4x2x0.90	10.6	146
SAM0509HUESX-F3TEL	5x2x0.90	11.6	174
SAM0609HUESX-F3TEL	6x2x0.90	13	215
SAM0809HUESX-F3TEL	8x2x0.90	14.7	283
SAM1009HUESX-F3TEL	10x2x0.90	17	345
SAM1209HUESX-F3TEL	12x2x0.90	17.5	395

Puissramfeu

TYPE: SOLID

NF C32-070 CAT. CR1-C1 & C2

CONSTRUCTION

Multi-Core, Solid CU,
Silicon Rubber-Insulation, LSZH-Sheath

Conductor:

Plain annealed copper wire, Solid

Insulation:

Special Mix Silicon Rubber

Outer Sheath:

Thermoplastic Low Smoke, Halogen Free

Sheath Colour:

Orange

PUISSRAMFEU
NF C32-070 CAT. CR1-C1 & C2



IDENTIFICATION OF CORE

In acc. to HD 308

ELECTRICAL DATA

Insulation Resistance @ 20°C:

> 200 MOhm*Km

Test Voltage Core-Core:

2000 V

Test Voltage Core-Screen:

2000 V

Mutual Capacitance:

< 150 nF/km

Inductance:

< 1 mH/km

Operating Voltage:

300/500 V

Reference Standard

- NF C32-070 CAT. CR1-C1 & C2
- EN 50200
- NF C32-310

On Request

- Armor in Double Steel Tape (STA)
- Armor in Steel Wire Armour (SWA)
- Conductor Multistrand, Class 5

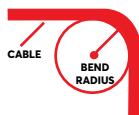
Temperature Range

Fixed Installation:
-30° C up to +180°C
During Installation:
-5° C up to +50°C

Fire Resistant



Min. Bending Radius



8 x cable
diameter

French Market



Low Smoke Halogen free



ramcro.com

Note: Information subject to confirmation

Puissramfeu

TYPE: SOLID

NF C32-070 CAT. CR1-C1 & C2

CABLE PRINTING

Ramfirecro-F3 PUISSRAMFEU - 2x1,5 mm² - 300/500 V - répond aux exigences du CR1/C1 - Batch - Meter Marking

DIMENSIONAL DATA

RAMCRO CODE	FORMATION [n° x mm ²]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SSR0214HUYSL-F3PUISS	2x1.50	6.6	88
SSR0314HUYSX-F3PUISS	3x1.50	7.4	115
SSR0414HUYSX-F3PUISS	4x1.50	8.3	139
SSR0514HUYSX-F3PUISS	5x1.50	9.1	183
SSR0218HUYSL-F3PUISS	2x2.50	8.4	99
SSR0318HUYSX-F3PUISS	3x2.50	8.9	133
SSR0418HUYSX-F3PUISS	4x2.50	10	174
SSR0518HUYSX-F3PUISS	5x2.50	10.9	211
SSS0240HUYSL-F3PUISS	2x4.00	10	148
SSS0340HUYSL-F3PUISS	3x4.00	10.6	201
SSS0440HUYSL-F3PUISS	4x4.00	11.9	263
SSS0540HUYSL-F3PUISS	5x4.00	13	320
SSS0260HUYSL-F3PUISS	2x6.00	11.4	201
SSS0360HUYSL-F3PUISS	3x6.00	12.3	285
SSS0460HUYSL-F3PUISS	4x6.00	13.6	365
SSS0560HUYSL-F3PUISS	5x6.00	15.1	455

Note: Information subject to confirmation



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Lancro Fire Resistant

TYPE: SOLID

EIA/TIA 568A, ISO/IEC 11801

CONSTRUCTION

Multi-Core, Solid CU, PO + Fire Resistant Tape-Insulation, Collective Screen, LSZH-Sheath

Conductor:

Plain annealed copper wire, solid

Insulation:

- PO + Fire Resistant Tape

Wrapping:

Fiber Glass Tape + at least 1 layer of plastic tape 0,023 mm

Collective Screen:

0,026 mm Aluminium / PETP tape + Tinned Copper Braid

Outer Sheath:

Thermoplastic Low Smoke, Halogen Free

Sheath Colour:

Red

LANCRO FIRE RESISTANT
EIA/TIA 568A, ISO/IEC 11801



IDENTIFICATION OF CORE

- 1 Pair: ● ●
2 Pair: ● ●
3 Pair: ● ●
4 Pair: ● ●

ELECTRICAL DATA

Insulation Resistance @ 20°C:

> 200 MOhm*Km

Test Voltage Core-Core:

2000 V

Test Voltage Core-Screen:

2000 V

Mutual Capacitance:

< 150 nF/km

Inductance:

< 1 mH/km

Operating Voltage:

300 V

Reference Standard

- IEC 60331-21:1999
- IEC 60332-1-2:2004
- IEC 61034-2:2005
- EN 60754-1:2014
- EN 50200 PH120

Temperature Range

During Operation:

-30° C up to +180°C

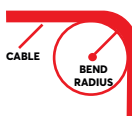
During Installation:

-5° C up to +50°C

Fire Resistant



Min. Bending Radius



8 x cable
diameter

Data LAN



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Note: Information subject to confirmation

Lancro Fire Resistant

TYPE: SOLID

EIA/TIA 568A, ISO/IEC 11801

CABLE PRINTING

RAMFIRECRO-F3 IEC 60331 LANCRO FIRE RESISTANT IEC 60331-21:1999 - FIRE RESISTANT Data Cable Cat. 6 - CONDx-AREA 4x2x23AWG + E - LSZH 90 min. 750 - IEC 60331-21:1999 - IEC 60332-1-2:2004 - EN 61034-2:2005 - EN 60754-1:2014 - 300 V - BATCH N° + METER MARKING

DIMENSIONAL DATA

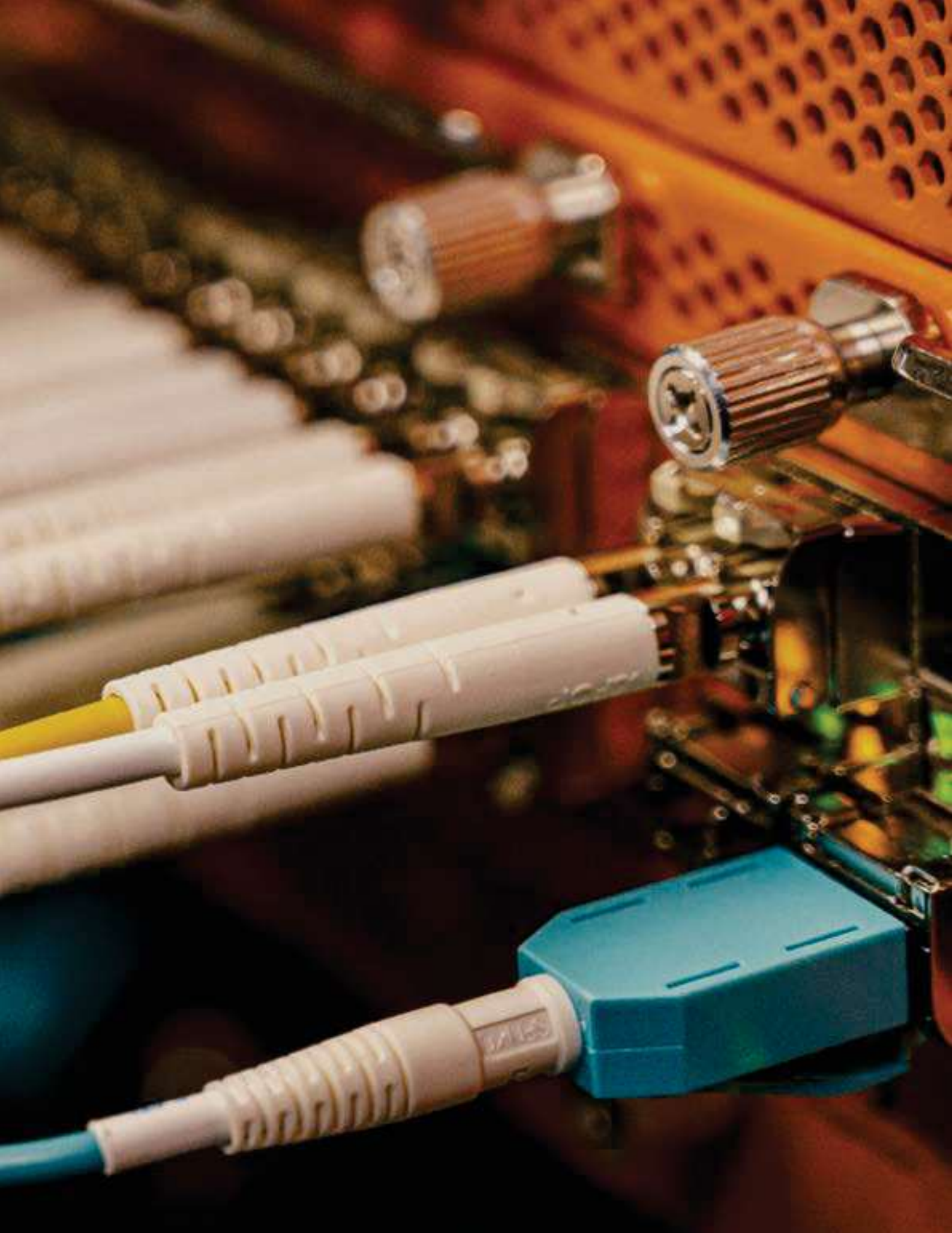
RAMCRO CODE		FORMATION		OUTER	WEIGHT	
		[n° x mm2]		DIAMETER [mm]	[kg/km]	
SAM0406HFEDX-F3CAT.6		4x2x23AWG		8,0	85	
Frequency	Max. Insetion	Min.	Min.	Min. ACR	Min.	Min. ACFR
	Loss	NEXT	PSNEXT	(dB)	PSACR	(ELFEXT)
(MHz)	(dB/100 m)	(dB)	(dB)		(dB)	(dB)
1	2.8	75.3	72.3	93	67	68
4	3.8	66.3	63.3	82	67	56
10	6	60.4	57.3	73	67	48
20	8.5	55.8	52.8	67	67	42
30	10.5	53.1	50.1	63	67	38.4
100	19.9	45.3	42.3	53	62.5	28
150	24.9	42.7	39.7	50	59.8	24.5
200	29.1	40.8	37.8	47	58	22
250	33	39.3	36.3	45	56.5	20

Note: Information subject to confirmation



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FIRE FIBER OPTICS CABLE



Fiber Optic Loose Tube

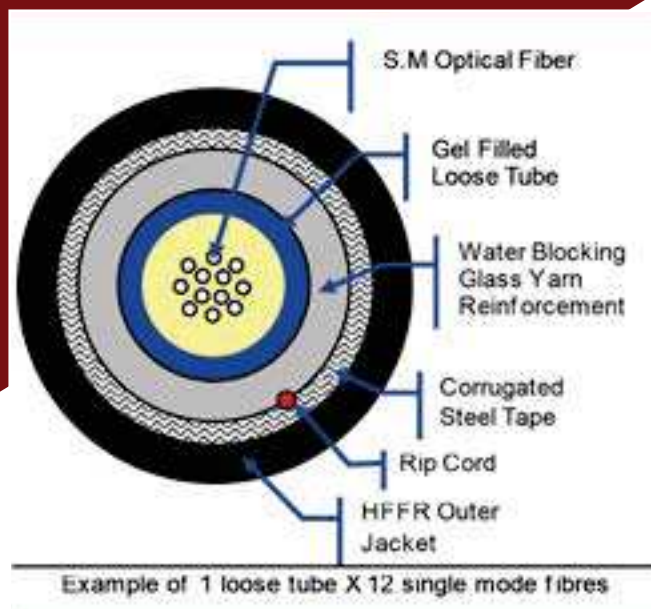
SINGLE MODE 9/125 μ m

DESCRIPTION

These Fiber Optic cables can incorporate up to 24 single-mode fibres. The cable is glass yarn reinforced and jacketed with Halogen Free Flame Retardant compound (HFFR). The cable is designed for indoor/outdoor applications in ducts, direct burial, or latched installations. Comply with IEC 60332-3 & IEC 60331-25 flammability test and with halogen-free according to IEC 60754-2 Corrosively

REFERENCE STANDARD

- IEC 60331-25:1999
- IEC 60332-1-2:2004
- EN 61034-2:2005
- EN 60754-1:2014



CONSTRUCTION

Fibers:

Up to Twenty-four single mode fibers, meeting or exceeding the ITU-T G.652/G.651 and/or IEC 60793 specifications color coded for easy identification

Tubes:

PBT tube.

Filling:

The tube is filled with water blocking, thixotropic gel to prevent the ingress of water.

Tubes Filled:

Dry, water swelling glass yarn is laid over the tube to serve as peripheral strength members and to block the cable from water penetration. LSZH inner jacket is extruded over the yarn.

Armouring:

A corrugated steel armor tape is longitudinally applied over the yarn with an overlap.

Sheath:

A UV-resistant, Halogen Free, Flame-Retardant (HFFR) extruded over the armoring.

Ripcords:

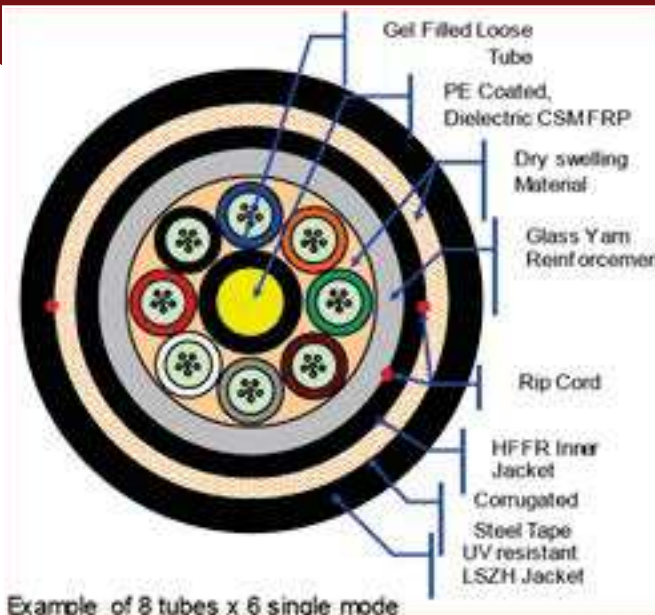
laid under the steel tape to facilitate the jacket removal.

IDENTIFICATION OF FIBERS

FIBER COLOR	FIBER NUMBER
Blue	1
Orange	2
Green	3
Brown	4
Slate	5
White	6
Red	7
Black	8
Yellow	9
Violet	10
Rose	11
Aqua	12

Fiber Optic Multi Tube

SINGLE MODE 9/125 μ m



DESCRIPTION

These Fiber Optic cables can incorporate up to 24 single mode fibers. The cable is glass yarn reinforced and jacketed with Halogen Free Flame Retardant compound (HFFR). The cable is designed for indoor/outdoor applications in ducts, direct burial or latched installations. Comply with IEC 60332- 3 & IEC 60331-25 flammability test and with halogen-free according to IEC 60754-2 Corrosively.

REFERENCE STANDARD

- IEC 60331-25:1999
- IEC 60332-1-2:2004
- EN 61034-2:2005
- EN 60754-1:2014

CONSTRUCTION

Fibers:

Up to 432 optical single mode fibers color coded for easy identification

Tubes:

PBT tube the tubes are SZ stranded around a dielectric central member

Filling:

The tube is filled with water blocking, thixotropic gel to prevent the ingress of water.

Tubes Fills:

Dry, water swelling glass yarn is laid over the tube to serve as peripheral strength members and to block the cable from water penetration. LSZH inner jacket is extruded over the yarn.

Armouring:

A corrugated steel armor tape is longitudinally applied over the yarn with an overlap.

Sheath:

UV resistant, Halogen Free, Flame-Retardant (HFFR) extruded over the armoring.

Ripcords:

laid under the steel tape to facilitate the jacket removal.

Ripcords:

laid under the steel tape to facilitate the jacket removal.

IDENTIFICATION OF FIBERS

FIBER COLOR	FIBER NUMBER
Blue	1
Orange	2
Green	3
Brown	4
Slate	5
White	6
Red	7
Black	8
Yellow	9
Violet	10
Rose	11
Aqua	12



Applicable for 6 FO
SM/MM unarmoured

Cert.n.568h

Note: Information subject to confirmation



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Fiber Optic

Loose Tube

MULTI MODE OM3 50/125 μ m

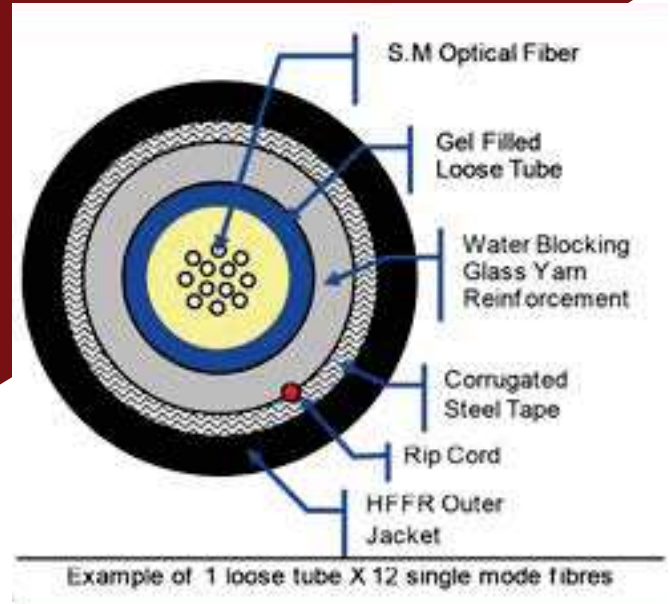
- 50/125 μ m - 62.5/125 μ m

DESCRIPTION

These Fiber Optic cables can incorporate up to 24 single-mode fibres. The cable is glass yarn reinforced and jacketed with Halogen Free Flame Retardant compound (HFFR). The cable is designed for indoor/outdoor applications in ducts, direct burial, or latched installations. Comply with IEC 60332-3 & IEC 60331-25 flammability test and with halogen-free according to IEC 60754-2 Corrosively.

REFERENCE STANDARD

- IEC 60331-25:1999
- IEC 60332-1-2:2004
- EN 61034-2:2005
- EN 60754-1:2014



CONSTRUCTION

Fibers:

Up to Twenty-four single mode fibers, meeting or exceeding the ITU-T G.652/G.651 and/or IEC 60793 specifications color coded for easy identification

Tubes:

PBT tube.

Filling:

The tube is filled with water blocking, thixotropic gel to prevent the ingress of water

Tubes Filled:

Dry, water swelling glass yarn is laid over the tube to serve as peripheral strength members and to block the cable from water penetration. LSZH inner jacket is extruded over the yarn.

Armouring:

A corrugated steel armor tape is longitudinally applied over the yarn with an overlap.

Sheath:

A UV-resistant, Halogen Free, Flame-Retardant (HFFR) extruded over the armoring.

Ripcords:

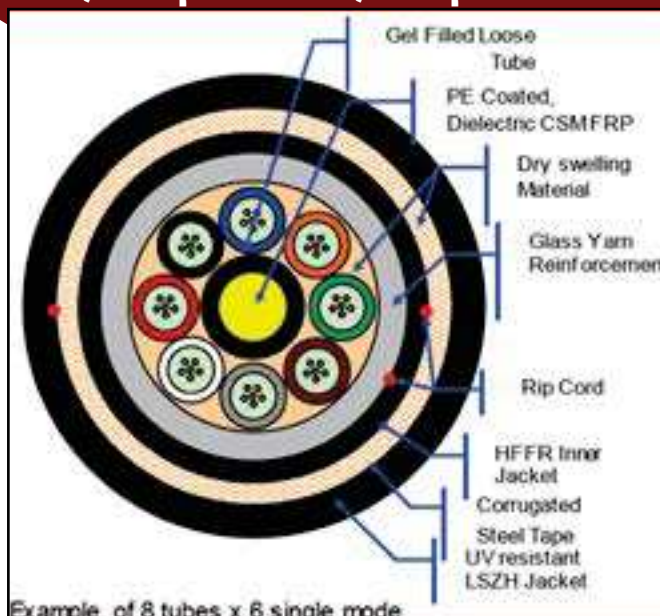
laid under the steel tape to facilitate the jacket removal.

IDENTIFICATION OF FIBERS

FIBER COLOR	FIBER NUMBER
Blue	1
Orange	2
Green	3
Brown	4
Slate	5
White	6
Red	7
Black	8
Yellow	9
Violet	10
Rose	11
Aqua	12

Fiber Optic Multi Tube

MULTI MODE OM3 50/125 μ m
- 50/125 μ m - 62.5/125 μ m



DESCRIPTION

These Fiber Optic cables can incorporate up to 24 single mode fibers. The cable is glass yarn reinforced and jacketed with Halogen Free Flame Retardant compound (HFFR). The cable is designed for indoor/outdoor applications in ducts, direct burial or latched installations. Comply with IEC 60332-3 & IEC 60331-25 flammability test and with halogen-free according to IEC 60754-2 Corrosively.

REFERENCE STANDARD

- IEC 60331-25:1999
- IEC 60332-1-2:2004
- EN 61034-2:2005
- EN 60754-1:2014

CONSTRUCTION

Fibers:

Up to 432 optical single mode fibers color coded for easy identification

Tubes:

PBT tube the tubes are SZ stranded around a dielectric central member

Filling:

The tube is filled with water blocking, thixotropic gel to prevent the ingress of water.

Tubes Fills:

Dry, water swelling glass yarn is laid over the tube to serve as peripheral strength members and to block the cable from water penetration. LSZH inner jacket is extruded over the yarn.

Armouring:

A corrugated steel armor tape is longitudinally applied over the yarn with an overlap.

Sheath:

UV resistant, Halogen Free, Flame-Retardant (HFFR) extruded over the armoring.

Rip cords:

laid under the steel tape to facilitate the jacket removal.

IDENTIFICATION OF FIBERS

FIBER COLOR	FIBER NUMBER
Blue	1
Orange	2
Green	3
Brown	4
Slate	5
White	6
Red	7
Black	8
Yellow	9
Violet	10
Rose	11
Aqua	12



Note: Information subject to confirmation



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Fiber Optic - CR1-C1

XP C 93-539

Loose Tube

REFERENCE STANDARD

IEC 60793 IEC 60794-1-2

Flame spread: IEC 60332-1-2 / NF C 32-070 C2

Smoke toxicity: IEC 60754-1 / EN 50267-2-1

Smoke opacity: IEC 61034-2 / EN 50268-2

Spread of fire: IEC 60332-3-24 / NF C 32-070 C1

Fire resistance: IEC 60331-25 / NF C 32-070 CR1
EN 50200 / XP C 93-539

CONSTRUCTION

1 - Fibers:

Up to Twenty-four single mode fibers, meeting or exceeding the ITU-T G.652/G.651 and/or IEC 60793 specifications
Color coded following TIA/EIA 598 for easy identification

2 - Tube:

PBT tube filled with water blocking, thixotropic gel to prevent the ingress of water

3 - Tubes Filled:

Dry, water swelling glass yarn is laid over the tube to serve as peripheral strength members and to block the cable from water penetration, with overall Fiber Glass Tape.

4 - Ripcord:

laid under the jacket for easy removal.

5 - Sheath:

A UV-resistant, Halogen Free, Flame-Retardant (HFFR) extruded over the Fiber Glass Tape.



APPLICATIONS

- Outdoor or indoor/outdoor installation
- For installation in ducts, tubes, trenches, or directly buried
- Fire resistant
- Flame and Fire retardant
- Halogen Free
- Low smoke emission – UV st
- Rodent resistant – Corrugated steel tape armor

CONSTRUCTION

1 - Fibers:

Up to Twenty-four single mode fibers, meeting or exceeding the ITU-T G.652/G.651 and/or IEC 60793 specifications
Color coded following TIA/EIA 598 for easy identification

2 - Tube:

PBT tube filled with water blocking, thixotropic gel to prevent the ingress of water

3 - Tubes Filled:

Dry, water swelling glass yarn is laid over the tube to serve as peripheral strength members and to block the cable from water penetration, with overall Fiber Glass Tape.

4 - Ripcords:

laid under the steel tape to facilitate the jacket removal.

5 - Inner Sheath:

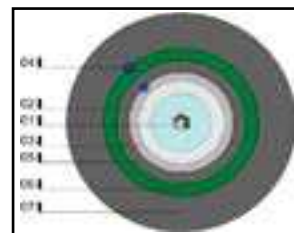
LSZH inner jacket is extruded over the yarn.

6 - Armouring:

A corrugated steel armor tape is longitudinally applied over the yarn with an overlap.

7 - Sheath:

A UV-resistant, Halogen Free, Flame-Retardant (HFFR) extruded over the armor.



Code	Type of Fiber	N. Fibres	Fibres per tube	Active Tubes	Tube Diameter mm	Outer Diam. mm
FO4x9_125SMSTZA-F3XPC	UnArmoured	4	4	1	2,7	8,9
FO6x9_125SMSTZA-F3XPC	UnArmoured	6	6	1	2,7	8,9
FO12x9_125SMSTZA-F3XPC	UnArmoured	12	12	1	2,7	8,9
FO24x9_125SMSTZA-F3XPC	UnArmoured	24	24	1	2,7	8,9
FO4x9_125SMSTCSTZA-F3XPC	Armoured	4	4	1	2,7	10,0
FO6x9_125SMSTCSTZA-F3XPC	Armoured	6	6	1	2,7	10,0
FO12x9_125SMSTCSTZA-F3XPC	Armoured	12	12	1	2,7	10,0
FO24x9_125SMSTCSTZA-F3XPC	Armoured	24	6	1	2,7	10,0



Note: Information subject to confirmation

Fiber Optic - CR1-C1

XP C 93-539

Multi Tube

CONSTRUCTION

1 - Dielectric central member

2 - Fibers:

Up to 48 optical ITU-T G.652/G.651 and/or IEC 60793 fibers, Color coded following TIA/EIA 598 for easy identification

3 - Tubes:

PBT tube he tubes filled with water blocking, thixotropic gel to prevent the ingress of water.

4 - Tubes Fills:

Dry, water swelling glass yarn is laid over the tubes to serve as peripheral strength members and to block the cable from water penetration, with overall Fiber Glass Tape.

5 - Ripcord:

laid under the jacket for easy removal.

6 - Inner Sheath:

LSZH inner jacket is extruded over the yarn.

7 - Armoring:

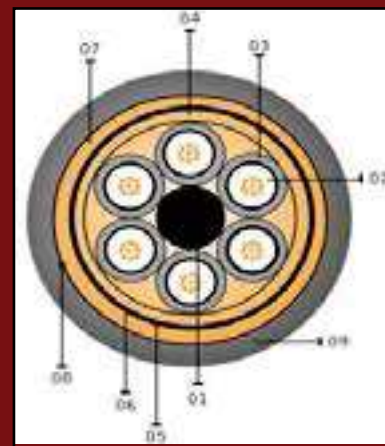
A corrugated steel armor tape is longitudinally applied over the yarn with an overlap.

8 - Ripcords:

laid under the steel tape to facilitate the jacket removal.

9 - Sheath:

A UV-resistant, Halogen Free, Flame-Retardant (HFFR) extruded over the armoring.



DESCRIPTION

- Outdoor installation
- For installation in conduits, cable trays, ducted or directly buried
- Rodent resistant – Reinforced corrugated steel tape armor
- Sealing – Water-repellent barrier construction – Dry conductor
- Flame and Fire retardant
- Halogen Free
- Low smoke emission – UV stabilized

REFERENCE STANDARD

Flame spread: IEC 60332-1-2 / NF C 32-070 C2

Smoke opacity: IEC 61034-2 / EN 50268-2

Smoke toxicity: IEC 60754-1 / EN 50267-2-1

Spread of fire: IEC 60332-3-24 NF C 32-070 C1

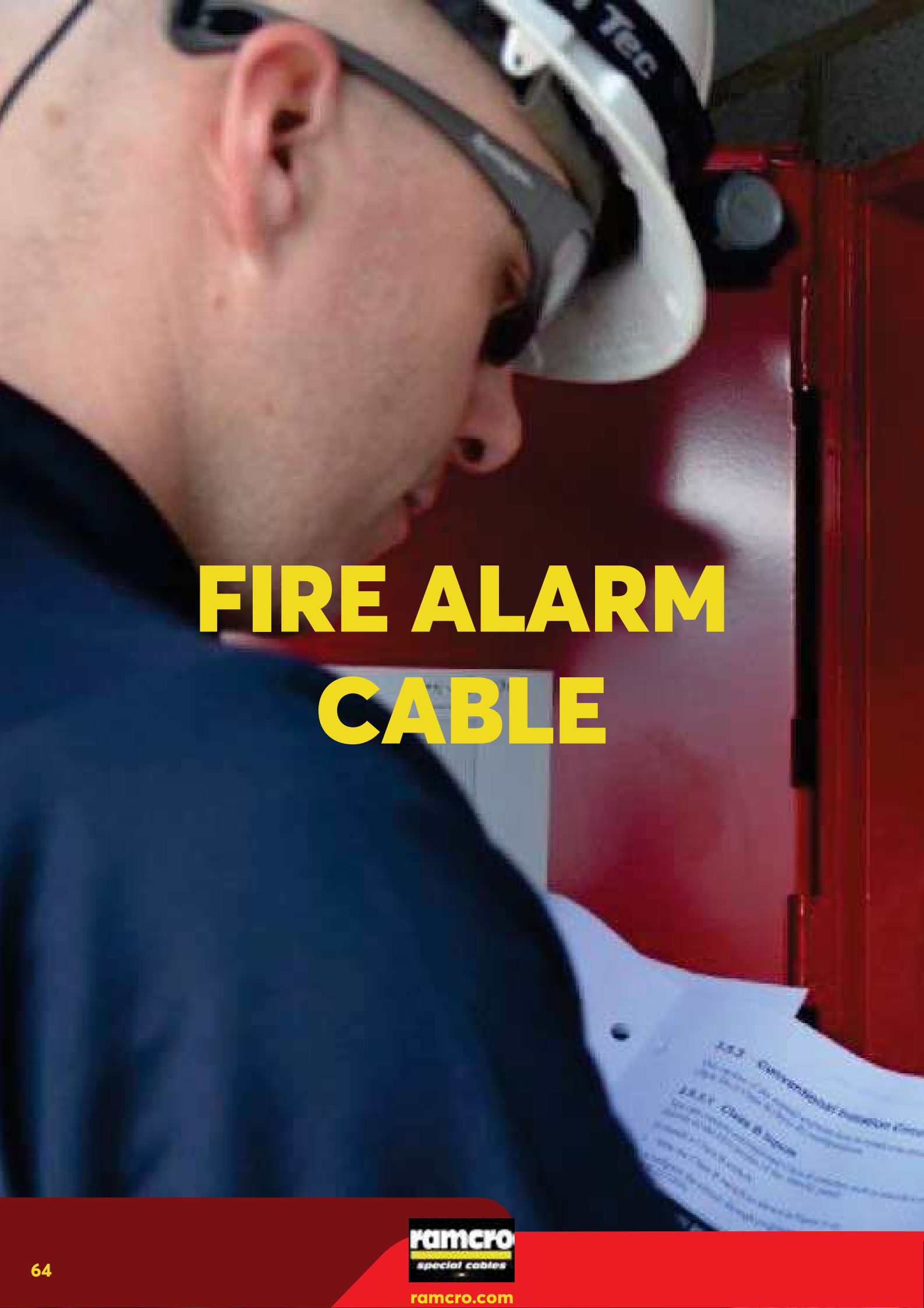
Fire resistance: IEC 60331-25 NF C 32-070 CR1
EN 5020

Code	Type of Fiber	N. Fibres	Fibres per tube	Active Tubes	Tube Diameter mm	Outer Diam. mm
FO6x9_125SMMTCSTZA-F3XPC FO6x50_125MMMTCTZA-F3XPC	Single Mode Multi Mode	6	6	1/8	2	16,5
FO12x9_125SMMTCSTZA-F3XPC FO12x50_125MMMTCTZA-F3XPC	Single Mode Multi Mode	12	6	2/8	2	16,5
FO24x9_125SMMTCSTZA-F3XPC FO24x50_125MMMTCTZA-F3XPC	Single Mode Multi Mode	24	6	4/8	2	16,5
FO36x9_125SMMTCSTZA-F3XPC FO36x50_125MMMTCTZA-F3XPC	Single Mode Multi Mode	36	6	6/8	2	16,5
FO48x9_125SMMTCSTZA-F3XPC FO48x50_125MMMTCTZA-F3XPC	Single Mode Multi Mode	48	6	8/8	2	16,5
FO72x9_125SMMTCSTZA-F3XPC FO72x50_125MMMTCTZA-F3XPC	Single Mode Multi Mode	72	12	6/8	2	16,5
FO96x9_125SMMTCSTZA-F3XPC FO96x50_125MMMTCTZA-F3XPC	Single Mode Multi Mode	96	12	8/8	2	16,5
FO144x9_125SMMTCSTZA-F3XPC FO144x50_125MMMTCTZA-F3XPC	Single Mode Multi Mode	144	24	6/8	2	16,5

Note: Information subject to confirmation



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FIRE ALARM CABLE



FPLR - fire alarm cable

TYPE: SOLID

E475091 - UL 1424

CONSTRUCTION

Multi-Core, PVC HT 105-Insulation, unscreened or with collective screen, Hi-Performance PVC-Sheath

Conductor:

Plain annealed copper wire, Solid

Insulation:

Hi Temperature Polyvinylchloride - PVC HT 105°C

Wrapping:

at least 1 layer of plastic tape 0,023 mm

Collective Screen:

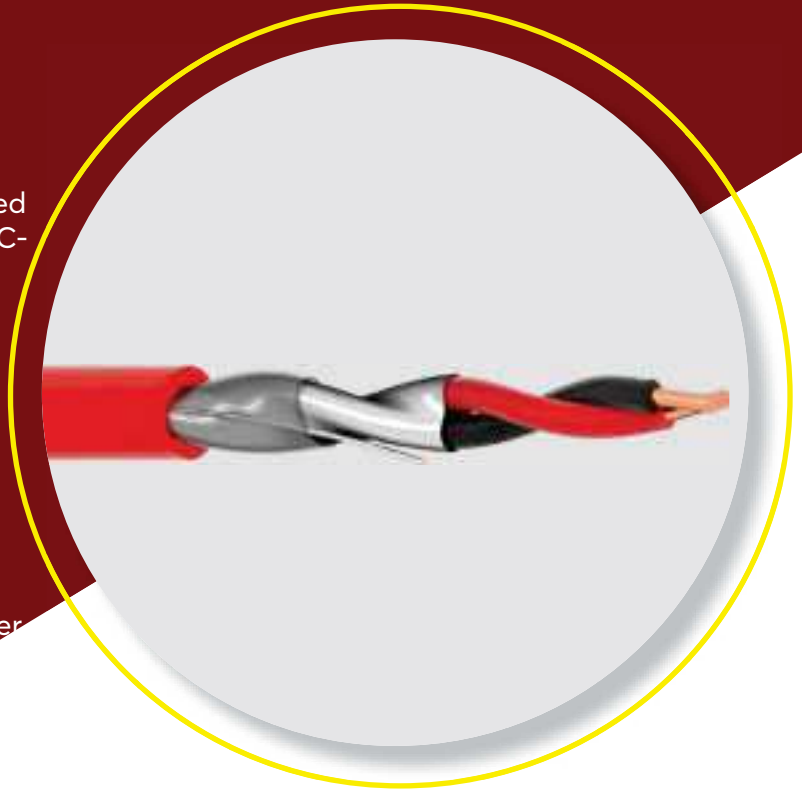
0,026 mm Aluminium / PETP tape over copper drain wire

Outer Sheath:

High-Performance Polyvinyl chloride

Sheath Colour:

Red



IDENTIFICATION OF CORE

2 Core: ● ●

ELECTRICAL DATA

Insulation Resistance @ 20°C:

> 25 MOhm/Km

Test Voltage Core-Core:

2000 V

Test Voltage Core-Screen:

2000 V

Mutual Capacitance:

< 150 nF/km

Inductance:

< 1 mH/km

Operating Voltage:

300 V

Reference Standard

- UL 1424 (FPRL Type)
- NEC Article 760
- NEC Article 725
- UL 1666
- ASTM D 1329
- NF C 32-020
- IRAM IAP
- EN 50266-2
- IEC 60332-1
- IEC 60332-3

Temperature Range

During Operation:

-30°C up to +105°C

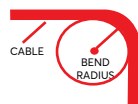
During Installation:

-5°C up to +50°C

Fire Resistant



Min. Bending Radius



8 x cable diameter

Low Smoke Halogen free



FPLR - fire alarm cable

TYPE: SOLID



E475091

UL 1424

CABLE PRINTING

RAMCRO S.p.A. – (UL) Listed E475091 Type FPLR - 2 C 18AWG
- Shielded - 105°C <Batch> <MeterMarking>

SCREENED CABLE

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAR0204HFOCH-UL-FA	2x20AWG	3.9	20
SAR0203HFOCH-UL-FA	2x18AWG	4.3	27
SAR0202HFOCH-UL-FA	2x16AWG	4.9	38
SAR0201HFOCH-UL-FA	2x14AWG	6.2	70
SAR0251HFOCH-UL-FA	2x12AWG	7.2	90

UNSCREENED CABLE

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SSR0204HFOCH-UL-FA	2x20AWG	3.8	22
SSR0203HFOCH-UL-FA	2x18AWG	4.2	29
SSR0202HFOCH-UL-FA	2x16AWG	4.8	35
SSR0201HFOCH-UL-FA	2x14AWG	6.1	75
SSR0251HFOCH-UL-FA	2x12AWG	7.1	92

Note: Information subject to confirmation



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FPLR - Armoured fire alarm cable

TYPE: SOLID

E475091 - UL 1424

CONSTRUCTION

Multi-Core, PVC HT 105-Insulation, unscreened or with collective screen, Hi-Performance PVC-Sheath

Conductor:

Plain annealed copper wire, Solid

Insulation:

Hi Temperature Polyvinylchloride
PVC HT 105°C

Wrapping:

at least 1 layer of plastic tape 0,023 mm

Collective Screen:

0,026 mm Aluminium / PETP tape over copper drain wire

Inner Sheath:

High Performance Polyvinyl chloride - Hi-PVC

Armour:

Galvanized steel wire armour - SWA

Outer Sheath:

High-Performance Polyvinyl chloride - Hi-PVC

Sheath Colour:

Red

IDENTIFICATION OF CORE

2 Core: ●●

ELECTRICAL DATA

Insulation Resistance @ 20°C:

> 25 MOhm/Km

Test Voltage Core-Core:

2000 V

Test Voltage Core-Screen:

2000 V

Mutual Capacitance:

< 150 nF/km

Inductance:

< 1 mH/km

Operating Voltage:

300 V

**FIRE ALARM
FPLR
UL 1424**



Reference Standard

- UL 1424 (FPRL Type)
- NEC Article 760
- NEC Article 725
- UL 1666
- ASTM D 1329
- NF C 32-020
- IRAM IAP
- EN 50266-2
- IEC 60332-1
- IEC 60332-3

Temperature Range

During Operation:

-30°C up to +105°C

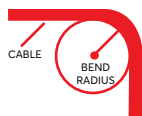
During Installation:

-5°C up to +50°C

Fire Resistant



Min. Bending Radius



8 x cable
diameter

Low Smoke Halogen free



FPLR - Armoured fire alarm cable

TYPE: SOLID

UL 1424

CABLE PRINTING

RAMCRO S.p.A. – (UL) Listed E475091 Type FPLR - 2 C 18AWG
- Shielded - 105°C <Batch> <MeterMarking>

SCREENED CABLE

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]
SAR0204AFOCH-UL-FA	2x20AWG	7.9	30	34
SAR0203AFOCH-UL-FA	2x18AWG	8.4	41	21.4
SAR0202AFOCH-UL-FA	2x16AWG	8.7	57	13.5
SAR0201AFOCH-UL-FA	2x14AWG	10.3	105	8.5
SAR0251AFOCH-UL-FA	2x12AWG	11.1	135	5.3

UNSCREENED CABLE

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]	MAX RESISTANCE AT 20°C [Ohm/km]
SSR0204AFOCH-UL-FA	2x20AWG	8.1	33	34
SSR0203AFOCH-UL-FA	2x18AWG	8.5	44	21.4
SSR0202AFOCH-UL-FA	2x16AWG	8.8	52	13.5
SSR0201AFOCH-UL-FA	2x14AWG	10.4	113	8.5
SSR0251AFOCH-UL-FA	2x12AWG	11.2	138	5.3

Note: Information subject to confirmation



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FPLP - FPLR - fire alarm

TYPE: SOLID

E475091 - UL 1424

CONSTRUCTION

Multi-Core, PLENUM PVC, unscreened or with collective screen, PLENUM PVC-Sheath

Conductor:

Plain annealed copper wire, Solid

Insulation:

Plenum Polyvinylchloride - PVC

Wrapping:

at least 1 layer of plastic tape 0,023 mm

Collective Screen:

0,026 mm Aluminium / PETP tape over copper drain wire

Outer Sheath:

Plenum Polyvinylchloride - PVC

Sheath Colour:

Red

**FIRE ALARM
FPLP-FPLR
UL 1424**



IDENTIFICATION OF CORE

2 Core: ● ●

ELECTRICAL DATA

Insulation Resistance @ 20°C:

> 25 MOhm/Km

Test Voltage Core-Core:

2000 V

Test Voltage Core-Screen:

2000 V

Mutual Capacitance:

< 150 nF/km

Inductance:

< 1 mH/km

Operating Voltage:

300 V

Reference Standard

- FPLP-FPLR
- NEC Article 760
- NEC Article 725
- UL 910 - PLENUM
- ASTM D 1329
- NF C 32-020
- IRAM IAP
- EN 50266-2
- IEC 60332-1
- IEC 60332-3

Temperature Range

During Operation:

-30°C up to +75°C

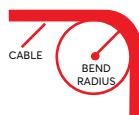
During Installation:

-5°C up to +50°C

Fire Resistant



Min. Bending Radius



8 x cable
diameter

Low Smoke Halogen free



FPLP - FPLR - fire alarm



E475091

TYPE: SOLID

UL 1424

CABLE PRINTING

RAMCRO S.p.A. – (UL) Listed E475091 Type FPLR - 2 C 18AWG
- Shielded - 75°C <Batch> <MeterMarking>

SCREENED CABLE

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SAR022HFOCH-UL-LP	2x22AWG	3.3	19
SAR0422HFOCX-UL-LP	4x22AWG	3.6	27
SAR0622HFOCX-UL-LP	6x22AWG	4.3	37
SAR0204HFOCH-UL-LP	2x20AWG	4.5	30
SAR0404HFOCX-UL-LP	4x20AWG	5.1	48
SAR0604HFOCX-UL-LP	6x20AWG	6	68
SAR0203HFOCH-UL-LP	2x18AWG	5	38
SAR0403HFOCX-UL-LP	4x18AWG	5.6	64
SAR0603HFOCX-UL-LP	6x18AWG	6.7	91
SAR0202HFOCH-UL-LP	2x16AWG	5.3	45
SAR0402HFOCX-UL-LP	4x16AWG	5.9	76
SAR0602HFOCX-UL-LP	6x16AWG	7.1	109
SAR0201HFOCH-UL-LP	2x14AWG	6.6	77

UNSCREENED CABLE

RAMCRO CODE	FORMATION [n° x mm2]	OUTER DIAMETER [mm]	WEIGHT [kg/km]
SSR022HFOCH-UL-LP	2x22AWG	3.2	14
SSR0422HFOCX-UL-LP	4x22AWG	3.5	22
SSR0622HFOCX-UL-LP	6x22AWG	4.2	32
SSR0204HFOCH-UL-LP	2x20AWG	4.4	25
SSR0404HFOCX-UL-LP	4x20AWG	5	43
SSR0604HFOCX-UL-LP	6x20AWG	5.9	62
SSR0203HFOCH-UL-LP	2x18AWG	4.9	33
SSR0403HFOCX-UL-LP	4x18AWG	5.5	58
SSR0603HFOCX-UL-LP	6x18AWG	6.6	85
SSR0202HFOCH-UL-LP	2x16AWG	5.2	39
SSR0402HFOCX-UL-LP	4x16AWG	5.8	71
SSR0602HFOCX-UL-LP	6x16AWG	7	103
SSR0201HFOCH-UL-LP	2x14AWG	6.5	71
SSR0401HFOCH-UL-LP	4x14AWG	7.3	126

Note: Information subject to confirmation



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FIRE RESISTANT TEST INFORMATIONS





CABLE FEATURES:

In case of fire risk or to maintain circuits integrity, the Ramcro Fire special cables prevent smoke risks and other collateral problems to sensitive equipments, avoiding damage from gases. Ramcro Fire cables are produced according with all major international standards.

Product range under sub-brand RAMFIRECRO-F3 Manufactured according to:

- International Electro-technical Commission IEC 60331-21
- British Standard BS 6387 Cat. C-W-Z
- British Standard BS 7629
- European Norms EN 50200

FIRE SUN CABLE	FIRE STAR CABLE	FLAME TEMPERATURE	TEST ENVIRONMENT						
✓	✓	 950°C		BS 6387:2013 Cat. C					
✓	✓	 650°C	 	BS 6387:2013 Cat. W			30 Min.		
✓	✓	 950°C	 	BS 6387:2013 Cat. Z		15 Min.			
✓	✓	 830°C	 	BS EN 50200:2015					
✓	✓	 830°C	  	BS EN 50200:2015 + Annex E			30 Min.		
	✓	 930°C	  	BS EN 50200:2015 + Annex E			30 Min. (1 Impact / 5min)		
	✓	 930°C	  	BS 8434-2:2003 + A2:2009			15 Min.		
Mechanical Shock									
			Fire	Water					

”

**RAMCRO IN THE VERY HEART
OF GREAT JOBS.**

“



Note: Information subject to confirmation

- Basic Type: IEC 60331-21
- Standard Type: BS 6387 Cat. C-W-Z and BS 7629
- Enhanced Type: EN 50200 PHI20 - BS 8434-2

RAMCRO
special cables

Fire resistant test informations



FIRE RESISTANCE (Cat. C)

The cable is exposed to fire at the 950°C for 180 minutes



FIRE AND WATER RESISTANCE (Cat. W)

The cable is exposed for 15 minutes to flame at 650°C and for additional 15 minutes to fire and water spray



FIRE RESISTANCE WITH MECHANICAL SHOCKS (Cat. Z)

The cable is mounted on a vertical panel and shocked with a steel bar for 15 minutes while submitted to the action of a flame.

FIRE RESISTANCE (EN 50200 PH 1 5-30-60-90-120) IEC 60331-2:2018 (Diam <20mm) IEC 60331-1:2018 (Diam >20mm)

This test is carried out to verify the circuit integrity of cables exposed to fire at 830°C and mechanical shocks.

CLASSIFICATION	
EN 50200 PH 15	Flame exposure for 15 min
EN 50200 PH 30	Flame exposure for 30 min
EN 50200 PH 60	Flame exposure for 60 min
EN 50200 PH 90	Flame exposure for 90 min
EN 50200 PH 120	Flame exposure for 120 min



Note: Information subject to confirmation

Fire resistant test informations

FIRE RESISTANCE
BS EN 50200 annex E



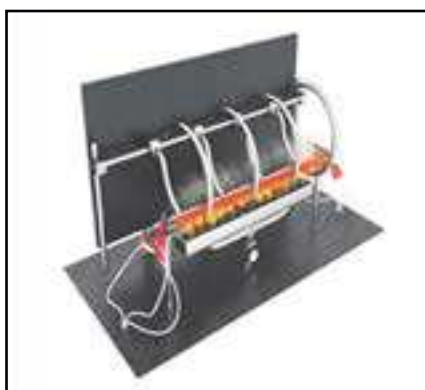
This test is carried out to verify circuit integrity during a fire. The cable is exposed to a flame at 830°C and mechanical shocks for 15 minutes and additional 15 minutes to flame, mechanical shocks, and water spray.

FIRE RESISTANCE
(BS 8434-2)



This test is carried out to verify circuit integrity during a fire. The cable is exposed to a flame at 930°C and mechanical shocks for 60 minutes and additional 60 minutes to flame, mechanical shocks, and water spray.

FIRE RESISTANCE
(IEC 60331-21, CEI 20-36)



This test is carried out to verify circuit integrity even during a fire. A sample of cable is held on a flame at about 750°C for a period of minimum 90 min, under rated voltage.

Note: Information subject to confirmation



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Fire retardant test informations

FLAME PROPAGATION TEST (IEC 60332-1) ON A SINGLE CABLE



A 60 cm long sample of cable is vertically fixed with two clamps inside a small cabin, open on the front. The cable is subjected to the action of a flame produced by a calibrated Bunsen burner.

The application time of the flame is according to the cable diameter (60-480 seconds).

At the end of the test the burnt portion of cable must not be 50 mm close to the higher clamp

FIRE PROPAGATION TEST (IEC 60332-3) ON BUNCHED CABLES



Samples of cables 3,5 m long in quantities required by standard are installed on a ladder inside a metallic cabinet.

They are subjected to the action of a flame at 750°C for a specific time (20 or 40 minutes).

Cables must not burn for more than 2,5 m.

"Ramcro S.p.A Lab have all the above test facilities"



Note: Information subject to confirmation

Certificates of PRODUCTS APPROVAL



RAMCRO
special cables

Certificates of PRODUCTS APPROVAL



Certificates of COMPANY QUALITY SYSTEM



ISO/IEC 17025:2017



ISO 9001:2015



ISO 14001:2015



ISO 45001:2018

Note: Information subject to confirmation

CPR REGULATION

CPR Cables (Construction Products Regulation) are essential for ensuring safety in buildings. Regulated by the European Regulation 305/2011, these cables must meet specific fire reaction requirements, reducing the risk of flame propagation and the emission of toxic smoke in the event of a fire.

The CPR classification allows for the selection of the most suitable type of cable based on the installation environment, enhancing the protection of people and property.

Using cables that comply with CPR standards is therefore not only a legal obligation but also a responsible choice for designers, installers, and clients.

RAMCRO has a wide variety of CPR products developed in almost 10 years. In addition, RAMCRO is proud to communicate that it's been among the first movers (2020) in owning a CPR Test Equipment in-house in order to develop our products and fit perfectly your needs.

Advantages of High rated CPR Cables

High Rated classified cables offer numerous benefits, especially in environments where fire safety is a top priority. Here are the main advantages:

Reduced emission of toxic gases

This protects both people and electronic equipment, especially in sensitive environments like hospitals, schools, public offices, and critical infrastructure.

Low smoke emission

They produce very little smoke when burning, improving visibility during evacuation and reducing the risk of inhaling toxic substances.

Regulatory compliance

These cables are often legally required in public or high-occupancy buildings, ensuring compliance with European fire safety regulations.

No flaming droplets

They do not release burning droplets that could further fuel the fire or cause burns.



CPR Machine @ RAMCRO

US-AMERICAN AND BRITISH UNITS

Conversion of usual measuring units

Units for cables and wires

In the US the measurements are mainly used in AWG-numbers (AWG = American Wire Gauge). The AWG-numbers conform the british B&S-numbers (B&S = Brown & Sharp)

AWG No.	Cross-section mm ²	Diameter mm	Conductor resistance Ohm/km	AWG No.	Cross-section mm ²	Diameter mm	Conductor resistance Ohm/km
1000 MCM*	507	25,4	0,035	14	2,08	1,63	8,79
750	380	22,0	0,047	15	1,65	1,45	11,20
600	304	19,7	0,059	16	1,31	1,29	14,70
500	254	20,7	0,07	17	1,04	1,15	17,80
400	203	18,9	0,09	18	0,8230	10,240	23,0
350	178	17,3	0,10	19	0,6530	0,9120	28,3
300	152	16,0	0,12	20	0,5190	0,8120	34,5
250	127	14,6	0,14	21	0,4120	0,7230	44,0
4/0	107,20	11,68	0,18	22	0,3250	0,6440	54,8
3/0	85,00	10,40	0,23	23	0,2590	0,5730	70,1
2/0	67,50	9,27	0,29	24	0,2050	0,5110	89,2
0	53,40	8,25	0,37	25	0,1630	0,4550	111,0
1	42,40	7,35	0,47	26	0,1280	0,4050	146,0
2	33,60	6,54	0,57	27	0,1020	0,3610	176,0
3	26,70	5,83	0,71	28	0,0804	0,3210	232,0
4	21,20	5,19	0,91	29	0,0646	0,2860	282,0
5	16,80	4,62	1,12	30	0,0503	0,2550	350,0
6	13,30	4,11	1,44	31	0,0400	0,2270	446,0
7	10,60	3,67	1,78	32	0,0320	0,2020	578,0
8	8,366	3,26	2,36	33	0,0252	0,1800	710,0
9	6,63	2,91	2,77	34	0,0200	0,1600	899,0
10	5,26	2,59	3,64	35	0,0161	0,1430	1125,0
11	4,15	2,30	4,44	36	0,0123	0,1270	1426,0
12	3,30	2,05	5,41	37	0,0100	0,1130	1800,0
13	2,62	1,83	7,02	38	0,00795	0,1010	2255,0
				39	0,00632	0,0897	2860,0

4/0 is also stated: 0000; 1 mil = 0,001 inch = 0,0254 mm

* for bigger cross-section the sizes in MCM (circular mils)

1 CM = 1 Circ. mil. = 0,0005067 mm²

1 MCM = 1000 Circ. mils = 0,5067 mm²

General measuring units

Lengths

1 mil	= 0,0254 mm
1 in (inch)	= 25,4 mm
1 ft (foot)	= 0,3048 m
1 yd (yard)	= 0,9144 m
1 ch (chain)	= 20,1 m
1 mile (land mile)	= 1,609 km
1 mile (nautic mile)	= 1,760 yards
1 mm	= 1,852 km
1 m	= 0,039370 inches
1 m	= 39,370079 inches

Area

1 CM (circ. mil)	= 0,507 · 10 ⁻³ mm ²
1 MCM	= 0,5067 mm ²
1 sq. inch (sq. inch)	= 645,16 mm ²
1 sq. ft. (sq. foot)	= 0,0929 m ²
1 square yard	= 0,836 m ²
1 acre	= 4047 m ²
1 square mile	= 2,59 km ²

Density

1 cu. in. (cubic inch)	= 16,39 cm ³
1 cu. ft. (cubic foot)	= 0,0283 m ³
1 cu. yd. (cubic yard)	= 0,7646 m ³
1 gal. (US gallon)	= 3,785 l
1 gal. (brit. gallon)	= 4,546 l
1 US pint	= 0,473 l
1 US quart	= 0,946 l
1 US barrel	= 158,8 l

Temperature

F (Fahrenheit)	= (1,8 · C) + 3°
C (Celsius)	= 0,5556 · (F-32°)

Weight

1 grain	= 64,8 mg
1 dram	= 1,77 g

1 oz (ounce)	= 28,35 g
1 lb (pound)	= 0,4536 Kp
1 stone	= 6,35 Kp
1 qu (quarter)	= 12,7 Kp
1 US-cwt (hundredweight)	= 45,36 Kp
1 US ton (short ton)	= 0,907 t
1 brit. ton (long ton)	= 1,016 t

Force

1 lb	= 4,448 N
1 brit. ton	= 9954 N
1 pdl (Poundal)	= 0,1383 N
1 kp	= 9,81 N
1 N	= 0,102 kp

Velocity

1 mile/h	= 1,609 km/h
1 Knoten	= 1,852 km/h
1 ft/s	= 0,305 m/s
1 ft/min	= 5,08 · 10 ⁻³ m/s
Energy	
1 lb/mile	= 0,282 kg/m
1 lb/yd	= 0,496 kg/m
1 lb/foot	= 1,488 kg/m

Radiation absorbed dose

1 Gray	= 1 J/kg
1 rad	= 10 ⁻² J/kg = 1 Centi Gy
	= 0,01 Gy
1 Centi	= 100 Joule
1 rad	= cJ/kg = 0,01Gy
1 Mrad	= 1 · 10 ⁶ cJ/kg

Pressure

1 psi (lb/sq.)	= 68,95 mbar
	= 6,895 · 10 ⁻³ Nmm ²

1 lb/sq. ft.	= 0,478 mbar
1 pdl/sq. ft.	= 1,489 N/m ²
1 in Hg	= 33,86 mbar
1 ft H2 O	= 29,89 mbar
1 in H2 O	= 2,491 mbar
1 N/mm2	= 145 psi

1 kp/mm2	= 1422 psi
1 at	= 736 Torr
	= 1 kp/cm ²
1 Torr	= 1 mm Hg
1 bar	= 0,1 H Pa
1 Pa	= 1 N/m ²

Density

1 lb/cu. ft.	= 16,02 kg/m ³
1 lb/cu. in.	= 27,68 t/m ³

Horse power

1 hp · h	= 1,0139 PS · h
	= 2,684 · 10 ⁶ Joule
	= 746 W · h
1 BTU (brit. therm. unit)	= 1055 Joule

Electrical units

1 ohm/1000 yd	= 1,0936 /km
1 ohm/1000 ft	= 3,28 /km
1 µF/mile	= 0,62 µF/km
1 megohm/mile	= 1,61 M/km
1 µuf/foot	= 3,28 pF/m
1 decibel/mile	= 71,5 mN/m

Power rate

1 PS	= 0,736 kW
1 kW	= 1,36 PS
1 hp	= 0,7457 kW
1 kW	= 1,31 hp

Note: Information subject to confirmation



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CODE-DESIGNATION

Explanations for Cables and Insulated Wires

A-	Outdoor cable	(N)	in adapted to VDE standard
A	approved national design	NC	non-corrosiv, smoke-gase
AB	Outdoor cable with lighting protection	NF	natural colour
AD	Outdoor cable with differential protection	-O	cabl without green-yellow earth core
AJ-	Outdoor cable with induction protection	-OZ	cabl without green-yellow earth core and cores with
ASLH	self-supporting communication cables for high voltage overhead lines	ö	imprinted numbers
B	armouring	02Y	oil-resistant
B	spinning of textile yarn	Q	Foam-PE, insulation (cellular PE)
b	armouring	(R...)	Steel wire braiding
(1B...)	one layer of steel tape... thickness of the steel tape in mm	RAGL-	round wire, diameter in mm
(2B...)	two layers of steel tape... thickness of the steel tape in mm	RD-	Compensating cable for thermocoupling
BD	unit-type stranding	RE	Rhenomatic cable
BLK	bare copper-conductor without insulation	RG-	Computer cable
BZ	bronze conductor	re	Coaxial cable according MIL specification
C	screen of copper wire braiding	rm	round, single wire
C	screen of copper wire spinning	RS-	round, multiwire
C	outer protection of jute and viscous compound	S	computer switchboard cable
Cu	copper wire	S	silk whipping
(-Cu)	total cross-section of copper screens (mm2)	(S...)	signal cables for railways
D	screen of copper wires	-S	nominal value of mutual capacitance (nF /km)
(D)	screen of helically applied copper wires	S-	signal cable for German Railway
DM	Dieselhorst-Martin quad	SL	Switchboard cable
Dreier	three cores in triple stranded	2S	exible sheathed cable
E	copper drain wire	St	two layers of silk whipping
E(e)	protective covering of viscous compound with embedded layer of plastic tape	St I	star quad for phantom circuits
e	single wire, solid	St III	star quad in telephone cables for lager distance
F	cable cores assembly with petrol-jelly	(St)	star quad in local cables
F	foil wrapping	Staku	static screen
F	flat cable	Staku-Li	copper clad steel wire
F	star quad for railway cable	...t	copper clad steel stranded wires
F	star quad for phantom circuits	T	termite protection
(F...)	flat wire armouring... thickness in mm	T	supporting element for overhead cable
OF	jelly lled cable core, lling compound of hard substances	TF	fan out cable
FR	flame retardant	TiC	carrier frequency of pairs or quads triple
f	flexible, ne wire stranding	TiMF	triple in copper wire braid
ff	extra fine wire stranding	U	triple in metal foil
G	insulation or sheath material of rubber (NR) or (SBR)	VGD	braiding of textile fibres
G-	Mining cable	VN	gold-plated
GJ	Mining cable with induction protection	VZK	ickel-plated VS silver-plated
GS	glass fibre whipping or braiding	W	galvanized VZN tinned
2G	insulation or jacket of silicone rubber, (SIR)	W	corrugated steel sheath
3G	insulation or jacket of ethylene propylene rubber, (EPR)	W	high heat resistant
4G	insulation or jacket of ethylene vinylacetate rubber (EVA)	X	corrugated steel sheath
5G	insulation or jacket of chloroprene rubber (CR)	XPE	cross-linked polyvinylchlorid (X-PVC) or other materials
6G	insulation or jacket of chlorosulphonated polyethylene (CSM), Hypalon	2X	cross-linked polyethylene
7G	insulation or jacket of Flouorelastomer (FKM)	7X	cross-linked Ethylentetrafluorethylen (X-ETFE)
8G	insulation or jacket of Nitrile rubber (NBR)	10X	cross-linked Polyvinylidenfluorid (X-PVDF)
9G	PE-C rubber (CM)	Y	PVC, polyvinylchloride
53G	CM, chlorinated Polyethylene	Yu	PVC, polyvinylchloride, non-flammable, flame-retardant
H	insulation or jacket of halogen-free compound	Yv	PVC, polyvinylchloride, with reinforced sheath
H	Harmonized Documents	YV	Equipment wires with tinned conductor
(H...)	maximal value of mutual capacitance (nF /km)	Yw	PVC, polyvinylchlorid, heat resistant upto 90°C
(HS)	semi-conducting tape of layer	2Y	Polyethylene (PE)
HX	cross-linked, halogen-free polymer compound	2Yv	Polyethylene, reinforced sheath
...IMF	individual stranding element (pairs or single cores etc.)	02Y	Cellular polyethylene
IMF	in metal foil and drain wire	02YS	insulation of cellular polyethylene with outer PE-skin
IMF	several stranding elements in metalfoil and drain wire	2YHO	insulation of air-spaced polyethylene
-J	cabl with green-yellow earth core	3Y	insulation polystyrene (PS)
-JZ	cabl with green-yellow earth core and cores with inprinted numbers	4Y	insulation or jacket of polyamide (PA)
K	copper-tape	5Y	insulation or jacket of polytetrafluorethylene (PTFE)
(K)	inner sheath and longitudinally folded copper tape	5YX	Perfluoralkoxy (PFA)
LA	tinsel conductor (flat copper wire stranded over the thread of synthetic fibres)	6Y	Perfluoroethylene-propylene (FEP)
LD	corrugated aluminium sheath	7Y	insulation or jacket of ethylentetrafluorethylen (ETFE)
Lg	in layers stranding	8Y	insulation of polyimid (PI)
Li	stranded wires conductor	9Y	polypropylen (PP)
(L)Y	laminated sheath Al-tape and PVC-jacket	10Y	PVDF, Polyvinylidene fluoride
(L)2Y	laminated sheath Al-tape and PE-jacket	11Y	polyurethan (PUR)
2L	double enamel coating as insulation	12Y	TPE-E, TPE
M	plastic-sheath cable	13Y	TPE-EE, TPE on base of Polyester-Ester
M	lead sheath	31Y	TPE-S, TPE on base of Polystyrol
Mz	alloyed lead sheath	41Y	TPE-A, TPE on base of Polyamide
(mS)	magnetic shield	51Y	PFA, Per uor-Alkoxylalkane
N	VDE standard	71Y	ECTFE, Monochlorotrifluorethylen
		91Y	TPE-O, TPE on base of Polyester-Ester
		-Z	core imprinted with numbers
		Z	twin cable
		(Z)	high-tensile braid of steel wires
		(ZG)	high-tensile element of glass fibre yarn
		(ZN)	high-tensile of non-metallic elements

DIN 47100

- Core 1:  White
- Core 2:  Brown
- Core 3:  Green
- Core 4:  Yellow
- Core 5:  Grey
- Core 6:  Pink
- Core 7:  Blue
- Core 8:  Red
- Core 9:  Black
- Core 10:  Violet
- Core 11:  Grey/Pink
- Core 12:  Red/Blue
- Core 13:  White/Green
- Core 14:  Brown/Green
- Core 15:  White/Yellow
- Core 16:  Yellow/Brown
- Core 17:  White/Grey
- Core 18:  Grey/Brown
- Core 19:  White/Pink
- Core 20:  Pink/Brown
- Core 21:  White/Blue
- Core 22:  Brown/Blue
- Core 23:  White/Red
- Core 24:  Brown/Red
- Core 25:  White/Black
- Core 26:  Brown/Black
- Core 27:  Grey/Green
- Core 28:  Yellow/Grey
- Core 29:  Pink/Green
- Core 30:  Yellow/Pink
- Core 31:  Green/Blue
- Core 32:  Yellow/Blue
- Core 33:  Green/Red
- Core 34:  Yellow/Red
- Core 35:  Green/Black
- Core 36:  Yellow/Black
- Core 37:  Grey/Blue
- Core 38:  Pink/Blue
- Core 39:  Grey/Red
- Core 40:  Pink/Red
- Core 41:  Grey/Black
- Core 42:  Pink/Black
- Core 43:  Blue/Black
- Core 44:  Red/Black
- Core 45*:  White/Brown/Black
- Core 46*:  Yellow/Green/Black
- Core 47*:  Grey/Pink/Black
- Core 48*:  Red/Blue/Black
- Core 49*:  White/Green/Black
- Core 50*:  Brown/Green/Black

* Starting from conductor No. 45, it is possible to request either the version where the color sequence restarts from No. 1, or the two-tone + black option. If no specific request is made, Option 1 will be applied by default.

Note: Information subject to confirmation



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HANDLING, STORAGE AND LAYING OF CABLES

Great care is taken in the manufacturing of cables to ensure quality at every stage.

- Handling is the next important factor to ensure that by poor workmanship and mishandling the quality does not deteriorate.

Of course laying is generally carried out by unskilled or semi-skilled men, strict supervision should be maintained so that this

- material, which can be very easily damaged, is handled with great care.

If great care during installation is observed in the handling of cables on site the life of the cables is extended.

A. CABLE INSPECTION

1. Inspect every cable reel for damage before accepting the shipment. Be particularly alert for cable damage if:
2. A reel is lying flat on its side
3. Several reels are stacked one over the other
4. Other freight is stacked on a reel
5. Cable drums are without planks or broken
6. Nails have been driven into reel flanges to secure shipping blocks
7. A reel flange is damaged
8. A cable covering is removed, stained or damaged
9. A cable end seal is removed or damaged. A reel has been dropped (hidden damage likely)

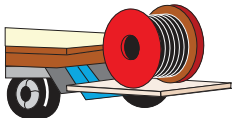
B. CABLE HANDLING & STORAGE

Damage to cables can occur due to the incorrect handling to which the drums and cables may be subjected; causing breakdown of the drum flanges and in exceptional cases, movement of the drum barrel takes place. Once this breakdown of the drum occurs, the cable is immediately exposed to damage. Cables damaged during handling & storage can cause service failures when the subject cable is put to use.

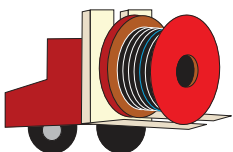
Thus the following is a list of Do's and Don'ts that should be followed while handling and storing the cables before it is put to use.



DO's



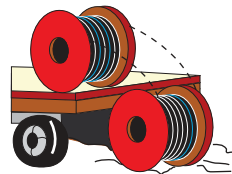
When off loading reels from a truck, lower reels carefully using a hydraulic gate, hoist or forklift truck.



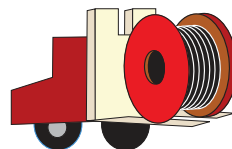
If a fork lift is used, approach the reel from the flange side. Position the forks such that the reel is lifted by both reel flanges. Also Consideration should be given to, Traffic patterns during off-loading & damage during the time in storage.



DON'ts



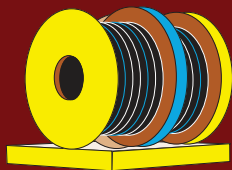
Never drop reels. If reels must be rolled, roll in opposite direction of the cable wraps to keep cable from loosening on the reel.



Do not allow the lift forks to contact the cable. Care must be taken by the fork lift operator not to make sudden turns or stops.



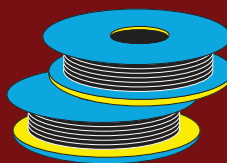
DO's



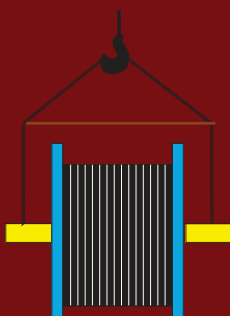
Cable reels should be stored on hard surfaces resting on the flanges edge (flanges vertical). Align reels flange to flange and, if possible, arrange so that first in is first out.



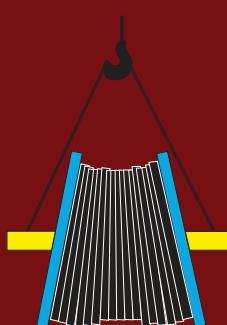
DON'Ts



Multiple reels stacked on top of each other ("Pancake" storage) is not recommended for cable drums. The weight of the stack can total thousands of Kgs. creating an enormous load on the bottom reel. Also, damage to the reel and/or cable will likely occur when the reel is flipped for transit. A concentration of stress on the reel flange may cause it to break and subsequently damage the cable.



When using a hoist, install a mandrel through the reel arbor holes and attach a sling. Use a spreader bar approximately 6 inches longer than the overall reel width placed between the sling ends just above the reel flanges.



This may lead to the bending of the reel flanges and mashing the cable.

C. RECOMMENDED MINIMUM BENDING RADIUS FOR LV CABLES

Single Core: $15 \times D$

Multicore : $12 \times D$

Where D = Diameter of cable in mm

D. INSTALLATION & LAYING

Mechanical stresses during installation are generally more severe than those encountered while in service. Thus care should be taken as regards to the following while installation and laying of cables.

1. Care shall be taken during laying to avoid sharp bending, and twisting.
2. Cable shall be unwound from the drum by lifting the drum on the center.
3. Shaft supported both ends with suitable jacks / stands.
4. Under no circumstances the cable winding shall be lifted off a coil or drum lying flat at the flanges. This would cause serious twist and damages.
5. Suitable protection shall be provided to the cables against mechanical damages, it includes covers, pipes etc.

E. PRE- INSTALLATION

To ensure safety during cable installation, following shall be checked prior to installation.

1. The cable selected is proper for designed application.
2. The cable has not been damaged in transit or storage.

Review all applicable state and national codes to verify that the cable chosen is appropriate for the job. Also consult your local electricity authority. Next, you must identify any existing cable damage and prevent any further damage from occurring. This is done through proper cable inspection, handling and storage.

F. RECOMMENDED SAFE PULLING FORCE WHEN PULLED WITH PULLING EYE:

- a) For Aluminum Conductors : 30 N/mm²
- b) For Copper Conductor : 50 N/mm²

G. RECOMMENDED SAFE PULLING FORCE WITH STOCKINGS:

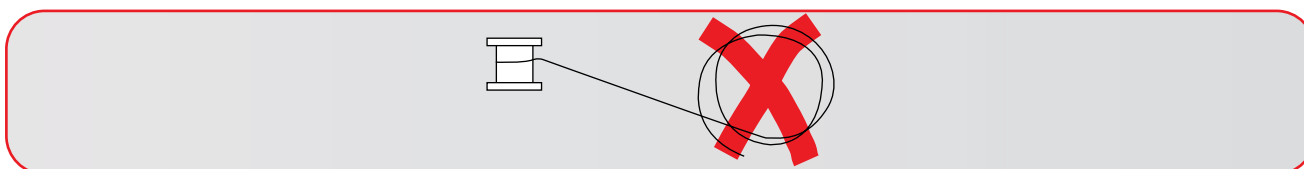
- a) For Unarmoured Cable : $P = 5 D^2$
Where P = Pulling Force
- b) For Armoured Cable : $P = 9 D^2$
Where D = Diameter of cable in mm

SPECIAL PRECAUTIONS FOR HANDLING / INSTALLATION OF LOW SMOKE SHEATHED CABLES

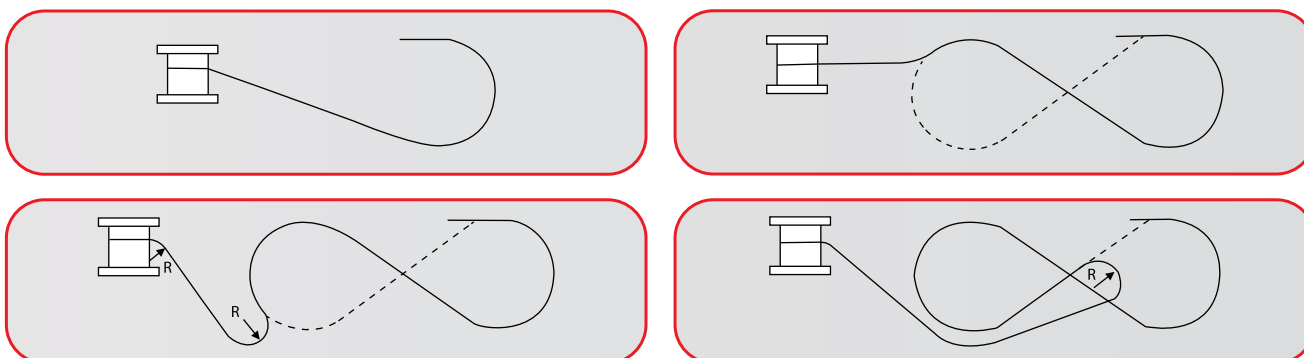
- Cables like LSF sheath need to be handled with care during installation. While special additives are used in formulation of LSF compound to give the typical flame retardant characteristics of Zero Halogen Polymers some mechanical properties deteriorate. The following basic precautions are necessary.
- Cables should not be exposed to sunlight for considerable period before installation i.e. the temp of cables sheath should be below 45°C.
- Preferably installation is done during morning hours when the ambient temperature is low.
- Wire/ropes should not be used directly on the cable sheath for pulling.
- When pulled on cable trays or any uneven surface, special attention is needed to welding or unusually rough terrains.

Rollers and bends should not have any sharpness which may damage sheath.

DO NOT ATTEMPT "COILING" OF CABLE ON THE GROUND



ON THE GROUND CABLE CAN BE FLAKED IN A FIGURE OF EIGHT FORMATION



QD 06/01

Edited by RAMCRO S.p.A. on January 2023

Note: R Minimum Permissible bending radius of cable.

NOTE

Note: Information subject to confirmation





**"WE SUPPLY
WORLDWIDE"**





RAMCRO S.p.A.

via Marzorati, 15 - Nerviano
20014 - Milano - Italy

Get In Touch

T. +39 0331 406 511
F. +39 0331 406 559
E. ramcro@ramcro.it
W ramcro.com

For Website



ramcro.com

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