



شركة كابلات البحر الأحمر. RED SEA CABLES CO.



FIREGUARD

Fire Resistant Cables

Low Smoke Cables

www.rescab.com



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About RESCAB

Red Sea Cables Company (RESCAB) was established as a closed joint stock company In 2008 in the Kingdom of Saudi Arabia with a capital of 370 million SAR. RESCAB is a Member of Al-Abdullatif group of companies. The largest two shareholders in RESCAB are Al-Abdullatif Group Holding Company and Al-Abdullatif Industrial Investment Company.

RESCAB manufactures and distributes power cables and wires of all types and sizes and Caters to the growing demand of the local market, as well as exports to other markets Especially in neighboring countries.

RESCAB plant is located in Yanbu city in the Industrial Area of the Royal Commission of Jubail and Yanbu. The 100,000-square-meter plant is built with state-of-the-art international Technologies and is based on best European know-how in the field of wire and cable Production conforming to the international standards to manufacture products of highest Quality.

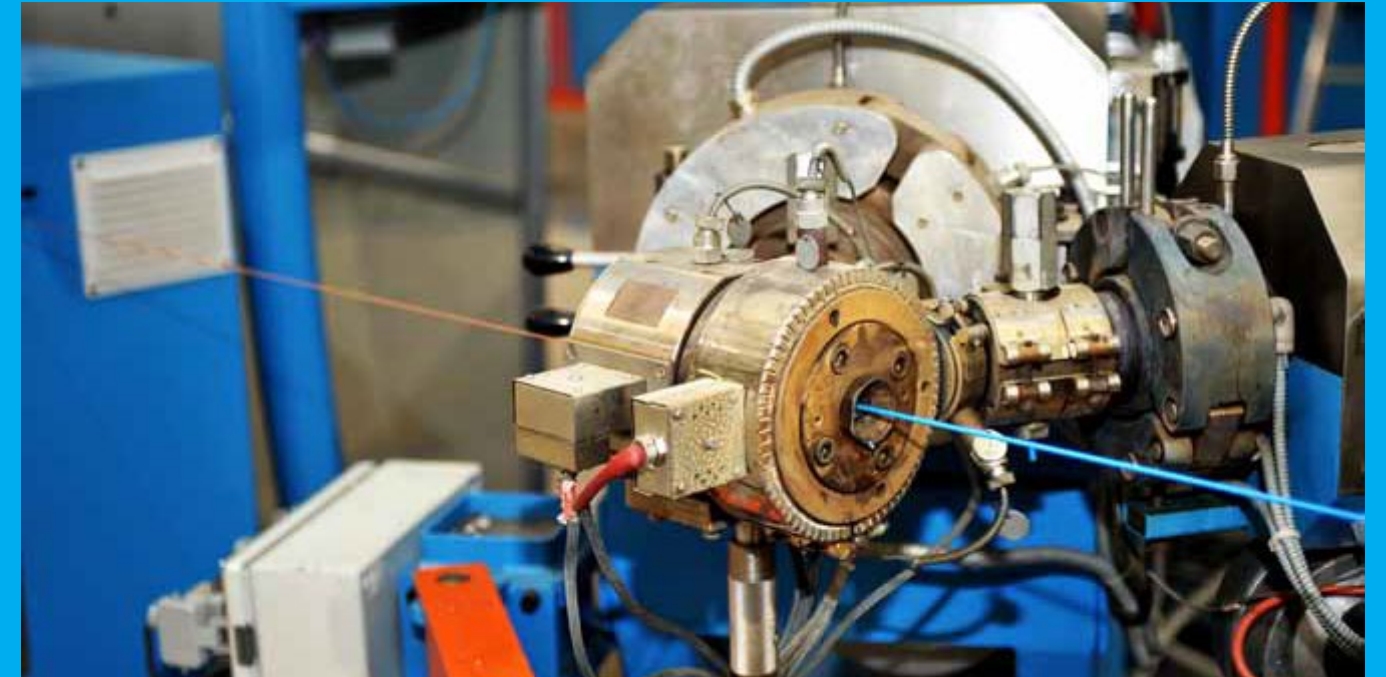
RESCAB offers its products to various sectors like power, oil & gas, infrastructure, utilities, Industries and residential sectors. The company is technically well equipped to adapt to Special requirements in line with the progress in the field of wire and cable manufacturing Technologies.

RESCAB has ISO 9001:2015 certification.

RESCAB vision is to supply safe and reliable products complying with best quality standards, continually enhance product quality through efficient quality management systems and provide efficient after-sales service.

About
US

Part 1: Technical Information



Ampacity of Cables

Cable design parameters and dimensions of cables are based on IEC 60502 -1, which may have a slight variation in practical values applied in cable manufacturing to the best common Engineering practices.

The basis of the standard conditions is the climatic condition of the Kingdom of Saudi Arabia, having following details:

Ambient Air Temperature	40 °C
Ambient Ground Temperature	35 °C
Depth of laying in ground	0.50 m
Soil Thermal Resistivity	1.2 K.m/W

For other Installation conditions or any value of different air/ground temperature, depth of laying, different Soil thermal resistivity, the customer is advised to multiply the tabulated current rating by the de-rating factor Values as in tables 1 to 5 for direct buried cables in groun.

INSTALLATION CONDITIONS FOR DIRECT BURIAL CABLES

For a cable installed direct buried, the following tables will be used to calculate the current rates based on the actual soil thermal resistivity, Ground ambient temperature and the Depth of Laying.

Table 1:

Rating factors for Ground temperature variations

Ground Temprature	15°C	20°C	25°C	30°C	35°C	40°C	50°C	55°C	60°C
XPLE Insulated	1.16	1.13	1.09	1.03	1.0	0.95	0.90	0.85	0.80

Ampacity of Cables

Table 2:

Rating Factors for depth of Laying (to center of cable or trefoil group of cables)

Depth of Laying (m)	Up to 70mm²	95mm² to 240mm²	300mm² and adove
0.50	1.00	1.00	1.00
0.60	0.99	0.98	0.97
0.80	0.97	0.96	0.94
1.00	0.95	0.93	0.92
1.25	0.94	0.92	0.89
1.50	0.93	0.90	0.87
1.75	0.92	0.89	0.86
2.00	0.91	0.88	0.85
2.50	0.90	0.87	0.84

Table 3:

Rating Factors for variation in thermal resistivity of soil (average value)

Thermal resistivity, k.m/W	0.80	1.00	1.20	1.50	2.0	2.50
Rating factor	1.16	1.07	1.00	0.91	0.80	0.71

Ampacity of Cables

Table 4: Group rating factors for circuits of three single core cables in trefoil or laid flat touching, in horizontal formation

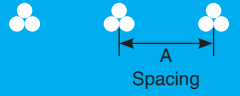
Number of circuits						
	Cables Touching		Cable to Cable Clearance A (Trefoil)			
	Trefoil	Flat Laying	0.15 m	0.30 m	0.45 m	0.60 m
2	0.78	0.81	0.83	0.88	0.91	0.93
3	0.66	0.70	0.73	0.79	0.84	0.87
4	0.61	0.64	0.68	0.73	0.79	0.85
5	0.56	0.60	0.64	0.73	0.79	0.85
6	0.53	0.57	0.61	0.71	0.78	0.82

Table 5: Group rating factors for multicore cables in Horizontal formation (flat formation)

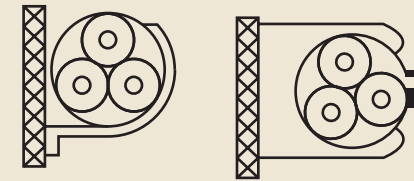
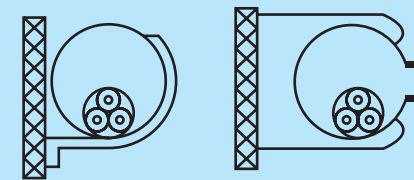
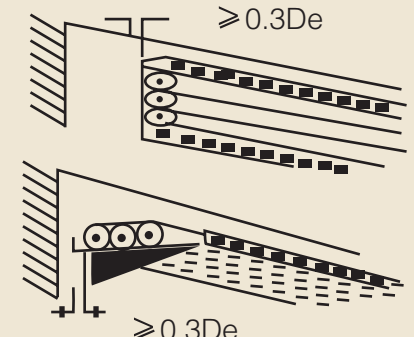
Number of cables in group					
	Cable to Cable Clearance A				
	Touching	0.15 m	0.30 m	0.45 m	0.60 m
2	0.81	0.87	0.91	0.93	0.95
3	0.70	0.78	0.84	0.88	0.90
4	0.63	0.74	0.81	0.86	0.89
5	0.59	0.70	0.78	0.84	0.87
6	0.55	0.68	0.77	0.83	0.87

Ampacity of Cables

INSTALLATION CONDITIONS FOR CABLES IN AIR

Cables installed in air could have many forms of installation methods as described in BS 7671 IEE wiring regulation 17th edition. Some of these methods are like B or C (for cables on Trefoil format laying as in table 6) or like E or F (For cables Laid Flat vertically or horizontally as in table 6). It is assumed that the cables are not exposed to the direct sunlight and away from any external heat sources.

Table 6: Installation Method for Cables

Installation Method	Description	Current carrying Capacity Reference Method
	Single Core multi cables: Fixed on (Clipped direct) or space less than 0.3 times the cable diameter from a wall	C
	Multi Core cable in conduit, spaced less than 0.3 times conduit diameter	B2
	Cables run horizontally or vertically flat on perforated tray For multi core cable De= Cable diameter, and for single core cables De = 3 times cable diameter (flat)	E or F

Ampacity of Cables

Important note for Single core cables:

The conductors of an A.C. circuit installed in Iron pipes of ferromagnetic enclosure shall be arranged so that all line conductors and the neutral conductor, if any, and the appropriate protective conductors are contained in the same enclosure.

When such conductors enter Iron pipes or ferrous enclosure, they shall be arranged such that the conductors are only collectively surrounded by ferrous material.

Table 7:
Rating factors for other ambient air temperature

Air Temperature	25°C	30°C	35°C	40°C	45°C	50°C	55°C	60°C
Cable Type: XPLE Insulated	1.14	1.10	1.05	1.00	0.95	0.90	0.84	0.78

Ampacity

Three and Four core cable with copper conductor,XLPE insulated and LSHF sheathed,0.6/1 KV

Conductor	Conductor Resistance		In Ground		In Air		
			Unarmoured	Armoured	Unarmoured		Armoured
Cross Sectional Area	DC at 20°C	AC at 90°C	Laid in Duct	Direct Laid	Free	In Pipes	Free
mm²	Ohm/km	Ohm/km	amps	amps	amps	amps	amps
1.5	12.1	15.4	22	-	20	17	-
2.5	7.41	9.45	29	-	29	23	-
4	4.61	5.88	37	46	38	31	39
6	3.08	3.93	46	56	48	39	50
10	1.83	2.33	60	74	67	52	67
16	1.15	1.47	75	96	88	68	89
25	0.727	0.927	102	123	115	90	119
35	0.524	0.669	120	147	142	107	147
50	0.387	0.494	145	173	174	129	179
70	0.268	0.343	180	214	220	161	228
95	0.193	0.248	210	252	271	196	276
120	0.153	0.197	245	286	314	226	321
150	0.124	0.160	275	322	363	258	368
185	0.0991	0.129	310	360	414	295	420
240	0.0754	0.0998	365	415	489	346	491
300	0.0601	0.0812	405	468	565	394	557

Short Circuit Rating – Copper XLPE Insulated

Conductor Size	Short Circuit Rating for 1 Second in K amp
10	1.43
16	2.29
25	3.58
35	5.0
50	7.15
70	10.01
95	13.59
120	17.16
150	21.45
185	26.46
240	34.32
300	42.90
400	57.20
500	71.50
630	90.09

Voltage Drop

Approximate voltage drop at 60Hz

Nominal Area of Conductor mm²	Single core in trefoil formation mV/amp/m	Multi core mV/amp/m
1.5	22.0	22.0
2.5	14.1	14.0
4.0	8.7	8.7
6.0	5.9	5.9
10	3.6	3.5
16	2.3	2.2
25	1.5	1.5
35	1.1	1.1
50	0.83	0.81
70	0.60	0.58
95	0.46	0.44
120	0.38	0.37
150	0.33	0.31
158	0.28	0.27
240	0.24	0.23
300	0.21	0.20
400	0.19	0.18
500	0.17	0.16
630	0.16	-

Storage & Installation Recommendation

■ Storage

- Store in a dry, sheltered place
- The ends of the cable must be sealed with caps.

■ Installation

- Minimum recommended installation temperature 0°C.
- Suitable for indoor and outdoor installations, for external exposure the use of a Black sheath is recommended.
- It should be installed in accordance with BS7671/IEE Wiring regulations or any other appropriate national regulations.

■ Bending Radius

- A minimum internal radius of bend of 20 x cable diameter is recommended during installation.

Part 2: LSHF Sheathed Cables



H07Z-R (Cu/LSHF)

Construction: BS EN 50525–3–41

- 1. Conductor: Copper Class 2 in acc. To EN 60228.
- 2. Insulation: Polyolefin cross-linked material of Type EI 5 to EN 50363-5

Characteristics:

- Nominal Voltage: 450/750 V
- Test Voltage: 2.5kV
- Max. Temperature: +90°C
- Flame retardant: EN60332-1

Core Color:

Red, Blue, Black, Brown, Gray, Orange, white and Green/Yellow

Application:

This single core cable is used for indoor fixed installations in dry locations, laid in conduits, as well as in steel support brackets.

Code	N x S* mm²	Insulation thickness (mm)	Approx. Outer Ø(mm)	Conductor Resistance (Ω/km at 20° C)	Standard Packing Length
WNH04R01BUX	1 x 1.5	0.7	3.0	12.1	100 yards/coils
WNH05R01BUX	1 x 2.5	0.8	3.6	7.41	100 yards/coils
WNH06R01BUX	1 x 4	0.8	4.2	4.61	100 yards/coils
WNH07R01BUX	1 x 6	0.8	4.7	3.08	100 yards/coils
WNH08C01BUX	1 x 10	1.0	5.7	1.83	100 yards/coils
WNH09C01BUX	1 x 16	1.0	6.8	1.15	100 yards/coils
WNH10C01BUX	1 x 25	1.2	8.3	0.727	100 yards/coils
WNH11C01BUX	1 x 35	1.2	9.5	0.524	100 yards/coils
WNH12C01BUX	1 x 50	1.4	10.9	0.387	2000 meters/drum
WNH13C01BUX	1 x 70	1.4	12.5	0.268	2000 meters/drum
WNH14C01BUX	1 x 95	1.6	14.6	0.193	2000 meters/drum
WNH15C01BUX	1 x 120	1.6	16.1	0.153	2000 meters/drum
WNH16C01BUX	1 x 150	1.8	17.9	0.124	2000 meters/drum
WNH17C01BUX	1 x 185	2.0	20.0	0.0991	1000 meters/drum
WNH18C01BUX	1 x 240	2.2	22.8	0.0754	1000 meters/drum
WNH19C01BUX	1 x 300	2.4	25.4	0.0601	1000 meters/drum
WNH20C01BUX	1 x 400	2.6	28.4	0.0470	500 meters/drum
WNH21C01BUX	1 x 500	2.8	32.3	0.0366	500 meters/drum
WNH22C01BUX	1 x 630	2.8	36.1	0.0283	500 meters/drum

*Round compacted from 10 mm² and above

H07Z-K (Cu/LSHF)

Construction: BS EN 50525–3–41

- 1. Conductor: Copper Class 5 in acc. To EN 60228.
- 2. Insulation: Polyolefin cross-linked material of Type EI 5 to EN 50363-5

Characteristics:

- Nominal Voltage: 450/750 V
- Test Voltage: 2.5kV
- Max. Temperature: +90°C
- Flame retardant: EN60332-1

Core Color:

Red, Blue, Black, Brown, Gray, Orange, white and Green/Yellow

Application:

This single core cable is used for indoor fixed installations in dry locations, where particular flexibility is required.

Code	N x S mm²	Insulation thickness (mm)	Approx. Outer Ø(mm)	Conductor Resistance (Ω/km at 20° C)	Standard Packing Length
WNH04F01BUX	1 x 1.5	0.7	2.9	13.3	100 yards/coils
WNH05F01BUX	1 x 2.5	0.8	3.6	7.98	100 yards/coils
WNH06F01BUX	1 x 4	0.8	4.1	4.95	100 yards/coils
WNH07F01BUX	1 x 6	0.8	4.7	3.30	100 yards/coils
WNH08F01BUX	1 x 10	1.0	6.1	1.91	100 yards/coils
WNH09F01BUX	1 x 16	1.0	7.2	1.21	100 yards/coils
WNH10F01BUX	1 x 25	1.2	8.6	0.780	100 yards/coils
WNH11F01BUX	1 x 35	1.2	10	0.554	100 yards/coils
WNH12F01BUX	1 x 50	1.4	12	0.386	1000 meters/drum
WNH13F01BUX	1 x 70	1.4	14	0.272	1000 meters/drum
WNH14F01BUX	1 x 95	1.6	15.9	0.206	1000 meters/drum
WNH15F01BUX	1 x 120	1.6	17.7	0.161	1000 meters/drum
WNH16F01BUX	1 x 150	1.8	19.7	0.129	1000 meters/drum
WNH17F01BUX	1 x 185	2.0	21.8	0.106	1000 meters/drum
WNH18F01BUX	1 x 240	2.2	24.7	0.0801	1000 meters/drum

LSHF Unarmoured Cables (Cu/XLPE/LSHF)



Construction: IEC 60502–1

- 1. Conductor: Copper Class 2 in acc. To IEC 60228
- 2. Insulation: Cross linked polyethylene (XLPE) acc. To IEC 60502
- 3. Outer Sheath: LSHF type ST8 acc. To IEC 60502

Characteristics:

- Nominal Voltage: 600/1000 V
- Test Voltage: 3.5 kV
- Max. Temperature: +90°C
- Flame retardant: IEC60332-1

Core Color:

Black (Red on request)

Application:

This cable is used for outdoor and indoor installations in damp and wet locations.

Code	N x S* mm²	Insulation thickness (mm)	Sheath thickness (mm)	Approx. Outer Ø(mm)	Conductor Resistance (Ω/km at 20° C)	Standard Packing Length
1NX08C01SUF	1 x 10	0.7	1.4	8.4	1.83	1000
1NX09C01SUF	1 x 16	0.7	1.4	9.5	1.15	1000
1NX10C01SUF	1 x 25	0.9	1.4	11	0.727	1000
1NX11C01SUF	1 x 35	0.9	1.4	12.2	0.524	1000
1NX12C01SUF	1 x 50	1.0	1.4	13.4	0.387	1000
1NX13C01SUF	1 x 70	1.1	1.4	15.2	0.268	1000
1NX14C01SUF	1 x 95	1.1	1.5	17.1	0.193	1000
1NX15C01SUF	1 x 120	1.2	1.5	18.8	0.153	1000
1NX16C01SUF	1 x 150	1.4	1.6	20.8	0.124	1000
1NX17C01SUF	1 x 185	1.6	1.6	22.9	0.0991	1000
1NX18C01SUF	1 x 240	1.7	1.7	25.7	0.0754	1000
1NX19C01SUF	1 x 300	1.8	1.8	28.3	0.0601	1000
1NX20C01SUF	1 x 400	2.0	1.9	31.5	0.0470	500
1NX21C01SUF	1 x 500	2.2	2.0	35.6	0.0366	500
1NX22C01SUF	1 x 630	2.4	2.2	40.2	0.0283	500

*Round compacted

Multi-Core LSHF Unarmoured Cables (Cu/XLPE/LSHF)



Construction: IEC 60502–1

- 1. Conductor: Copper Class 2 in acc. To IEC 60228
- 2. Insulation: Cross linked polyethylene (XLPE) acc. To IEC 60502
- 3. Outer Sheath: LSHF type ST8 acc. To IEC 60502

Characteristics:

- Nominal Voltage: 600/1000 V
- Test Voltage: 3.5 kV
- Max. Temperature: +90°C
- Flame retardant: IEC60332-1

Core Color:

3 ½ Cores: Red, Yellow, Blue and Black.

4 Cores: Red, Yellow, Blue and Black.

Application:

This cable is used for outdoor and indoor installations in damp and wet locations.

Code	N x S* mm²	Insulation thickness (mm)	Sheath thickness (mm)	Approx. Outer Ø(mm)	Conductor Resistance (Ω/km at 20° C)	Standard Packing Length
1NX51C3HSUF	3x16+10	0.7/0.7	1.8	19.8	1.15/1.83	1000
1NX52C3HSUF	3x25+16	0.9/0.7	1.8	23.8	0.727/1.15	1000
1NX53C3HSUF	3x35+16	0.9/0.7	1.8	25.6	0.524/1.15	1000
1NX54S3HSUF	3x50+25	1.0/0.9	1.8	28.2	0.387/0.727	1000
1NX55S3HSUF	3x70+35	1.1/0.9	1.9	32.4	0.268/0.524	500
1NX56S3HSUF	3x95+50	1.1/1.0	2.1	36.2	0.193/0.387	500
1NX57S3HSUF	3x120+70	1.2/1.1	2.2	40.0	0.153/0.268	500
1NX58S3HSUF	3x150+70	1.4/1.1	2.3	44.3	0.124/0.268	500
1NX59S3HSUF	3x185+95	1.6/1.1	2.5	49.2	0.0991/0.193	500
1NX60S3HSUF	3x240+120	1.7/1.2	2.7	55.0	0.0754/0.153	500
1NX61S3HSUF	3x300+150	1.8/1.4	2.9	60.3	0.0601/0.124	500

* Compacted round for 10 mm² up to 35 and sector for above sizes (Phase)

**Compacted round (Neutral)

Code	N x S* mm²	Insulation thickness (mm)	Sheath thickness (mm)	Approx. Outer Ø(mm)	Conductor Resistance (Ω/km at 20° C)	Standard Packing Length
1NX04R04SUF	4x1.5	0.7	1.8	13.4	12.1	1000
1NX05R04SUF	4x2.5	0.7	1.8	14.3	7.41	1000
1NX06R04SUF	4x4	0.7	1.8	15.8	4.61	1000
1NX07R04SUF	4x6	0.7	1.8	17.0	3.08	1000
1NX08C04SUF	4x10	0.7	1.8	18.2	1.83	1000
1NX09C04SUF	4x16	0.7	1.8	21.1	1.15	1000
1NX10C04SUF	4x25	0.9	1.8	24.7	0.727	1000
1NX11C04SUF	4x35	0.9	1.8	27.2	0.524	1000
1NX12S04SUF	4x50	1.0	1.9	29.5	0.387	1000
1NX13S04SUF	4x70	1.1	2.0	34.0	0.268	500
1NX14S04SUF	4x95	1.1	2.1	37.7	0.193	500
1NX15S04SUF	4x120	1.2	2.3	42.1	0.153	500
1NX16S04SUF	4x150	1.4	2.4	46.7	0.124	500
1NX17S04SUF	4x185	1.6	2.6	51.6	0.0991	500
1NX18S04SUF	4x240	1.7	2.8	57.7	0.0754	500
1NX19S04SUF	4x300	1.8	3.0	63.4	0.0601	500

*Round compacted for 10 mm² up to 35 mm² and sector for above sizes

LSHF Armoured Cables (Cu/XLPE/SWA/LSHF)



Construction: IEC 60502–1, BS 6724

1. Conductor: Copper Class 2 in acc. To IEC 60228
2. Insulation: Cross linked polyethylene (XLPE) acc. To IEC 60502
3. Armoring: Galvanized steel wire
4. Outer Sheath: LSHF type ST8 acc. To IEC 60502 and LTS1 BS 7655-6.1

Characteristics:

- Nominal Voltage: 600/1000 V
- Test Voltage: 3.5 kV
- Max. Temperature: +90°C
- Flame retardant: IEC60332-1, IEC 60332-3-24

Core Color:

3 ½ Cores: Red, Yellow, Blue and Black.

4 Cores: Red, Yellow, Blue and Black.

Application:

This cable is used for outdoor installations in damp and wet locations.

Code	N x S* mm²	Insulation thickness (mm)	Steel wire Diameter (mm)	Sheath thickness (mm)	Approx. Outer Ø (mm)	Conductor Resistance (Ω/km at 20° C)	Standard Packing Length meters/drum
1NX51C3HSSWF	3 x16+10	0.7/0.7	1.25	1.8	23.3	1.15/1.83	1000
1NX52C3HSSWF	3x25+16	0.9/0.7	1.6	1.8	27.5	0.727/1.15	1000
1NX53C3HSSWF	3x35+16	0.9/0.7	1.6	1.8	29.8	0.524/1.15	1000
1NX54S3HSSWF	3x50+25	1.0/0.9	1.6	1.9	32.1	0.387/0.727	1000
1NX55S3HSSWF	3x70+35	1.1/0.9	2.0	2.1	37.3	0.268/0.524	500
1NX56S3HSSWF	3x95+50	1.1/1.0	2.0	2.2	40.9	0.193/0.387	500
1NX57S3HSSWF	3x120+70	1.2/1.1	2.0	2.3	44.7	0.153/0.268	500
1NX58S3HSSWF	3x150+70	1.4/1.1	2.5	2.5	50.2	0.124/0.268	500
1NX59S3HSSWF	3x185+95	1.6/1.1	2.5	2.7	55.1	0.0991/0.193	500
1NX60S3HSSWF	3x240+120	1.7/1.2	2.5	2.9	60.9	0.0754/0.153	500
1NX61S3HSSWF	3x300+150	1.8/1.4	2.5	3.0	66.0	0.0601/0.124	250

* Compacted round for 10 mm² up to 35 and sector for above sizes (Phase)

** Compacted round (Neutral)

Code	N x S* mm²	Insulation thickness (mm)	Steel wire Diameter (mm)	Sheath thickness (mm)	Approx. Outer Ø (mm)	Conductor Resistance (Ω/km at 20° C)	Standard Packing Length meters/drum
1NX07R04SSWF	4x6	0.7	1.25	1.8	20.0	3.08	1000
1NX08C04SSWF	4x10	0.7	1.25	1.8	21.4	1.83	1000
1NX09C04SSWF	4x16	0.7	1.6	1.8	24.6	1.15	1000
1NX10C04SSWF	4x25	0.9	1.6	1.8	28.2	0.727	1000
1NX11C04SSWF	4x35	0.9	1.6	1.9	31.1	0.524	1000
1NX12S04SSWF	4x50	1.0	1.6	2.0	33.4	0.387	1000
1NX13S04SSWF	4x70	1.1	2.0	2.2	38.9	0.268	500
1NX14S04SSWF	4x95	1.1	2.0	2.3	42.6	0.193	500
1NX15S04SSWF	4x120	1.2	2.5	2.5	48.0	0.153	500
1NX16S04SSWF	4x150	1.4	2.5	2.6	52.6	0.124	500
1NX17S04SSWF	4x185	1.6	2.5	2.8	57.5	0.0991	500
1NX18S04SSWF	4x240	1.7	2.5	3.0	63.6	0.0754	500
1NX19S04SSWF	4x300	1.8	2.5	3.2	69.3	0.0601	250

*Round compacted for 10 mm² up to 35 mm² and sector for above sizes

Part 3: FIREGUARD Fire Resistant Cables



RESCAB FIRE GUARD Cable

It is not a cable only but a solution

Red Sea Cables Company enjoys a track record in wires; cords and power cables manufactured in KSA and successfully we introduce our new LSHF fire resistant power cables and wires and we will sell under the brand name of “Fire guard”.

RESCAB provides fire resistant cables meeting IEC 60331-21; BS 6387 and BS 7846-F2 requirements. We provides these cables with LSHF sheath meeting IEC 61034; IEC 60754 and IEC 60332-3 Cat C and A.

FIRE TESTS many tests are carried out during manufacturing or as final inspections. You can find here the main tests concerning the behavior of cables under fire conditions, it is important to verify all required performances and give the customers the full compliance to the requirements.

RESCAB is proud of its new product passed fire tests at UK labs.

BS 6387

Following tests are carried out to verify if a cable is capable of maintaining circuit integrity under fire condition, fire with water, and fire with mechanical shocks. During the tests the cables are maintained at their rated voltage.

Fire Resistance (Cat. C)

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



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 sprays.



Fire Resistance with Mechanical Shocks (Cat. Z)

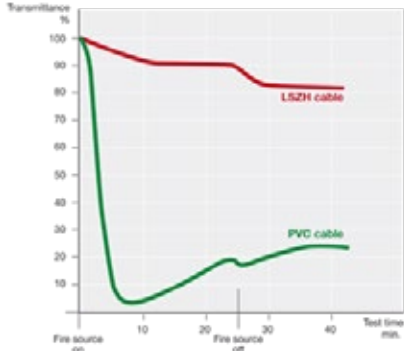
The cable is mounted on a vertical panel and shocked with a steel bar for 15 minutes while submitted to the action of a flame.



BS EN 61034–2

Smoke Density In a 3 m cube metal cabinet

Standard	BS EN 61034-2, IEC 61034-2
Required values	≥ 60%



IEC 60331–21

Fire Resistance

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.

No break or short circuit should occur.



BS EN 60332–3

Fire Propagation Test 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 for a specific time (20 or 40 minutes). Cables must not burn for more than 2,5 m.



BS EN 60332–1, BS EN 60332–2

Flame Propagation Test 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 application time of the flame is according to the cable diameter. At the end of the test the burnt portion of cable must not be 50 mm close to the higher clamp.



IEC 60754–1

HCl Emission

Each nonmetallic material of the cable (~1.0 g) is burnt into a tube furnace. A controlled air flow rate absorbs the generated gases in an appropriate solution. HCL are finally measured.

Standard	IEC 60754-1
Required values	≤0,5% HCl



IEC 60754–2

Smoke Corrosivity

This test allows estimation of corrosiveness against metals of gases released when cables burn. Materials composing the cable are burnt into a tubular oven. A controlled air flow rate absorbs the generated gases in a specific distilled water solution. pH and conductivity are finally measured.

Standard	IEC 60754-2
Required values	pH ≥4,3 Conductivity ≤100 μS.cm-1



FIREGUARD 1 (Cu/MICA/LSHF)



Construction: BS EN 50525–3–41, BS 6387 CWZ, IEC 60331–21

1. Conductor: Copper Class 2 in acc. To EN 60228
2. Mica tape
3. Insulation: Polyolefin cross-linked material of Type EI 5 to EN 50363-5

Characteristics:

- Nominal Voltage: 450/750 V
- Test Voltage: 2.5kV
- Max. Temperature: +90°C
- Flame retardant: EN60332-1

Core Color:

Red, Blue, Black, Brown, Gray, Orange, white and Green/Yellow

Application:

This single core cable is especially designed for applications where integrity of electrical circuit is critical and essential so that power supply can be maintained even under extreme condition such as fire.

1. Fire extinguishing systems to operate sprinklers
2. Control panels
3. Exit signs in high rising buildings
4. Hotels, hospitals and other public facilities

Code	N x S mm²	Insulation thickness (mm)	Approx. Outer Ø(mm)	Conductor Resistance (Ω/km at 20° C)	Standard Packing Length
WMH08C01BUX	1 x 10	1.0	6.5	1.83	1000
WMH09C01BUX	1 x 16	1.0	7.6	1.15	1000
WMH10C01BUX	1 x 25	1.2	9.1	0.727	1000
WMH11C01BUX	1 x 35	1.2	10.3	0.524	1000
WMH12C01BUX	1 x 50	1.4	11.7	0.387	1000
WMH13C01BUX	1 x 70	1.4	13.3	0.268	1000
WMH14C01BUX	1 x 95	1.6	15.4	0.193	1000
WMH15C01BUX	1 x 120	1.6	16.9	0.153	1000
WMH16C01BUX	1 x 150	1.8	18.5	0.124	1000
WMH17C01BUX	1 x 185	2.0	20.8	0.0991	1000
WMH18C01BUX	1 x 240	2.2	23.4	0.0754	1000
WMH19C01BUX	1 x 300	2.4	26.1	0.0601	1000
WMH20C01BUX	1 x 400	2.6	29.2	0.0470	500
WMH21C01BUX	1 x 500	2.8	33.1	0.0366	500
WMH22C01BUX	1 x 630	2.8	36.6	0.0283	500

*Round compacted

FIREGUARD 2 (Cu/MICA/XLPE/LSHF)

Construction: IEC 60502–1, BS 6387 CWZ

- 1. Conductor: Copper Class 2 in acc. To IEC 60228
- 2. Insulation: Crosslinked polyethylene (XLPE) acc. To IEC 60502
- 3. Mica tape
- 4. Outer Sheath: LSHF type ST8 acc. To IEC 60502

Characteristics:

- Nominal Voltage: 600/1000 V
- Max. Temperature: +90°C
- Test Voltage: 3.5 kV
- Flame retardant: IEC60332-1

Core Color:

- 1 Core: Black (Red on request).
- 3 ½ Cores: Red, Yellow, Blue and Black
- 4 Cores: Red, Yellow, Blue and Black.

Application:

This cable is specially designed for areas where integrity of electrical circuit is critical and essential so that power supply can be maintained even under extreme condition such as fire.

- 1. Emergency lightings, control and power circuits
- 2. Power stations
- 3. Fire alarm system
- 4. Underground tunnels
- 5. Communication systems
- 6. Lifts
- 7. High rise buildings

Code	N x S* mm²	Insulation thickness (mm)	Sheath thickness (mm)	Approx. Outer Ø(mm)	Conductor Resistance (Ω/km at 20° C)	Standard Packing Length
1MX08C01SUF	1 x 10	0.7	1.4	9.2	1.83	1000
1MX09C01SUF	1 x 16	0.7	1.4	10.3	1.15	1000
1MX10C01SUF	1 x 25	0.9	1.4	11.8	0.727	1000
1MX11C01SUF	1 x 35	0.9	1.4	12.8	0.524	1000
1MX12C01SUF	1 x 50	1.0	1.4	14.2	0.387	1000
1MX13C01SUF	1 x 70	1.1	1.4	16.0	0.268	1000
1MX14C01SUF	1 x 95	1.1	1.5	17.9	0.193	1000
1MX15C01SUF	1 x 120	1.2	1.5	19.6	0.153	1000
1MX16C01SUF	1 x 150	1.4	1.6	21.5	0.124	1000
1MX17C01SUF	1 x 185	1.6	1.6	23.7	0.0991	1000
1MX18C01SUF	1 x 240	1.7	1.7	26.5	0.0754	1000
1MX19C01SUF	1 x 300	1.8	1.8	29.1	0.0601	1000
1MX20C01SUF	1 x 400	2.0	1.9	32.3	0.0470	500
1MX21C01SUF	1 x 500	2.2	2.0	36.4	0.0366	500
1MX22C01SUF	1 x 630	2.4	2.2	41.0	0.0283	500

*Round compacted



Code	N x S* mm²	Insulation thickness (mm)	Sheath thickness (mm)	Approx. Outer Ø(mm)	Conductor Resistance (Ω/km at 20° C)	Standard Packing Length
1MX51C3HSUF	3x16+10	0.7/0.7	1.8	22.4	1.15/1.83	1000
1MX52C3HSUF	3x25+16	0.9/0.7	1.8	25.8	0.727/1.15	1000
1MX53C3HSUF	3x35+16	0.9/0.7	1.8	27.6	0.524/1.15	1000
1MX54S3HSUF	3x50+25	1.0/0.9	1.8	30.5	0.387/0.727	1000
1MX55S3HSUF	3x70+35	1.1/0.9	1.9	35.2	0.268/0.524	500
1MX56S3HSUF	3x95+50	1.1/1.0	2.1	38.1	0.193/0.387	500
1MX57S3HSUF	3x120+70	1.2/1.1	2.2	42.0	0.153/0.268	500
1MX58S3HSUF	3x150+70	1.4/1.1	2.3	46.9	0.124/0.268	500
1MX59S3HSUF	3x185+95	1.6/1.1	2.5	51.9	0.0991/0.193	500
1MX60S3HSUF	3x240+120	1.7/1.2	2.7	58.1	0.0754/0.153	500
1MX61S3HSUF	3x300+150	1.8/1.4	2.9	63.7	0.0601/0.124	500

* Compacted round for 10 mm² up to 35 and sector for above sizes (Phase)

**Compacted round (Neutral)

Code	N x S* mm²	Insulation thickness (mm)	Sheath thickness (mm)	Approx. Outer Ø(mm)	Conductor Resistance (Ω/km at 20° C)	Standard Packing Length
1MX08C04SUF	4x10	0.7	1.8	19.9	1.83	1000
1MX09C04SUF	4x16	0.7	1.8	22.6	1.15	1000
1MX10C04SUF	4x25	0.9	1.8	26.2	0.727	1000
1MX11C04SUF	4x35	0.9	1.8	28.6	0.524	1000
1MX12S04SUF	4x50	1.0	1.9	30.9	0.387	1000
1MX13S04SUF	4x70	1.1	2.0	35.4	0.268	500
1MX14S04SUF	4x95	1.1	2.1	38.1	0.193	500
1MX15S04SUF	4x120	1.2	2.3	42.6	0.153	500
1MX16S04SUF	4x150	1.4	2.4	47.1	0.124	500
1MX17S04SUF	4x185	1.6	2.6	52.1	0.0991	500
1MX18S04SUF	4x240	1.7	2.8	58.3	0.0754	500
1MX19S04SUF	4x300	1.8	3.0	63.9	0.0601	500

*Round compacted for 10 mm² up to 35 mm² and sector for above sizes

FIREGUARD 3 (Cu/MICA/XLPE/SWA/LSHF)

Construction: IEC 60502–1, BS 6724, BS 6387 CWZ

- 1. Conductor: Copper Class 2 in acc. To IEC 60228
- 2. Mica tape
- 3. Insulation: Cross linked polyethylene (XLPE) acc. To IEC 60502
- 4. Armoring: Galvanized steel wire
- 5. Outer Sheath: LSHF type ST8 acc. To IEC 60502 and LTS1 BS 7655-6.1



Characteristics:

- Nominal Voltage: 600/1000 V
- Max. Temperature: +90°C
- Test Voltage: 3.5 kV
- Flame retardant: IEC60332-1, IEC 60332-3-24

Core Color:

- 3 ½ Cores: Red, Yellow, Blue and Black.
- 4 Cores: Red, Yellow, Blue and Black.

Application:

This cable is specially designed for areas where integrity of electrical circuit is critical and essential so that power supply can be maintained even under extreme condition such as fire.

As these cables are armored, they are suitable for laying in cable trenches or ducts.

- 1. Emergency lightings circuits
- 2. Signal lights
- 3. Fume extractors

Code	N x S* mm²	Insulation thickness (mm)	Steel wire Diameter (mm)	Sheath thickness (mm)	Approx. Outer Ø (mm)	Conductor Resistance (Ω/km at 20° C)	Standard Packing Length meters/drum
1MX51C3HSSWF	3x16+10	0.7/0.7	1.25	1.8	25.0	1.15/1.83	1000
1MX52C3HSSWF	3x25+16	0.9/0.7	1.6	1.8	29.0	0.727/1.15	1000
1MX53C3HSSWF	3x35+16	0.9/0.7	1.6	1.8	30.8	0.524/1.15	1000
1MX54S3HSSWF	3x50+25	1.0/0.9	1.6	1.9	34.5	0.387/0.727	1000
1MX55S3HSSWF	3x70+35	1.1/0.9	2.0	2.1	40.0	0.268/0.524	500
1MX56S3HSSWF	3x95+50	1.1/1.0	2.0	2.2	42.7	0.193/0.387	500
1MX57S3HSSWF	3x120+70	1.2/1.1	2.0	2.3	46.8	0.153/0.268	500
1MX58S3HSSWF	3x150+70	1.4/1.1	2.5	2.5	52.7	0.124/0.268	500
1MX59S3HSSWF	3x185+95	1.6/1.1	2.5	2.7	57.7	0.0991/0.193	500
1MX60S3HSSWF	3x240+120	1.7/1.2	2.5	2.9	63.9	0.0754/0.153	500
1MX61S3HSSWF	3x300+150	1.8/1.4	2.5	3.0	69.3	0.0601/0.124	250

* Compacted round for 10 mm² up to 35 and sector for above sizes (Phase)
**Compacted round (Neutral)

Code	N x S* mm²	Insulation thickness (mm)	Steel wire Diameter (mm)	Sheath thickness (mm)	Approx. Outer Ø (mm)	Conductor Resistance (Ω/km at 20° C)	Standard Packing Length meters/drum
1MX08C04SSWF	4x10	0.7	1.25	1.8	22.9	1.83	1000
1MX09C04SSWF	4x16	0.7	1.6	1.8	26.2	1.15	1000
1MX10C04SSWF	4x25	0.9	1.6	1.8	29.8	0.727	1000
1MX11C04SSWF	4x35	0.9	1.6	1.9	32.4	0.524	1000
1MX12S04SSWF	4x50	1.0	1.6	2.0	34.7	0.387	1000
1MX13S04SSWF	4x70	1.1	2.0	2.2	40.2	0.268	500
1MX14S04SSWF	4x95	1.1	2.0	2.3	42.9	0.193	500
1MX15S04SSWF	4x120	1.2	2.5	2.5	48.4	0.153	500
1MX16S04SSWF	4x150	1.4	2.5	2.6	52.9	0.124	500
1MX17S04SSWF	4x185	1.6	2.5	2.8	57.9	0.0991	500
1MX18S04SSWF	4x240	1.7	2.5	3.0	64.1	0.0754	500
1MX19S04SSWF	4x300	1.8	2.5	3.2	69.7	0.0601	250

*Round compacted for 10 mm² up to 35 mm² and sector for above sizes

Certificates

■ Test Reports:



■ ISO:





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