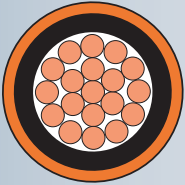


# FR-MI 90 / Single Core / Double Insulated

BETAflam® Fire Resistant Safety Cables 0.6 / 1 kV, acc. to BS 6387 C.W.Z., LSOH



## Advantages

- High safety standard: BS 6387 C.W.Z, fully tested by LPCB
- Halogen and silicone free
- Operating temperature 90 °C
- In compliance with RoHS directive
- Mineral filled fire resistant materials

## Application

Power cable 0.6 / 1 kV for fixed installation in cable systems with improved fire performance and circuit integrity.

Use for: Fire Alarm circuits, Fire Detection circuits, Emergency signal / Control circuits, Fire fighting systems (water pumps), Smoke Exhaust Systems etc. Especially recommended in areas where human and animal life as well as valuable property are exposed to high risk in case of fire.

## Construction

- **Conductor:** Bare annealed copper, acc. IEC 60228 class 2
- **Flame barrier:** MICA tape
- **Insulation:** BETAflam® mineral copolymer
- **Core identification:** White, Black or Green-Yellow (other colours on request)
- **Sheath:** BETAflam® mineral copolymer, Orange

## Technical specification

- **Rated voltage:**  $U_0/U$  0.6 / 1 kV
- **Test voltage:** 4 kV / 50 Hz
- **Temperature range:**
  - Operation temperature from – 30 °C to + 90 °C
  - Laying temperature from – 5 °C to + 70 °C
  - Short circuit temperature + 250 °C (temperature peak ≤ 5 s)

## Bending radius:

During laying > 10 × outer Ø

Fixed installed > 6 × outer Ø

- **Laying conditions:** For fixed installation indoor, in air, trays or dry tubes/ducts. Outdoor laying only when protected from direct sunlight and other external impacts.

## Material properties

- **Halogen free:** IEC 60754-1; BS EN 50267-2-1; VDE 0482-267-2-1
- **No corrosive gases:** IEC 60754-2; BS EN 50267-2-2; VDE 0482-267-2-2
- **No toxic gases:** NES 02-713; NF C20-454; BS EN 50267-2-1
- **Low smoke density:** IEC 61034-1 & -2; BS EN 61034-2; VDE 0482-1034-1 & -2

## Fire performance

- **Flame retardant:** IEC 60332-1; BS EN 60332-1; VDE 0482-332-1
- **No flame propagation:** IEC 60332-3-24; EN 60332-3-24; VDE 0482-266-1 & -2-4
- **Circuit integrity:**
  - BS 6387 C.W.Z. / Ø ≤ 20 mm
  - IEC 60331-21; VDE 0472-814

Cross section	Part no.	Core colour	Conductor stranding	Nominal thickness insulation	Nominal diameter core	Nominal thickness sheath	Nominal diameter cable	Approx. weight	Current Rating <sup>1</sup>		AC Voltage Drop		Fire Load
									1 phase <sup>2</sup>	3 phase <sup>3</sup>	1 phase system	3 phase system	
mm <sup>2</sup>	LSA		n × Ø mm	mm	Ø mm	mm	Ø mm	kg / km	A	A	mV / Am	mV / Am	kWh / m
1.5	Ø	white	7 × 0.53	0.60	3.45	0.95	5.35	46	26	24	24.90	21.52	0.11
1.5	301838	black	7 × 0.53	0.60	3.45	0.95	5.35	46	26	24	24.90	21.52	0.11
1.5	Ø	g/y	7 × 0.53	0.60	3.45	0.95	5.35	46	26	24	24.90	21.52	0.11
2.5	Ø	white	7 × 0.68	0.68	4.00	1.00	6.00	63	35	33	15.32	13.22	0.13
2.5	301839	black	7 × 0.68	0.68	4.00	1.00	6.00	63	35	33	15.32	13.22	0.13
2.5	Ø	g/y	7 × 0.68	0.68	4.00	1.00	6.00	63	35	33	15.32	13.22	0.13
4	Ø	white	7 × 0.85	0.78	4.65	1.05	6.75	78	47	44	9.55	8.27	0.16
4	301840	black	7 × 0.85	0.78	4.65	1.05	6.75	78	47	44	9.55	8.27	0.16
4	Ø	g/y	7 × 0.85	0.78	4.65	1.05	6.75	78	47	44	9.55	8.27	0.16
6	Ø	white	7 × 1.04	0.83	5.15	1.05	7.25	108	61	57	6.47	5.56	0.19
6	301841	black	7 × 1.04	0.83	5.15	1.05	7.25	108	61	57	6.47	5.56	0.19
6	Ø	g/y	7 × 1.04	0.83	5.15	1.05	7.25	108	61	57	6.47	5.56	0.19
10	Ø	white	7 × 1.32	1.05	6.65	1.40	9.45	177	86	79	3.92	3.35	0.31
10	301842	black	7 × 1.32	1.05	6.65	1.40	9.45	177	86	79	3.92	3.35	0.31
10	Ø	g/y	7 × 1.32	1.05	6.65	1.40	9.45	177	86	79	3.92	3.35	0.31
16	Ø	white	7 × 1.72	1.05	7.50	1.40	10.30	250	115	105	2.53	2.14	0.35
16	301843	black	7 × 1.72	1.05	7.50	1.40	10.30	250	115	105	2.53	2.14	0.35
16	Ø	g/y	7 × 1.72	1.05	7.50	1.40	10.30	250	115	105	2.53	2.14	0.35
25	Ø	white	7 × 2.15	1.20	9.05	1.40	11.85	355	156	141	1.66	1.39	0.43
25	301844	black	7 × 2.15	1.20	9.05	1.40	11.85	355	156	141	1.66	1.39	0.43
25	Ø	g/y	7 × 2.15	1.20	9.05	1.40	11.85	355	156	141	1.66	1.39	0.43
35	Ø	white	7 × 2.52	1.20	10.20	1.40	13.00	456	194	174	1.24	1.03	0.49
35	301845	black	7 × 2.52	1.20	10.20	1.40	13.00	456	194	174	1.24	1.03	0.49
35	Ø	g/y	7 × 2.52	1.20	10.20	1.40	13.00	456	194	174	1.24	1.03	0.49
50	Ø	white	19 × 1.79	1.40	11.90	1.40	14.70	600	239	212	0.96	0.78	0.60
50	301846	black	19 × 1.79	1.40	11.90	1.40	14.70	600	239	212	0.96	0.78	0.60
50	Ø	g/y	19 × 1.79	1.40	11.90	1.40	14.70	600	239	212	0.96	0.78	0.60
70	Ø	white	19 × 2.15	1.40	13.60	1.50	16.60	813	304	273	0.71	0.57	0.72
70	301847	black	19 × 2.15	1.40	13.60	1.50	16.60	813	304	273	0.71	0.57	0.72
70	Ø	g/y	19 × 2.15	1.40	13.60	1.50	16.60	813	304	273	0.71	0.57	0.72
95	Ø	white	19 × 2.52	1.60	15.80	1.60	19.00	1'101	381	336	0.55	0.43	0.91
95	301848	black	19 × 2.52	1.60	15.80	1.60	19.00	1'101	381	336	0.55	0.43	0.91
95	Ø	g/y	19 × 2.52	1.60	15.80	1.60	19.00	1'101	381	336	0.55	0.43	0.91
120	Ø	white	37 × 2.02	1.60	17.50	1.65	20.80	1'372	447	395	0.47	0.36	1.03
120	301849	black	37 × 2.02	1.60	17.50	1.65	20.80	1'372	447	395	0.47	0.36	1.03
120	Ø	g/y	37 × 2.02	1.60	17.50	1.65	20.80	1'372	447	395	0.47	0.36	1.03
150	Ø	white	37 × 2.23	1.80	19.50	1.70	22.90	1'645	517	452	0.41	0.31	1.23
150	301850	black	37 × 2.23	1.80	19.50	1.70	22.90	1'645	517	452	0.41	0.31	1.23
150	Ø	g/y	37 × 2.23	1.80	19.50	1.70	22.90	1'645	517	452	0.41	0.31	1.23
185	Ø	white	37 × 2.49	2.00	21.70	1.80	25.30	2'021	603	525	0.36	0.27	1.47
185	301851	black	37 × 2.49	2.00	21.70	1.80	25.30	2'021	603	525	0.36	0.27	1.47
185	Ø	g/y	37 × 2.49	2.00	21.70	1.80	25.30	2'021	603	525	0.36	0.27	1.47
240	Ø	white	61 × 2.23	2.20	24.50	1.90	28.30	2'598	724	627	0.31	0.22	1.81
240	301852	black	61 × 2.23	2.20	24.50	1.90	28.30	2'598	724	627	0.31	0.22	1.81
240	Ø	g/y	61 × 2.23	2.20	24.50	1.90	28.30	2'598	724	627	0.31	0.22	1.81

Ø = On request  
g/y = Green/Yellow

1 AC circuit, max. conductor temperature 90 °C  
2 Free in air, spaced  
3 Open tray, touching

Cross section	Part no.	Core colour	Conductor stranding	Nominal thickness insulation	Nominal diameter core	Nominal thickness sheath	Nominal diameter cable	Approx. weight	Current Rating <sup>1</sup>		AC Voltage Drop		Fire Load
									1 phase <sup>2</sup>	3 phase <sup>3</sup>	1 phase system	3 phase system	
mm <sup>2</sup>	LSA		n × Ø mm	mm	Ø mm	mm	Ø mm	kg / km	A	A	mV / Am	mV / Am	kWh / m
300	Ø	white	61 × 2.52	2.45	28.30	2.00	32.30	3'440	856	737	0.28	0.20	2.31
300	301853	black	61 × 2.52	2.45	28.30	2.00	32.30	3'440	856	737	0.28	0.20	2.31
300	Ø	g/y	61 × 2.52	2.45	28.30	2.00	32.30	3'440	856	737	0.28	0.20	2.31
400	Ø	white	61 × 2.85	2.65	31.70	2.15	36.00	4'394	1'007	862	0.25	0.17	2.65
400	301854	black	61 × 2.85	2.65	31.70	2.15	36.00	4'394	1'007	862	0.25	0.17	2.65
400	Ø	g/y	61 × 2.85	2.65	31.70	2.15	36.00	4'394	1'007	862	0.25	0.17	2.65
500	Ø	white	61 × 3.20	2.85	35.30	2.30	39.90	5'435	1'179	1'008	0.23	0.16	3.36
500	301855	black	61 × 3.20	2.85	35.30	2.30	39.90	5'435	1'179	1'008	0.23	0.16	3.36
500	Ø	g/y	61 × 3.20	2.85	35.30	2.30	39.90	5'435	1'179	1'008	0.23	0.16	3.36
630	Ø	white	127 × 2.52	3.05	39.70	2.40	44.50	6'965	1'385	1'184	0.21	0.14	4.06
630	301856	black	127 × 2.52	3.05	39.70	2.40	44.50	6'965	1'385	1'184	0.21	0.14	4.06
630	Ø	g/y	127 × 2.52	3.05	39.70	2.40	44.50	6'965	1'385	1'184	0.21	0.14	4.06

Ø = On request  
g/y = Green/Yellow

1 AC circuit, max. conductor temperature 90 °C  
2 Free in air, spaced  
3 Open tray, touching