



Circuit-Integrity Fire-Resistant Fibre Optic Cables

Fire-Resistant FO FE180

Circuit-Integrity Fibre Optic Cable

FE180 / E30-E90 circuit-integrity metal-tube & corrugated-steel armoured LSZH fibre optic



OS2 / OM3 / OM4

FE180 / E30-E90

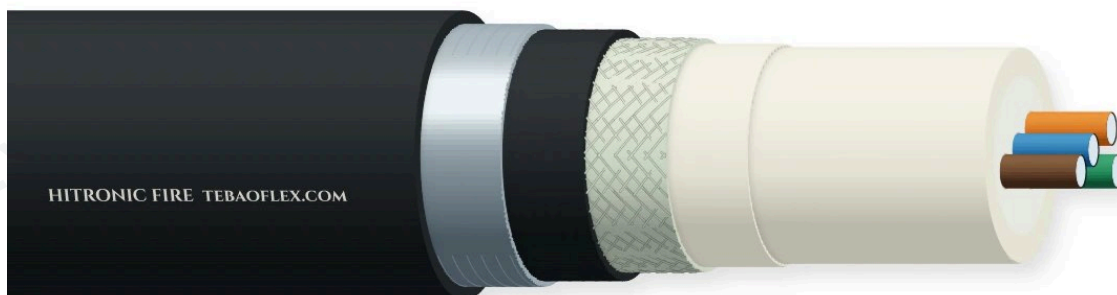
IEC 60331-25 Fibre

Application

HITRONIC FIRE is a circuit-integrity optical fibre backbone cable engineered to maintain uninterrupted optical data transmission for 180 minutes in direct 750-850 °C flame (IEC 60331-25 FE180) and 30 to 90 minutes in furnace system testing (DIN 4102-12 E30/E90)

Typical uses: Metro, rail & road tunnels, Networked fire alarm rings, Airports & high-rise towers, Hospitals & emergency command, Refinery & power plant ESD links

Construction



Cross-section, not to scale

1	Optical glass fibres (OS2 / OM3 / OM4)	IEC 60793-2
2	Metallic / fire-resistant central loose tube	IEC 60794-1
3	Glass-roving & mica thermal barrier	IEC 60331-25
4	Corrugated steel tape armour (CST)	IEC 60794-1
5	LSZH fire-safety outer sheath	IEC 60332-3-24

Technical data

Typical values

Dielectric / metallic classification	Metal-armoured optical cable (CST armour requires equipotential earthing at entry)	Max. attenuation increase in fire	≤0.5 dB/km (or link budget continuity) during 180 min @ 750 °C
Operating temperature range	-30 °C to +70 °C	Installation temperature range	-10 °C to +50 °C
Fire endurance temperature	≥750 °C (IEC 60331-25) / up to 1000 °C (DIN 4102-12 E30-E90)	Min. bend radius (static / dynamic)	15 × cable OD (fixed) · 20 × cable OD (during pulling)
Max. tensile pulling load	2000 N (short-term installation) · 1000 N (permanent)	Crush resistance	≥3000 N/100 mm per IEC 60794-1-21 Method E3
Attenuation OS2 @ 1310 / 1550 nm	≤0.36 dB/km @ 1310 nm · ≤0.22 dB/km @ 1550 nm	Attenuation OM3 / OM4 @ 850 / 1300 nm	≤2.5 dB/km @ 850 nm · ≤0.7 dB/km @ 1300 nm
Bandwidth OM3 / OM4 @ 850 nm	OM3 ≥2000 MHz·km · OM4 ≥4700 MHz·km (EMB)	Optical circuit integrity in fire	FE180 (180 min @ ≥750 °C + 15 min cool-down per IEC 60331-25)
System functional integrity	E30 / E60 / E90 per DIN 4102-12	Flame, smoke & halogen	IEC 60332-3-24 Cat. C, IEC 61034-2 (≥60 %), IEC 60754-2 (pH ≥4.3)
Standards	IEC 60331-25 & DIN 4102-12		

Sizes

13 standard constructions

Tick the sizes you need and send this page to info@tebaoflex.com or WhatsApp +86 185 9591 3361.

Designation	Fibres & Mode	Core/Clad µm	Outer Ø ≈ mm	Copper kg/km	Total weight ≈ kg/km	Min. bend R fixed mm
HITRONIC FIRE standard series 13 sizes						
☐ HITRONIC FIRE 4G50/125 OM3 FE180/E90	4F OM3 Multimode	50/125 µm	10.2	0	135	153
☐ HITRONIC FIRE 8G50/125 OM3 FE180/E90	8F OM3 Multimode	50/125 µm	10.2	0	136	153
☐ HITRONIC FIRE 12G50/125 OM3 FE180/E90	12F OM3 Multimode	50/125 µm	10.5	0	142	158
☐ HITRONIC FIRE 24G50/125 OM3 FE180/E90	24F OM3 Multimode	50/125 µm	11.4	0	168	171
☐ HITRONIC FIRE 4G50/125 OM4 FE180/E90	4F OM4 Multimode	50/125 µm	10.2	0	135	153
☐ HITRONIC FIRE 8G50/125 OM4 FE180/E90	8F OM4 Multimode	50/125 µm	10.2	0	136	153
☐ HITRONIC FIRE 12G50/125 OM4 FE180/E90	12F OM4 Multimode	50/125 µm	10.5	0	142	158
☐ HITRONIC FIRE 24G50/125 OM4 FE180/E90	24F OM4 Multimode	50/125 µm	11.4	0	168	171
☐ HITRONIC FIRE 4E9/125 OS2 FE180/E90	4F OS2 Single-Mode	9/125 µm	10.2	0	135	153
☐ HITRONIC FIRE 8E9/125 OS2 FE180/E90	8F OS2 Single-Mode	9/125 µm	10.2	0	136	153
☐ HITRONIC FIRE 12E9/125 OS2 FE180/E90	12F OS2 Single-Mode	9/125 µm	10.5	0	142	158
☐ HITRONIC FIRE 24E9/125 OS2 FE180/E90	24F OS2 Single-Mode	9/125 µm	11.4	0	168	171
☐ HITRONIC FIRE 48E9/125 OS2 FE180/E90	48F OS2 Single-Mode	9/125 µm	13.8	0	235	207

– Nominal outer diameters and weights are subject to manufacturing tolerances per IEC 60331-25 / DIN 4102-12.

Electrical data

13 sizes

Fibres & Mode	Max. DC R @ 20 °C Ω/km	Current in air A	Current in duct/tray A
4F OM3 Multimode	0.350	2,000	1,720
8F OM3 Multimode	0.350	2,000	1,720
12F OM3 Multimode	0.350	2,000	1,720
24F OM3 Multimode	0.350	2,000	1,720
4F OM4 Multimode	0.350	2,000	1,720
8F OM4 Multimode	0.350	2,000	1,720
12F OM4 Multimode	0.350	2,000	1,720

Fibres & Mode	Max. DC R @ 20 °C Ω/km	Current in air A	Current in duct/tray A
24F OM4 Multimode	0.350	2,000	1,720
4F OS2 Single-Mode	0.220	2,000	1,720
8F OS2 Single-Mode	0.220	2,000	1,720
12F OS2 Single-Mode	0.220	2,000	1,720
24F OS2 Single-Mode	0.220	2,000	1,720
48F OS2 Single-Mode	0.220	2,500	2,150

– Current ratings apply at +30 °C ambient in free air and +25 °C in enclosed tray/conduit.

Standards and approvals

- ✓ IEC 60331-25 FE180
- ✓ DIN 4102-12 E30 / E60 / E90
- ✓ IEC 60332-3-24 Cat. C
- ✓ IEC 60754-2 & IEC 61034-2
- ✓ ITU-T G.652.D / ISO/IEC 11801

Certifications



Management systems: ISO 9001, ISO 14001, ISO 45001

Request a quotation

Send the size, length and destination. An application engineer replies within 2 business hours.

WhatsApp / phone

+86 185 9591 3361

Email

info@tebaoflex.com

Web

tebaoflex.com/cables/hitronic-fire-circuit-integrity-fire-resistant-fibre-optic-cable



Typical values for this cable type, based on IEC 60331-25 / DIN 4102-12. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.