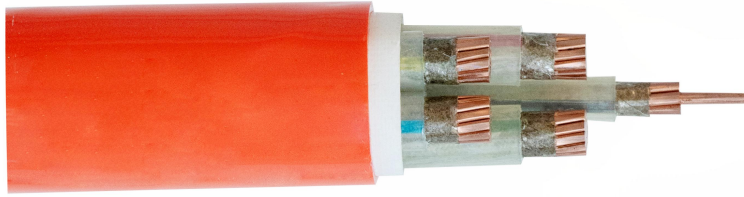


Mineral-Insulated Fire-Resistant Cables



0.6/1 kV Flexible Mineral-Insulated Flame-Retardant Fire-Resistant Cable [BBTRZ]

Standards: IEC 60702 (mineral-insulated cables), IEC 60331 (fire-resistance circuit integrity), IEC 60332-3 (flame retardance), IEC 60754 (halogen-free), IEC 61034 (low smoke)

Technical Data

Max. conductor temperature: normal continuous operation 90 °C; emergency operation up to 250 °C; flame survival 950–1000 °C / 3 h

Rated voltage (U0/U): 0.6 / 1 kV

Min. installation temperature: ≥ 0 °C

Min. bending radius: $\geq 12 \times OD$ ($D \leq 25$ mm); $\geq 15 \times OD$ ($D > 25$ mm)

Insulation resistance (after fire test): ≥ 0.4 M Ω ·km (per IEC 60331 circuit-integrity criterion)

Core Fire Performance

Circuit integrity (fire resistance): maintains continuous electrical operation under direct flame at 950 °C for ≥ 3 hours, per IEC 60331 / BS 6387 Category C

Flame + water (BS 6387 W): circuit integrity preserved during 15 min at 650 °C followed by 15 min water spray — no breakdown

Flame + mechanical impact (BS 6387 Z): circuit integrity preserved during 15 min at 950 °C with mechanical impact (1 blow per 30 s) — no breakdown

Bunched-cable flame propagation: IEC 60332-3-23 Category B — flame spread height ≤ 1.5 m

Single-wire flame test: self-extinguishing per IEC 60332-1-2

Smoke density: low smoke per IEC 61034 — light transmittance $\geq 60\%$

Halogen / corrosive gas: halogen-free per IEC 60754-1; non-corrosive per IEC 60754-2 (pH ≥ 4.3 , conductivity ≤ 10 μ S/mm)

Application

BBTRZ is the cable of choice for life-safety power and lighting circuits that must remain energized during a fire — emergency lighting, fire-pump motors, smoke-extraction fans, elevator power, fire-alarm and public-address systems, and standby generator feeders in high-rise buildings, hospitals, airports, metro and railway tunnels, data centres, petrochemical plants, and other high-risk occupancies. The flexible mineral construction combines the fire performance of traditional rigid MI cable with handling characteristics closer to ordinary XLPE cable, allowing fast installation in long runs and tight routings without specialised terminations.

Construction

- ① Annealed copper conductor
- ② Inorganic mineral synthetic mica tape (multi-layer fire barrier)
- ③ Refractory mortar / ceramic composite fireproof layer (extruded, compacted)
- ④ XLPE isolation layer (optional, separates mineral from sheath)
- ⑤ Low-smoke halogen-free (LSZH) outer sheath

Single-Core (1 × 10–300 mm²) — Dimensions & Properties

Nominal Cross Section	Conductor Class	Conductor Diameter (approx)	Overall Diameter (approx)	Net Weight (approx)	Delivery Length	DC Conductor Resistance 20°C Max	Current Capacity (air)
mm ²	—	mm	mm	kg/km	m	Ω/km	A
10	1 (solid)	3.6	10.2	199	500	1.83	75
16	1 (solid)	4.5	11.1	266	500	1.15	100
25	2 (stranded)	5.7	12.5	371	300	0.7270	133
35	2 (stranded)	6.7	13.5	477	300	0.5240	163
50	2 (stranded)	8.0	15.2	648	300	0.3870	198
70	2 (stranded)	9.6	17.2	871	200	0.2680	253
95	2 (stranded)	11.2	19.2	1146	200	0.1930	306
120	2 (stranded)	12.6	20.6	1399	200	0.1530	353
150	2 (stranded)	14.1	22.5	1723	200	0.1240	406
185	2 (stranded)	15.8	24.6	2097	100	0.0991	463
240	2 (stranded)	18.1	27.3	2672	100	0.0754	546
300	2 (stranded)	20.6	30.0	3289	100	0.0601	624

Two-Core (2 × 1.5–240 mm²) — Dimensions & Properties

Nominal Cross Section	Conductor Class	Conductor Diameter (approx)	Overall Diameter (approx)	Net Weight (approx)	Delivery Length	DC Conductor Resistance 20°C Max	Current Capacity (per core, air)
mm ²	—	mm	mm	kg/km	m	Ω/km	A
2 × 1.5	1 (solid)	1.4	9.6	140	500	12.10	19
2 × 2.5	1 (solid)	1.8	10.4	173	500	7.41	26
2 × 4	1 (solid)	2.3	11.4	220	500	4.61	35
2 × 6	1 (solid)	2.8	12.6	283	500	3.08	45
2 × 10	1 (solid)	3.6	14.6	407	300	1.83	62
2 × 16	1 (solid)	4.5	16.4	564	300	1.15	82
2 × 25	2 (stranded)	5.7	19.4	824	200	0.7270	108
2 × 35	2 (stranded)	6.7	21.4	1074	200	0.5240	133
2 × 50	2 (stranded)	8.0	24.8	1487	200	0.3870	163
2 × 70	2 (stranded)	9.6	28.0	1986	200	0.2680	208
2 × 95	2 (stranded)	11.2	31.6	2621	100	0.1930	253
2 × 120	2 (stranded)	12.6	34.8	3251	100	0.1530	291
2 × 150	2 (stranded)	14.1	38.2	4003	50	0.1240	335
2 × 185	2 (stranded)	15.8	41.6	4849	50	0.0991	381
2 × 240	2 (stranded)	18.1	46.6	6202	50	0.0754	451

Note: Conductors are annealed bare copper per IEC 60228 (Class 1 solid up to 16 mm²; Class 2 stranded above); DC conductor resistance is the maximum at 20 °C. Dimensions and weights are approximate and for reference only, including mica fire barrier, refractory mortar layer, and LSZH sheath. Current-carrying capacity is indicative for a single insulated cable in free air at 30 °C ambient with 90 °C conductor — apply derating factors per installation method, grouping, and ambient temperature. The fire-test performance values quoted are those measured on standard BBTRZ samples; for project-specific certification (e.g. BS 6387 CWZ third-party test), refer to the product type-test report. Delivery length follows realistic packaging — lighter cables in 500 m coils/drums, heavier cables in 300 / 200 / 100 / 50 m wooden drums; other lengths available on request.