



Underground Mining Armoured Communication Cables

MGM 110 Single Layer Armoured Mining Communication Cable

MGM 110 / Spec 542 / BS 6708 · 250 V · 1 to 100 Pairs (0.5–0.8 mm²) · PE cores · Al/Cu



MGM 110 / BS 6708

Single Wire Armour (SWA)

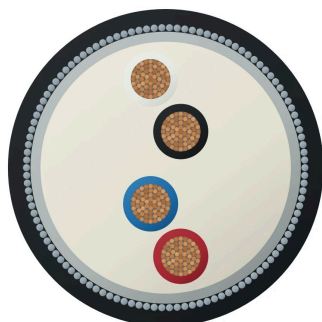
Intrinsically Safe (IS) Comms

Application

MGM 110 Single Layer Armoured Mining Communication Cable is a heavy-duty underground roadway telephone, cadence signalling, pre-start alarm, and leaky-feeder/RS-485 telemetry cable engineered with low-loss polyethylene (PE) twisted pairs, a collective

Typical uses: Underground Coal & Hard-Rock Mines, Conveyor Pull-Key & Pre-Start Signalling, Refuge Chamber & Shaft Emergency Phones, Intrinsically Safe (Ex ia) Mine SCADA, Cross-Rail & Road Tunnel Emergency Comms

Construction



Cross-section, not to scale

1	Annealed tinned or bare copper	BS 6708 / Spec 542
2	Solid polyethylene (PE) twisted pairs	BS 6708 / Spec 542
3	Collective Al-PET tape screen + drain	BS 6708 / Spec 542
4	Extruded PVC / LSZH inner bedding	BS 6708
5	Single layer galvanized steel wire	BS EN 10257-1
6	Flame-retardant mining PVC or LSZH	IEC 60332-1/-3

Technical data

Typical values

Characteristic impedance	Approx. 110 $\Omega \pm 15 \Omega$ (voice / data band)	Conductor loop DC resistance	$\leq 73.6 \Omega/\text{km}$ at 20 °C (0.50 mm ² pair)
Max. mutual pair capacitance	$\leq 65 \text{ nF/km}$ (typically 52–58 nF/km)	Capacitance unbalance (pair-to-pair)	$\leq 250 \text{ pF} / 500 \text{ m}$ at 800 Hz
Operating voltage rating	250 V rms (intrinsically safe & telecom)	Dielectric test voltage	1,500 V AC (core/core) / 2,000 V AC
Operating temperature range	-20 °C to +70 °C	Installation temperature range	-5 °C to +50 °C
Flame propagation (single cable)	IEC 60332-1-2	Bunched cable fire test	IEC 60332-3-22 / BS 4066 Pt 3
LSZH halogen & smoke option	IEC 60754-1/2 & IEC 61034-2	Max. short-circuit core temperature	+130 °C (PE core insulation)
Conductor construction	1 $\times$ 0.80 mm (0.50 mm ²) or 7 $\times$ 0.30 mm (0.50)	Standard pair counts	1, 2, 4, 7, 10, 15, 20, 30, 50, 100 pairs
Armour wire diameter	0.90 mm, 1.25 mm, or 1.60 mm galvanized steel	Min. bend radius (fixed install)	10 $\times$ overall cable diameter (10 $\times$ D)
Armour earth conductance	$\geq 50 \%$ of largest copper conductor (with Cu)	Gland compatibility	BS 6121 / EN 62444 Ex d / Ex e SWA glands
Rockfall & impact crush resistance	Single layer galvanized steel wire armour	Mine water & dampness	Zero-moisture-absorption PE core insulation
Methane & coal-dust environment	Anti-static / flame-retardant outer sheath	Rodent protection	Full circumference steel wire armour barrier
Acid mine water corrosion	Heavy zinc coating + extruded outer sheath	RoHS / REACH status	RoHS 3 compliant
Standards	NCB / British Coal Spec 542 / MGM 110		

Sizes

5 standard constructions

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

Order designation	Construction / Variant	Conductor	Outer $\varnothing \approx$ mm	Metal kg/km	Weight $\approx$ kg/km	Min. bend R fixed mm
Standard MGM 110 Single Layer Armoured variants 5 sizes						
☐ MGM 110 SWA 2 $\times$ 2 $\times$ 0.5 mm ²	2 Pairs + Screen + 0.9 mm SWA	0.50 mm ² (1/0.8 or 7/0.3)	12.80	24.0	295.0	128
☐ MGM 110 SWA 4 $\times$ 2 $\times$ 0.5 mm ²	4 Pairs + Screen + 0.9 mm SWA	0.50 mm ² (1/0.8 or 7/0.3)	14.50	43.0	370.0	145
☐ MGM 110 SWA 10 $\times$ 2 $\times$ 0.5 mm ²	10 Pairs + Screen + 1.25 mm SWA	0.50 mm ² (1/0.8 or 7/0.3)	19.60	102.0	680.0	196
☐ MGM 110 SWA 20 $\times$ 2 $\times$ 0.5 mm ²	20 Pairs + Screen + 1.25 mm SWA	0.50 mm ² (1/0.8 or 7/0.3)	24.20	198.0	990.0	242
☐ MGM 110 SWA 50 $\times$ 2 $\times$ 0.5 mm ²	50 Pairs + Screen + 1.60 mm SWA	0.50 mm ² (1/0.8 or 7/0.3)	34.80	490.0	2,150.0	348

– Dimensions and weights are nominal production values subject to manufacturing tolerances per NCB / British Coal Spec 542 (MGM 110) / BS 6708.

Impedance, capacitance & electrical data

5 sizes

Configuration	Max. conductor DC R Ω / km @ 20 °C	Characteristic Z ₀ Ω	Capacitance pF / m	Velocity VoP %	Test voltage V _{rms}
2 Pairs + Screen + 0.9 mm SWA	183.3	110	48.0	66	1,500
4 Pairs + Screen + 0.9 mm SWA	183.3	110	48.0	66	1,500
10 Pairs + Screen + 1.25 mm SWA	183.3	110	48.0	66	1,500
20 Pairs + Screen + 1.25 mm SWA	183.3	110	48.0	66	1,500
50 Pairs + Screen + 1.60 mm SWA	183.3	110	48.0	66	1,500

– Transmission parameters measured at 1–100 MHz (+20 °C) in accordance with NCB / British Coal Spec 542 (MGM 110) / BS 6708.

Standards and approvals

- ✓ MGM 110 / Spec 542 / BS 6708
- ✓ IEC 60079-11 / -14 (Ex ia)
- ✓ IEC 60332-3-22

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/mgm-110-single-armoured-mining-communication-cable



Typical values for this cable type, based on NCB / British Coal Spec 542 (MGM 110) / BS 6708. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.