

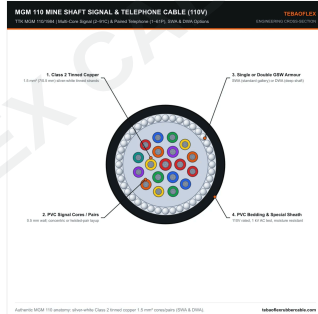
MGM 110 110V Armoured Mine Signal (2–91x1.5) & Telephone (1–61x2x1.5) Cable (SWA & DWA)

MGM 110 is a 110 V underground mine signaling and voice-communication cable family manufactured to Turkish TTK MGM 110/1984, combining 1.5 mm² Class 2 tinned copper conductors, PVC core insulation, and single or double galvanized steel wire armour for deep shafts and gassy roadways.

1. CABLE CONSTRUCTION

1. Conductor	Electrolytic circular stranded tinned copper wire per IEC 60228 Class 2: 1.5 mm² nominal cross-section (7 x 0.50 mm stranding, 1.50 mm nominal conductor diameter) for moisture corrosion immunity and reliable Krone/screw termination.
2. Core Insulation & Pairing	0.5 mm nominal PVC insulation wall yielding 2.36–2.64 mm insulated core diameter. Concentrically stranded as single cores (2–91C Signal) or twisted into balanced pairs (1–61P Telephone).
3. Inner Bedding	Extruded PVC inner sheath (1.0 mm to 1.6 mm nominal wall depending on core count) forming a firm mechanical cushion beneath the steel armour wires.
4. Galvanized Steel Wire Armour	Single concentric layer (SWA: 0.9 mm to 2.5 mm wires) or double counter-wound layer (DWA: 2x0.9 mm to 2x2.5 mm wires) of galvanized steel round wires, with optional galvanized steel binder tape.
5. Outer Sheath	Heavy-duty special flame-retardant PVC compound (1.4 mm to 2.6 mm radial thickness) resistant to acidic mine water, mineral oils, and mechanical abrasion.

Cross-Section Anatomy



MGM 110 Cross-Section: Concentric layers of 1.5 mm² (7/0.50 mm) Class 2 tinned copper PVC cores or twisted pairs, extruded PVC bedding, single or double GSW wire armour, and special mining PVC jacket.

2. ELECTRICAL, MECHANICAL & STANDARD DATA

Reference Standard	Turkish Hard Coal Enterprises TTK MGM 110/1984 & IEC 60228 Class 2
Rated Operating Voltage	110 V (Signaling, Telemetry, Bell & Underground Telephone Circuits)
Routine Dielectric Test	1000 V (1 kV) AC
Unit Conductor Geometry	1.5 mm² Tinned Copper (7 / 0.50 mm, nom. Ø 1.50 mm; Core OD 2.36–2.64 mm)
Signal Core Counts	2, 4, 7, 10, 12, 14, 19, 37, 61, and 91 cores x 1.5 mm²
Telephone Pair Counts	1, 2, 4, 7, 10, 12, 19, 27, 30, 37, 48, and 61 pairs x 2 x 1.5 mm²
Minimum Bending Radius	8 x Max. OD (Single-Layer Armour SWA) 9 x Max. OD (Double-Layer Armour DWA)
Installation Environment	Fixed installation in deep gassy coal shafts, inclined drifts, haulage roadways, and surface headframes

TEBAOFLEX CABLE

MGM 110 110V Armoured Mine Signal (2–91x1.5) & Telephone (1–61x2x1.5) Cable (SWA & DWA) — Dimensional, Weight & Electrical Schedule

SKU: MGM-110-SIG-TEL
<https://tebaoflexrubbercable.com/>

3. DIMENSIONAL, ARMOUR & ELECTRICAL SPECIFICATIONS

1. MGM 110 Signal Cable — Single-Layer Galvanized Steel Wire Armour (SWA, 2x1.5 to 91x1.5 mm²)

Cable Size	Inner Sheath (mm)	SWA Wire Dia. (mm)	Outer Sheath (mm)	Min. OD (mm)	Max. OD (mm)	Min. Bend (mm)	Copper Wt. (kg/km)	Cable Wt. (kg/km)
2x1.5	1.0	1 x 0.90	1.4	11.6	13.0	104	30	320
4x1.5	1.0	1 x 0.90	1.5	12.8	14.4	116	60	395
7x1.5	1.0	1 x 0.90	1.5	14.2	15.8	127	105	500
10x1.5	1.0	1 x 1.25	1.6	17.7	19.3	155	150	750
12x1.5	1.0	1 x 1.25	1.6	18.1	19.7	158	180	850
14x1.5	1.0	1 x 1.25	1.6	18.6	20.6	165	210	950
19x1.5	1.0	1 x 1.25	1.7	20.2	22.2	178	280	1100
37x1.5	1.2	1 x 1.60	1.8	26.5	28.9	232	540	1900
61x1.5	1.2	1 x 1.60	2.0	32.1	34.5	276	880	2740
91x1.5	1.4	1 x 2.00	2.2	38.5	41.3	331	1315	4050

2. MGM 110 Signal Cable — Double-Layer Galvanized Steel Wire Armour (DWA, 2x1.5 to 91x1.5 mm²)

Cable Size	Inner Sheath (mm)	DWA Wire Dia. (mm)	Outer Sheath (mm)	Min. OD (mm)	Max. OD (mm)	Min. Bend (mm)	Copper Wt. (kg/km)	Cable Wt. (kg/km)
2x1.5	1.0	2 x 0.90	1.5	15.9	17.3	156	30	570
4x1.5	1.0	2 x 0.90	1.6	17.0	18.6	168	60	680
7x1.5	1.0	2 x 0.90	1.6	17.5	19.1	172	105	820
10x1.5	1.0	2 x 1.25	1.7	22.8	24.4	220	150	1280
12x1.5	1.0	2 x 1.25	1.7	23.2	24.8	224	180	1350
14x1.5	1.0	2 x 1.25	1.7	23.8	25.8	233	210	1450
19x1.5	1.0	2 x 1.25	1.8	25.3	27.3	246	280	1650
37x1.5	1.2	2 x 1.60	1.9	32.5	34.9	315	540	2850
61x1.5	1.2	2 x 1.60	2.1	37.7	40.1	361	880	3000
91x1.5	1.4	2 x 2.00	2.3	45.1	47.9	432	1315	5600

3. MGM 110 Telephone Cable — Single-Layer Galvanized Steel Wire Armour (SWA, 1x2x1.5 to 61x2x1.5 mm²)								
Pair Size	Inner Sheath (mm)	SWA Wire Dia. (mm)	Outer Sheath (mm)	Min. OD (mm)	Max. OD (mm)	Min. Bend (mm)	Copper Wt. (kg/km)	Cable Wt. (kg/km)
1x2x1.5	1.0	1 x 0.90	1.4	11.6	13.0	104	30	320
2x2x1.5	1.0	1 x 0.90	1.5	12.8	14.4	116	60	395
4x2x1.5	1.0	1 x 1.25	1.6	17.6	19.3	155	120	690
7x2x1.5	1.0	1 x 1.60	1.7	20.5	22.5	180	210	900
10x2x1.5	1.2	1 x 1.60	1.7	27.0	28.0	224	290	1350
12x2x1.5	1.2	1 x 1.60	1.7	27.3	28.9	232	350	1460
19x2x1.5	1.2	1 x 1.60	1.8	30.5	32.9	264	550	2000
27x2x1.5	1.4	1 x 2.00	2.0	36.9	39.5	316	780	2800
30x2x1.5	1.4	1 x 2.00	2.0	37.0	39.6	317	870	3000
37x2x1.5	1.4	1 x 2.00	2.1	40.8	43.6	349	1070	3450
48x2x1.5	1.4	1 x 2.00	2.3	46.1	48.9	392	1390	4160
61x2x1.5	1.6	1 x 2.50	2.4	51.3	54.5	436	1760	5500

4. MGM 110 Telephone Cable — Double-Layer Galvanized Steel Wire Armour (DWA, 1x2x1.5 to 61x2x1.5 mm²)								
Pair Size	Inner Sheath (mm)	DWA Wire Dia. (mm)	Outer Sheath (mm)	Min. OD (mm)	Max. OD (mm)	Min. Bend (mm)	Copper Wt. (kg/km)	Cable Wt. (kg/km)
1x2x1.5	1.0	2 x 0.90	1.4	15.9	17.3	156	30	570
2x2x1.5	1.0	2 x 0.90	1.5	17.0	18.6	168	60	680
4x2x1.5	1.0	2 x 1.25	1.6	22.7	24.4	220	120	1250
7x2x1.5	1.0	2 x 1.25	1.7	25.3	27.3	246	210	1580
10x2x1.5	1.2	2 x 1.60	1.9	32.0	34.0	306	290	2350
12x2x1.5	1.2	2 x 1.60	1.9	32.4	34.8	314	350	2550
19x2x1.5	1.2	2 x 1.60	2.0	36.2	38.6	348	550	3280
27x2x1.5	1.4	2 x 2.00	2.2	43.6	46.2	416	780	4680
30x2x1.5	1.4	2 x 2.00	2.2	44.7	47.3	426	870	4950
37x2x1.5	1.4	2 x 2.00	2.3	47.3	50.1	451	1070	5620
48x2x1.5	1.4	2 x 2.00	2.4	52.5	55.3	498	1390	6590
61x2x1.5	1.6	2 x 2.50	2.6	58.8	62.0	558	1760	8800

Dimensional Calibration Note: All 44 SWA and DWA configurations have been verified against concentric pair/core layup geometry (including calibrated minimum outer diameters of 27.3 mm on 12x2x1.5 SWA and 30.5 mm on 19x2x1.5 SWA).