

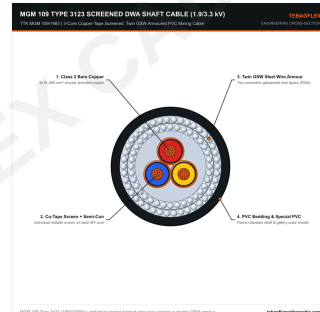
MGM 109 Type 3123 Screened Double-Armoured MV Mining Cable (1900/3300V)

MGM 109 Type 3123 is a 1900/3300 V individually screened, double galvanized steel wire armoured (DWA) PVC power cable complying with Turkish TTK MGM 109/1983 for permanent power feeders in deep coal shafts, inclined galleries, underground substations, and surface processing plants.

1. CABLE CONSTRUCTION

1. Phase Conductor	Electrolytic circular stranded bare copper wire conforming to IEC 60228 Class 2 (16 mm ² to 400 mm ²).
2. Core Insulation	Medium-voltage grade PVC compound (2.2 mm to 2.6 mm radial thickness) color-coded for 3-phase identification.
3. Semiconductive & Metallic Screen	Semiconductive separator layer followed by an individual copper-backed tape screen helically lapped around each insulated phase core.
4. Lay-Up & Inner Bedding	Three screened cores laid up in trefoil contact and covered with an extruded PVC-based inner bedding compound (1.6 mm to 2.6 mm radial wall).
5. Double GSW Armour (DWA)	Two concentric layers of flexible galvanized steel round wires (1.6 mm, 2.0 mm, or 2.5 mm wire gauge) with optional galvanized steel separator tape.
6. Outer Sheath	Heavy-duty black special flame-retardant PVC compound (2.0 mm to 3.3 mm radial thickness) resistant to mine moisture, oils, and abrasion.

Cross-Section Anatomy



MGM 109 Type 3123 Cross-Section: Three Class 2 bare copper cores with MV PVC insulation, semiconductive separator, individual copper-backed tape screens, PVC bedding, and twin GSW wire armour.

2. ELECTRICAL, MECHANICAL & STANDARD DATA

Reference Standard	Turkish Hard Coal Enterprises TTK MGM 109/1983 & IEC 60228 Class 2
Rated Voltage (Uo/U)	1900 / 3300 V (3.3 kV Medium-Voltage System)
Routine AC Test Voltage	6 kV AC
Conductor Cross-Sections	3x16, 3x25, 3x35, 3x50, 3x70, 3x95, 3x120, 3x150, 3x185, 3x240, 3x300, 3x400 mm ²
Current Rating Reference	82 A (3x16 mm ²) to 620 A (3x400 mm ²) continuous in air at 25°C ambient
Minimum Bending Radius	10 x maximum overall cable diameter (379 mm to 917 mm during installation)
Armour Conductance	Galvanized steel twin wire armour rated 1.53 Ω/km (3x16) down to 0.0627 Ω/km (3x400)
Installation Environment	Fixed installation in deep gassy/dusty underground mines, vertical shafts, and surface plant

3. DIMENSIONAL, ARMOUR & ELECTRICAL SPECIFICATIONS

MGM 109 Type 3123 (1900/3300V) — Dimensional, Armour & Electrical Schedule (3x16 to 3x400 mm²)													
Cable Type	Insul. (mm)	Inner Sheath (mm)	Inner Dia. (mm)	DWA Wire Dia. (mm)	Outer Sheath (mm)	Min. OD (mm)	Max. OD (mm)	Min. Bend (mm)	Current 25°C (A)	Cond. R (Ω/km)	Armour R (Ω/km)	Cu Wt. (kg/km)	Cable Wt. (kg/km)
3x16	2.2	1.6	24.8	2 x 1.6	2.0	33.9	37.9	379	82	1.15	1.53	465	2500
3x25	2.2	1.6	27.4	2 x 1.6	2.0	36.5	40.5	405	108	0.727	0.97	700	3000
3x35	2.2	1.6	29.6	2 x 1.6	2.1	38.9	42.9	429	135	0.524	0.699	1010	3500
3x50	2.2	1.8	33.2	2 x 2.0	2.2	44.3	48.3	483	168	0.387	0.516	1480	4600
3x70	2.2	1.8	36.6	2 x 2.0	2.3	47.9	51.9	519	207	0.268	0.357	2170	5550
3x95	2.2	1.8	40.5	2 x 2.0	2.4	52.0	56.0	560	250	0.193	0.257	3070	6800
3x120	2.2	2.2	44.5	2 x 2.5	2.6	58.4	62.4	624	292	0.153	0.204	3790	8550
3x150	2.2	2.2	48.6	2 x 2.5	2.7	62.7	66.7	667	335	0.124	0.165	4880	9800
3x185	2.2	2.2	52.5	2 x 2.5	2.8	66.8	70.8	708	382	0.0991	0.132	6120	11350
3x240	2.2	2.6	58.6	2 x 2.5	2.9	73.1	77.1	771	453	0.0754	0.101	8080	13950
3x300	2.4	2.6	64.4	2 x 2.5	3.1	79.3	83.3	833	523	0.0601	0.0801	10290	16700
3x400	2.6	2.6	72.4	2 x 2.5	3.3	87.7	91.7	917	620	0.0470	0.0627	13750	20750

Armour Notation Note: Source Turkish schedules abbreviate armour wire gauge as 1/1. 6, 1/2. 0, and 1/2. 5 to indicate individual round wire diameter (mm) applied in two concentric layers on Type 3123.