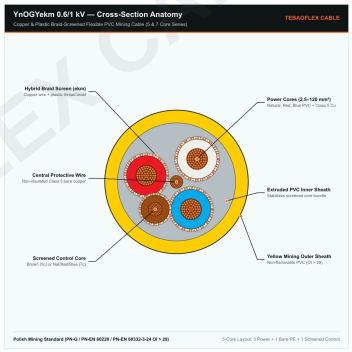
YnOGYekm 0.6/1 kV Copper-Plastic Braid-Screened Flexible PVC Mining Cable

YnOGYekm 0.6/1 kV is a Polish standard copper-plastic braid-screened flexible PVC mining power and pilot cable engineered for high-capacity movable machines, stage loaders, roadheaders, and gate-end distribution up to 120 mm² (290 A) in underground coal mines with methane classes a, b, c and coal-dust classes A and B.

1. CABLE CONSTRUCTION

1. Power & Control Conductors	Flexible multi-wire bare annealed copper conductors complying with PN-EN 60228 Class 5 (Power: 2.5–120 mm²; Control: 1.5–16 mm²).
2. Central Protective Conductor	Non-insulated stranded bare copper protective earth conductor (2.5–50 mm²) located in the center of the cable core assembly.
3. Core Insulation & Colors	Special mining-grade PVC insulation; Power phases: Natural, Red, Blue; Control cores: Brown (in 5-core) or Natural, Red, Blue (in 7-core).
4. Individual Hybrid Screens (ekm)	Mixed braid composed of bare copper wires and elastic plastic threads applied directly over each insulated power core for high flex-life metallic earth screening.
5. Core Stranding & Inner Sheath	Screened power cores and control core(s) stranded concentrically around the central bare copper protective wire, bound inside an extruded PVC inner sheath.
6. Outer Sheath	Heavy-duty Yellow special non-flammable PVC outer sheath (Oxygen Index OI > 29), flame-retardant to PN-EN 60332-1 and bundled test PN-EN 60332-3-24 (IEC 60332-3).

Cross-Section Anatomy



YnOGYekm 0.6/1 kV Cross-Section (5-Core): Three Class 5 bare copper power cores (Natural, Red, Blue) wrapped with individual copper-wire and plastic-thread hybrid braid screens (ekm) plus control core(s) stranded around a central bare copper protective conductor inside a yellow OI > 29 PVC outer sheath.

2. ELECTRICAL, MECHANICAL & FLAME-RETARDANT DATA

Cable Type Designation	YnOGYekm 0.6/1 kV (Copper-Plastic Braid-Screened Flexible Mining Cable)
Rated Voltage (Uo/U)	0.6/1 kV (600/1000 V AC)
Routine AC Test Voltage	3.2 kV for power cores | 2.0 kV for control cores
Conductor & PE Standard	PN-EN 60228 Class 5 bare copper + central uninsulated bare copper PE
Operating Temperature Range	-30°C to +70°C continuous operation
Max. Short-Circuit Temperature	+160°C (up to 5 seconds)
Minimum Bending Radius	6 × Overall Diameter (fixed) | 10 × Overall Diameter (movable equipment)
Flame Retardancy & Oxygen Index	Oxygen Index OI > 29; compliant with PN-EN 60332-1 & PN-EN 60332-3-24 (IEC 60332-3)
Approved Hazardous Mine Zones	Open-pit, strip, and underground mines with methane hazard classes a, b, c and coal-dust hazard classes A and B

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3. DIMENSIONAL, WEIGHT & ELECTRICAL SPECIFICATIONS

Table 1A — YnOGYekm 5-Core (3 Braid-Screened Power + Central Bare PE + 1 Brown Control) Schedule

Part Construction (mm²)	Screened Power (n × mm²)	Central Bare PE (mm²)	Control Core (mm²)	Approx. Outer Diameter (mm)	Approx. Cable Weight (kg/km)
3x2.5+2.5+2.5	3 × 2.5	2.5	1 × 2.5	18.6	505
3x4+4+4	3 × 4	4	1 × 4	20.0	619
3x6+6+4	3 × 6	6	1 × 4	23.6	810
3x10+10+6	3 × 10	10	1 × 6	25.8	1110
3x16+16+10	3 × 16	16	1 × 10	29.8	1560
3x25+16+16	3 × 25	16	1 × 16	35.6	2340

Table 1B — YnOGYekm 7-Core (3 Braid-Screened Power + Central Bare PE + 3 Control Cores) Schedule

Part Construction (mm²)	Screened Power (n × mm²)	Central Bare PE (mm²)	Control Cores (n × mm²)	Approx. Outer Diameter (mm)	Approx. Cable Weight (kg/km)
3x16+16+3x1.5	3 × 16	16	3 × 1.5	30.3	1600
3x25+16+3x2.5	3 × 25	16	3 × 2.5	38.1	2175
3x35+16+3x2.5	3 × 35	16	3 × 2.5	41.1	2770
3x50+25+3x4	3 × 50	25	3 × 4	47.5	3760
3x70+35+3x4	3 × 70	35	3 × 4	54.1	5010
3x95+35+3x4	3 × 95	35	3 × 4	63.0	6410
3x120+50+3x4	3 × 120	50	3 × 4	67.5	8130

Table 2 — YnOGYekm Phase Electrical Parameters, Capacitance & Current Capacity (2.5–120 mm²)

Power Core Cross-Section (mm²)	Max. DC Resistance at 20°C (Ω/km)*	Inductive Reactance at 50 Hz (Ω/km)	Phase Inductivity (mH/km)	Phase Capacitance (μF/km)	Current-Carrying Capacity (A)
2.5	7.98	0.126	0.40	0.42	27
4	4.95	0.113	0.36	0.55	37
6	3.30	0.110	0.35	0.57	47
10	1.91	0.104	0.33	0.62	66
16	1.21	0.096	0.28	0.66	90
25	0.780	0.094	0.28	0.67	115
35	0.554	0.090	0.27	0.76	144
50	0.386	0.088	0.26	0.81	176
70	0.272	0.084	0.25	0.92	213
95	0.206	0.083	0.25	0.96	250
120	0.161	0.080	0.24	1.08	290

***DC Resistance Reference:** Maximum 20°C DC conductor resistance values follow statutory **PN-EN 60228 Class 5** bare copper limits (plus 1.5 mm² pilot core max. 13.3 Ω/km).

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