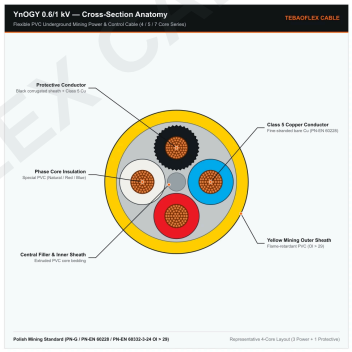
YnOGY 0.6/1 kV Flexible Multi-Core PVC Mining Power & Control Cable

YnOGY 0.6/1 kV is a Polish PN-G and PN-EN compliant flexible multi-core PVC mining cable engineered for power supply and pilot control of mobile, semi-mobile, and stationary machinery across non-explosion-hazard underground headings, open-pit quarries, and strip mining operations throughout Upper Silesia and Ostrava-Karvina.

1. CABLE CONSTRUCTION

1. Conductors	Flexible multi-wire bare annealed copper conductors complying with PN-EN 60228 Class 5 across power (2.5–120 mm²), protective (2.5–25 mm²), and control (2.5–6 mm²) cores.
2. Core Insulation	Special mining-grade polyvinyl chloride (PVC) compound extruded with uniform radial wall thickness for 0.6/1 kV power phases and auxiliary control circuits.
3. Core Identification	Power cores: Natural (uncoloured), Red, Blue; Protective earth core: Black with longitudinal external corrugations (ribs); Control cores: Brown (in 5-core) or Natural, Red, Blue (in 7-core).
4. Core Layup & Central Filler	Insulated cores parallel-stranded with controlled lay length around a shaped central non-hygroscopic filler to preserve circular cable geometry under bending.
5. Inner Sheath	Extruded interstitial PVC inner sheath locking the core assembly against torsional core migration and moisture tracking.
6. Outer Sheath	Heavy-duty Yellow special non-flammable PVC outer sheath (Oxygen Index > 29), abrasion-resistant and self-extinguishing to PN-EN 60332-1 and PN-EN 60332-3-24 (IEC 60332-3 Cat. C).

Cross-Section Anatomy



YnOGY 0.6/1 kV Cross-Section (4-Core Configuration): Three PN-EN 60228 Class 5 bare copper power cores (Natural, Red, Blue) and one black corrugated protective earth core parallel-stranded around a central filler inside a PVC inner sheath and yellow flame-retardant PVC outer sheath (OI > 29).

2. ELECTRICAL, MECHANICAL & FLAME-RETARDANT DATA

Cable Type Designation	YnOGY 0.6/1 kV (Polish PN-G / WUG Underground Mining Nomenclature)
Rated Voltage (Uo/U)	0.6/1 kV (600/1000 V AC three-phase systems)
Routine AC Test Voltage	3.2 kV (50 Hz) for power cores | 2.0 kV (50 Hz) for control cores
Conductor Class & Standard	PN-EN 60228 / IEC 60228 Class 5 flexible bare copper
Operating Temperature Range	-30°C to +70°C ambient / conductor operating limit
Max. Short-Circuit Temperature	+160°C (up to 5 seconds duration)
Minimum Bending Radius	6 × Overall Cable Diameter (fixed) | 10 × Overall Cable Diameter (movable service)
Flame Retardancy & Oxygen Index	Oxygen Index OI > 29; single-cable PN-EN 60332-1 & bundled vertical flame test PN-EN 60332-3-24 (IEC 60332-3)
Permissible Mine Scope	Underground, open-pit, and strip mines in workings without methane or coal-dust explosion hazard

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3. DIMENSIONAL, WEIGHT & ELECTRICAL SPECIFICATIONS

Table 1A — YnOGY 4-Core (3 Power + 1 Corrugated Protective Core) Dimensions & Weight

Part Construction (mm²)	Power Cores (n × mm²)	Protective Core (mm²)	Approx. Outer Diameter (mm)	Approx. Cable Weight (kg/km)
3x2.5+2.5	3 × 2.5	2.5	17.6	424
3x4+4	3 × 4	4	18.6	502
3x6+6	3 × 6	6	21.3	616
3x10+10	3 × 10	10	24.7	800
3x16+16	3 × 16	16	28.6	1377
3x25+16	3 × 25	16	35.1	2050
3x35+16	3 × 35	16	38.3	2500
3x50+25	3 × 50	25	44.2	3435
3x70+25	3 × 70	25	49.7	4487
3x95+25	3 × 95	25	56.6	5780
3x120+25	3 × 120	25	60.7	6900

Table 1B — YnOGY 5-Core (3 Power + 1 Protective + 1 Brown Control Core) Dimensions & Weight

Part Construction (mm²)	Power Cores (n × mm²)	Protective Core (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	19.0	469
3x4+4+4	3 × 4	4	1 × 4	20.3	588
3x6+6+4	3 × 6	6	1 × 4	23.1	738
3x10+10+6	3 × 10	10	1 × 6	26.8	1054

Table 1C — YnOGY 7-Core (3 Power + 1 Protective + 3 Control Cores) Dimensions & Weight

Part Construction (mm²)	Power Cores (n × mm²)	Protective Core (mm²)	Control Cores (n × mm²)	Approx. Outer Diameter (mm)	Approx. Cable Weight (kg/km)
3x4+4+3x4	3 × 4	4	3 × 4	23.0	810
3x6+6+3x6	3 × 6	6	3 × 6	26.5	1255
3x25+16+3x2.5	3 × 25	16	3 × 2.5	39.2	2780
3x35+16+3x2.5	3 × 35	16	3 × 2.5	42.7	3684

Table 2 — YnOGY Phase Electrical Parameters & Current-Carrying 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)	Current-Carrying Capacity (A)
2.5	7.98	0.110	0.35	27
4	4.95	0.101	0.32	37
6	3.30	0.101	0.32	47
10	1.91	0.097	0.31	66
16	1.21	0.094	0.30	87
25	0.780	0.094	0.30	113
35	0.554	0.091	0.29	140
50	0.386	0.091	0.29	172
70	0.272	0.088	0.28	212
95	0.206	0.088	0.28	257
120	0.161	0.085	0.27	295

***Engineering Note on DC Resistance:** Maximum conductor DC resistance at 20°C is referenced directly to statutory **PN-EN 60228 Class 5** plain annealed copper limits for underground feeder voltage-drop calculations. Custom drum lengths and composite pilot combinations are manufactured to order.

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