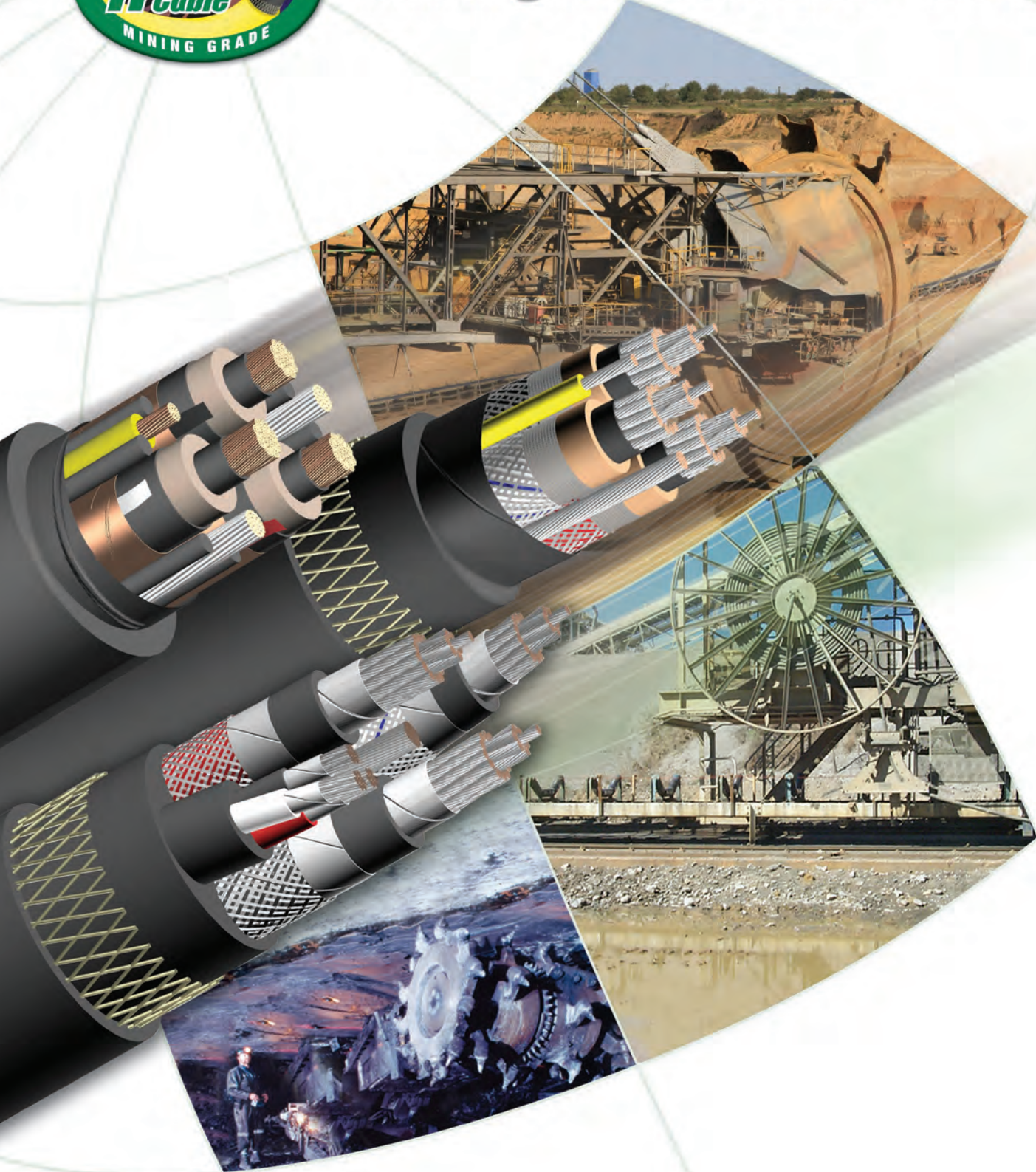




Mining Cables 2kV - 25kV



TF Cable

TELE-FONIKA CABLE AMERICAS


TELE-FONIKA CABLE AMERICAS

TELE-FONIKA CABLE AMERICAS (TF CABLE) is a US firm with corporate offices and main facility located in Bolingbrook, IL and is a wholly owned subsidiary of Tele-Fonika Kable SA. Tele-Fonika, one of the largest manufacturers of wire and cable in the world, is a fully integrated manufacturer recognized by the industry as a world class producer of quality wire and cable products. The company specializes in electrical wire and cable for **MINING, HEAVY INDUSTRY, UTILITY and ENERGY** applications utilizing materials to meet strict mechanical and electrical performance requirements.

KEY STATISTICS

- 2.5 billion USD in annual turnover
- 4th largest wire and cable supplier in Europe and one of the TOP global producers
- No. 1 European POWER CABLE SUPPLIER
- 3000 Group Employees
- 27 Global Facilities
- 25,000 Different types of wire and cable constructions
- Sales & Distribution network stretching 90 countries


TF Cable Mining brand delivers a full range of specially formulated cables and after sales services for all mining applications. As one of the leading global producers of mining cables, **Tele-Fonika** is dedicated to provide the top performing and lowest cost product.



FROM SURFACE



TO REELING



TO UNDERGROUND,

TF CABLE IS THE MINE POWER SOLUTION



Mining Cable Applications

Extra heavy duty, outer jackets have exceeded their performance in the most severe mining conditions throughout the world. Europe, North/South America, Australia, and Asia are some of the key regions that have found **TF** to be the industry standard for the most stringent mining applications.

UNDERGROUND MINES

Primary Application Usages / Cable Recommendations

Shuttle Car	TYPE W FLAT 2/C 2KV; TYPE W FLAT 4/C 2KV; TYPE G FLAT 2/C 2KV; TYPE G-GC FLAT 3/C 2KV; TYPE W ROUND 4/C 2KV; TYPE G-GC ROUND 3/C 2KV
Continuous Miner	TYPE W ROUND 4/C 2KV; TYPE G-GC ROUND 3/C 2KV; SHD-GC 3/C 2KV; SHD-CGC 3/C 2KV; SHD-CGC 3/C 5KV; SHD FLAT 3/C 2KV; SHD-GC 3/C 5KV
Longwall Miner	SHD-GC 3/C 2KV; SHD-PCG LONGWALL 2KV, 5KV; SHD-CGC 3/C 2KV; SHD-CGC 3/C 5KV; SHD-GC 3/C 5KV
Pumps	TYPE W FLAT 4/C 2KV; TYPE G-GC FLAT 3/C 2KV; TYPE W ROUND 4/C 2KV; TYPE G-GC ROUND 3/C 2KV; SHD-GC 3/C 2KV
Roof Bolter	TYPE W FLAT 4/C 2KV; TYPE G FLAT 2/C 2KV; TYPE G-GC FLAT 3/C 2KV; TYPE G-GC ROUND 3/C 2KV; SHD-GC 3/C 2KV
Mine Power Feeder Vertical	MP-GC 3/C EPR/CPE 5-KV15KV
Mine Power Feeder Horizontal	MP-GC 3/C XLPE/PVC 5KV-15KV
Boring Machine	MP-GC 3/C EPR/CPE 5KV-15KV; MP-GC 3/C XLPE/PVC 5KV-15KV

SURFACE MINES

Primary Application Usages / Cable Recommendations

Dragline	SHD-GC 3/C NEOPRENE 8KV; SHD-GC 3/C TPU 8KV; SHD-GC 3/C NEOPRENE 15KV; SHD-GC 3/C TPU 15KV; SHD-GC 3/C NEOPRENE 25KV; SHD-GC 3/C TPU 25KV
Shuttle Car	TYPE W FLAT 2/C 2KV; TYPE W FLAT 4/C 2KV; TYPE G FLAT 2/C 2KV; TYPE G-GC FLAT 3/C 2KV; TYPE W ROUND 4/C 2KV; TYPE G-GC ROUND 3/C 2KV
Continous Miner	SHD-GC 3/C NEOPRENE 2KV; SHD-GC 3/C TPU 2KV; SHD-GC 3/C NEOPRENE 5KV; SHD-GC 3/C TPU 5KV; TYPE W ROUND 4/C 2KV; TYPE G-GC ROUND 3/C 2KV
Longwall Mining Equipment (Shearers, Conveyors, Crushers, Stageloaders)	SHD-GC 3/C NEOPRENE 2KV; SHD-GC 3/C TPU 2KV; SHD-GC 3/C NEOPRENE 5KV; SHD-GC 3/C TPU 5KV
Blast Hole Driller	SHD-GC 3/C NEOPRENE 2KV; SHD-GC 3/C TPU 2KV; SHD-GC 3/C NEOPRENE 5KV; SHD-GC 3/C TPU 5KV; SHD-GC 3/C NEOPRENE 8KV; SHD-GC 3/C TPU 8KV; TYPE W ROUND 4/C 2KV; TYPE G-GC ROUND 3/C 2KV
Loading Machines	SHD-GC 3/C NEOPRENE 5KV; SHD-GC 3/C TPU 5KV; SHD-GC 3/C NEOPRENE 8KV; SHD-GC 3/C TPU 8KV; SHD-GC 3/C NEOPRENE 15KV; SHD-GC 3/C TPU 15KV
Pumps	SHD-GC 3/C NEOPRENE 2KV; SHD-GC 3/C TPU 2KV; TYPE W ROUND 4/C 2KV; TYPE G-GC ROUND 3/C 2KV
Roof Bolter	SHD-GC 3/C NEOPRENE 2KV; SHD-GC 3/C TPU 2KV

REELING

Cable Type	Reeling Applications
SHD-GC NEOPRENE, CPE, HYPALON 2KV-15KV, TYPE G-GC 3/C 2KV, TYPE W 3/C & 4/C 2KV	Monspiral Level Wind Randon Wind Reeler On Gantry Cranes, Container Cranes, Log Handling Cranes, Stacker/Reclaimers Ports, Shipyards, Lumber Mills, Steel Mills, Mines

TELE-FONIKA STRENGTHS

- Warehousing and Global Product Reach (Covering Virtually Every Continent)**
 Short delivery time from factories / Global facilities / Stock on demand
- Flexibility and Special Arrangements for Long Term Contracts**
 Pricing / Quality / Value
- Widely Diversified Cable Range**
 25,000 different types of cable constructions with various mining cable jacket types
- Advanced Technology/ R&D and Constant Cost Reduction Initiatives**
- TF Cable Value Promise**
 HV cable systems / Mining cable terminations and accessory supply / Terminating and kitting / Stock on hand

The Leader in Mining Cable Quality and Performance

MINING CABLES WITH EXTRA HEAVY DUTY (EHD) JACKETS

MECHANICAL CHARACTERISTICS

Attribute	ICEA Minimum for Extra Heavy Duty Jackets	Chlorinated Polyethylene (CPE)	Chloroprene (Neoprene) Black Jackets	Chloroprene (Neoprene) Colored Jackets	Chlorosulphonated Polyethylene (CSPE)	Polyurethane (TPU) Jackets
Tensile Strength (psi)	2400	2450	2500	2700	2550	6600
Elongation (%)	300	350	500	380	350	480
Modulus at 200% (psi)	700	980	820	820	800	1960
Tear Resistance Strength (lbs/in.)	40	42	66	90	60	210

JACKET COLOR

TF Chloroprene (Neoprene) or Chlorinated Polyethylene (CPE) and TPU colored jackets have the same physical properties as the black jackets with added visibility for mine applications. The jackets meet and often exceed the requirements of extra heavy or heavy duty cross linked jackets of ICEA S-75-381 WC 58-1991.

Available Colors:

Red, Yellow, Green, Orange, Blue, and Black



CABLE ASSEMBLIES:

- **Couplers** – A range of couplers are stocked for shovel, drill and dragline applications (up to 25kv)
- **Molded Pot Heads**
- **Installations**



Tele-Fonika in cooperation with its network of partnerships spread nationwide offers a full line of cable stock, cable couplers, pot heads, and other accessories. Combined with the ability to offer cable repairs along with first hand engineering support, **TELE-FONIKA CABLE AMERICAS BECOMES THE TURN KEY CHOICE FOR MINING CABLES.**

Tele-Fonika Kable S.A.

TELE-FONIKA KABLE SA, a privately held wire and cable manufacturer headquartered in Krakow, Poland, is one of the largest wire and cable companies in the world. **TF** operates 8 plants in Central and Eastern Europe with a distribution network stretching 90 countries. Formed through a series of acquisitions and mergers, **TFK** has developed world-class technology centers of excellence with state of the art manufacturing operations. Founded in 1992, **TF** grew rapidly and the operations today are a result of internal development projects supported by strategic investments.

TF is the leading medium and high voltage cable manufacturer in Europe with significant market share in rubber insulated

portable power cables used by **HEAVY INDUSTRY & MINING**. Additionally, the company manufactures products for the **TELECOMMUNICATION, SHIP BUILDING, ELECTRONIC and ENERGY** sectors.

All manufacturing facilities are ISO 9001, ISO 2000, and ISO 14001 certified. All products are manufactured to public, utility and industrial standards including ICEA, IEEE, and ASTM. **Tele-Fonika** has over 400 individual certificates issued by more than 30 governing bodies which include UL, CSA, MSHA, SABS, VDE, CE, etc.



Key Features

Long term experience of manufacturing demonstrates a proven track record of manufacturing products for underground and surface mine applications. This has generated the ability to develop and produce a very extensive range of mining cables that provide the following features.

- **FLEXIBILITY:** Excellent flexibility and torsion resistance due to superior construction and applied materials – Tinned and Rope lay conductors and pure integral filling.
- **WORKING SAFETY:** Maximum working safety due to applying individual shielding and minimizing induction of mutual electromotive forces.
- **DURABILITY:** Excellent abrasion, compression, tear and flame resistance due to **Tele-Fonika's** in-house formulated jacketing compounds: Chloroprene (Neoprene), Chlorinated Polyethylene (CPE), Chlorosulfonated Polyethylene (Hypalon) or the extra tough Polyurethane (TPU). **Results of the abrasion testing according to the ISO 4649:07 has found that Tele-Fonika's standard rubber jacketing options have a 20% higher resistance than its leading global competitors. (Result: 150-180mm³ as per ISO4649:07 testing)**
- **MECHANICAL:** High Dielectric strength, excellent resistivity, excellent resistance to flame (low flammability), good elongation capability, low flexural modulus, excellent resistance to water absorption, oils and fuels.

MINING CABLE TYPES



Industrial Power Cable 600V Single Conductor
RHH/RHW-2 USE-2 (UL) 90C, Welding Cable 105C
CSA, Stage Lighting 105C (UL)



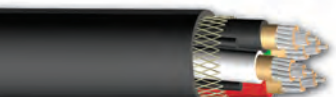
Industrial Portable Cords and Flexible Control Cables 300V-600V
SOOW 600V SJOOW 300V 90C and 105C (UL) CSA MSHA



Industrial Portable Power Cable 2KV (1KV) Single Conductor
DLO RHW-2 RW90 90C 2KV MSHA (UL) CSA



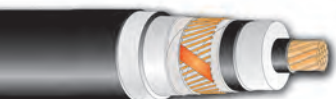
Industrial Portable Power Cable 2KV Multiconductor
W / G / G-GC 90C 2KV (UL) C(UL) MSHA



Mining Portable Power Cable 2KV Multiconductor
W / G / G-GC 90C (UL) C(UL) MSHA



Shielded Mining Portable Power Cable
SHD-GC SHD-PGC 90C MSHA CSA,
MP-GC 90C MSHA



High Voltage Power Cable
69 KV - 230KV

REGULATORY APPROVALS

MSHA	Mine Safety & Health Administration USA	W, G, GG-C MP-GC SHD-GC
	Underwriter's Laboratories USA	W G GG-C
	Canadian Underwriter's Laboratories USA	W G GG-C
	Canadian Standards Association Canada	W MPGC G GG-C SHD-GC



Standard Construction

Tele-Fonika offers an extra heavy duty grade, reinforced low-layer thermo set jacket providing excellent protection and hazard resistance. For the harshest applications, **Tele-Fonika's thermoplastic Polyurethane (TPU)** jacket provides the super tough physical parameters needed for the roughest mining environments and longer service life. **Tele-Fonika's** TPU cable jackets offer superior tensile strength, tear and abrasion resistance when comparing to standard Neoprene and CPE jackets.

CONSTRUCTION

TF cable construction includes an integral fill, taped core and double layer jackets. Two pass jackets with the nylon reinforcing open braid and special compound technology applied provide durable bonding of the layers.

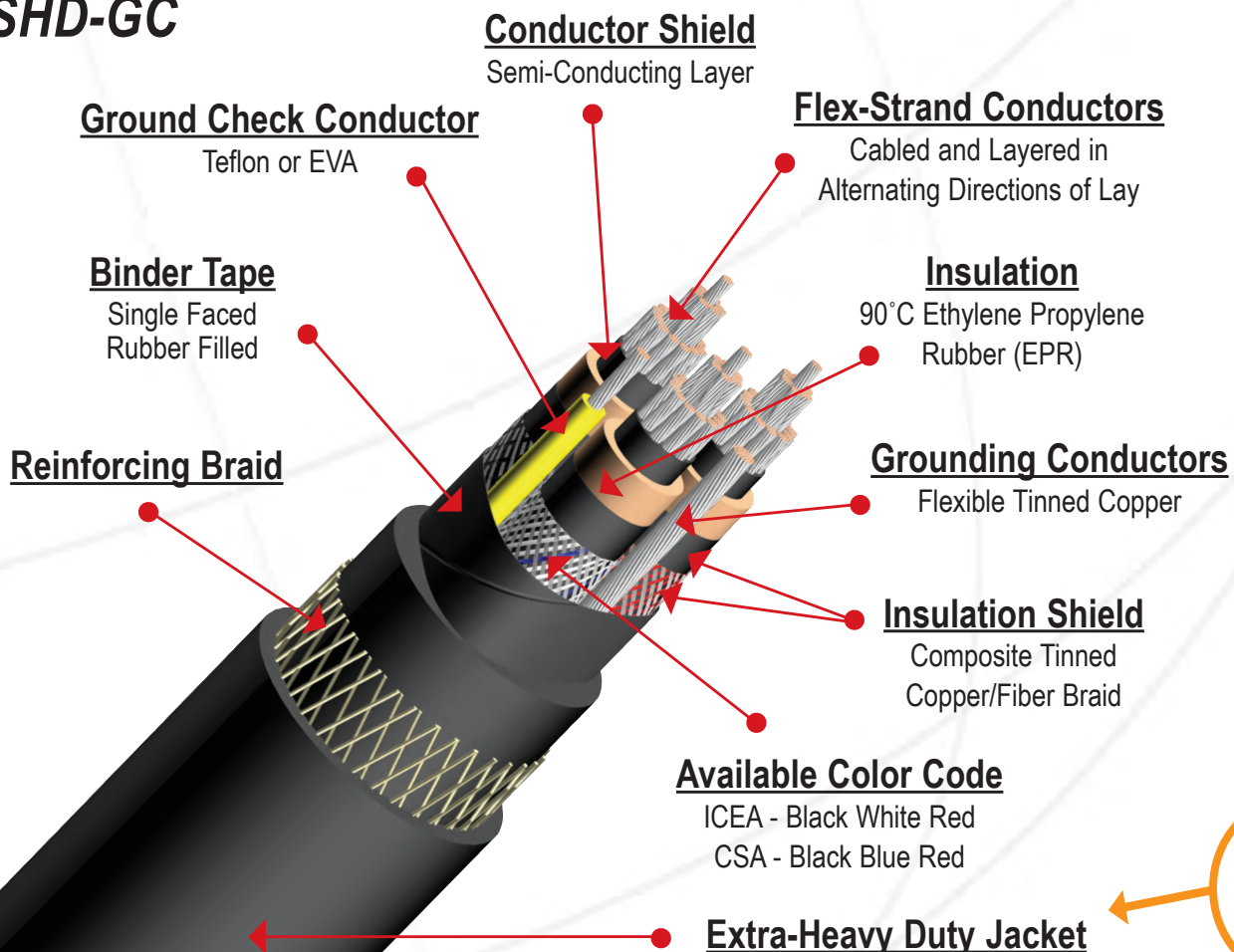
INSULATION

TF thermosetting hard ethylene propylene insulation compound provides the properties needed for high dielectric strength, ozone resistance, water resistance and treeing. The insulation meets and often exceeds minimum requirements stipulated by UL and ICEA standards.

JACKET

TF Chloroprene (Neoprene) and Chlorinated Polyethylene (CPE) based compounds provide the physical properties for performance and strength needed to resist the tear, abrasion, oil and are flame retardant. For added durability and reinforcement, TFCA Brand offers the extra tough TPU (polyurethane) jacket.

SHD-GC





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