




PROVEEDORES MINEROS
EXPERTOS EN SOLUCIONES ELÉCTRICAS CERTIFICADAS

CATALOGUE
2023/24 EDITION



PRESENTATION

Mining Suppliers assumes the challenge of the main industries; mining, sustainable, digital and autonomous energy, hydrocarbons and infrastructure, presenting its main products and solutions of its partners strategic, with more than 100 years of experience, under certifications and international standards.

Indeed, our strategic alliances also allow us jointly present our industrial and engineering division, with innovation and development under ISO 9001:2015 certification in cables, connectors, boards, rooms and electrical connections up to 25kV; having as added values SAFETY, PRODUCTIVITY and RELIABILITY (SPC), in a MINING and INDUSTRY 4.0.

We are prepared to meet the diverse needs of our clients and users, with a staff of professionals and technicians, with more than 25 years of experience in developing and supplying our products.

By, CEO.

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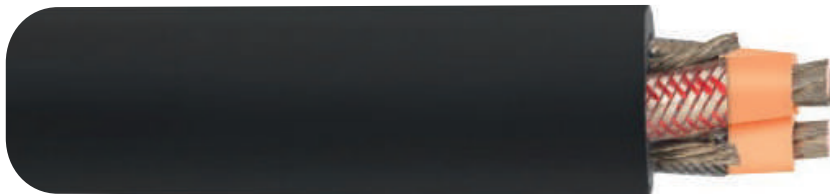
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CABLES TYPE G-GC / SHD-GC

- 01 For mobile mining equipment such as shovels, drilling rigs, crane, among others.
- 02 Medium voltage portable cable for severe operating conditions in open pit and underground mining.
- 03 Tensile, tear, impact, drag, among others.

CABLES G-GC, SHD-GC EPR/CPE 2KV UP TO 25 KV



SHD-GC EPR/TPU CABLES, 1 KV UP TO 25 KV



ARISTONCAVI

CABLE W/O LED LIGHTS DECREASES SHOVEL AVAILABILITY



NEW LED CABLE LIGHTS DUE TO VOLTAGE

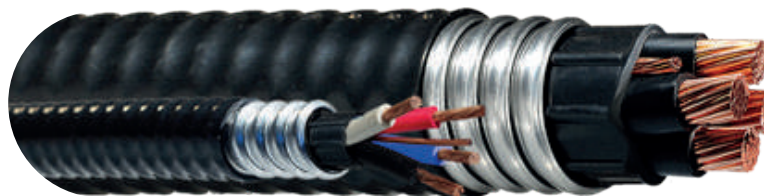


SHD-GC LED CABLES 2ND GENERATION

- 01 Prevents crushing by trucks.
- 02 Signaling with voltage only.
- 03 Same diameter as an SHD-GC cable without LED light.
- 04 Light all the time plugged in.

ARMORED INDUSTRIAL CABLES

Resistance to weathering, abrasion, sun rays and oil. His armor provides greater mechanical protection and in turn provides flexibility compared to other types of armor.



An effective technical alternative with international certification that replaces the use of pipes and subsequent wiring, achieving a reduction of up to 35% in costs and installation times.

INDUSTRIAL POWER CABLES

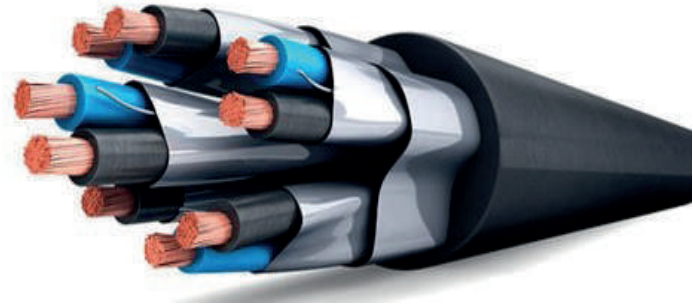
Cables with UL certification types XHHW-2 (Tray Cable) and MV-105 up to 35KV; are those that provide a more reliable value than other similar types, for their high power electrical installations, available in copper or aluminum.



 **General Cable**

INDUSTRIAL CABLES OF INSTRUMENTATION

Multi-conductor cables that carry electrical signals low energy used for supervise or control electric power systems and its associated processes.



ALUMINUM AND BARE CABLES

Aluminum cables are the best economical alternative for your fixed installations.

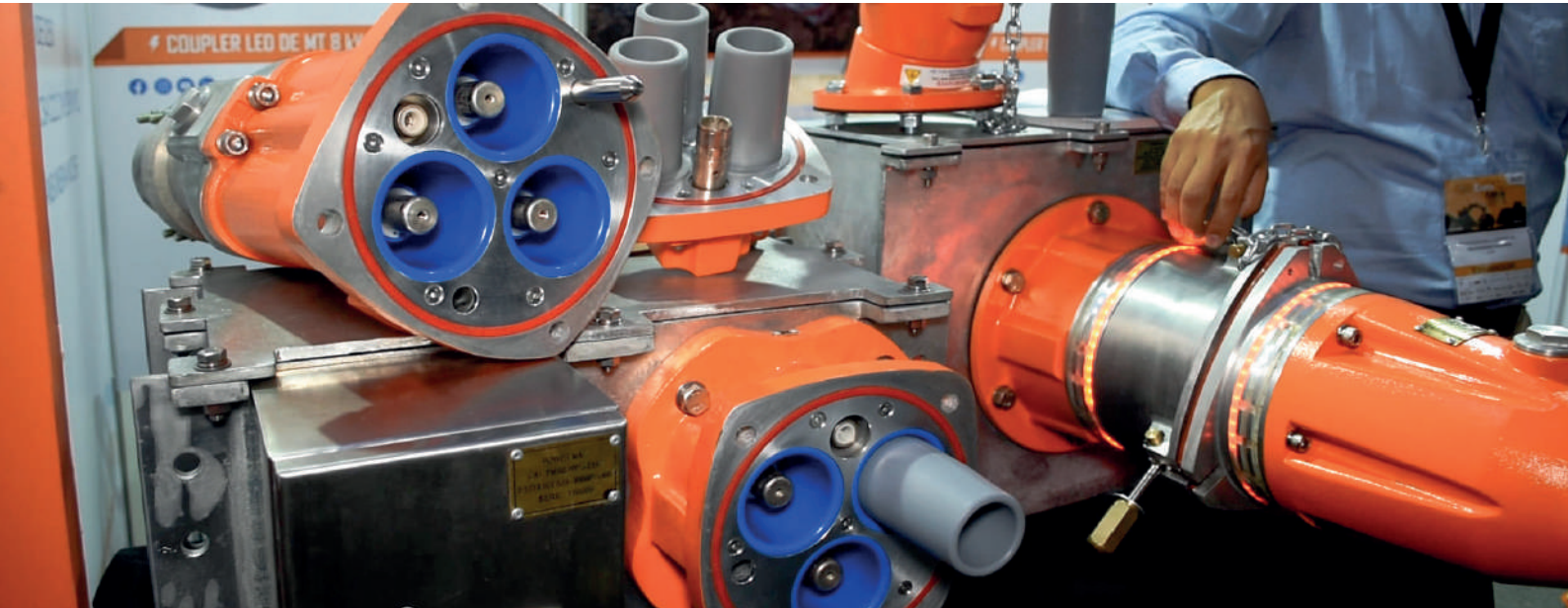
The electrical resistivity of AL is less than that of CU, so it is necessary increase the section of the aluminum cable to match the capacity of copper wire load.

Bare wires for grounding, corrosion resistant It can be used in installations with saline atmospheres and in áreas industrial environments with corrosive fumes and vapors.



FIRST LATAM MANUFACTURER OF COUPLERS UP TO 25000 VOLTS

- Under international standard CSA and/or AS/NZS
- Configuration: 3 Phases + Earth + Pilot





25 KV COUPLERS ENERGIZING THE LIMA METRO 2 TBM



MEDIUM 5/8kV PLUG VOLTAGE FOR SYSTEMS FIXED AND PORTABLE CABLES

The couplers are used in pit/pit mining operations open (surface mining) and underground (underground mining). They provide safe and convenient means of connect laptop cables up to 8,000 volts and up to 400 amps, copper or aluminum conductors mining equipment, electric shovels, drills, loaders, barges, tunnel boring machines, portable substations, portable junction boxes or for join half lengths of cables strain.

FEATURES AND COMPETITIVE ADVANTAGES

Resistant to weather:
IP68.

Subjection and entry of the cable, consisting of a clamp and a stamp arrangement, which will provide a grip cable lock and seal airtight.

Male contacts and 99.9% copper female
ASTM B-187.

Replaceable parts.

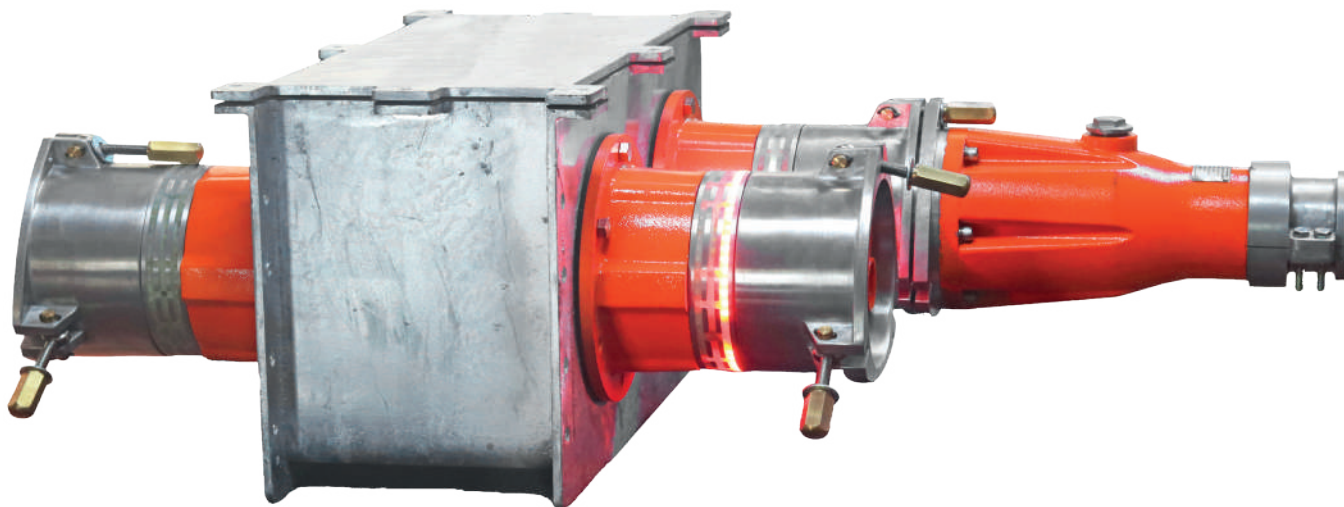
It is recommended to use the insulating padding for places of high humidity and with sudden changes of temperatures.

Durable insulators that resist cracks or other defects that can drive to tracking.

ASTM/ALCAN Corrosion Resistant Aluminum.



SPLITTER BOX, 5/8kV



PLUG AND ACCESSORIES UP TO 25 KV, LOW STANDARD AUSTRALIAN AS/NZS

Used in industrial operations, oil, gas, underground mining and on the surface, in the open sky and in Wells.

Plugs provide a means safe and convenient to connect fixed or portable cables up to 25000 volts and 800 Amps, copper or aluminum conductor mining equipment, electric shovels, drag lines, loaders, barges, tunnel boring machines, substations portable junction boxes portable, or to join lengths of medium voltage cables.



Optional With Led Ring,
Voltage Detector



COMPARISON TABLE BETWEEN CSA AND AS/NZ STANDARDS

ITEM	CHARACTERISTIC	8KV CSA CONNECTOR (female-Male)	8KV AS/NZS CONNECTOR (male-male)	COMMENTS
1	Stiffness test dielectric	35 kV @ 1 minute	35 kV @ 1 minute	Both comply with the same level of isolation
2	Tightness degree	IP68	IP68	Tightness test at 1.1m @ 60 minute
3	Connection type	Female-male	Male-male	The advantage of AS/NZS could be that all the connectors are male and the stock is single connector type (male)
4	Connection accessories	Not required	Connectors are required female phase for the connected	Requires connection accessories (phase connectors), which are handled in the field and susceptible to pollution that could lead to failure
5	Coupling System	Adjust via 3 bolts	4 bolt adjustment with M12 nut	CSA can be coupled up to 50% less time than an AS/NZS
6	Weight	12kg	16kg	CSA weighs 30% less than AS/NZS, minimizes ergonomic risks
7	Length	490mm	560mm	CSA mide un 15% menos que AS/NZS, por lo tanto, permite una mejor manipulación del operador
8	Population participation of couplers in the LATAM market.	>90%	<10%	AS/NZS recently standardized in the central zone of Peru
9	Price	X	X+40%	AS/NZ demands more inputs and processes.
10	LATAM experience	More than 80 years	Less than 10 years	CSA has greater acceptance in LATAM according to our stereotypes.

LOW VOLTAGE COUPLERS UP TO 2.5 kV FOR PORTABLE CABLE SYSTEMS

Used in underground mining operations, open pit (pit), energy, ships, trains, etc.

Provide a safe and fast means of connecting portable cables with capacities up to 2500V, 630 AMP.

APPLICATIONS

Pumps, jumbos, scoops, dredges, distribution boxes, tunnels, or also as cable extensions/splices.



MAIN CATALOGS OF LOW VOLTAGE COUPLERS STANDARDIZED IN PERU, BOLIVIA, CENTRAL AMERICA AND COLOMBIA

Coupler 160A (3Phase + 1Ground + 1Pilot)		
Catalogue	Type	Wire range
PM9345-10 SP	Female	8- 2 AWG (10-35MM2)
PM9345-11 SP	Male	8- 2 AWG (10-35MM2)
MA9345-20 SP	Equipment Mount Female	8- 2 AWG (10-35MM2)
MA9345-21 SP	Equipment Mount Male	8- 2 AWG (10-35MM2)
MA9345-20 SPI 20°	Equipment Mount Female, inclination 20°	8- 2 AWG (10-35MM2)

Coupler 250A (3Phase + 1Ground + 1Pilot)		
Catalogue	Type	Wire range
PM9347-1012 SP	Female	1-2/0 AWG (50-70MM2)
PM9347-1011 SP	Male	1-2/0 AWG (50-70MM2)
MA9347-1014 SP	Equipment Mount Female	1-2/0 AWG (50-70MM2)
MA9347-1013 SP	Equipment Mount Male	1-2/0 AWG (50-70MM2)
MA9347-1014 SPI 20°	Equipment Mount Female, inclination 20°	1-2/0 AWG (50-70MM2)

MAIN CATALOGS OF LOW VOLTAGE COUPLERS STANDARDIZED IN PERU, BOLIVIA, CENTRAL AMERICA AND COLOMBIA

Coupler 400A (3Phase + 1Ground + 1Pilot)

Catalogue	Type	Rango de cable
PM9347-2022 SP	Female	3/0-4/0 AWG (95-120MM2)
PM9347-2021 SP	Male	3/0-4/0 AWG (95-120MM2)
MA9347-2024 SP	Equipment Mount Female	3/0-4/0 AWG (95-120MM2)
MA9347-2023 SP	Equipment Mount Male	3/0-4/0 AWG (95-120MM2)
MA9347-2024 SPI 20°	Equipment Mount Female, inclination 20°	3/0-4/0 AWG (95-120MM2)

Coupler 630A (3Phase + 1Ground + 1Pilot)

Female	Male	Descripción
PM9351-4042	PM9351-4041	Coupler 2kV - 630A Maximum cable diameter 2.76" (70 mm) (3Phase + 1Ground + 1Pilot) Appropriate for flexible cables up 240mm ²
MA9351-4044		Equipment Mount Female 2kV- 630 A. (3Phase + 1Ground + 1Pilot) Appropriate for flexible cables up 240mm ²

LOW VOLTAGE COUPLER WITH INDICATOR LIGHT

ADVANTAGES

- Lets know the state of your ground Monitoring, without need to get close to the board where locate the relay.
- Allows to identify types of failure cable and facilitates location.

To order couplers with LED indicator, add the following suffixes to standard catalogs:

- LED160: For couplers up to 160 AMP
- LED250: For couplers up to 250 AMP
- LED400: For couplers up to 400 AMP



ELECTRICAL PANELS

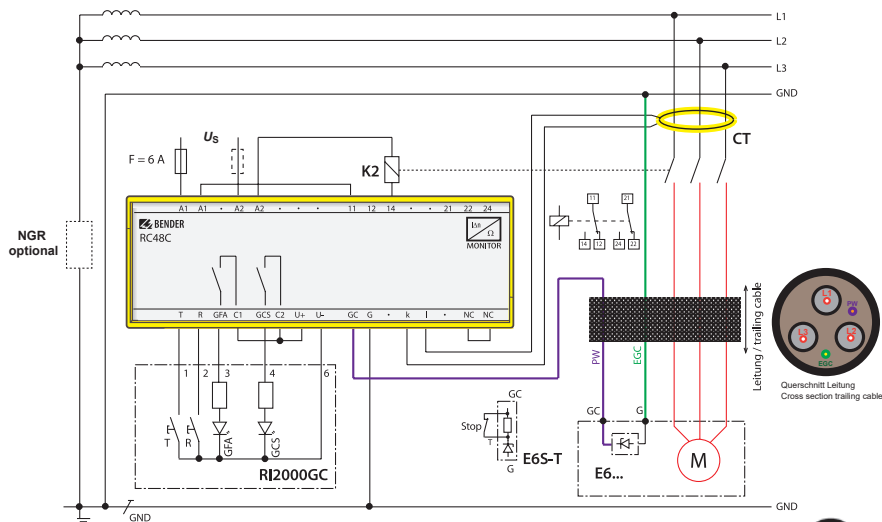
We have the best protection surge protection for boards power distribution and equipment generally with equipment imported NEMA and IEC.

Added to POWERMAX Couplers for a better pass of energy what makes it possible to protect people, avoid fire hazards and destruction of electrical machines.



BOARD WITH DIFFERENTIAL PROTECTION (GFP)

CONNECTIONS DIAGRAM



IN PARTNERSHIP WITH



BENDER

Y



POWERMAX
INNOVACIÓN Y DESARROLLO





DISTRIBUTION BOARDS



Schneider
Electric



CONTROL CENTER OF ENGINES (CCM)

We also integrate with brands under NEMA or IEC standard, with their respective certificates under inspections of:



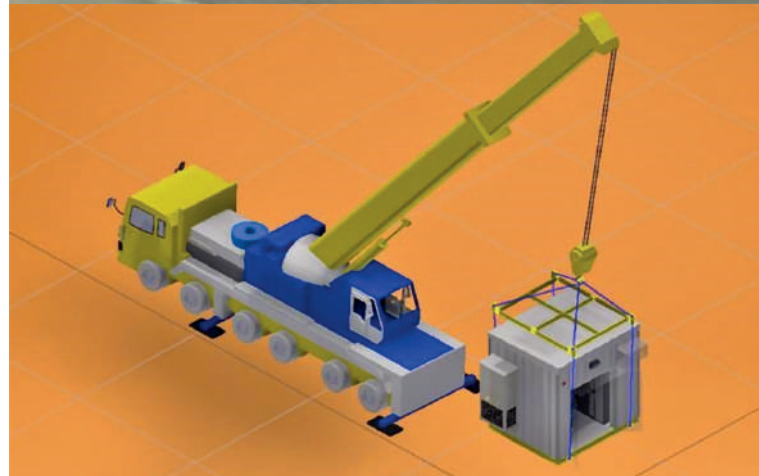
POLYESTER RESIN BOARDS REINFORCED WITH FIBERGLASS



ENGINEERING IN SUBSTATIONS, ELECTRICAL ROOMS IN MEDIUM

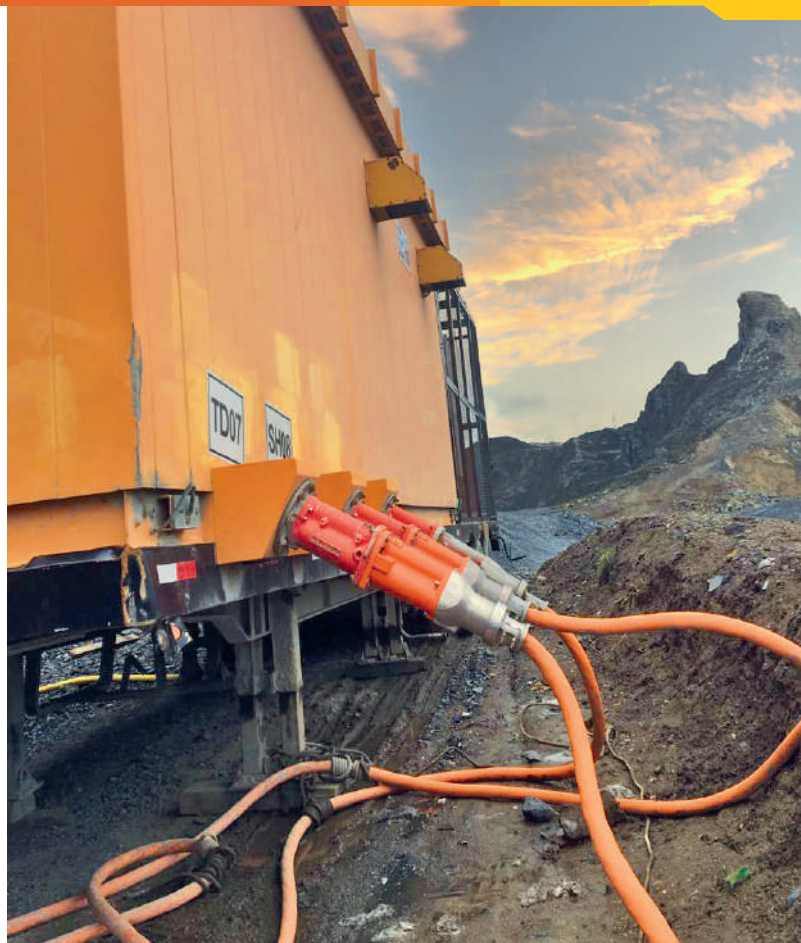
ELECTRICAL SUBSTATIONS

Designed with the objective of executing practical and safe maneuvers from the transformation to local supervisión or remote, facilitating process maneuvers switching, control and protection.



ROOM POWER SUPPLY ELECTRIC WITH COUPLERS UP TO 25000 VOLTS

Metallic structures that have the purpose of housing all electrical power equipment, control and operation required by the different types of projects and productive sectors.



EQUIPMENT EXPLOSION PROOF



LIGHTING EQUIPMENT

We have a wide variety industrial lighting products market leaders, available in standard configuration and LEDs.



KILLARK®

LIGHTING RETROFIT

Retrofit products are designed to replace systems lighting currents without having to remove its structure or make substantial changes to the bodies of the luminaires.

BENEFICIOS

- Reduced operating costs (maintenance and replacement) without compromising light quality
Replacement is as simple as unscrewing a bulb for another.
- LED lighting does not generate heat or radiation ultraviolet keeping intact the surfaces already installed.
- Being free of heavy metals such as mercury or lead, comply with the strictest regulations environmental issues around the world, becoming a environmentally friendly solution.



INSULATORS AND JOINTING KITS

We develop various techniques and procedures under international standards for the execution and repair of low and medium voltage electrical cables.



REPAIR OF ELECTRICAL CABLES WITH VULCANIZING PRESS

DESCRIPTION

- Hydraulic system 2000 PSI
- Power 5000 W
- Single-phase or three-phase electrical system 220/380/440 VAC
- Temperature 130° - 180°.
- Control panel: electric drive 220 VAC, individual T° control and program using controllers digital, timer for vulcanized.
- Molds for cables according to measure.



SOME CATALOGS OF MOLDS

- PMA70: Mold for mining cables 70 mm² 6/10 Kv.
- PMA20: Mold for mining cables 2/0 AWG 5-15 Kv.
- PMA30: Mold for mining cables 3/0 AWG, 5-15 Kv.
- PMA40: Mold for mining cables 4/0 AWG 5-15 Kv.



SPLICE LED WITH VOLTAGE DETECTOR

- Junction with LED signaling bright.
- Detects presence of voltage without need for the passage of current
- Applicable to mining cables existing, whether these are LEDs or not.
- Maximize security in operators handling the cable, since they have an indicator light of voltaje
- Minimize the occurrence of crushing overnight, ya that trucks can identify the wire.

TESTS UNDER STANDARDS INTERNATIONAL (JOINTS)

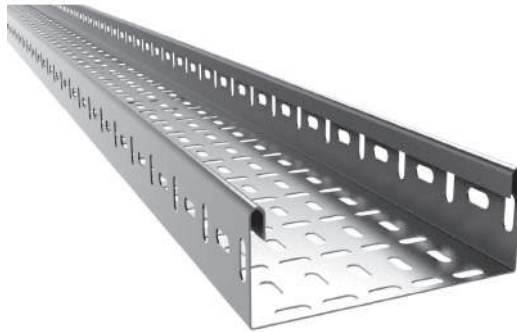
- Voltages: Up to 15kV (Standard: VDE)
- Regulatory Compliance: IEEE-404, VDE 0250
- Outdoor use, resistance to agents chemicals, oils, acids.
- Outer cover with MSHA seal and components according to ASTM standard, UL, CSA.



MISCELLANEOUS ACCESSORIES



CUT OUT SWITCHES



PORTABLE TRAY



COBERTORES AISLANTES

CABLE CROSSOVER MATS

- Protect exposed wires to the passage of large trucks tonnage (400 TN).
- Extends cable life.

Type	Dimensions	Catalogue
Van 20 TN	450 MM X 450 MM X 120 MM	PSCM
Truck 40 TN	450 MM X 800 MM X 120 MM	PSCBT
High tonnage	12000 MM X 950 MM X 125 MM	PSCAT



CABLE SADDLE

- To relieve mechanical stress on the cables.
- Polyurethane and rubber construction resistant, strong and flexible.
- Meets the minimum radius of cable curvature.



Dimensions	Catalogue
51 to 60 mm	BANPW - 060
61 to 70 mm	BANPW - 070
71 to 80 mm	BANPW - 080



ROPE BRAKE

Our rope brake has an important feature safety one handle self-locking which has been designed to prevent falls accidental cable tower.

- Automatic self-braking with total safety.
- The rope brake rotates 180 degrees to give a directional pull when hoisting.
- Designed for rope diameters Synthetic from ½" to 1".
- Capacity: 1.5 tons.



**ROPE FOR ROPE BRAKE,
ORANGE COLOR 5/8" X 300'**



Code	Weight
RB - 101SS	23.5 kg (52 lb)

MINING CABLE CONVERSION SERVICE STANDARD TO LED WITH VOLTAGE SENSOR



- The parameters are met electrical and mechanical cable existing.
- The splice exceeds a maximum of 10% the original diameter of the cable.
- Detection is implemented voltage in the 3 phases (redundancy).
- Light all the time: The splice does not requires the presence of current to turn on, voltage only.



RESULTS

■ **Security**

- The redundant indication of the voltage in the three (03) phases allows to verify the absence of voltage and prevent accidents disconnect the plugs.

■ **Operational Efficiency**

- Previene daño por atropellamiento en turno noche, por lo tanto, incrementa la disponibilidad de la pala.



CUSTOMERS

THANK YOU to our staff of qualified professionals and technicians, who satisfy our customers with our products, services and/or solutions electricity energizing Peru and Latam, for more than 20 years.



Pan American
SILVER CORP.



pluspetrol



minsUR



LUZ DEL SUR



Compañía
de Minas

Buena Ventura

BHP



SOUTHERN COPPER
SOUTHERN PERU

Yanacocha

GLENCORE

CERRO VERDE



AngloAmerican

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SGS

