



TIGER® BRAND

# TUNNELING POWER CABLES



AmerCable



# COMMITTED TO MORE PRODUCTIVE TUNNELING

*Tiger® Brand mining cables have powered some of the world's biggest TBMs.*

No matter what size your TBM, AmerCable has a tunnel cable productivity solution for your TBM project. Our innovatively engineered and manufactured cables are designed for your toughest conditions. As the leading producer of mining and tunneling cables in North America, AmerCable is dedicated to producing:

- cables that last longer in harsh tunneling environments
- cables designed to help provide greater levels of safety and productivity
- innovative jobsite cable delivery solutions

## INNOVATION & SUPPORT

- Designing insulating and jacketing materials that are more flexible with greater resistance to abrasion and moisture
- Cable constructions that last longer providing reduced down time for increased production
- New product development that addresses environmental, safety and cost reduction issues specific to your mining application
- AmerCable is an ISO-9001 certified manufacturer



*To support the world's largest TBM at the Seattle SR-99 tunnel project, AmerCable designed and built a unique cable payout tray system that mounted directly on the unit.*



## FIELD SUPPORT

Our highly experienced field application engineers are available 24/7 for on-site evaluation and solutions. They also conduct education and training sessions that address safety, splicing and cable handling issues.

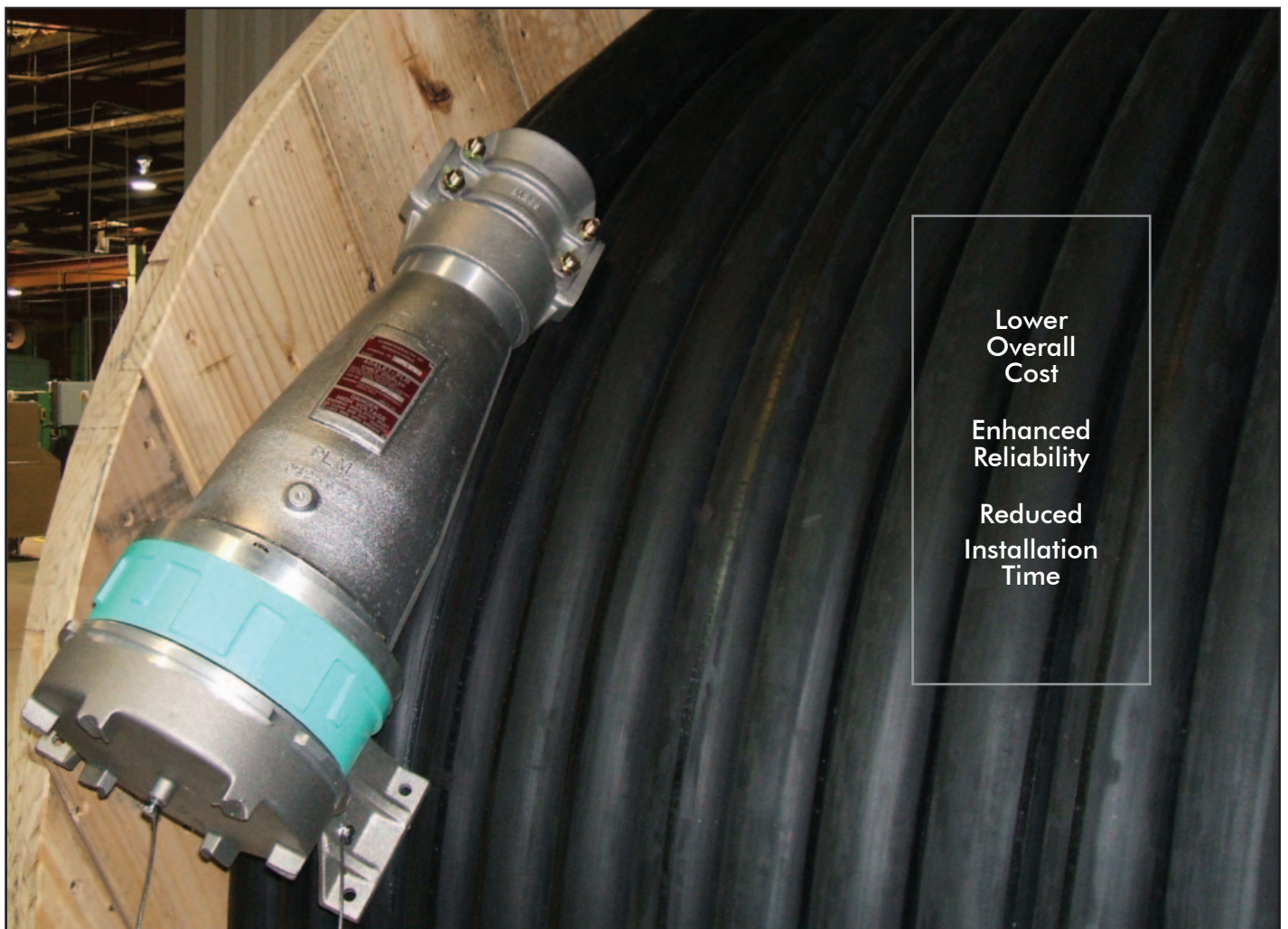


# FACTORY INSTALLED CABLE ASSEMBLIES



Professionally assembled at our AmerCable Systems facility in Katy, Texas, our team of experienced technicians mate cables and connectors that match your specifications and perform in the harshest operating conditions.

Factory prepared cable assemblies or terminations are a reliable way to lower your overall cable connectivity costs through enhanced reliability, reduced handling and lower installation time.





36-519

# TYPE SHD-GC 3/C

MOLD-CURED CPE JACKET • 15000 VOLTS



### Conductors

Flexible tinned copper

### Ground Check Conductor<sup>2</sup>

Flexible tinned copper with yellow polypropylene insulation

### Strand Shield

Semi-conducting layer

### Ground Wires

Flexible tinned copper

### Insulation

90°C ethylene-propylene rubber (EPR)

### Insulation Shielding

Semi-conducting tape

### Jacket<sup>1</sup>

Reinforced mold-cured thermosetting Chlorinated Polyethylene (CPE) Jacket. Cable identification via permanent marking.



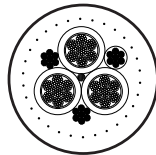
### Insulation Shielding

Tinned copper and color coded nylon braid

### Assembly

Taped core

See back cover for jacket colors and color/stripe options.



## APPLICATION

Heavy-duty high voltage portable power cable for use in circuits not exceeding the rated voltage. Recommended maximum continuous conductor temperature in 90°C. Suitable for shallow water submersion.

Cable carries "P-184-MSHA" marking indicating acceptance as flame resistant by the Pennsylvania Department of Environmental Protection and the Mine Safety and Health Administration.

Tiger® Brand Mining Cable meets or exceeds ICEA Standards S-75-381/NEMA WC-58, ASTM B-172 and B-33.



## RATINGS & APPROVALS

- Mine Safety & Health Administration 184-MSHA.
- Pennsylvania Department of Environmental Protection P-184.
- Insulated Cable Engineers Association S-75-381/NEMA WC-58. Design standard for mining cables.
- Canadian Standards Association C22.2 No. 96 File 82346, FT1, FT5, -50°C CSA Phase Color ID available on MTO Type SHD-GC, SHD-BGC up to 25kV SHD-GC meets FT4 requirements



Tiger® Brand is a registered trademark of AmerCable Incorporated.





36-525

# TYPE SHD-GC 3/C

## MOLD-CURED CPE JACKET

### 25000 VOLTS



#### Conductors

Flexible tinned copper

#### Ground Check Conductor<sup>2</sup>

Flexible tinned copper with yellow polypropylene insulation

#### Strand Shield

Semi-conducting layer

#### Ground Wires

Flexible tinned copper

#### Insulation Shielding

Semi-conducting rubber and semi-conductive tape

#### Jacket<sup>1</sup>

Reinforced mold-cured thermosetting Chlorinated Polyethylene (CPE) Jacket. Cable identification via permanent marking.



#### Insulation Shielding

Tinned copper and color coded nylon braid

#### Insulation

90°C ethylene-propylene rubber (EPR)

#### Assembly

Taped core

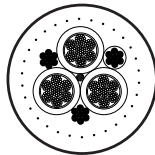
## APPLICATION

Heavy-duty high voltage portable power TBM cable for use in circuits not exceeding the rated voltage. Recommended maximum continuous conductor temperature in 90°C. Suitable for shallow water submersion.

Cable carries "P-184-MSHA" marking indicating acceptance as flame resistant by the Pennsylvania Department of Environmental Protection and the Mine Safety and Health Administration.

Tiger® Brand Mining Cable meets or exceeds ICEA Standards S-75-381/NEMA WC-58, ASTM B-172 and B-33.

**See back cover for jacket colors and color/stripe options.**



## RATINGS & APPROVALS

- Mine Safety & Health Administration 184-MSHA.
- Pennsylvania Department of Environmental Protection P-184.
- Insulated Cable Engineers Association S-75-381/NEMA WC-58. Design standard for mining cables.
- Canadian Standards Association C22.2 No. 96 File 82346, FT1, FT5, -50°C CSA Phase Color ID available on MTO Type SHD-GC, SHD-BGC up to 25kV SHD-GC meets FT4 requirements



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# TYPE MP-GC 3/C MINE POWER FEEDER

5/8/15KV • 100% LEVEL (GROUNDED)



## 36-601/602/604 MOLD-CURED JACKET

### Conductors

Copper

### Ground Check Conductor

8 AWG 7-wire copper with yellow polypropylene insulation

### Strand Shield

Semi-conducting layer

### Insulation

90°C ethylene-propylene rubber (EPR)

### Ground Wires

Tinned copper

### Insulation Shielding

Semi-conducting layer under copper tape (phase identification provided)

### Assembly

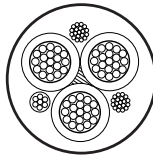
Taped core

### Jacket<sup>1</sup>

Mold-cured thermosetting Chlorinated Polyethylene (CPE) Jacket. Cable identification via permanent marking.



See back cover for jacket colors and color/stripe options.



## RATINGS & APPROVALS

- Mine Safety & Health Administration.
- Pennsylvania Department of Environmental Protection.
- Insulated Cable Engineers Association S-75-381.
- Canadian Standards Association C22.2 #96.1, File 82346, FT5, -35°C Type MP-GC, MPF up to 35kV
- RETIE

## 621/622/624 PVC JACKET

### Conductors

Copper

### Ground Check Conductor

8 AWG 7-wire copper with yellow polypropylene insulation

### Strand Shield

Semi-conducting layer

### Insulation

90°C cross-linked polyethylene

### Fillers

### Binder Tape

### Jacket<sup>1</sup>

Polyvinyl chloride (PVC), cable identification via permanent surface marking.

### Ground Wires

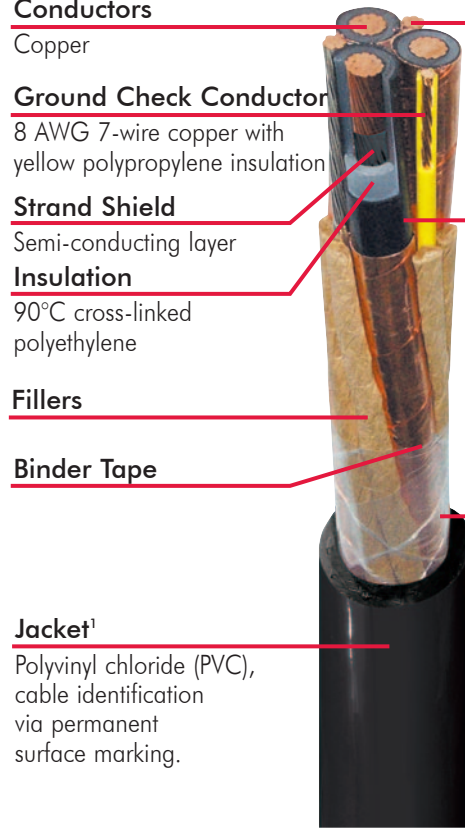
Tinned Copper

### Insulation Shielding

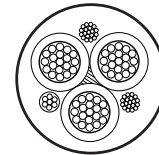
Semi-conducting layer under copper tape (phase identification provided)

### Assembly

Taped core



PVC jacket color options are the same as CPE. See back cover.



## RATINGS & APPROVALS

- Mine Safety & Health Administration.
- Pennsylvania Department of Environmental Protection.
- Insulated Cable Engineers Association S-75-381 up to 25kV.
- Canadian Standards Association C22.2 #96, File 82346, FT5, -35°C Type MP-GC, MPF up to 25kV
- RETIE



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**37-102 CIR**

# CIR® POWER CABLE (CRUSH & IMPACT RESISTANT)

**THREE & FOUR CONDUCTOR + GROUND**
**UL LISTED AS TYPE TC-ER • 0.6/1KV • RATED 90°C**

### Insulation

GEXOL® cross-linked flame retardant polyolefin, meeting the requirements for Type P of IEEE 1580 and Type X110 of UL 1309/CSA 245. 600V/IEC 1000V.

### Safer to Handle

CIR® has no sharp metal armor edges that imperil worker's hands during splicing and installation of connectors



### Conductor

Soft annealed flexible stranded tinned copper per IEEE 1580 Table 11.



### Jacket

A black, flame retardant, oil, abrasion, chemical and sunlight resistant thermoplastic compound meeting UL 1309/CSA 245 and IEEE 1580.



## APPLICATION

A flexible alternative to Type MC cable where application requires crush and impact protection.

## FEATURES

- MSHA approved (2-7 conductors)
- Complies with the requirements for TC-ER-HL per UL 2225 (Up to 1-inch OD)
- Rated TC-ER (Greater than 1-inch OD)
- Exceeds CSA cold bend /cold impact (-40°C / -35°C)
- Brittlepoint as per ASTM D 746-07 exceeds -65°C for Jacket and -75°C for Insulation
- Gas & vapor tight – impervious to water & air

## CIR vs. TYPE MC

- Smaller bend radius (up to 40% smaller)
- Reduced tray fill (up to 35% less)
- Considerably more flexible
- Reduced installation time and cost



## RATINGS & APPROVALS

- MSHA approved (3 & 4 Conductor Cables)
- UL Listed as TC-ER-HL – suitable for Class 1, Div 1 and Zone 1 environments (cables up to 1" OD)
- UL Listed as Type TC-ER – suitable for use in Class 1, Div 2 and Zone 2 environments (cables greater than 1" OD)
- UL Listed as Marine Shipboard Cable (E111461)
- American Bureau of Shipping (ABS)
- Flame Retardant – IEEE 1202
- 90°C temperature rating





36-501



# VFD POWER CABLE

SHIELDED • 2000 VOLTS

3 CONDUCTORS + 3 GROUNDS + GROUND CHECK(S)

### Ground Conductors (x3)

Flexible tinned rope stranded conductors per ASTM-B-172 and B-33, Insulated and colored green

### Insulation

Type II EPDM (EPR) suitable for continuous operation at 90°C. Ozone resistant.

### Shield

Overall tinned copper braid plus aluminum/polyester tape providing 100% coverage

### Jacket

Reinforced mold-cured thermosetting Chlorinated Polyethylene (CPE) Jacket. Cable identification via permanent marking.

### Power Conductor

Extra flexible tinned rope stranded conductors per ASTM-172 and B-33

### Ground Check' Wire(s) Optional

Flexible tinned copper with yellow insulation. Center ground check available

### Other VFD Constructions Available:

- Low Smoke Halogen-Free
- Crush & Impact Resistant (CIR®)
- Type TC-ER

## APPLICATION

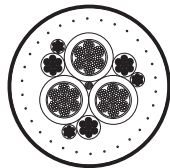
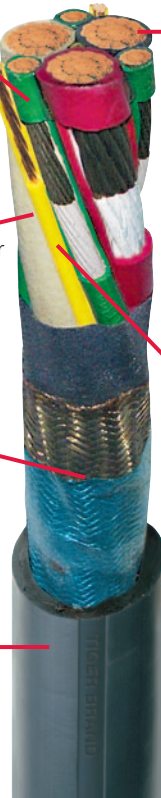
A flexible, braid and foil shielded, 2kV power cable specifically engineered for use in variable frequency AC motor drive (VFD) applications.

Cable carries "P-184-MSHA" marking indicating acceptance as flame resistant by the Pennsylvania Department of Environmental Protection and the Mine Safety and Health Administration.

Tiger® Brand Mining Cable materials meet or exceed ICEA Standard S-75-381/NEMA WC-58 for Type SHC constructions. ASTM B-172 and B-33.

## RATINGS & APPROVALS

- 90°C Temperature Rating
- Tiger® Brand Mining Cable materials meet or exceed ICEA Standard S-75-381/NEMA WC-58.
- Mine Safety & Health Administration 7K-184-MSHA.
- Pennsylvania Department of Environmental Protection P-7K-184.
- Canadian Standards Association File 82346 2kV CSA Phase Color ID available on MTO



See back cover for jacket colors and color/stripe options.



## SAFETY, TRAINING & EDUCATION

MineCable-Safe is an investment in **Safety** and **Productivity** that brings the knowledge and experience of our field engineers to your project.

High voltage cables require special handling to get maximum service life and keep personnel safe.

Can you identify the difference between a productivity problem and a safety issue? **Our experts can.**



# ELECTRO-OPTICAL CABLES

## POWER & HIGH-SPEED DATA IN ONE CABLE

AmerCable is the only cable manufacturer offering electro-optical cables for mining or tunneling applications. Fiber optic cable is used for high-speed data gathering from equipment or remote control usage.

Contact your AmerCable rep for more information.

### COMPOSITE ELECTRO-OPTICAL POWER CABLES



### COMPOSITE FIBER OPTIC SIGNAL CABLES



## EXPERTISE IN TUNNELING PROJECTS

**PROJECT PLANING:** AmerCable is the industry leader in product and project support. From initial planning to delivered product, we're with you every step of the way. Our Tiger® Brand cables have powered some of the largest TBMs in the world.

**CABLES:** AmerCable has flexible, dynamic cables that are popular in the tunneling industry. If you have an unusual application or specific design requirement, such as the addition of fiber optic, our design team will develop a cable package that meets your requirements.

**LOGISTICS:** AmerCable will work with you to assure your project is kept on time with the cables you need, when you need them.

# TRANSIT CABLE 1/C

LOW SMOKE HALOGEN-FREE • FLAME RESISTANT  
EXTREMELY FLEXIBLE • 2KV • RATED 90°C

## Conductor

Soft annealed flexible stranded tinned copper per IEEE 1580 Table 11.



## Sheath (Optional)

A black low smoke halogen-free flame retardant polyolefin, meeting IEEE 1580.

## Insulation/Jacket

GEXOL®-HF low smoke, Halogen-Free flame retardant cross-linked, polyolefin insulation meeting the requirements for Type LSE or LSX of IEEE 1580 plus a black low smoke Halogen-Free flame retardant polyolefin jacket meeting IEEE 1580. 2000V/IEC 1000V.

## Armor (Optional)

Basket weave wire armor per IEEE 1580 and UL 1309/CSA 245. Bronze standard. Tinned copper available by request.

## APPLICATION

AmerCable's Transit Power Cables are your best choice when safety, mechanical toughness and long-term reliability are important.

## FEATURES

- Totally HALOGEN-FREE EPR/XLPO cable construction.
- Flame retardant: IEC 332-3 Category A and IEEE 1202.
- Emits low smoke and no toxic fumes
- High strand count conductors make this product more flexible and easier to install than IEC 60092-350 Series cables.
- Severe cold durability: exceeds CSA cold bend/cold impact (-40°C/-35°C).
- Meets New York State Combustion Toxicity Registration Law.
- Excellent heat & moisture resistance.
- Rated 90°C wet, 105°C dry.
- Completed cable passes IEEE 383 flame test.
- Optional braid armor of bronze, aluminum or tinned copper.

Also Available in  
**Fire Resistant:**  
**IEC 60331**  
**Construction**

## RATINGS & APPROVALS

- 90°C Temperature Rating
- ABS 99-BT5905-X
- NRTL Classified to IEEE STD. 1580
- Transport Canada
- Det Norske Veritas (DNV) (pending)





## DLO • 2000 VOLTS • 90°C

### DIESEL LOCOMOTIVE CABLE • LIMITED SMOKE (SIZES 2/0 AND HIGHER) • EP/CPE • RHH, RHW-2

#### CONDUCTOR

Flexible-stranded,  
tin-coated annealed  
copper



#### SEPARATOR

Suitable separator tape  
provides easy stripping  
of insulation

#### INSULATION

Ethylene-Propylene rubber  
(EPR)

#### JACKET

Flame retardant,  
oil and sunlight  
resistant Chlorinated  
Polyethylene (CPE)



## APPLICATION

AmerCable's 2000V Diesel Locomotive Cable (DLO) is a single conductor portable power cable suitable for use in applications needing great flexibility, excellent wearability and good flex life. Applications include locomotive and car equipment, motor and generator leads, battery leads, shipyards, telecommunications power, heavy earth moving equipment, renewable energy and other heavy duty flexing applications.

## FEATURES

- A two layer composite of flame retardant, oil and sunlight resistant Chlorinated Polyethylene (CPE) outer layer and Ethylene-Propylene rubber (EPR) inner layer. The composite design provides significant diameter reductions compared to designs using full thickness jackets.
- Suitable for continuous operating temperatures of 90°C, wet or dry
- Rated RHH, RHW-2; 2/0 – 1111 kcmil listed and marked "for CT use"
- UL listed as Sunlight Resistant
- UL listed as Marine Shipboard Cable (4/0 and larger) – Special order only
- Insulation and jacket meet hazardous waste regulations, per Code of Federal Regulations 40 Section 261 (40CFR261) for characteristic lead content
- Flame Resistance: FT-4/IEEE1202 for 2/0 – 1111 kcmil and UL VW-1
- Meets smoke release and other requirements of Vertical Cable Tray Test UL 1685 and is marked "ST-1" for 2/0 – 1111 kcmil
- Extremely flexible stranding used for increased flexibility and ease of installation

## RATINGS & APPROVALS

- ICEA S-95-658/ NEMA WC-70: Nonshielded Power Cables Rated 2000 Volts or Less for the Distribution of Electrical Energy
- UL Standard 44: Thermoset Insulated Wires & Cables, Types RHH, RHW-2. UL VW-1
- UL Standard 1685: Vertical Tray Fire propagation and Smoke Release Test for Electrical and optical Fiber Cables. (UL,ST-1)
- CSA C22.2 No. 38 Thermoset Wires & Cables, Type RW90
- ASTM B-33: Standard Specification for Tinned Soft or Annealed Copper Wire for Electrical Purposes
- ASTM B-172: Standard Specification for Rope-Lay-Stranded Copper Conductors having Bunch-Stranded Members, for Electrical Conductors
- MSHA P-184
- RoHS Compliant

# JACKET COLORS & STRIPES



## AMERCABLE CPE JACKETS

AmerCable's thermoset Chlorinated Polyethylene (CPE) jacket provides the physical performance and strength needed to resist wear, tear, abrasion and compression cuts caused by everyday use. This tough, durable jacket is a proven performer in tunnel projects and mines throughout the world.

Tiger Brand cables are available in black (standard) and five optional colors. Colored cables provide extra safety through visual circuit identification and have the same performance specifications as our standard black cable.



Black  
(standard)

Blue

Green

Orange

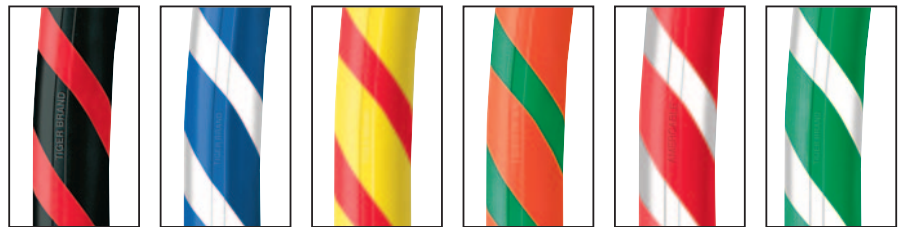
Yellow

Red

## TIGER STRIPES – STANDARD

AmerCable's standard **Tiger Stripes** provide additional color combinations by vulcanizing a contrasting colored stripe into the jacket of our round CPE cables.

Shown are a few examples of the many possible jacket / stripe combinations.



Black/Red

Blue/White

Yellow/Red

Orange/Green

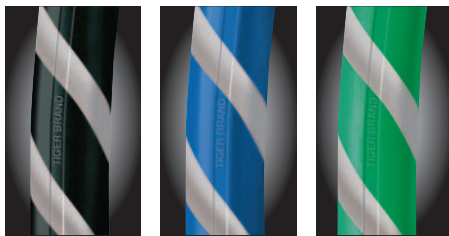
Red/White

Green/White

Consult your AmerCable rep for a complete list of stripe options.

## TIGER STRIPES – REFLECTIVE

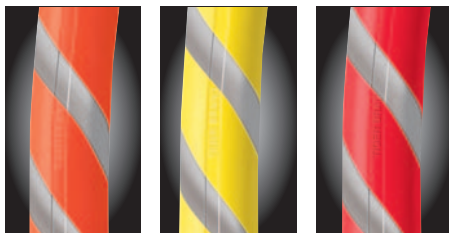
AmerCable's reflective **Tiger Stripes** can extend cable life by reducing run-overs in low visibility situations and **improve mine safety** by providing easier visual circuit identification.



Black  
(standard)

Blue

Green



Orange

Yellow

Red



### FOLLOW US!



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