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Mining Cables



Your One Stop Supplier for Mining Cables

Mining Grade - Cable Types:

- ❖ Type W 2kV (Flat & Round)
- ❖ Type G 2kV (Flat & Round)
- ❖ Type G-GC 2kV (Flat & Round)
- ❖ Type SHD-GC 2, 5, 8, 15, 25kV
- ❖ Type MP-GC 5, 8, 15kV (EPR/CPE & XLP/PVC)
- ❖ Type DLO 2kV EPR/CPE UL RHW-2
- ❖ Type SOOW
- ❖ Welding cables (MSHA approved)
- ❖ Special constructions available upon request

Advanced Constructions:

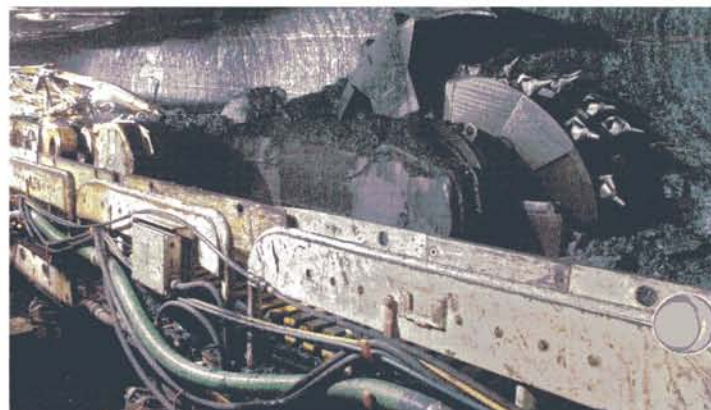
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These cables provide the performance you require!

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- ❖ **Extra Heavy Duty** CPE, Neoprene, & CSPE .
- ❖ Type MP-GC Cables are **Triple Extruded** for Enhanced Protection against Corona.
- ❖ Type SHD-GC & Type G-GC cables offer **Integral filled** construction improving Torsion resistance.
- ❖ Flat Mining cables offer **Square and "D"** shaped conductors for longer life.
- ❖ Type SOOW cables are constructed with **rubber fillers** to avoid moisture absorption.
- ❖ Industry leading approvals & acceptances: **MSHA, UL, CSA, ICEA.**

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- ❖ Professional Service
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Priority Wire & Cable has a zero return policy on special cut lengths.

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PWC-411



Two Conductor Flat Type W

600/2,000 volts

Applications:

For use on D.C. off-track mining equipment. Especially designed for D.C. shuttle cars, drills, cutting and loading machines. Recommended maximum continuous conductor temperature is 90°C.

Cable carries "MSHA" marking indicating listing by the Mine Safety and Health Administration and the Pennsylvania Department of Environmental Resources.

Mining Cable meets or exceeds ICEA Standards S-68-516 & S-75-381.

Conductors

Flexible tinned copper

Insulation

90°C Ethylene-Propylene rubber (EPR)

Reinforcement

Over assembly

Jacket

CPE with permanent surface marking.



Size of Conductor AWG	No. of Wires per Conductor	Insulation Thickness Mils	Approx O.D. in. (1)	Approx. Weight lbs. per 1,000 ft.	Ampacity (2) 40°C Ambient Temp.
8	133 7x19	60	.51 x .84	340	72
6	133 7x19	60	.56 x .93	440	95
4	259 7x37	60	.61 x 1.05	580	127
2	259 7x37	60	.73 x 1.24	850	167
1	259 7x37	80	.81 x 1.40	1070	191
1/0	259 7x37	80	.93 x 1.51	1310	217
2/0	329 7x47	80	.99 x 1.63	1600	250
4/0	532 19x28	80	1.10 x 1.89	2300	328

(1) **Tolerances**- Minor Dimension $\pm .030$
Major Dimension $\pm .040$

For other ratings under various conditions, see portable power cable ampacities table Inside Back Cover

(2) **Ampacity**- Based on 90°C conductor temperature.

Number of Layers	Multiplying Correction Factors
1	0.85
2	0.65
3	0.45
4	0.35

Reel correction factors

For use with ampacities when one or more layers of cable are wound on a reel.

Two Conductor Flat Type W SPECIFICATIONS

1. **SCOPE** This specification describes 2 conductor flat twin type W portable power cable with ethylene-propylene rubber insulation for use on circuits not exceeding 2000 volts at a maximum continuous conductor temperature of 90°C. These cables are intended primarily for use on DC shuttle cars.
2. **STANDARDS**
ICEA S-68-516/NEMA WC-8 ICEA S-75-381/NEMA WC-58 ASTM B-172 ASTM B-33
3. **CONDUCTORS** Annealed tin coated rope stranded conductors in accordance with ICEA and ASTM.
4. **INSULATION** The insulation shall be ethylene-propylene rubber (EPR) extruded insulation.

The average thickness of the insulation wall over the conductor shall be as specified in Table 3-7 of ICEA S-75-381. The minimum thickness of insulation shall not be less than 90% of the specified average value.
5. **CIRCUIT IDENTIFICATION** Color coding of power conductors shall be black and white in accordance with Par. 3.18.1 of ICEA S-75-381. Stock cables shall have colored insulation.
6. **REINFORCEMENT** Each cable shall have an open braid of synthetic yarn applied over the assembly for reinforcement and to control adhesion and movement between the insulated conductor and the outer jacket.
7. **JACKET** A CPE jacket shall be extruded over the two parallel insulated conductors in accordance with Par. 3.21 of ICEA S-75-381. The standard jacket for all sizes is extra-heavy-duty black CPE. All jackets meet the requirements of Table 3-3 of ICEA S-75-381, and have a smooth dense surface that is highly resistant to cutting, abrasion, chemicals, sunlight and flame. It has excellent resistance to heat, moisture and the oils commonly used in mining applications.
8. **OUTSIDE DIAMETER** Shall be in accordance with ICEA S-75-381 Table 3-7, and tolerance shall meet the requirements of ICEA S-75-381 Par. 3.22.2.
9. **SURFACE LEGEND** Shall be embossed in the jacket showing 600/2000V Twin (size) Type W MSHA. Additional information can be furnished on the surface legend to special order.
10. **TESTS** Cable shall be tested in accordance with applicable ICEA requirements.

PWC-414



Four Conductor Flat Type W

600/2,000 volts

Applications:

For use on A.C. off-track mining equipment where bare grounding conductors are not required or desired. Especially designed for AC shuttle care service. Recommended maximum continuous conductor temperature is 90°C.

Cable carries "MSHA" marking indicating listing by the Mine Safety and Health Administration and the Pennsylvania Department of Environmental Resources.

Mining Cable meets or exceeds ICEA Standards S-68-516 & S-75-381.

Conductors
Flexible tinned copper

Insulation
90°C Ethylene-Propylene rubber (EPR)
Color coded Black, White, Red, Green

Reinforcement
Over assembly

Jacket
CPE with permanent surface marking.



Power Conductors			Approx O.D. in. (1)	Approx. Weight lbs. per 1,000 ft.	Ampacity (2) 40°C Ambient Temp.
Size of Conductor AWG	No. of Wires per Conductor	Insulation Thickness Mils			
6	133 7x19	60	.68 x 1.71	910	72
4	259 7x37	60	.76 x 1.91	1220	93
2	259 7x37	60	.82 x 2.25	1720	122
1	259 7x37	60	.97 x 2.48	2240	143

(1) **Tolerances**- Minor Dimension $\pm .050$
Major Dimension $\pm .080$

(2) **Ampacity**- Based on 90°C conductor temperature.

For other ratings under various conditions, see portable power cable ampacities table Inside Back Cover

Number of Layers	Multiplying Correction Factors
1	0.85
2	0.65
3	0.45
4	0.35

Reel correction factors

For use with ampacities when one or more layers of cable are wound on a reel.

Four Conductor Flat Type W SPECIFICATIONS

1. **SCOPE** This specification describes 4 conductor flat type W portable power cable with ethylene-propylene rubber insulation for use on circuits not exceeding 2000 volts at a maximum continuous conductor temperature of 90°C. These cables are intended primarily for use on AC shuttle cars and roof bolters.
2. **STANDARDS**
ICEA S-68-516/NEMA WC-8 ICEA S-75-381/NEMA WC-58 ASTM B-172 ASTM B-33
3. **CONDUCTORS** Annealed tin coated rope stranded conductors in accordance with ICEA and ASTM.
4. **INSULATION** The insulation shall be ethylene-propylene rubber (EPR) extruded insulation.

The average thickness of the insulation wall over the conductor shall be as specified in Table 3-14 of ICEA S-75-381. The minimum thickness of insulation shall not be less than 90% of the specified average value.
5. **CIRCUIT IDENTIFICATION** Color coding of power conductors shall be black, white, red and green in accordance with Par. 3.18.1 of ICEA S-75-381. Stock cables shall have colored insulation.
6. **REINFORCEMENT** Each cable shall have an open braid of synthetic yarn applied over the assembly for reinforcement and to control adhesion and movement between the insulated conductor and the outer jacket.
7. **JACKET** A CPE jacket shall be extruded over the four parallel insulated conductors in accordance with Par. 3.21 of ICEA S-75-381. The standard jacket for all sizes is extra-heavy-duty black CPE. All jackets meet the requirements of ICEA S-75-381 Table 3-3, and have a smooth dense surface that is highly resistant to cutting, abrasion, chemicals, sunlight and flame. It has excellent resistance to heat, moisture and the oils commonly used in mining applications.
8. **OUTSIDE DIAMETER** Shall be in accordance with Table 3-14 of ICEA standard S-75-381 and tolerances shall meet the requirements of ICEA S-75-381 Par. 3.22.2.
9. **SURFACE LEGEND** Shall be embossed in the jacket showing 600/2000V 4/C (size) Type W MSHA. Additional information can be furnished on the surface legend to special order.
10. **TESTS** Cable shall be tested in accordance with applicable ICEA requirements.

PWC-420



Two Conductor Flat Type G

600/2,000 volts

Applications:

For use on D.C. off-track mining equipment where grounding is required. Especially designed for D.C. shuttle cars, cutting and loading machines. Recommended maximum continuous conductor temperature is 90°C.

Cable carries "MSHA" marking indicating listing by the Mine Safety and Health Administration and the Pennsylvania Department of Environmental Resources.

Mining Cable meets or exceeds ICEA Standards S-68-516 & S-75-381.

Conductors
Flexible tinned copper

Ground Wire
Uni-directional lay, flexible tinned copper

Insulation
90°C Ethylene-Propylene rubber (EPR)

Reinforcement
Over assembly

Jacket
CPE with permanent surface marking.



Size of Conductor AWG	Power Conductors		Insulation Thickness Mils	Grounding Conductor		Approx. O.D. in. (1)	Approx. Weight lbs. per 1,000 ft.	Ampacity (2) 40° C Ambient Temp.
	No. of Wires per Conductor			Size AWG	No. of Wires			
6	133	7x19	60	8	270 6x45	.56 x 1.02	500	95
4	259	7x37	60	7	180 6x30	.61 x 1.15	660	127
2	259	7x37	60	5	168 6x28	.73 x 1.35	990	167
1	259	7x37	80	4	168 6x28	.81 x 1.55	1230	191
1/0	259	7x37	80	3	204 6x34	.93 x 1.67	1540	217
2/0	329	7x47	80	2	246 6x41	.99 x 1.85	1870	250
4/0	532	19x28	80	1/0	342 6x57	1.10 x 2.10	2600	328

(1) **Tolerances**- Minor Dimension $\pm .030$
Major Dimension $\pm .040$

(2) **Ampacity**- Based on 90°C conductor temperature.

For other ratings under various conditions, see portable power cable ampacities table Inside Back Cover

Number of Layers	Multiplying Correction Factors
1	0.85
2	0.65
3	0.45
4	0.35

Reel correction factors

For use with ampacities when one or more layers of cable are wound on a reel.

Two Conductor Flat Type G SPECIFICATIONS

1. **SCOPE** This specification describes 2 conductor flat twin type G Portable power cable with ethylene-propylene rubber insulation for use on circuits not exceeding 2000 volts at a maximum continuous conductor temperature of 90°C. These cables are intended primarily for use on DC shuttle cars, cutting machines, loading machines, roof bolters and drills.
2. **STANDARD**
ICEA S-68-516/NEMA WC-8 ICEA S-75-381/NEMA WC-58 ASTM B-172 ASTM B-33
3. **CONDUCTORS** Annealed tin coated rope stranded conductors in accordance with ICEA and ASTM.
4. **INSULATION** The insulation shall be ethylene-propylene rubber (EPR) extruded insulation.

The average thickness of the insulation wall over the conductor shall be as specified in Table 3-7 of ICEA S-75-381. The minimum thickness of insulation shall not be less than 90% of the specified average value.
5. **CIRCUIT IDENTIFICATION** Color coding of power conductors shall be black and white in accordance with Par. 3.18.1 of ICEA S-75-381. Stock cables shall have colored insulation.
6. **GROUNDING CONDUCTOR** The grounding conductor shall be annealed tin coated copper of not less than the size listed in Table 3-7 of ICEA S-75-381 for the corresponding power conductor sizes. The grounding conductor shall be covered with a green TPE.
7. **ASSEMBLY** Two insulated conductors are laid parallel with the grounding conductor between them.
8. **REINFORCEMENT** Each cable shall have an open braid of synthetic yarn applied over the assembly for reinforcement and to control adhesion and movement between the insulated conductor and the outer jacket.
9. **JACKET** A CPE jacket shall be extruded over the two parallel insulated conductors and ground in accordance with Par. 3.21 of ICEA S-75-381. The standard jacket for all sizes is extra-heavy-duty black CPE. All jackets meet the requirements of ICEA S-75-381 Table 3-3, and have a smooth dense surface that is highly resistant to cutting, abrasion, chemicals, sunlight and flame. It has excellent resistance to heat, moisture and the oils commonly used in mining applications.
10. **OUTSIDE DIAMETER** Shall be in accordance with ICEA S-75-381 Table 3-7, and tolerances shall meet the requirements of ICEA S-75-381 Par. 3.22.2.
11. **SURFACE LEGEND** Shall be embossed in the jacket showing 600/2000V Twin (size) Type G MSHA. Additional information can be furnished on the surface legend to special order.
12. **TESTS** Cable shall be tested in accordance with applicable ICEA requirements.

PWC-422



Three Conductor Flat Type G-GC

600/2,000 Volts

Applications:

For use on A.C. off-track mining equipment. Especially designed for A.C. shuttle car service. Recommended maximum continuous conductor temperature is 90°C.

Cable carries "MSHA" marking indicating listing by the Mine Safety and Health Administration and the Pennsylvania Department of Environmental Resources.

Mining Cable meets or exceeds ICEA Standards S-68-516 & S-75-381.

Conductors
Flexible tinned copper

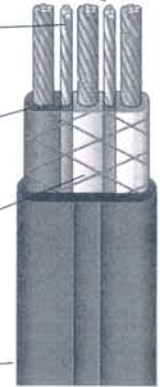
Ground Wire
Uni-directional lay, flexible tinned copper

Ground Check
Uni-directional lay 8 AWG 270W-6x45 Flexible tinned copper with yellow insulation

Insulation
90°C Ethylene-Propylene rubber

Reinforcement
Over assembly

Jacket
CPE with permanent surface marking.



Size of Conductor AWG	Power Conductors		Insulation Thickness Mils	Grounding Conductor		Approx. O.D. in. (1)	Approx. Weight lbs. per 1,000 ft.	Ampacity (2) 40° C Ambient Temp.
	No. of Wires per Conductor			Size AWG	No. of Wires			
6	133	7x19	60	8	270 6x45	.67 x 1.69	940	79
4	259	7x37	60	7	180 6x30	.75 x 1.89	1240	104
2	259	7x37	60	5	168 6x28	.81 x 2.23	1690	138
1	259	7x37	80	4	168 6x28	.97 x 2.48	2170	161
1/0	259	7x37	80	3	204 6x34	1.01 x 2.67	2550	186
2/0	329	7x47	80	2	246 6x41	1.10 x 2.86	3040	215
4/0	532	19x28	80	1/0	342 6x57	1.24 x 3.30	4250	287

(1) **Tolerances**- Minor Dimension $\pm .050$
Major Dimension $\pm .080$

(2) **Ampacity**- Based on 90°C conductor temperature.

For other ratings under various conditions, see portable power cable ampacities table Inside Back Cover

Number of Layers	Multiplying Correction Factors
1	0.85
2	0.65
3	0.45
4	0.35

Reel correction factors

For use with ampacities when one or more layers of cable are wound on a reel.

Three Conductor Flat Type G-GC SPECIFICATIONS

1. **SCOPE** This specification describes 3 conductor flat type G-GC portable power cable with ethylene-propylene rubber insulation for use on circuits not exceeding 2000 volts at a maximum continuous conductor temperature of 90°C. These cables are intended for use on off track equipment such as continuous miners, AC shuttle cars, cutting machines, loading machines and drills.
2. **STANDARD**
ICEA S-68-516/NEMA WC-8 ICEA S-75-381/NEMA WC-58 ASTM B-172 ASTM B-33
3. **CONDUCTORS** Annealed tin coated rope stranded conductors in accordance with ICEA and ASTM.
4. **INSULATION** The insulation shall be a ethylene-propylene rubber (EPR) extruded insulation.

The average thickness of the insulation wall over the conductor shall be as specified in Table 3-13 of ICEA S-75-381. The minimum thickness of insulation shall not be less than 90% of the specified average value.
5. **CIRCUIT IDENTIFICATION** Color coding of power conductors shall be black, white and red in accordance with Par. 3.18.1 of ICEA S-75-381. Stock cables shall have colored insulation.
6. **GROUNDING CONDUCTOR** The grounding conductor shall be annealed tin coated copper of not less than the size shown in Table 3-13 of ICEA S-75-381 for the corresponding power conductor sizes. The grounding conductor shall be covered with extruded green TPE. The stranding shall be uni-directional lay.
7. **GROUND CHECK CONDUCTOR** The ground check conductor shall be 8AWG as given in Table 3-13 of ICEA S-75-381 with 270 strands of tinned annealed copper. The conductor shall have a yellow TPE insulation. The stranding shall be uni-directional lay.
8. **ASSEMBLY** Three power conductors shall be laid parallel with the ground check conductor between the black and white power conductors and grounding conductor between the white and red power conductors.
9. **REINFORCEMENT** Each cable shall have an open braid of synthetic yarn applied over the assembly for reinforcement to control adhesion and movement between the insulated conductor and the outer jacket.
10. **JACKET** A CPE jacket shall be extruded over the parallel assembly of conductors in accordance with Par. 3.21 of ICEA S-75-381 Table 3-3, and have a smooth dense surface that is highly resistant to cutting, abrasion, chemicals, sunlight and flame. It has excellent resistance to heat, moisture and the oils commonly used in mining applications.
11. **OUTSIDE DIAMETER** Shall be in accordance with ICEA S-75-381 Table 3-13 and tolerances shall meet the requirements of ICEA S-75-381 Par. 3.22.2.
12. **SURFACE LEGEND** Shall be embossed in the jacket showing 600/2000V 3/C Type G-GC MSHA. Additional information can be furnished on the surface legend to special order.
13. **TESTS** Cable shall be tested in accordance with applicable ICEA requirements.

PWC-431



Three Conductor Round Type W

600/2,000 Volts

Applications:

Especially suitable for non-automatic reeling, or as a "drag" cable where bare grounding conductors are not required or desired. Recommended maximum continuous conductor temperature is 90°C.

Cable carries "MSHA" marking indicating listing by the Mine Safety and Health Administration and the Pennsylvania Department of Environmental Resources.

Mining Cable meets or exceeds ICEA Standards S-68-516 & S-75-381.

Conductors
Flexible tinned copper

Insulation
90°C Ethylene-Propylene rubber (EPR)

Jacket
Reinforced CPE with permanent surface marking (2).



Size of Conductor AWG or MCM	No. of Wires per Conductor	Insulation Thickness Mils	Approx. O.D. In.	Diameter Tolerance Plus & Minus in.	Approx Weight lbs. per 1,000 ft.	Ampacity (1) 40° C Ambient Temp.
8	133 7x19	60	.91	0.03	550	59
6	133 7x19	60	1.01	0.03	730	79
4	259 7x37	60	1.17	0.03	1020	104
2	259 7x37	60	1.34	0.03	1430	138
1	259 7x37	80	1.51	0.03	1800	161
1/0	266 19x14	80	1.65	0.04	2140	186
2/0	342 19x18	80	1.75	0.04	2580	215
4/0	532 19x28	80	2.04	0.05	3800	287

(1) Ampacity- Based on 90°C conductor temperature. For other ratings under various conditions, see portable power cable ampacities table Inside Back Cover

(2) Jacket- Black is standard. Colored jackets available upon request.
Thermoplastic polyurethane (TPU) also available.

Three Conductor Round Type W SPECIFICATIONS

1. **SCOPE** This specification describes 3 conductor round type W portable power cable with ethylene-propylene rubber insulation for use on circuits not exceeding 2000 volts at a maximum continuous conductor temperature of 90°C. These cables are intended for use on DC equipment where bare grounding conductors are not required or desired, such as shuttle cars, drills, pumps, etc.
2. **STANDARDS**
ICEA S-68-516/NEMA WC-8 ICEA S-75-381/NEMA WC-58 ASTM B-172 ASTM B-33
3. **CONDUCTORS** Annealed tin coated rope stranded conductors in accordance with ICEA and ASTM.
4. **INSULATION** The insulation shall be ethylene-propylene rubber (EPR) extruded insulation.

The average thickness of the insulation wall over the conductor shall be as specified in Table 3-9 of ICEA S-75-381. The minimum thickness of insulation shall not be less than 90% of the specified average value.
5. **CIRCUIT IDENTIFICATION** Color coding of power conductors shall be black, white and green in accordance with Par. 3.18.1 of ICEA S-75-381. Stock cables shall have colored insulation.
6. **ASSEMBLY** Three power conductors shall be cabled together with a left-handed lay meeting the requirements of Table 3-5 of ICEA S-75-381. A cured rubber filler is placed in each valley, with a synthetic binder overall.
7. **JACKET** A reinforced CPE jacket providing an integral fill shall be extruded over the assembly in accordance with Par. 3.21 of ICEA S-75-381. The standard jacket for all sizes is extra-heavy-duty black CPE or colors can be provided. All jackets meet the requirements of ICEA S-75-381 Table 3-3, and have a smooth dense surface that is highly resistant to cutting, abrasion, chemicals, sunlight and flame. It has excellent resistant to heat, moisture and the oils commonly used in mining applications.
8. **OUTSIDE DIAMETER** Shall be in accordance with ICEA S-75-381 Table 3-9, and tolerances shall meet the requirements of ICEA Par. 3.22.2.
9. **SURFACE LEGEND** Shall be embossed in the jacket showing 600/2000V 3/C (size) Type W MSHA. Additional information can be furnished on the surface legend to special order.
10. **TESTS** Cable shall be tested in accordance with applicable ICEA requirements.

PWC-432



Four Conductor Round Type W

600/2,000 Volts

Applications:

Especially suitable for non-automatic reeling, or as a "drag" cable where bare grounding conductors are not required or desired. Recommended maximum continuous conductor temperature is 90°C.

Cable carries "MSHA" marking indicating listing by the Mine Safety and Health Administration and the Pennsylvania Department of Environmental Resources.

Mining Cable meets or exceeds ICEA Standards S-68-516 & S-75-381.

Conductors

Flexible tinned copper

Insulation

90°C Ethylene-Propylene rubber (EPR)

Jacket

Reinforced CPE with permanent surface marking (2).



Size of Conductor AWG	No. of Wires per Conductor	Insulation Thickness Mils	Approx. O.D. in.	Diameter Tolerance Plus & Minus Inches	Approx. Weight lbs. per 1,000 ft.	Ampacity (1) 40° C Ambient Temp.
8	133 7x19	60	.99	0.03	670	54
6	133 7x19	60	1.10	0.03	890	72
4	259 7x37	60	1.27	0.03	1250	93
2	259 7x37	60	1.48	0.03	1800	122
1	259 7x37	80	1.68	0.03	2270	143
1/0	266 19x14	80	1.79	0.04	2680	165
2/0	342 19x18	80	1.93	0.04	3200	192
4/0	532 19x28	80	2.26	0.05	4650	255

(1) **Ampacity**- Based on 90°C conductor temperature. For other ratings under various conditions, see portable power cable ampacities table Inside Back Cover.

Note: When 4/C cable is used on A.C. and one for the insulated conductors is used as a grounding conductor, the ampacities for 3/C Type W may be used.

(2) **Jacket**- Black is standard. Colored jackets available upon request. **Thermoplastic polyurethane (TPU) also available.**

Four Conductor Round Type W SPECIFICATIONS

1. **SCOPE** This specification describes 4 conductor round type W portable power cable with ethylene-propylene rubber insulation for use on circuits not exceeding 2000 volts at a maximum continuous conductor temperature of 90°C. These cables are intended for use on AC equipment where bare grounding conductors are not required or desired, such as shuttle cars, drills, pumps, etc.
2. **STANDARDS**
ICEA S-68-516/ NEMA WC-8 ICEA S-75-381/NEMA WC-58 ASTM B-172 ASTM B-33
3. **CONDUCTORS** Annealed tin coated rope stranded conductors in accordance with ICEA and ASTM.
4. **INSULATION** The insulation shall be ethylene-propylene rubber (EPR) extruded insulation.

The average thickness of the insulation wall over the conductor shall be as specified in Table 3-10 of ICEA S-75-381. The minimum thickness of insulation shall not be less than 90% of the specified average value.
5. **CIRCUIT IDENTIFICATION** Color coding of power conductors shall be black, white, red and green in accordance with Par. 3.18.1 of ICEA S-75-381. Stock cables shall have colored insulation.
6. **ASSEMBLY** Four power conductors shall be cabled together with a left-hand lay meeting the requirements of Table 3-5 of ICEA S-75-381. A cured rubber filler is placed in each valley with a synthetic binder overall.
7. **JACKET** A reinforced CPE jacket providing an integral fill shall be extruded over the assembly in accordance with Par. 3.21 of ICEA S-75-381. The standard jacket for all sizes is extra-heavy-duty black CPE or colors can be provided. All jackets meet the requirements of ICEA S-75-381 Table 3-3, and have a smooth dense surface that is highly resistant to cutting, abrasion, chemicals, sunlight and flame. It has excellent resistance to heat, moisture and the oils commonly used in mining applications.
8. **OUTSIDE DIAMETER** Shall be in accordance with ICEA S-75-381 Table 3-10 and tolerances shall meet the requirements of ICEA S-75-381 Par. 3.22.2.
9. **SURFACE LEGEND** Shall be embossed in the jacket showing 600/2000V 4/C (size) Type W MSHA. Additional information can be furnished on the surface legend to special order.
10. **TESTS** Cable shall be tested in accordance with applicable ICEA requirements.

PWC-442



Three Conductor Round Type G-GC

600/2,000 Volts

Applications:

Especially suitable for use with mobile mining equipment such as continuous miners, drills, cutters, loading machines, and AC shuttle cars. The type G-GC is for applications where grounding conductors and a ground check conductor are required. Recommended maximum continuous conductor temperature is 90°C.

Cable carries "MSHA" marking indicating listing by the Mine Safety and Health Administration and the Pennsylvania Department of Environmental Resources.

Mining Cable meets or exceeds ICEA Standards S-68-516 & S-75-381.

Conductors
Flexible tinned copper

Insulation
90°C Ethylene-Propylene rubber (EPR)

Ground Wires
Flexible tinned copper

Ground Check
Flexible tinned copper with yellow insulation (1).

Jacket
Reinforced CPE with permanent surface marking (3).



Size AWG/ MCM	Power Conductors		Insulation Thickness Mils	Grounding Conductor		Approx. O.D. in.	Diameter Tolerance Plus & Minus In.	Approx. Weight lbs. per 1,000 ft.	Ampacity (2) 40° C Ambient Temp.	
	Stranding			Size AWG	Minimum No. of Wires per Conductor					
8	133	7x19	60	10	49	7x7	.97	0.03	600	59
6	133	7x19	60	10	49	7x7	1.05	0.03	750	79
4	259	7x37	60	8	133	7x19	1.19	0.03	1070	104
2	259	7x37	60	7	133	7x19	1.34	0.03	1480	138
1	259	7x37	80	6	133	7x19	1.51	0.03	1890	161
1/0	266	19x14	80	5	133	7x19	1.65	0.04	2340	186
2/0	342	19x18	80	4	259	7x37	1.75	0.04	2750	215
4/0	532	19x28	80	2	259	7x37	2.04	0.05	3980	287
250	627	19x33	95	2	259	7x37	2.39	0.06	5000	320
350	888	37x24	95	1/0	266	19x14	2.68	0.06	6750	394
500	1221	37x33	95	2/0	342	19x18	3.03	0.06	8900	487

(1) Ground Check- 10 AWG (minimum 49 strand 7x7) ground check conductor on 8 AWG through 2 AWG cable.

8 AWG (minimum 133 strand 7x19) ground check conductor on 1 AWG through 4/0 AWG cable.

6 AWG (minimum 133 strand 7x19) ground check conductor on 250 MCM and larger cable.

(2) Ampacity- Based on 90°C conductor temperature. For other ampacity ratings under various conditions, see portable power cable ampacities table Inside Back Cover.

(3) Jacket- Black is standard. Colored jackets available upon request. **Thermoplastic polyurethane (TPU) also available.**

Three Conductor Round Type G-GC SPECIFICATIONS

1. **SCOPE** This specification describes 3 conductor round type G-GC portable power cable with ethylene-propylene rubber insulation for use on circuits not exceeding 2000 volts at a maximum continuous conductor temperature of 90°C. These cables are intended for use on AC off track equipment such as continuous miners, shuttle cars, cutting machines, loading machines and drills, as well as conveyors and pumps.
2. **STANDARDS**
ICEA S-68-516/NEMA WC-8 ICEA S-75-381/NEMA WC-58 ASTM B-172 ASTM B-33
3. **CONDUCTORS** Annealed tin coated rope stranded conductors in accordance with ICEA and ASTM.
4. **INSULATION** The insulation shall be ethylene-propylene rubber (EPR) extruded insulation.

The average thickness of the insulation wall over the conductor shall be as specified in Table 3-12 of ICEA S-75-381. The minimum thickness of insulation shall not be less than 90% of the specified average value.
5. **CIRCUIT IDENTIFICATION** Color coding of power conductors shall be black, white and red in accordance with Par. 7.2.15.1 of ICEA. Stock cables shall have colored insulation.
6. **GROUNDING CONDUCTORS** The grounding conductors shall be annealed tin coated copper of not less than the size and number of wires in Table 3-12 of ICEA S-75-381 for the corresponding power conductor sizes. Each grounding conductor shall be covered with a green Mylar tape.
7. **GROUND CHECK CONDUCTOR** The ground check conductor shall be as given in Table 3-12 of ICEA S-75-381 for the corresponding power conductor sizes. A minimum of 49 strands of annealed copper shall be used. The conductor shall have a yellow TPE insulation.
8. **ASSEMBLY CORE** Sizes 4/OAWG and smaller: Three power conductors shall be cabled together with a left-hand lay meeting the requirements of Table 3-5 of ICEA S-75-381, the ground check conductor shall be laid in the valley between the black and white power conductors, a tinned copper grounding conductor in each of the other two valleys and a synthetic reinforcing binder overall. This assembly will provide integral filling when the jacket is applied. Sizes 250MCM and larger: Three power conductors shall be cabled together with a left-hand lay meeting the requirements of Table 3-5 of ICEA S-75-381, the ground check conductor shall be laid in the valley between the black and white power conductors and a tinned copper grounding conductor in each of the other two valleys, with cured rubber fillers as required to make an essentially round core, synthetic binder and a single faced rubber filled binder tape applied overall.
9. **JACKET** A CPE jacket shall be extruded over the assembly in accordance with Par. 3.21 of ICEA S-75-381. The standard jacket for all sizes is extra-heavy-duty black CPE or colors can be provided. All jackets meet the requirements of ICEA S-75-381 Table 3-3, and have a smooth dense surface that is highly resistant to cutting, abrasion, chemicals, sunlight and flame. It has excellent resistance to heat, moisture and the oils commonly used in mining applications.
10. **OUTSIDE DIAMETER** Shall be in accordance with ICEA S-75-381 Table 3-12, and tolerances shall meet the requirements of ICEA S-75-381 Par. 3.22.2.
11. **SURFACE LEGEND** Shall be embossed in the jacket showing 600/2000V 3/C (size) Type G-GC MSHA. Additional information can be furnished on the surface legend to special order.
12. **TESTS** Cable shall be tested in accordance with applicable ICEA requirements.

PWC-503



Three Conductor Type SHD-GC

2,000 Volts

Applications:

Heavy duty portable power cable for use in circuits not exceeding 2,000 volts. Equipment such as longwall miners, continuous miners, loaders, drills, conveyors, pumps, and mobile equipment requiring grounding conductors, a ground check conductor, and metallic shielding overall. Recommended maximum continuous conductor temperature is 90°C.

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

Mining Cable meets or exceeds ICEA Standards S-68-516 & S-75-381.

Conductors

Flexible tinned copper

Separator Tape

Insulation

90°C Ethylene-Propylene rubber (EPR)

Tape colored rubber filled

Insulation Shielding

Tinned copper and color coded nylon braid

Ground Check Conductor

Flexible tinned copper with yellow insulation (1)

Ground Wires

Flexible tinned copper

Jacket

Reinforced CPE with permanent surface marking (2).



Size AWG/ MCM	Power Conductors		Insulation Thickness Mils	Grounding Conductor		Jacket Thickness Mils	Nominal Diameter In. (3)	Approx. Weight lbs. per 1,000 ft.	Ampacity (4) 40° C Ambient Temp.
	Stranding			Size AWG	Minimum No. of Wires per Conductor				
6	133	7x19	70	10	49 7x7	155	1.29	1160	93
4	259	7x37	70	8	133 7x19	155	1.40	1490	122
2	259	7x37	70	6	133 7x19	170	1.59	2000	159
1	259	7x37	80	5	133 7x19	190	1.76	2450	184
1/0	266	19x14	80	4	259 7x37	190	1.86	2840	211
2/0	342	19x18	80	3	259 7x37	205	2.00	3400	243
4/0	532	19x28	80	1	259 7x37	220	2.31	4860	321
250	627	19x33	95	1/0	266 19x14	220	2.51	5950	355
350	888	37x24	95	2/0	342 19x18	235	2.81	7400	435
500	1221	37x33	95	4/0	532 19x28	265	3.19	10100	536

(1) **Ground Check-** 10 AWG (minimum 49 strand 7x7) ground check conductor on 6 AWG through 4 AWG cable.

8 AWG (minimum 133 strand 7x19) ground check conductor on 2 AWG through 4/0 AWG cable.

6 AWG (minimum 133 strand 7x19) ground check conductor on 250 MCM and larger cable.

(2) **Jacket-** Black is standard. Colored jackets available upon request. **Thermoplastic polyurethane (TPU) also available.**

(3) **Diameters-** Subject to plus or minus 3% tolerance.

(4) **Ampacity-** Based on continuous duty at 90°C conductor temperature. For other ampacity ratings under various conditions, see portable power cable ampacities table Inside Back Cover

Three Conductor Type SHD-GC SPECIFICATIONS

1. **SCOPE** This specification describes 3 conductor round type SHD-GC shielded power cable with ethylene-propylene rubber insulation for use at a maximum continuous conductor temperature of 90°C. These cables are intended for use on longwall mining equipment, continuous miners, cutting machines, loading machines and drills, as well as conveyors and pumps.
2. **STANDARDS** ICEA S-68-516/NEMA WC-8 ICEA S-75-381/NEMA WC-58 ASTM B-172 ASTM B-33
3. **CONDUCTORS** Annealed tin coated rope stranded conductors in accordance with ICEA and ASTM.
4. **INSULATION** The insulation shall be ethylene-propylene rubber (EPR) extruded insulation. The average thickness of the insulation wall over the conductor shall be as specified in Table 3-21 of ICEA S-75-381. The minimum thickness of insulation shall not be less than 90% of the specified average value.
5. **CIRCUIT IDENTIFICATION AND SHIELDING** The shielding system shall consist of a tinned copper/nylon braid applied over a lapped non-conducting bedding tape on each conductor. Both the tape, and the nylon in the shielding braid, are colored black, white, and red for easy identification. The shielding braid shall provide a 60% minimum coverage in accordance with ICEA S-75-381 Par. 3.19.1.2. A full tinned copper braid shield with 84% minimum coverage in accordance with ICEA S-75-381 Par. 3.19.1.1 can be furnished to order.
6. **GROUNDING CONDUCTORS** The grounding conductors shall be annealed tin coated copper of not less than the size and number of wires in Table 3-24 of ICEA S-75-381 for the corresponding power conductor sizes.
7. **GROUND CHECK CONDUCTOR** The ground check conductor shall be as given in Table 3-21 of ICEA S-75-381 for the corresponding power conductor size except that we shall use 6AWG in lieu of 8AWG minimum on sizes 250 MCM and larger. A minimum of 49 strands of annealed copper shall be used. The conductor shall have a yellow polypropylene insulation.
8. **ASSEMBLY CORE** Sizes 4/OAWG and smaller: Three conductors shall be cabled together with a left-hand lay meeting the requirements of Table 3-5 of ICEA S-75-381, the ground check conductor shall be laid in the valley between the black and white power conductors, a bare tinned copper grounding conductor in each of the other two valleys and a synthetic reinforcing binder overall. This assembly will provide integral filling when the jacket is applied. Size 250MCM and larger: Three power conductors shall be cabled together with a left-hand lay meeting the requirements of Table 3-5 of ICEA S-75-381. The ground check conductor shall be laid in the valley between the black and white power conductors and a bare tinned copper grounding conductor in each of the other two valleys, with cured rubber fillers as required to make an essentially round core, synthetic binder and a single faced rubber filled binder tape applied overall, so that it will adhere to the underside of the outer jacket.
9. **JACKET** A reinforced CPE jacket shall be extruded over the assembly in accordance with Par. 3.21 of ICEA S-75-381. The standard jacket for all sizes is extra-heavy-duty black CPE or colors can be provided. All jackets meet the requirements of ICEA S-75-381 Table 3-3, and have a smooth dense surface that is highly resistant to cutting, abrasion, chemicals, sunlight and flame. It has excellent resistance to heat, moisture and the oils commonly used in mining applications.
10. **OUTSIDE DIAMETER** Shall be in accordance with ICEA S-75-381 Table 3-21. (Note ICEA S-75-381 Par. 3.22.2 allows $\pm 5\%$ tolerance.)
11. **Surface Legend** Shall be embossed in the jacket showing 2000V 3/C (size) Type SHD-GC MSHA. Additional information can be furnished on the surface legend to special order.
12. **TESTS** Cable shall be tested in accordance with applicable ICEA requirements.

PWC-504



Type SHD-PCG Longwall Cables

2,000 Volts

Applications:

Heavy duty portable power cable designed for use to power longwall shearers, where three shielded power conductors, three unshielded control conductors, and a grounding conductor are required. Recommended maximum continuous conductor temperature is 90°C.

Cable carries "MSHA" marking indicating listing by the Mine Safety and Health Administration and the Pennsylvania Department of Environmental Resources.

Mining Cable meets or exceeds ICEA Standards S-68-516 & S-75-381.

Power Conductors
Flexible tinned copper

Separator Tape

Insulation
90°C Ethylene-Propylene rubber (EPR)

Ground Wires
Flexible tinned copper

Control Group 3 Conductors
Flexible tinned copper,
Ethylene-Propylene rubber
Insulation color coded
black, white, red, and overall,
a thermosetting jacket

Tape colored rubber filled

Insulation Shielding
Tinned copper and color coded
nylon braid

Jacket
Reinforced CPE with
permanent surface marking.



Power Conductors		Grounding Conductor		Control Conductors		Nominal O.D. in. (1)	Approx. Weight lbs. per 1,000 ft.	Ampacity (2) 40° C Ambient Temp.
Size of Conductor AWG (3)	No. of Wires per Conductor	Size AWG	No. of Wires	Size AWG	No. of Wires per Conductor			
2/0	342 19x18	2	246 6x41	8	133 7x19	2.23	3950	243
4/0	532 19x28	1/0	426 6x71	6	133 7x19	2.67	5750	321

(1) Diameters- Subject to plus or minus 3% tolerance

(3) Other sizes available.

(2) Ampacity- Based on 90°C conductor temperature. For other ratings under various conditions, see portable power cable ampacities table Inside Back Cover.

Type SHD-PCG Longwall Cables SPECIFICATIONS

1. **SCOPE** This specification describes a type SHD-PCG longwall cable containing three shielded power conductors, a three conductor nonshielded control group and one central grounding conductor. It is intended for use on longwall mining equipment at a maximum continuous conductor temperature of 90°C.
2. **STANDARDS**
ICEA S-68-516/NEMA WC-8 ICEA S-75-381/NEMA WC-58 ASTM B-172 ASTM B-33
3. **CONDUCTORS** Annealed tin coated rope stranded conductors in accordance with ICEA and ASTM.
4. **INSULATION** The insulation shall be ethylene-propylene rubber (EPR) extruded insulation.

The average thickness of the insulation wall over the power conductors shall be as specified in Table 3-21 of ICEA S-75-381. The minimum thickness of insulation shall not be less than 90% of the specified average value.
5. **CIRCUIT IDENTIFICATION AND SHIELDING** The power conductor shielding system shall consist of a tinned copper/nylon braid applied over a lapped non-conducting bedding tape on each conductor. Both the tape, and the nylon in the shielding braid, are colored black, white, and red for easy identification. The shielding braid shall provide a 60% minimum coverage in accordance with ICEA S-75-381 Par. 3.19.1.2.
6. **GROUNDING CONDUCTOR** The grounding conductor shall be annealed tin coated copper of not less than the size shown in Table 3-17 of ICEA S-75-381 for the corresponding power conductor sizes.
7. **CONTROL GROUP** The control group shall consist of 3 flexible 133 wire 7 X 19 strand tinned copper conductors, with .045" ethylene propylene rubber insulation, color coded black, white and red. The 3 insulated control conductors shall be cabled, and overall, a thermosetting integral fill jacket to a diameter compatible with the shielded power conductors.
8. **ASSEMBLY CORE** Three shielded power conductors and one 3 conductor control group shall be cabled around a single grounding conductor, with the control group between the red and black shielded power conductors and a synthetic binder to hold the core assembly together.
9. **JACKET** A reinforced two layer thermosetting jacket providing an integral fill shall be extruded over the assembly in accordance with Par. 3.21 & Table 3-23 of ICEA-S-75-381. The standard jacket for all sizes is extra-heavy-duty black CPE. All jackets meet the requirements of ICEA S-75-381 Table 3-3 and have a smooth dense surface that is highly resistant to cutting, abrasion, chemicals, sunlight and flame. It has excellent resistance to heat, moisture and the oils commonly used in mining applications.
10. **OUTSIDE DIAMETER** Shall be in accordance with the dimensions shown on the front of this sheet. (Note ICEA S-75-381 Par.3.22.2 allows +5% tolerance.)
11. **SURFACE LEGEND** Shall be embossed in the jacket showing 2 KV (size) Type SHD-PCG Longwall MSHA. Additional information can be furnished on the surface legend to special order.
12. **TESTS** Cable shall be tested in accordance with applicable ICEA requirements.

Three Conductor Type SHD-CGC

2,000 Volts

Applications:

Heavy duty portable power cable for use in circuits not exceeding 2,000 volts. Equipment such as longwall miners, continuous miners, loaders, drills, conveyors, pumps, and other mobile equipment requiring grounding conductors, a ground check conductor, and metallic shielding overall. Recommended maximum continuous conductor temperature is 90°C.

Cable carries "MSHA" marking indicating acceptance as flame resistant by the Pennsylvania Department of Environmental Resources and the Federal Mine Safety and Health Administration.

Mining Cable meets or exceeds ICEA Standards S-68-516 & S-75-381.

Conductors

Flexible tinned copper

Separator Tape

Insulation

90°C Ethylene-Propylene rubber (EPR)

Ground Check Conductor

Located in the center of the conductor (1)

Tape colored rubber filled

Insulation Shielding

Tinned copper and color coded nylon braid

Ground Wires

Flexible tinned copper

Jacket

Reinforced CPE with permanent surface marking (2).



Size AWG/ MCM	Power Conductors		Insulation Thickness Mils	Grounding Conductor			Jacket Thickness Mils	Nominal Diameter In. (3)	Approx. Weight lbs. per 1,000 ft.	Ampacity (4) 40° C Ambient Temp.
	Stranding			Size AWG	Minimum No. of Wires per Conductor					
2/0	342	19x18	80	5	133	7x19	205	2.09	3400	243
4/0	532	19x28	80	3	259	7x37	220	2.36	4860	321
350	888	37x24	95	1	259	7x37	250	2.81	7400	435

(1) **Ground Check-** 16 AWG tinned copper conductor designed to withstand extreme flexing and be extensible insulated with yellow polypropylene.

(2) **Jacket-** Black is standard. Colored jackets are available on request. **Thermoplastic polyurethane (TPU) also available.**

(3) **Diameters-** Subject to plus or minus 3% tolerance.

(4) **Ampacity-** Based on continuous duty at 90°C conductor temperature. For other ampacity ratings under various conditions, see portable power cable ampacities table Inside Back Cover

Three Conductor Type SHD-CGC SPECIFICATIONS

1. **SCOPE** This specification describes 3 conductor round type SHD-CGC shielded power cable with 3 ethylene-propylene rubber insulated power conductors for use at a maximum continuous conductor temperature of 90°C, 3 grounding conductors and 1 center ground check conductor. These cables are intended for use on longwall mining equipment, continuous miners, cutting machines, loading machines, conveyors, etc.
2. **STANDARDS**
ICEA S-68-516/NEMA WC-8 ICEA S-75-381/NEMA WC-58 ASTM B-172 ASTM B-33
3. **CONDUCTORS** Annealed tin coated rope stranded conductors in accordance with ICEA and ASTM.
4. **INSULATION** The insulation shall be ethylene-propylene rubber (EPR) extruded insulation. The average thickness of the insulation wall over the conductor shall be as specified in Table 3-22 of ICEA S-75-381. The minimum thickness of insulation shall not be less than 90% of the specified average value.
5. **CIRCUIT IDENTIFICATION AND SHIELDING**
The shielding system shall consist of a tinned copper/nylon braid applied over a lapped non-conducting bedding tape on each conductor. Both the tape, and the nylon in the shielding braid, are colored black, white, and red for easy identification. The shielding braid shall provide a 60% minimum coverage in accordance with ICEA S-75-381 Par. 3.19.1.2. A full tinned copper braid shield with 84% minimum coverage in accordance with ICEA S-75-381 Par. 3.19.1.1 can be furnished to order.
6. **GROUNDING CONDUCTORS** The grounding conductors shall be annealed tin coated copper of not less than the size and number of wires in Table 3-22 of ICEA S-75-381 for the corresponding power conductor sizes.
7. **GROUND CHECK CONDUCTOR** The center ground check conductor shall be 16AWG and consist of tinned copper strands laid around a nonmetallic core and designed to be extensible and withstand extreme flexing in accordance with Par. 3.12.2 of ICEA S-75-381. The conductor shall have yellow polypropylene insulation in accordance with Table 3-22 of ICEA S-75-381.
8. **ASSEMBLY CORE** Sizes 4/OAWG and smaller: Three conductors shall be cabled together with a left-hand lay meeting the requirements of Table 3-5 of ICEA S-75-381, the ground check conductor shall be laid in the center of the assembly with a bare tinned copper grounding conductor in each of the three valleys and a synthetic reinforcing binder overall. This assembly will provide integral filling when the jacket is applied.

Sizes 250MCM and larger: Three power conductors shall be cabled together with a left-hand lay meeting the requirements of Table 3-5 of ICEA S-75-381, the ground check conductor shall be laid in the center of the assembly with a bare tinned copper grounding conductor in each of the three valleys, cured rubber fillers as required to make an essentially round core, synthetic binder and a single faced rubber filled binder tape applied overall, so that it will adhere to the underside of the outer jacket.
9. **JACKET** A reinforced thermosetting jacket shall be extruded over the assembly in accordance with Table 3-22 of ICEA S-75-381. The standard jacket for all sizes is extra-heavy-duty black CPE. All jackets meet the requirements of ICEA S-75-381 Table 3-3, and have a smooth dense surface that is highly resistant to cutting, abrasion, chemicals, sunlight and flame. It has excellent resistance to heat, moisture and the oils commonly used in mining applications.
10. **OUTSIDE DIAMETER** Shall be in accordance with ICEA S-75-381 Table 3-22. (Note ICEA S-75-381 Par. 3.22.2 allows $\pm 5\%$ tolerance.)
11. **SURFACE LEGEND** Shall be embossed in the jacket showing 2000V 3/C (size) Type SHD-CGC MSHA. Additional information can be furnished on the surface legend to special order.
12. **TESTS** Cable shall be tested in accordance with applicable ICEA requirements.

PWC-510



Three Conductor Type SHG

2,000 Volts

Applications:

Heavy duty portable power cable for use in circuits not exceeding 2000 volts. Especially designed for use on continuous miners requiring grounding conductors and metallic shielding over each conductor. Recommended maximum continuous conductor temperature is 90°C.

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

Mining Cable meets or exceeds ICEA Standards S-68-516 & S-75-381.

Conductors

Flexible tinned copper

Insulation

90°C Ethylene-Propylene rubber (EPR)

Tape

Colored rubber filled

Ground Wires

Flexible tinned copper

Insulation Shielding

Tinned copper and textile braid

Bridge Wall

Semi-conductive thermoset compound

Reinforcement

Jacket

Reinforced CPE with permanent surface marking.



Power Conductors			Grounding Conductor		Approx. O.D. in.	Approx. Weight lbs. per 1,000 ft.	Ampacity (2) 40° C Ambient Temp.
Size of Conductor AWG	Stranding	Insulation Thickness Mils	Size AWG	Minimum No. of Wires per Conductor			
2/0	329 7x47	80	3	204 6x34	1.175x2.990	3600	243

(1) **Tolerances-** Minor Dimension \pm .050
Major Dimension \pm .080

(2) **Ampacity-** based on continuous duty at 90°C conductor temperature. For other ampacity ratings under various conditions, see portable power cable ampacities table Inside Back Cover

Three Conductor Type SHG SPECIFICATIONS

1. **SCOPE** This specification describes 3 conductor flat type SHG shielded power cable with ethylene-propylene rubber insulation for use at a maximum continuous conductor temperature of 90°C. This cable is intended primarily for use on continuous miners.
2. **STANDARDS**
ICEA S-68-516/NEMA WC-8 ICEA S-75-381/NEMA WC-58 ASTM B-172 ASTM B-33
3. **CONDUCTORS** Annealed tin coated rope stranded conductors in accordance with ICEA and ASTM.
4. **INSULATION** The insulation shall be ethylene-propylene rubber (EPR) extruded insulation.

The average thickness of the insulation wall over the conductor shall be as specified in Table 3-21 of ICEA S-75-381. The minimum thickness of insulation shall not be less than 90% of the specified average value.
5. **CIRCUIT IDENTIFICATION AND SHIELDING** The shielding system shall consist of a tinned copper/textile braid applied over a lapped color coded non-conducting bedding tape on each conductor. The tapes are colored black, white and red in accordance with ICEA S-75-381 Par. 3.18. The shielding braid shall provide a 60% minimum coverage in accordance with ICEA S-75-381 Par. 3.19.1.2.
6. **GROUNDING CONDUCTORS** The grounding conductors shall be 3AWG (6X34) annealed tin coated copper shaped to approximately ".135" X .580" dimensions.
7. **ASSEMBLY** Three shielded power conductors are laid parallel with a grounding conductor between the black and white power conductors and a second grounding conductor between the white and red power conductors.
8. **JACKET** The area between all components filled with a semi-conductive thermosetting compound allowing approximately .020" bridgewall between each. Two open reverse wraps of synthetic reinforcement, and overall a .240" jacket of black extra heavy duty CPE are applied over the core. The jacket shall meet the requirements of ICEA S-75-381 Par. 3.2.1 and Table 3-3. The jacket has a smooth dense surface that is highly resistant to cutting, abrasion, chemicals, sunlight and flame. It has excellent resistance to heat, moisture and the oils commonly used in mining applications.
9. **OUTSIDE DIAMETER** Dimensions shall be 1.175"x2.990". Tolerance shall meet the requirements of ICEA S-75-381 Par. 3.22.2.
10. **SURFACE LEGEND** Shall be embossed in the jacket showing " 2KV 3/C 2/0 Type SHG MSHA".
11. **TESTS** Cable shall be tested in accordance with applicable ICEA requirements.

PWC-515



Three Conductor Type SHD-GC

5,000 Volts

Applications:

Heavy duty high voltage portable power cable for use in circuits not exceeding the rated voltage. These cables are used for heavy mobile equipment such as drag lines, shovels, dredges, drills, other off track equipment, and for power feeders in underground mines. Recommended maximum continuous conductor temperature is 90°C.

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

Mining Cable meets or exceeds ICEA Standards S-68-516 & S-75-381.

Conductors

Flexible tinned copper

Strand Shield

Semi-conducting layer

Insulation

90°C Ethylene-Propylene rubber (EPR)

Insulation Shielding

Color coded non-conducting tape under tinned copper and color coded nylon braid.

Ground Check Conductor

Flexible tinned copper with yellow insulation (1)

Ground Wires

Flexible tinned copper

Jacket

Reinforced CPE with permanent surface marking (2).



Size AWG/ MCM	Power Conductors		Insulation Thickness Mils	Grounding Conductor			Jacket Thickness Mils	Nominal Diameter In. (3)	Approx. Weight lbs. per 1,000 ft.	Ampacity (5) 40° C Ambient Temp.
	Number of Wires per Conductor (4)			Size AWG	Minimum No. of Wires per Conductor					
6	133	7x19	110	10	49	7x7	185	1.56	1560	93
4	259	7x37	110	8	133	7x19	185	1.68	1920	122
2	259	7x37	110	6	133	7x19	205	1.87	2500	159
1	259	7x37	110	5	133	7x19	205	1.95	2860	184
1/0	266	19x14	110	4	259	7x37	220	2.08	3390	211
2/0	342	19x18	110	3	259	7x37	220	2.20	3830	243
4/0	532	19x28	110	1	259	7x37	235	2.50	5300	321
250	627	19x33	120	1/0	266	19x14	250	2.69	6450	355
350	888	37x24	120	2/0	342	19x18	265	2.95	7880	435
500	1221	37x33	120	4/0	532	19x28	280	3.31	10440	536

(1) **Ground Check-** 8 AWG (minimum 133 strand 7x19) ground check conductor on 6 AWG through 4/0 AWG cable.

6AWG (minimum 133 strand 7x19) ground check conductor on 250 MCM and larger cable.

2) **Jacket-** Black is standard. Colored jackets available upon request. **Thermoplastic polyurethane (TPU) also available.**

(3) **Diameters-** Subject to plus 8% minus 5% tolerance.

(4) **Alternate strand constructions for power conductors:** 1/0 AWG through 4/0 AWG 259 wire 37x7 4/0 AWG through 500 MCM 427 wire 61x7

(5) **Ampacity-** Based on continuous duty at 90°C conductor temperature. For other ampacity ratings under various conditions, see portable power cable ampacities table Inside Back Cover

Three Conductor Type SHD-GC SPECIFICATIONS

1. **SCOPE** This specification describes 3 conductor round type SHD-GC shielded power cable with ethylene-propylene rubber insulation for use at a maximum continuous conductor temperature of 90°C. These cables are intended for use as power feeders on AC surface equipment such as drag lines, shovels, drills and in underground mines as portable power feeders, power to boring machines, longwall mining equipment, etc.
2. **STANDARDS**
ICEA S-68-516/NEMA WC-8 ICEA S-75-381/NEMA WC-58 ASTM B-172 ASTM B-33
3. **CONDUCTORS** Annealed tin coated rope stranded conductors in accordance with ICEA and ASTM.
4. **CONDUCTOR SHIELDING** Conducting layer over the conductor meeting the requirements of Par 3.14 of ICEA S-75-381.
5. **INSULATION** The insulation shall be a ethylene-propylene rubber (EPR) extruded insulation. The average thickness of the insulation wall over the conductor shall be as specified in Table 3-21 of ICEA S-75-381. The minimum thickness of insulation shall not be less than 90% of the specified average value.
6. **CIRCUIT IDENTIFICATION AND SHIELDING** The shielding system shall consist of a tinned copper/nylon braid applied over a lapped color-coded non-conducting tape on each conductor. The nylon in the shielding braid, is colored black, white, and red for easy identification. The shielding braid shall provide a 60% minimum coverage in accordance with ICEA S-75-381 Par. 3.19.1.2. A full tinned copper braid shield with 84% minimum coverage in accordance with ICEA S-75-381 Par. 3.19.1.1 can be furnished to order.
7. **GROUNDING CONDUCTORS** The grounding conductors shall be annealed tin coated copper of not less than the size and number of wires in Table 3-24 of ICEA S-75-381 for the corresponding power conductor sizes.
8. **GROUND CHECK CONDUCTOR** The ground check conductor shall be as given in Table 3-21 of ICEA S-75-381 for the corresponding power conductor sizes, except that we shall use #6AWG in lieu of 8AWG minimum on 250MCM and larger. A minimum of 133 strands of annealed copper shall be used. The conductor shall have a yellow polypropylene insulation. Larger than standard size ground check conductors can be furnished when desired and/or necessary due to operating conditions.
9. **ASSEMBLY CORE** Standard Stock construction.-Three power conductors shall be cabled together with a left-hand lay meeting the requirements of Table 3-5 of ICEA S-75-381. The ground check conductor shall be laid in the valley between the black and white power conductors and a bare tinned copper grounding conductor in each of the other two valleys, with cured rubber fillers as required to make an essentially round core. A synthetic binder and a single faced rubber filled binder tape will be applied overall, so that it will adhere to the underside of the outer jacket. When used on longwall shearers the following core assembly is recommended: Sizes 4/OAWG and smaller: Three conductors shall be cabled together with a left-hand lay meeting the requirements of Table 3-5 of ICEA S-75-381. The ground check conductor shall be laid in the valley between the black and white power conductors, a bare tinned copper grounding conductor in each of the other two valleys and a synthetic binder overall. Filling will be integral with the first layer of the jacket with this construction.
10. **JACKET** A reinforced thermosetting jacket shall be extruded over the assembly in accordance with Table 3-21 of ICEA S-75-381. The standard jacket for all sizes is extra-heavy-duty black CPE black or colors can be provided. All jackets meet the requirements of ICEA S-75-381 Table 3-3 and have a smooth dense surface that is highly resistant to cutting, abrasion, chemicals, sunlight and flame. It has excellent resistance to heat, moisture and the oils commonly used in mining applications.
11. **OUTSIDE DIAMETER** Shall be in accordance with ICEA S-75-381 Table 3-21, and tolerance in accordance with ICEA S-75-381 Par. 3.22.2.
12. **SURFACE LEGEND** Shall be embossed in the jacket showing 5KV 3/C (size) Type SHD-GC MSHA. Additional information can be furnished on the surface legend to special order.
13. **TESTS** Cable shall be tested in accordance with applicable ICEA requirements.

PWC-516



Type SHD-PCG Longwall Cables

5,000 Volts

Applications:

Heavy duty portable power cable designed for use to power longwall shearers, where three shielded power conductors, three unshielded control conductors, and a grounding conductor are required. Recommended maximum continuous conductor temperature is 90°C.

Cable carries "MSHA" marking indicating listing by the Mine Safety and Health Administration and the Pennsylvania Department of Environmental Resources.

Mining Cable meets or exceeds ICEA Standards S-68-516 & S-75-381.

Conductors

Flexible tinned copper

Strand Shield

Semi-conducting layer

Insulation

90°C Ethylene-Propylene rubber (EPR)

Ground Wire

Flexible tinned copper

Control Group 3 Conductors

Flexible tinned copper, ethylene propylene rubber insulation color coded black, white, red and overall a thermosetting jacket.

Insulation Shielding

Color coded non-conducting tape under tinned copper and color coded nylon braid.

Jacket

Reinforced CPE with permanent surface marking.



Power Conductors		Grounding Conductor		Control Conductors		Nominal O.D. in. (1)	Approx. Weight lbs. per 1,000 ft.	Ampacity (2) 40° C Ambient Temp.
Size of Conductor AWG	No. of Wires per Conductor	Size AWG	No. of Wires	Size AWG	No. of Wires per Conductor			
2	259 7x37	5	168 6x28	8	133 7x19	2.03	3020	159
1/0	266 19x14	3	222 6x37	8	133 7x19	2.27	3850	211
2/0	342 19x18	2	246 6x41	8	133 7x19	2.45	4550	243
4/0	532 19x28	1/0	426 6x71	6	133 7x19	2.93	6300	321

(1) Diameters- Subject to plus or minus 3% tolerance

(2) Ampacity- Based on 90°C conductor temperature.

For other ratings under various conditions, see portable power cable ampacities table Inside Back Cover.

Type SHD-PCG Longwall Cables SPECIFICATIONS

1. **SCOPE** This specification describes a type SHD-PCG longwall cable containing three shielded power conductors, a three conductor nonshielded control group and one central grounding conductor. It is intended for use on longwall mining equipment at a maximum continuous conductor temperature of 90°C.
2. **STANDARDS**
ICEA S-68-516/NEMA WC-8 ICEA S-75-381/NEMA WC-58 ASTM B-172 ASTM B-33
3. **CONDUCTORS** Annealed tin coated rope stranded conductors in accordance with ICEA and ASTM.
4. **CONDUCTOR SHIELDING** Extruded semi-conducting thermoset material.
5. **INSULATION** The insulation shall be ethylene-propylene rubber (EPR) extruded insulation.

The average thickness of the insulation wall over the power conductors shall be as specified in Table 3-21 of ICEA S-75-381. The minimum thickness of insulation shall not be less than 90% of the specified average value.
6. **CIRCUIT IDENTIFICATION AND SHIELDING** The shielding system shall consist of a tinned copper/nylon braid applied over a lapped color-coded non-conducting tape on each conductor. The nylon in the shielding braid is colored black, white and red for easy identification. The shielding braid shall provide a 60% minimum coverage in accordance with ICEA S-75-381 Par. 3.19.1.2.
7. **GROUNDING CONDUCTOR** The grounding conductor shall be annealed tin coated copper of not less than the size shown in Table 7.2-12 of ICEA for the corresponding power conductor sizes.
8. **CONTROL GROUP** The control group shall consist of 3 flexible 133 wire 7x19 strand tinned copper conductors, with .045" ethylene propylene rubber insulation, color coded black, white and red. The 3 insulated control conductors shall be cabled, and overall, a thermosetting integral fill jacket to a diameter compatible with the shielded power conductors.
9. **ASSEMBLY CORE** Three shielded power conductors and one 3 conductor control group shall be cabled around a single grounding conductor with the control group between the red and black shielded power conductors and a synthetic binder to hold the core assembly together.
10. **JACKET** A reinforced two layer thermosetting jacket providing an integral fill shall be extruded over the assembly in accordance with Table 3-23 of ICEA S-75-381. The standard jacket for all sizes is extra-heavy-duty black CPE or colors can be provided. All jackets meet the requirements of ICEA S-75-381 Par. 3.21 and Table 3-3 and have a smooth dense surface that is highly resistant to cutting, abrasion, chemicals, sun light and flame. It has excellent resistance to heat, moisture and the oils commonly used in mining applications.
11. **OUTSIDE DIAMETER** Shall be in accordance with the dimensions shown on the front of this sheet. (Note ICEA S-75-381 Par. 3.22.2 allows +8% -5% tolerance.)
12. **SURFACE LEGEND** Shall be embossed in the jacket showing 5KV (size) Type SHD-PCG Longwall MSHA. Additional information can be furnished on the surface legend to special order.
13. **TESTS** Cable shall be tested in accordance with applicable ICEA requirements.

PWC-517



Three Conductor Type SHD-GC

8,000 Volts

Applications:

Heavy duty high voltage portable power cable for use in circuits not exceeding the rated voltage. These cables are used for heavy mobile equipment such as drag lines, shovels, dredges, drills, other off-track equipment, and for power feeders in underground mines. Recommended maximum continuous conductor temperature is 90°C.

Cable carries "MSHA" marking indicating listing by the Mine Safety and Health Administration and the Pennsylvania Department of Environmental Resources.

Mining Cable meets or exceeds ICEA Standards S-68-516 & S-75-381.

Conductors
Flexible tinned copper

Strand Shield
Semi-conducting layer.

Insulation
90°C Ethylene-Propylene rubber (EPR)

Insulation Shielding
Semi-conducting layer under tinned copper and color coded nylon braid.

Ground Check Conductor
Flexible tinned copper with yellow insulation (1)

Ground Wires
Flexible tinned copper.

Assembly
Rubber fillers and tape.

Jacket
Two layer reinforced CPE with permanent surface marking (2).



Size AWG/ MCM	Power Conductors		Grounding Conductor			Jacket Thickness Mils	Nominal Diameter In. (3)	Approx. Weight lbs. per 1,000 ft.	Ampacity (5) 40° C Ambient Temp.
	No. of Wires per Conductor (4)	Insulation Thickness Mils	Size AWG	Minimum No. of Wires per Conductor					
4	259 7x37	150	8	133 7x19	7x19	205	1.94	2180	122
2	259 7x37	150	6	133 7x19	7x19	220	2.12	2830	159
1	259 7x37	150	5	133 7x19	7x19	220	2.21	3350	184
1/0	266 19x14	150	4	259 7x37	7x37	220	2.32	3590	211
2/0	342 19x18	150	3	259 7x37	7x37	235	2.46	4190	243
4/0	532 19x28	150	1	259 7x37	7x37	250	2.75	5660	321
250	627 19x33	150	1/0	266 19x14	19x14	250	2.89	6740	355
350	888 37x24	150	2/0	342 19x18	19x18	280	3.20	8460	435
500	1221 37x33	150	4/0	532 19x28	19x28	295	3.56	10700	536

(1) **Ground Check**- 8 AWG (minimum 133 strand 7x19) ground check conductor on 4 AWG through 4/0 AWG cable. 6 AWG

(minimum 133 strand 7x19) ground check conductor on 250 MCM and larger cable.

(2) **Jacket**- Black is standard. Colored jackets available on request. **Thermoplastic polyurethane (TPU) also available.**

(3) **Diameters**- Subject to plus 8% minus 5% tolerance.

(4) Alternate strand constructions for power conductors:
1/0 AWG through 4/0 AWG 259 wire 37x7
4/0 AWG through 500 MCM 427 wire 61x7

(5) **Ampacity**- Based on continuous duty at 90°C conductor temperature. For other ampacity ratings under various conditions, see portable power cable ampacities table Inside Back Cover.

Three Conductor Type SHD-GC SPECIFICATIONS

1. **SCOPE** This specification describes 3 conductor round type SHD-GC shielded power cable with ethylene-propylene rubber insulation for use at a maximum continuous conductor temperature of 90°C. These cables are intended for use as power feeders on AC surface equipment such as drag lines, shovels, drills and in underground mines as portable power feeders.
2. **STANDARDS**
ICEA S-68-516/NEMA WC-8 ICEA S-75-381/NEMA WC-58 ASTM B-172 ASTM B-33
3. **CONDUCTORS** Annealed tin coated rope stranded conductors in accordance with ICEA and ASTM.
4. **CONDUCTOR SHIELDING** Semi-conducting layer over the conductor, meeting requirements of Par 3.14 of ICEA S-75-381.
5. **INSULATION** The insulation shall be ethylene-propylene rubber (EPR) extruded insulation.

The average thickness of the insulation wall over the conductor shall be as specified in Table 3-21 of ICEA S-75-381. The minimum thickness of insulation shall not be less than 90% of the specified average value.
6. **CIRCUIT IDENTIFICATION AND SHIELDING** The shielding system shall consist of a tinned copper/nylon braid applied over a lapped semi-conducting tape on each conductor. The nylon in the shielding braid, is colored black, white, and red for easy identification. The shielding braid shall provide a 60% minimum coverage in accordance with ICEA S-75-381 Par. 3.19.1.2. A full tinned copper braid shield with 84% minimum coverage in accordance with ICEA S-75-381 Par. 3.19.1.1. can be furnished to order.
7. **GROUNDING CONDUCTORS** The grounding conductors shall be annealed tin coated copper of not less than the size and number of wires in Table 3-24 of ICEA S-75-381 for the corresponding power conductor sizes.
8. **GROUND CHECK CONDUCTOR** The ground check conductor shall be as given in Table 3-21 of ICEA S-75-381 for the corresponding power conductor sizes except that we shall use 6 AWG in lieu of 8 AWG minimum on 250 MCM and larger. A minimum of 133 strands of annealed copper shall be used. The conductor shall have yellow polypropylene insulation. Larger than standard size ground check conductors can be furnished when desired and/or necessary due to operating conditions.
9. **ASSEMBLY CORE** Three power conductors shall be cabled together with a left-hand lay meeting the requirements of Table 3-5 of ICEA S-75-381. The ground check conductor shall be laid in the valley between the black and white power conductors and a tinned copper grounding conductor in each of the other two valleys, with cured rubber fillers as required to make an essentially round core. A synthetic binder and a single faced rubber filled binder tape will be applied overall, so that it will adhere to the underside of the outer jacket.
10. **JACKET** A reinforced thermosetting jacket shall be extruded over the assembly in accordance with Table 3-21 of ICEA S-75-381. The standard jacket for all sizes is extra-heavy-duty black CPE. All jackets meet the requirements of ICEA S-75-381 Table 3-3, and have a smooth dense surface that is highly resistant to cutting, abrasion, chemicals, sunlight and flame. It has excellent resistance to heat, moisture and the oils commonly used in mining applications.
11. **OUTSIDE DIAMETER** Shall be in accordance with ICEA S-75-381 Table 3-21, and tolerance in accordance with ICEA S-75-381 Par. 3.22.2.
12. **SURFACE LEGEND** Shall be embossed in the jacket showing 8KV 3/C (size) Type SHD-GC MSHA. Additional information can be furnished on the surface legend to special order.
13. **TESTS**
Cable shall be tested in accordance with applicable ICEA requirements.

PWC-519



Three Conductor Type SHD-GC

15,000 Volts

Applications:

Heavy duty high voltage portable power cable for use in circuits not exceeding the rated voltage. These cables are used for heavy mobile equipment such as drag lines, shovels, dredges, drills, other off-track equipment, and for power feeders in underground mines. Recommended maximum continuous conductor temperature is 90°C.

Cable carries "MSHA" marking indicating listing by the Mine Safety and Health Administration and the Pennsylvania Department of Environmental Resources.

Mining Cable meets or exceeds ICEA Standards S-68-516 & S-75-381.

Conductors

Flexible tinned copper

Strand Shield

Semi-conducting layer.

Insulation

90°C Ethylene-Propylene rubber (EPR)

Insulation Shielding

Semi-conducting layer under tinned copper and color coded nylon braid.

Ground Check Conductor

8 AWG 7x19 wire flexible tinned copper with yellow insulation

Ground Wires

Flexible tinned copper.

Assembly

Rubber fillers and tape.

Jacket

Two layer reinforced CPE with permanent surface marking (1).



Size AWG/ MCM	Power Conductors		Insulation Thickness Mils	Grounding Conductor		Jacket Thickness Mils	Nominal Diameter In. (2)	Approx. Weight lbs. per 1,000 ft.	Ampacity (3) 40° C Ambient Temp.
	No. of Wires per Conductor (4)			Size AWG	Minimum No. of Wires per Conductor				
2	259	7X37	210	6	133 7x19	235	2.41	3500	164
1	259	7X37	210	5	133 7x19	235	2.52	4080	187
1/0	266	19X14	210	4	259 7x37	250	2.64	4610	215
2/0	342	19X18	210	3	259 7x37	250	2.73	4890	246
4/0	532	19X28	210	1	259 7x37	265	3.05	6820	325

(1) **Jacket**- Black is standard. Colored jackets available on request. **Thermoplastic polyurethane (TPU) also available.**

(2) **Diameters**- Subject to plus 8% minus 5% tolerance.

(3) **Ampacity**- Based on continuous duty at 90°C conductor temperature. For other ampacity ratings under various conditions, see portable power cable ampacities table Inside Back Cover.

(4) **Alternate strand constructions for power conductors:**
1/0 AWG through 4/0 AWG 259 wire 37x7
4/0 AWG 427 wire 61 x7

Three Conductor Type SHD-GC SPECIFICATIONS

- 1. SCOPE** This specification describes 3 conductor round type SHD-GC shielded power cable with ethylene-propylene rubber insulation for use at a maximum continuous conductor temperature of 90°C. These cables are intended for use as power feeders on AC surface equipment such as drag lines, shovels, drills and in underground mines as portable power feeders.
- 2. STANDARDS**
ICEA S-68-516/NEMA WC-8 ICEA S-75-381/NEMA WC-58 ASTM B-172 ASTM B-33
- 3. CONDUCTORS** Annealed tin coated rope stranded conductors in accordance with ICEA and ASTM.
- 4. CONDUCTOR SHIELDING** Extruded semi-conducting thermoset material, meeting requirements of Par. 3.14 of ICEA S-75-381.
- 5. INSULATION** The insulation shall be ethylene-propylene rubber (EPR) extruded insulation.

The average thickness of the insulation wall over the conductor shall be as specified in Table 3-21 of ICEA S-75-381. The minimum thickness of insulation shall not be less than 90% of the specified average value.
- 6. CIRCUIT IDENTIFICATION AND SHIELDING** The shielding system shall consist of a tinned copper/nylon braid applied over a lapped semi-conducting tape on each conductor. The nylon in the shielding braid, is colored black, white and red for easy identification. The shielding braid shall provide a 60% minimum coverage in accordance with ICEA S-75-381 Par. 3.19.1.2. A full tinned copper braid shield with 84% minimum coverage in accordance with ICEA S-75-381 Par. 3.19.1.1. can be furnished to order.
- 7. GROUNDING CONDUCTORS** The grounding conductors shall be annealed tin coated copper of not less than the size and number of wires in Table 3-24 of ICEA S-75-381 for the corresponding power conductor sizes.
- 8. GROUND CHECK CONDUCTOR** The ground check conductor shall be as given in Table 3-21 of ICEA S-75-381 for the corresponding power conductor sizes. A minimum of 133 strands of annealed copper shall be used. The conductor shall have a yellow polypropylene insulation. Larger than standard size ground check conductors can be furnished when desired and/or necessary due to operating conditions.
- 9. ASSEMBLY CORE** Three power conductors shall be cabled together with a left-hand lay meeting the requirements of Table 3-5 of ICEA S-75-381. The ground check conductor shall be laid in the valley between the black and white power conductors and a bare tinned copper grounding conductor in each of the other two valleys, with cured rubber fillers as required to make an essentially round core. A synthetic binder and a single faced rubber filled binder tape will be applied overall, so that it will adhere to the underside of the outer jacket.
- 10. JACKET** A reinforced thermosetting jacket shall be extruded over the assembly in accordance with Table 3-21 of ICEA S-75-381. The standard jacket for all sizes is extra-heavy-duty black CPE. All jackets meet the requirements of ICEA S-75-381 Table 3-3, and have a smooth dense surface that is highly resistant to cutting, abrasion, chemicals, sunlight and flame. It has excellent resistance to heat, moisture and the oils commonly used in mining applications.
- 11. OUTSIDE DIAMETER** Shall be in accordance with ICEA S-75-381 Table 3-21, and tolerance in accordance with ICEA S-75-381 Par. 3.22.2.
- 12. SURFACE LEGEND** Shall be embossed in the jacket showing 15KV 3/C (size) Type SHD-GC MSHA. Additional information can be furnished on the surface legend to special order.
- 13. TESTS** Cable shall be tested in accordance with applicable ICEA requirements.

PWC-525



Three Conductor Type SHD-GC

25,000 Volts

Applications:

Heavy duty high voltage portable power cable for use in circuits not exceeding the rated voltage. These cables are used for heavy mobile equipment such as drag lines, shovels, dredges, drills, other off-track equipment. Recommended maximum continuous conductor temperature is 90°C.

Cable carries "MSHA" marking indicating listing by the Mine Safety and Health Administration and the Pennsylvania Department of Environmental Resources.

Mining Cable meets or exceeds ICEA Standards S-68-516 & S-75-381.

Conductors

Flexible tinned copper

Strand Shield

Semi-conducting layer.

Insulation

90°C Ethylene-Propylene rubber (EPR)

Insulation Shielding

Semi-conducting layer under tinned copper and color coded nylon braid.

Ground Check Conductor

8 AWG 7x19 wire flexible tinned copper with yellow insulation

Ground Wires

Flexible tinned copper.

Assembly

Rubber fillers and tape.

Jacket

Two layer reinforced CPE with permanent surface marking (1).



Power Conductors			Grounding Conductor			Jacket Thickness Mils	Nominal Diameter In. (2)	Approx. Weight lbs. per 1,000 ft.	Ampacity (3) 40° C Ambient Temp.
Size AWG/MCM	No. of Wires per Conductor	Insulation Thickness Mils	Size AWG	Minimum No. of Wires per Conductor					
1	259 7x37	260	5	133 7x19	265	2.95	5320	191	
1/0	259 37x7	260	4	259 7x37	265	3.05	5840	218	
2/0	259 37x7	260	3	259 7x37	280	3.20	6550	249	
3/0	259 37x7	260	2	259 7x37	280	3.33	7250	286	
4/0	259 37x7	260	1	259 7x37	295	3.50	8350	327	

(1) Jacket- Black is standard. Colored jackets available on request. **Thermoplastic polyurethane (TPU) also available.**

(2) Diameters- Subject to plus 8% minus 5% tolerance.

(3) Ampacity- Based on continuous duty at 90°C conductor temperature. For other ampacity ratings under various conditions, see portable power cable ampacities table Inside Back Cover.

Three Conductor Type SHD-GC SPECIFICATIONS

1. **SCOPE** This specification describes 3 conductor round type SHD-GC shielded power cable with ethylene-propylene rubber insulation for use at a maximum continuous conductor temperature of 90°C. These cables are intended for use as power feeders on AC surface equipment such as drag lines and shovels.
2. **STANDARDS**
ICEA S-68-516/NEMA WC-8 ICEA S-75-381/NEMA WC-58 ASTM B-172 ASTM B-33
3. **CONDUCTORS** Annealed tin coated rope stranded conductors in accordance with ICEA and ASTM.
4. **CONDUCTOR SHIELDING** Extruded semi-conducting thermoset material, meeting requirements of Par. 3.14 of ICEA S-75-381.
5. **INSULATION** The insulation shall be ethylene-propylene rubber (EPR) extruded insulation.

The average thickness of the insulation wall over the conductor shall be as specified in Table 3-21 of ICEA S-75-381. The minimum thickness of insulation shall not be less than 90% of the specified average value.
6. **CIRCUIT IDENTIFICATION AND SHIELDING** The shielding system shall consist of a tinned copper/nylon braid applied over a lapped semi-conducting tape which is over an extruded insulation shield on each conductor. The nylon in the shielding braid is colored black, white and red for easy identification. The shielding braid shall provide a 60% minimum coverage in accordance with ICEA S-75-381 Par. 3.19.1.2. A full tinned copper braid shield with 84% minimum coverage in accordance with ICEA S-75-381 Par. 3.19.1.1 can be furnished to order. The semi-conducting layer meets both ICEA S-75-381 Appendix E and AEIC requirements for strippability.
7. **GROUNDING CONDUCTORS** The grounding conductors shall be annealed tin coated copper of not less than the size and number of wires in Table 3-24 of ICEA S-75-381 for the corresponding power conductor sizes.
8. **GROUND CHECK CONDUCTOR** The ground check conductor shall be as given in Table 3-21 of ICEA S-75-381 for the corresponding power conductor sizes. A minimum of 133 strands of annealed copper shall be used. The conductor shall have a yellow polypropylene insulation. Larger than standard size ground check conductors can be furnished when desired and/or necessary due to operating conditions.
9. **ASSEMBLY CORE** Three power conductors shall be cabled together with a left-hand lay meeting the requirements of Table 3-5 of ICEA S-75-381. The ground check conductor shall be laid in the valley between the black and white power conductors and a tinned copper grounding conductor in each of the other two valleys, with cured rubber fillers as required to make an essentially round core. A synthetic binder and a single faced rubber filled binder tape will be applied overall, so that it will adhere to the underside of the outer jacket.
10. **JACKET** A reinforced thermosetting jacket shall be extruded over the assembly in accordance with Table 3-21 of ICEA S-75-381. Table 3-3, and have a smooth dense surface that is highly resistant to chemicals, sunlight and flame. It has excellent resistance to heat, moisture and the oils commonly used in mining applications.
11. **OUTSIDE DIAMETER** Shall be in accordance with ICEA S-75-381 Table 3-21, and tolerance in accordance with ICEA S-75-381 Par. 3.22.2.
12. **SURFACE LEGEND** Shall be embossed in the jacket showing 25KV 3/C (size) Type SHD-GC MSHA. Additional information can be furnished on the surface legend to special order.
13. **TESTS** Cable shall be tested in accordance with applicable ICEA requirements.

PWC-601



Three Conductor Type MP-GC Mine Power Feeder

CPE Jacket, 5,000 Volts,
100% or 133% Level,
(Grounded or Ungrounded)

Applications:

Connections between units of mine distribution systems. For use up to 5,000 volts when installed in duct, conduit or open air and for direct burial in wet and dry locations. Recommended maximum continuous conductor temperature is 90°C.

Cable carries "MSHA" marking indicating listing by the Mine Safety and Health Administration and the Pennsylvania Department of Environmental Resources.

Mining Cable meets or exceeds ICEA Standards S-68-516 & S-75-381.

Conductors
Copper

Strand Shield
Semi-conducting layer

Insulation
90°C Ethylene-Propylene
rubber

Insulation Shielding
Semi-conducting layer under
.005" copper tape
(Phase identification provided)

Ground Check
8 AWG 7 wire copper with
yellow insulation.

Ground Wires
Copper.

Fillers (4)

Binder Tape

Jacket
CPE with permanent surface
marking (1).



Size AWG/ MCM	Power Conductors		Grounding Conductor		Jacket Thickness Mils	Nominal Diameter In. (2)	Approx. Weight lbs. per 1,000 ft.	Ampacity (3) 40° C Ambient Temp.
	No. of Wires per Conductor	Insulation Thickness Mils	Size AWG	Minimum No. of Wires per Conductor				
4	7	90	8	7	110	1.32	1240	122
2	7	90	6	7	110	1.45	1670	159
1	19	90	5	7	110	1.53	1940	184
1/0	19	90	4	7	110	1.63	2300	211
2/0	19	90	3	7	110	1.74	2730	243
4/0	19	90	1	19	140	2.00	3940	321
250	37	90	1/0	19	140	2.13	4620	355
350	37	90	2/0	19	140	2.35	5940	435
500	37	90	4/0	19	140	2.64	8160	536

(1) **Jacket-** Black is standard. Colored jackets available on request

(2) **Diameters-** Subject to plus 8% minus 5% tolerance.

(3) **Ampacity-** Based on continuous duty at 90°C conductor temperature. For other ampacity ratings under various conditions, see portable power cable ampacities table Inside Back Cover.

(4) Cured rubber fillers are standard.

Three Conductor Type MP-GC Mine Power Feeder SPECIFICATIONS

1. **SCOPE** This specification covers type MP-GC copper tape shielded mine power feeder cable with a ground check, rated at 5000 volts 100% and 133% insulation levels. Maximum continuous conductor temperature 90°C (194°F). These cables are for use as connections between units of mine distribution systems at nominal AC voltages up to 5000 volts.
2. **STANDARDS**
ICEA S-68-516/NEMA WC-8 ICEA S-75-381/NEMA WC-58 ASTM B-8 ASTM B-33
3. **CONDUCTORS** Class B stranded annealed un-coated copper in accordance with ICEA and ASTM.
4. **CONDUCTOR SHIELDING** Extruded semi-conducting thermoset material, in accordance with Par. 3.14 of ICEA S-75-381.
5. **INSULATION** The insulation shall be ethylene-propylene rubber (EPR) extruded insulation.

The average thickness of the insulation wall over the conductor shall be as specified in Table 4-2 of ICEA S-75-381. The minimum thickness of insulation shall not be less than 90% of the specified average value.
6. **SHIELDING AND CIRCUIT IDENTIFICATION** Semi-conductive tape applied helically and lapped over a semi-conductive coating. Color of print identifying the tape as "semiconducting" also indicates phase identification, and a .005" annealed copper tape applied helically and lapped. An alternate Extruded Insulation Shielding system is available. It consists of an extrusion of a semi-conducting thermoset material directly over the insulation and overall a .005" annealed copper tape is applied helically and lapped. Phase identification is provided by a color coded marker tape under the copper tape. This shielding system provides radial stress distribution that is symmetrical and corona free. The conducting layer meets both ICEA S-75-381 Par. 4.5, and AEIC requirements for strippability and corona.
7. **GROUNDING CONDUCTORS** The grounding conductors shall be annealed tin coated Class B copper not less than the size shown in Table 4-1 of ICEA S-75-381 for the corresponding power conductor sizes.
8. **GROUND CHECK CONDUCTOR** The ground check conductor shall be as given in Table 4-1 of ICEA S-75-381 for the corresponding power conductor sizes, and consist of 7 strands of annealed copper with yellow polypropylene insulation.
9. **ASSEMBLY** Three power conductors shall be cabled together with a left-hand lay meeting the requirements of Par. 4.7 of ICEA S-75-381. The ground check conductor shall be laid in the valley between the black and white power conductors and a tinned copper grounding conductor in each of the other two valleys in continuous contact with the metallic shields. Synthetic rope fillers to make an essentially round core and overall, a single faced rubber filled binder tape is applied overlapped. (Cured rubber fillers can be furnished when specified).
10. **JACKET** A thermosetting jacket shall be extruded over the assembly to the outside diameters shown in Table 4-2 of ICEA S-75-381. The standard jacket for all sizes is extra-heavy-duty black CPE or colors can be provided. All jackets meet the requirements of ICEA S-75-381 Par. 4.8 and Table 3-3. They have a smooth dense surface that is highly resistant to cutting, abrasion, chemicals, sunlight and flame. It has excellent resistance to heat, moisture and the oils commonly used in mining applications.
11. **OUTSIDE DIAMETER** Shall be in accordance with ICEA S-75-381 Table 4-2 and tolerances shall meet the requirement of ICEA S-75-381 Par. 4.9.
12. **SURFACE LEGEND** Shall be embossed in the jacket showing 5KV (size) MP-GC sunlight resistant MSHA. Additional information can be furnished on the surface legend to special order.
13. **TESTS** Cable shall be tested in accordance with applicable ICEA requirements.

PWC-602



Three Conductor Type MP-GC Mine Power Feeder

CPE Jacket, 8,000 Volts, 100% Level,
(Grounded)

Applications:

Connections between units of mine distribution systems. For use up to 8,000 volts when installed in duct conduit or open air and for direct burial in wet and dry locations. Recommended maximum continuous conductor temperature is 90°C.

Cable carries "MSHA" marking indicating listing by the Mine Safety and Health Administration and the Pennsylvania Department of Environmental Resources.

Mining Cable meets or exceeds ICEA Standards S-68-516 & S-75-381.

Conductors
Copper

Strand Shield
Semi-conducting layer

Insulation
90°C Ethylene-Propylene rubber

Insulation Shielding
Semi-conducting layer under .005" copper tape
(Phase identification provided)

Ground Check
8 AWG 7 wire copper with yellow insulation.

Ground Wires
Copper.

Fillers (4)

Binder Tape

Jacket
CPE with permanent surface marking (1).



Size AWG/ MCM	Power Conductors		Grounding Conductor		Jacket Thickness Mils	Nominal Diameter In. (2)	Approx. Weight lbs. per 1,000 ft.	Ampacity (3) 40° C Ambient Temp.
	No. of Wires per Conductor	Insulation Thickness Mils	Size AWG	Number of Wires per Conductor				
4	7	115	8	7	110	1.43	1440	122
2	7	115	6	7	110	1.55	1760	159
1	19	115	5	7	110	1.65	2070	184
1/0	19	115	4	7	140	1.75	2440	211
2/0	19	115	3	7	140	1.88	2940	243
4/0	19	115	1	19	140	2.12	4130	321
250	37	115	1/0	19	140	2.25	4760	355
350	37	115	2/0	19	140	2.46	6090	435
500	37	115	4/0	19	140	2.75	8360	536

(1) **Jacket**- Black is standard. Colored jackets available on request.

(2) **Diameters**- Subject to plus 8% minus 5% tolerance.

(3) **Ampacity**- Based on continuous duty at 90°C conductor temperature. For other ampacity ratings under various conditions, see portable power cable ampacities table Inside Back Cover

(4) Cured rubber fillers are standard.

Three Conductor Type MP-GC Mine Power Feeder SPECIFICATIONS

1. **SCOPE** This specification covers type MP-GC copper tape shielded mine power feeder cable with a ground check, rated at 8,000 volts 100% insulation level. Maximum continuous conductor temperature 90°C (194°F). These cables are for use as connections between units of mine distribution systems at nominal AC voltages up to 8,000 volts.
2. **STANDARDS**
ICEA S-68-516/NEMA WC-8 ICEA S-75-381/NEMA WC-58 ASTM B-8 ASTM B-33
3. **CONDUCTORS** Class B stranded annealed un-coated copper in accordance with ICEA and ASTM.
4. **CONDUCTOR SHIELDING** Extruded semi-conducting thermoset material, in accordance with Par. 3.14 of ICEA S-75-381.
5. **INSULATION** The insulation shall be ethylene-propylene rubber (EPR) extruded insulation.

The average thickness of the insulation wall over the conductor shall be as specified in Table 4-3 of ICEA S-75-381. The minimum thickness of insulation shall not be less than 90% of the specified average value.
6. **SHIELDING AND CIRCUIT IDENTIFICATION** Semi-conductive tape applied helically and lapped over a semi-conductive coating. Color of print identifying the tape as "semiconducting" also indicates phase identification, and a .005" annealed copper tape applied helically and lapped. An alternate Extruded Insulation Shielding system is available. It consists of an extrusion of a semi-conducting thermoset material directly over the insulation and overall a .005" annealed copper tape is applied helically and lapped. Phase identification is provided by a color coded marker tape under the copper tape. This shielding system provides radial stress distribution that is symmetrical and corona free. The conducting layer meets both ICEA S-75-381 Par. 4.5, and AEIC requirements for strippability and corona.
7. **GROUNDING CONDUCTORS** The grounding conductors shall be annealed tin coated Class B copper not less than the size shown in Table 4-1 of ICEA S-75-381 for the corresponding power conductor sizes.
8. **GROUND CHECK CONDUCTOR** The ground check conductor shall be as given in Table 4-1 of ICEA S-75-381 for the corresponding power conductor sizes, and consist of 7 strands of annealed copper with yellow polypropylene insulation.
9. **ASSEMBLY** Three power conductors shall be cabled together with a left-hand lay meeting the requirements of Par.4.7 of ICEA S-75-381. The ground check conductor shall be laid in the valley between the black and white power conductors and a tinned copper grounding conductor in each of the other two valleys in continuous contact with the metallic shields. Synthetic rope fillers to make an essentially round core and overall, a single faced rubber filled binder tape is applied overlapped. (Cured rubber fillers can be furnished when specified).
10. **JACKET** A thermosetting jacket shall be extruded over the assembly to the outside diameters shown in Table 4-3 of ICEA S-75-381. The standard jacket for all sizes is extra-heavy-duty black CPE or colors can be provided. All jackets meet the requirements of ICEA S-75-381 Par. 4.8 and Table 3-3. They have a smooth dense surface that is highly resistant to cutting, abrasion, chemicals, sunlight and flame. It has excellent resistance to heat, moisture and the oils commonly used in mining applications.
11. **OUTSIDE DIAMETER** Shall be in accordance with ICEA S-75-381 Table 4-3 and tolerances shall meet the requirement of ICEA S-75-381 Par. 4.9.
12. **SURFACE LEGEND** Shall be embossed in the jacket showing 8KV (size) grounded MP-GC sunlight resistant MSHA. Additional information can be furnished on the surface legend to special order.
13. **TESTS** Cable shall be tested in accordance with applicable ICEA requirements.

PWC-604



Three Conductor Type MP-GC Mine Power Feeder

CPE Jacket, 15,000 Volts,
100% Level, (Grounded)

Applications:

Connections between units of mine distribution systems. For use up to 15,000 volts when installed in duct, conduit or open air and for direct burial in wet and dry locations. Recommended maximum continuous conductor temperature is 90°C.

Cable carries "MSHA" marking indicating listing by the Mine Safety and Health Administration and the Pennsylvania Department of Environmental Resources.

Mining Cable meets or exceeds ICEA Standards S-68-516 & S-75-381.

Conductors
Copper

Strand Shield
Semi-conducting layer

Insulation
90°C Ethylene-Propylene
rubber

Insulation Shielding
Semi-conducting layer under
.005" copper tape
(Phase identification provided)

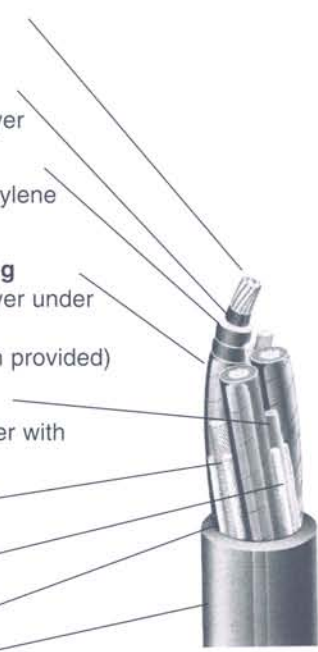
Ground Check
8 AWG 7 wire copper with
yellow insulation.

Ground Wires
Copper.

Fillers (4)

Binder Tape

Jacket
CPE with permanent surface
marking (1).



Size AWG/ MCM	Power Conductors		Grounding Conductor		Jacket Thickness Mils	Nominal Diameter In. (2)	Approx. Weight lbs. per 1,000 ft.	Ampacity (3) 40° C Ambient Temp.
	No. of Wires per Conductor	Insulation Thickness Mils	Size AWG	Number of Wires per Conductor				
2	7	175	6	7	140	1.88	2280	164
1	19	175	5	7	140	1.98	2460	187
1/0	19	175	4	7	140	2.05	2780	215
2/0	19	175	3	7	140	2.15	3290	246
4/0	19	175	1	19	140	2.40	4600	325
250	37	175	1/0	19	140	2.50	4990	359
350	37	175	2/0	19	140	2.75	6380	438
500	37	175	4/0	19	170	3.10	8770	536

(1) Jacket- Black is standard. Colored jackets available on request.

(2) Diameters- Subject to plus 8% minus 5% tolerance.

(3) Ampacity- Based on continuous duty at 90°C conductor temperature. For other ampacity ratings under various conditions, see portable power cable ampacities table Inside Back Cover.

(4) Cured rubber fillers are standard.

**Three Conductor
Type MP-GC Mine Power Feeder**
SPECIFICATIONS

1. **SCOPE** This specification covers type MP-GC copper tape shielded mine power feeder cable with a ground check rated at 15,000 volts 100% insulation level. Maximum continuous conductor temperature 90°C (194°F). These cables are for use as connections between units of mine distribution systems at nominal AC voltages up to 15,000 volts.
2. **STANDARDS**
ICEA S-68-516/NEMA WC-8 ICEA S-75-381/NEMA WC-58 ASTM B-8 ASTM B-33
3. **CONDUCTORS** Class B stranded annealed un-coated copper in accordance with ICEA and ASTM.
4. **CONDUCTOR SHIELDING** Extruded semi-conducting thermoset material. In accordance with Par. 3.14 of ICEA S-75-381.
5. **INSULATION** The insulation shall be ethylene-propylene rubber (EPR) extruded insulation.

The average thickness of the insulation wall over the conductor shall be as specified in Table 4-4 of ICEA S-75-381.
The minimum thickness of insulation shall not be less than 90% of the specified average value.
6. **SHIELDING AND CIRCUIT IDENTIFICATION** Semi-conductive tape applied helically and lapped over a semi-conductive coating. Color of print identifying the tape as "semiconducting" also indicates phase identification, and a .005" annealed copper tape applied helically and lapped. An alternate Extruded Insulation Shielding system is available. It consists of an extrusion of a semi-conducting thermoset material directly over the insulation and overall a .005" annealed copper tape is applied helically and lapped. Phase identification is provided by a color coded marker tape under the copper tape. This shielding system provides radial stress distribution that is symmetrical and corona free. The conducting layer meets both ICEA S-75-381 Par. 4.5, and AEIC requirements for strippability and corona.
7. **GROUNDING CONDUCTORS** The grounding conductors shall be annealed tin coated Class B copper not less than the size shown in Table 4-1 of ICEA S-75-381 for the corresponding power conductor sizes.
8. **GROUND CHECK CONDUCTOR** The ground check conductor shall be given in Table 4-1 of ICEA S-75-381 for the corresponding power conductor sizes, and consist of 7 strands of annealed copper with yellow polypropylene insulation.
9. **ASSEMBLY** Three power conductors shall be cabled together with a left-hand lay meeting the requirements of Par. 4.7 of ICEA S-75-381. The ground check conductor shall be laid in the valley between the black and white power conductors and a tinned copper grounding conductor in each of the other two valleys in continuous contact with the metallic shields. Synthetic rope fillers to make an essentially round core and overall, a single faced rubber filled binder tape is applied overlapped. (Cured rubber fillers can be furnished when specified).
10. **JACKET** A thermosetting jacket shall be extruded over the assembly to the outside diameters shown in Table 4-4 of ICEA S-75-381. The standard jacket for all sizes is extra-heavy-duty black CPE or colors can be provided. All jackets meet the requirements of ICEA S-75-381 Par. 4.8 and Table 3-3. They have a smooth dense surface that is highly resistant to cutting, abrasion, chemicals, sunlight and flame. It has excellent resistance to heat, moisture and the oils commonly used in mining applications.
11. **OUTSIDE DIAMETER** Shall be in accordance with ICEA S-75-381 Table 4-4 and tolerances shall meet the requirements of ICEA S-75-381 Par. 4.9.
12. **SURFACE LEGEND** Shall be embossed in the jacket showing 15KV (size) grounded MP-GC sunlight resistant MSHA. Additional information can be furnished on the surface legend to special order.
13. **TESTS** Cable shall be tested in accordance with applicable ICEA requirements.

PWC-621



Three Conductor Type MP-GC Mine Power Feeder

PVC Jacket, 5,000 Volts, 100% or
133% Level, (Grounded or Ungrounded)

Applications:

Connections between units of mine distribution systems. For use up to 5,000 volts when installed in duct, conduit or open air and for direct burial in wet and dry locations. Recommended maximum continuous conductor temperature is 90°C.

Cable carries "MSHA" marking indicating listing by the Mine Safety and Health Administration and the Pennsylvania Department of Environmental Resources.

Mining Cable meets or exceeds ICEA Standards S-68-516 & S-75-381.

Conductors
Copper

Strand Shield
Semi-conducting layer

Insulation
90°C Cross-linked polyethylene

Insulation Shielding
Semi-conducting layer under
.005" copper tape
(Phase identification provided)

Ground Check
8 AWG 7 wire copper with
yellow insulation.

Ground Wires
Copper.

Fillers (3)

Binder Tape

Jacket
Polyvinyl Chloride (PVC)
with permanent surface
marking.



Power Conductors			Grounding Conductor		Jacket Thickness Mils	Nominal Diameter In. (1)	Approx. Weight lbs. per 1,000 ft.	Ampacity (2) 40° C Ambient Temp.
Size AWG/MCM	No. of Wires per Conductor	Insulation Thickness Mils	Size AWG	Number of Wires per Conductor				
4	7	90	8	7	110	1.32	1190	122
2	7	90	6	7	110	1.45	1540	159
1	19	90	5	7	110	1.53	1780	184
1/0	19	90	4	7	110	1.63	2100	211
2/0	19	90	3	7	110	1.74	2490	243
4/0	19	90	1	19	140	2.00	3670	321
250	37	90	1/0	19	140	2.13	4260	355
350	37	90	2/0	19	140	2.35	5630	435

(1) **Diameters**- Subject to plus 8% minus 5% tolerance.

(3) Cured rubber fillers are standard.

(2) **Ampacity**- Based on continuous duty at 90°C conductor temperature. For other ampacity ratings under various conditions, see portable power cable ampacities table Inside Back Cover

Three Conductor Type MP-GC Mine Power Feeder SPECIFICATIONS

1. **SCOPE** This specification covers Type MP-GC copper tape shielded mine power feeder cable with a ground check, rated at 5000 volts 100 and 133% insulation levels. Maximum continuous conductor temperature 90°C (194°F). These cables are for use as connections between units of mine distribution systems at nominal AC voltages up to 5000 volts.
2. **STANDARDS**
ICEA S-68-516/NEMA WC-8 ICEA S-75-381/NEMA WC-58 ASTM B-8 ASTM B-33
3. **CONDUCTORS** Class B stranded annealed un-coated copper in accordance with ICEA and ASTM.
4. **CONDUCTOR SHIELDING** Extruded semi-conducting thermoset material in accordance with Par. 3.14 of ICEA S-75-381.
5. **INSULATION** The insulation shall be Cross-linked polyethylene (XLP) extruded insulation.

The average thickness of insulation wall over the conductor shall be as specified in Table 4-2 of ICEA S-75-381. The minimum thickness of insulation shall not be less than 90% of the specified average value.
6. **SHIELDING AND CIRCUIT IDENTIFICATION** Semi-conductive tape applied helically and lapped over a semi-conductive coating. Color of print identifying the tape as "semiconducting" also indicates phase identification, and a .005" bare annealed copper tape applied helically and lapped.
7. **GROUNDING CONDUCTORS** The grounding conductors shall be annealed Class B copper not less than the size shown in Table 4-1 of ICEA S-75-381 for the corresponding power conductor sizes.
8. **GROUND CHECK CONDUCTOR** The ground check conductor shall be as given in Table 4-1 of ICEA S-75-381 for the corresponding power conductor sizes, and consist of 7 strands of annealed copper with yellow polypropylene insulation.
9. **ASSEMBLY** Three power conductors shall be cabled together with a left-hand lay meeting the requirements of Par. 4.7 of ICEA S-75-381. The ground check conductor shall be laid in the valley between the black and white power conductors and a copper grounding conductor in each of the other two valleys in continuous contact with the metallic shields, suitable fillers to make an essentially round core and overall, a single faced rubber filled binder tape is applied overlapped.
10. **JACKET** A thermoplastic jacket shall be extruded over the assembly to the outside diameters shown in Table 4-2 of ICEA S-75-381. The standard jacket color for all sizes is black polyvinyl chloride (PVC), in accordance with ICEA S-75-381 Table 4-7. Colors can be provided. All jackets meet the requirements of ICEA S-75-381 Par.4.8. The PVC compounds used are highly resistant to chemicals, sunlight, flame, heat, moisture and the oils commonly used in mining applications.
11. **OUTSIDE DIAMETER** Shall be in accordance with ICEA S-75-381 Table 4-2 and tolerances shall meet the requirements of ICEA S-75-381 Par. 4.9.
12. **SURFACE LEGEND** Shall be a permanent indent marking in the jacket showing 5KV (size) MP-GC sunlight resistant MSHA. Additional information can be furnished on the surface legend to special order.
13. **TESTS** Cable shall be tested in accordance with applicable ICEA requirements.

PWC-622



Three Conductor Type MP-GC Mine Power Feeder

PVC Jacket, 8,000 Volts,
100% Level, (Grounded)

Applications:

Connections between units of mine distribution systems. For use up to 8,000 volts when installed in duct, conduit or open air and for direct burial in wet and dry locations. Recommended maximum continuous conductor temperature is 90°C.

Cable carries "MSHA" marking indicating listing by the Mine Safety and Health Administration and the Pennsylvania Department of Environmental Resources.

Mining Cable meets or exceeds ICEA Standards S-68-516 & S-75-381.

Conductors
Copper

Strand Shield
Semi-conducting layer

Insulation
90°C Cross-linked
polyethylene

Insulation Shielding
Semi-conducting layer under
.005" copper tape
(Phase identification provided)

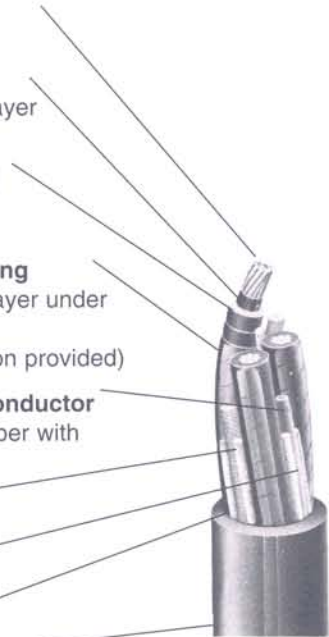
Ground Check Conductor
8 AWG 7 wire copper with
yellow insulation.

Ground Wires
Copper.

Fillers (3)

Binder Tape

Jacket
Polyvinyl Chloride (PVC)
with permanent surface
marking.



Size AWG/ MCM	Power Conductors		Grounding Conductor		Jacket Thickness Mils	Nominal Diameter In. (1)	Approx. Weight lbs. per 1,000 ft.	Ampacity (2) 40° C Ambient Temp.
	No. of Wires per Conductor	Insulation Thickness Mils	Size AWG	Minimum No. of Wires per Conductor				
4	7	115	5	7	110	1.43	1300	122
2	7	115	6	7	110	1.55	1680	159
1	19	115	5	7	110	1.65	1940	184
1/0	19	115	4	7	140	1.75	2280	211
2/0	19	115	3	7	140	1.88	2730	243
4/0	19	115	1	19	140	2.12	3830	321
250	37	115	1/0	19	140	2.25	4430	355
350	37	115	2/0	19	140	2.46	5700	435

(1) **Diameters-** Subject to plus 8% minus 5% tolerance.

(3) Cured rubber fillers are standard.

(2) **Ampacity-** Based on continuous duty at 90°C conductor temperature. For other ampacity ratings under various conditions, see portable power cable ampacities table Inside Back Cover.

Three Conductor Type MP-GC Mine Power Feeder SPECIFICATIONS

1. **SCOPE** This specification covers type MP-GC copper tape shielded mine power feeder cable with a ground check, rated at 8,000 volts 100% insulation level. Maximum continuous conductor temperature 90°C (194°F). These cables are for use as connections between units of mine distribution systems at nominal AC voltages up to 8,000 volts.
2. **STANDARDS**
ICEA S-68-516/NEMA WC-8 ICEA S-75-381/NEMA WC-58 ASTM B-8 ASTM B-33
3. **CONDUCTORS** Class B stranded annealed un-coated copper in accordance with ICEA and ASTM.
4. **CONDUCTOR SHIELDING** Extruded semi-conducting thermoset material in accordance with Par. 3.14 of ICEA S-75-381.
5. **INSULATION** The insulation shall be Cross-linked polyethylene (XLP) extruded insulation.

The average thickness of the insulation wall over the conductor shall be as specified in Table 4.3 of ICEA S-75-381. The minimum thickness of insulation shall not be less than 90% of the specified average value.
6. **SHIELDING AND CIRCUIT IDENTIFICATION** Semi-conductive tape applied helically and lapped over a semi-conductive coating. Color of print identifying the tape as "semiconducting" also indicates phase identification, and a .005" bare annealed copper tape applied helically and lapped.
7. **GROUNDING CONDUCTORS** The grounding conductors shall be annealed Class B copper not less than the size shown in Table 4-1 of ICEA S-75-381 for the corresponding power conductor sizes.
8. **GROUND CHECK CONDUCTOR** The ground check conductor shall be given in Table 4-1 of ICEA S-75-381 for the corresponding power conductor sizes, and consist of 7 strands of annealed copper with yellow polypropylene insulation.
9. **ASSEMBLY** Three power conductors shall be cabled together with a left-hand lay meeting the requirements of Par. 4.7 of ICEA S-75-381. The ground check conductor shall be laid in the valley between the black and white power conductors and a copper grounding conductor in each of the other two valleys in continuous contact with the metallic shields, suitable fillers to make an essentially round core and overall, a single faced rubber filled binder tape is applied overlapped.
10. **JACKET** A thermoplastic jacket shall be extruded over the assembly to the outside diameters shown in Table 4-3 of ICEA S-75-381. The standard jacket color for all sizes is black polyvinyl chloride (PVC), in accordance with ICEA S-75-381 Table 4-7. Colors can be provided. All jackets meet the requirements for ICEA S-75-381 Par. 4.8. The PVC compounds used are highly resistant to chemicals, sunlight, flame, heat, moisture and the oils commonly used in mining applications.
11. **OUTSIDE DIAMETER** Shall be in accordance with ICEA S-75-381 Table 4.3 and tolerances shall meet the requirements of ICEA S-75-381 Par. 4.9.
12. **SURFACE LEGEND** Shall be a permanent indent marking in the jacket showing 8KV (size) grounded MP-GC sunlight resistant MSHA. Additional information can be furnished on the surface legend to special order.
13. **TESTS** Cable shall be tested in accordance with applicable ICEA requirements.

PWC-624



Three Conductor Type MP-GC Mine Power Feeder

PVC Jacket, 15,000 Volts,
100% Level, (Grounded)

Applications:

Connections between units of mine distribution systems. For use up to 15,000 volts when installed in duct, conduit or open air and for direct burial in wet and dry locations. Recommended maximum continuous conductor temperature is 90°C.

Cable carries "MSHA" marking indicating listing by the Mine Safety and Health Administration and the Pennsylvania Department of Environmental Resources.

Mining Cable meets or exceeds ICEA Standards S-68-516 & S-75-381.

Conductors
Copper

Strand Shield
Semi-conducting layer

Insulation
90°C Cross-linked
polyethylene

Insulation Shielding
Semi-conducting layer under
.005" copper tape
(Phase identification provided)

Ground Check Conductor
8 AWG 7 wire copper with
yellow insulation.

Ground Wires
Copper.

Fillers (3)

Binder Tape

Jacket
Polyvinyl Chloride (PVC)
with permanent surface
marking.



Size AWG/ MCM	Power Conductors		Grounding Conductor		Jacket Thickness Mils	Nominal Diameter In. (1)	Approx. Weight lbs. per 1,000 ft.	Ampacity (2) 40° C Ambient Temp.
	No. of Wires per Conductor	Insulation Thickness Mils	Size AWG	Number of Wires per Conductor				
2	7	175	6	7	140	1.88	2100	164
1	19	175	5	7	140	1.98	2370	187
1/0	19	175	4	7	140	2.05	2640	215
2/0	19	175	3	7	140	2.15	3060	246
4/0	19	175	1	19	140	2.40	4220	325
250	37	175	1/0	19	140	2.50	4790	359
350	37	175	2/0	19	140	2.75	6160	438
500	37	175	4/0	19	140	3.10	8350	536

(1) **Diameters-** Subject to plus 8% minus 5% tolerance.

(3) Cured rubber fillers are standard.

(2) **Ampacity-** Based on continuous duty at 90°C conductor temperature. For other ampacity ratings under various conditions, see portable power cable ampacities table Inside Back Cover.

Three Conductor Type MP-GC Mine Power Feeder SPECIFICATIONS

1. **SCOPE** This specification covers type MP-GC copper tape shielded mine power feeder cable with a ground check, rated at 15,000 volts 100% insulation level. Maximum continuous conductor temperature 90°C (194°F). These cables are for use as connections between units of mine distribution systems at nominal AC voltages up to 15,000 volts.
2. **STANDARDS**
ICEA S-68-516/NEMA WC-8 ICEA S-75-381/NEMA WC-58 ASTM B-8 ASTM B-33
3. **CONDUCTORS** Class B stranded annealed un-coated copper in accordance with ICEA and ASTM.
4. **CONDUCTOR SHIELDING** Extruded semi-conducting thermoset material in accordance with Par. 3.14 of ICEA S-75-381.
5. **INSULATION** The insulation shall be Cross-linked polyethylene (XLP) extruded insulation.

The average thickness of the insulation wall over the conductor shall be as specified in Table 4-4 of ICEA S-75-381. The minimum thickness of insulation shall not be less than 90% of the specified average value.
6. **SHIELDING AND CIRCUIT IDENTIFICATION** Semi-conductive tape applied helically and lapped over a semi-conductive coating. Color of print identifying the tape as "semiconducting" also indicates phase identification, and a .005" bare annealed copper tape applied helically and lapped.
7. **GROUNDING CONDUCTORS** The grounding conductors shall be annealed Class B copper not less than the size shown in Table 4-1 of ICEA S-75-381 for the corresponding power conductor sizes.
8. **GROUND CHECK CONDUCTOR** The ground check conductor shall be given in Table 4-1 of ICEA S-75-381 for the corresponding power conductor sizes, and consist of 7 strands of annealed copper with yellow polypropylene insulation.
9. **ASSEMBLY** Three power conductors shall be cabled together with a left-hand lay meeting the requirements of Par. 4.7 of ICEA S-75-381. The ground check conductor shall be laid in the valley between the black and white power conductors and a copper grounding conductor in each of the other two valleys in continuous contact with the metallic shields, suitable fillers to make an essentially round core and overall, a single faced rubber filled binder tape is applied overlapped.
10. **JACKET** A thermoplastic jacket shall be extruded over the assembly to the outside diameters shown in Table 4-4 of ICEA S-75-381. The standard jacket color for all sizes is black polyvinyl chloride (PVC), in accordance with ICEA S-75-381 Table 4-7. Colors can be provided. All jackets meet the requirements for ICEA S-75-381 Par.4.8. The PVC compounds used are highly resistant to chemicals, sunlight, flame, heat, moisture and the oils commonly used in mining applications.
11. **OUTSIDE DIAMETER** Shall be in accordance with ICEA S-75-381 Table 4-4 and tolerances shall meet the requirements of ICEA S-75-381 Par. 4.9.
12. **SURFACE LEGEND** Shall be a permanent indent marking in the jacket showing 15KV (size) grounded MP-GC sunlight resistant MSHA. Additional information can be furnished on the surface legend to special order.
13. **TESTS** Cable shall be tested in accordance with applicable ICEA requirements.

90° C. Ampacities

For portable cables based on continuous conductor temperature of 90°C (194°F) at an ambient temperature of 40°C.

Amperes per Conductor (1)										
Size AWG MCM	Single Conductor				Two Conductor Round and Flat	Three Conductor Round and Flat	Three Conductor Round			Four Conductor
	0-2,000 Volts Unshielded	2,001- 8,000 Volts* Shielded	8,001- 15,000 Volts* Shielded	15,001- 25,000 Volts* Shielded	0-2,000 Volts	0-5,0000 Volts Unshielded	8,000 Volts Shielded	8,001- 15,000 Volts Shielded	15,001- 25,000 Volts Shielded	0-2,000 Volts
8	83	—	—	—	72	59	—	—	—	54
6	109	112	—	—	95	79	93	—	—	72
4	145	148	—	—	127	104	122	—	v	93
3	167	171	—	—	145	120	140	—	—	106
2	192	195	195	—	167	138	159	164	178	122
1	223	225	225	222	191	161	184	187	191	143
1/0	258	260	259	255	217	186	211	215	218	165
2/0	298	299	298	293	250	215	243	246	249	192
3/0	345	345	343	337	286	249	279	283	286	221
4/0	400	400	397	389	328	287	321	325	327	255
250	445	444	440	430	363	320	355	359	360	280
350	552	549	543	529	436	394	435	—	—	335
500	695	688	678	659	524	487	536	—	—	395

(1) Tables reproduced from standards publication ICEA S-68-516, NEMA WC-8.

*These ampacities are based on single isolated cable in air operated with open-circuited shield.

Correction Factors

For ampacities for various ambient temperatures above or below 40°C.

Ambient Temp. Degrees C	Correction Factors 90°C
10	1.26
20	1.18
30	1.10
40	1.00
50	.90

Reel Correction Factors

For use with ampacities when one or more layers of cable are wound on a reel. (1)

Number of Layers	Multiplying Correction Factors
1	0.85
2	0.65
3	0.45
4	0.35

(1) Tables reproduced from Standards publicatio ICEA S-68-516, NEMA WC-8.