

## 3/C CU 5KV Type SHD-GC RHINOSHIELD™ CPE Mining Cable 90°C

Flexible Copper conductors, EPR 100% Insulation Level, Cu/Nylon Braid Shield, Extra Heavy Duty Two Layer Chlorinated Polyethylene (CPE) Jacket with Optional Reflective Stripes



Image not to scale. See Table 1 for dimensions.

### CONSTRUCTION:

1. **Conductor:** Tin coated, soft drawn, annealed, flexible, rope-lay stranded copper per ASTM B33/B172
2. **Separator Tape:** Semi-conducting tape applied between the conductor and insulation to facilitate stripping
3. **Conductor Shield:** Semi-conducting cross-linked copolymer
4. **Insulation:** Ethylene Propylene Rubber (EPR) 100% Insulation Level
5. **Shield Separator:** Semi-conducting SBR tape applied to the phase insulation with a 50% overlap, adhesive side up
6. **Braid Shield:** Tin coated, soft drawn, annealed, copper braid shield (60% minimum coverage), combined with colour coded nylon (Black, Blue, Red) with a 40% maximum coverage
7. **Ground Check Conductor:** Tin coated, soft drawn, annealed, rope stranded, flexible lay copper per ASTM B33/B172 with high strength yellow polypropylene insulation
8. **Ground Conductors:** Two uninsulated, tin coated, soft drawn, annealed, rope stranded, flexible lay copper per ASTM B33/B172
9. **Tape:** SBR tape applied over the cabled core for improved mechanical integrity and ease of stripping
10. **Inner Jacket:** Black, mold cured, extra heavy-duty modified integral fill, flame resistant, thermosetting Chlorinated Polyethylene (CPE)
11. **Reinforcement:** Reinforcing twine applied between the two jacket layers
12. **Outer Jacket:** Black, mold cured, extra heavy-duty, flame resistant, thermosetting Chlorinated Polyethylene (CPE). Alternate jacket colors available
13. **Reflective Stripe:** Highly visible reflective stripe embedded into the outer jacket to increase safety and help prevent cable run-over (optional, contact your sales representative for part number)

### APPLICATIONS AND FEATURES:

RHINOSHIELD™ Type SHD-GC is a heavy-duty trailing cable where flexibility and maximum protection is required. For use with mobile, reeling, or stationary mining equipment, continuous mining machines, longwall mining systems, and blast hole drillers. It is also an excellent choice for shovels, draglines, dredges, cranes and marine shore-to-ship power supplies, and anytime extra-durable, flexible cable is required. Suitable for continuous submersion in water. Ground check conductor provides fail-safe ground monitoring. Embossed print legend for easy cable identification. Cold Bend and Impact Tested to -50°C.

### SPECIFICATIONS:

- ASTM B33 Standard Specification for Tin-Coated Soft or Annealed Copper Wire
- ASTM B172 Standard Specification for Rope-Lay-Stranded Copper Conductors Having Bunch-Stranded Copper Conductors



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- ICEA S-75-381 Portable and Power Feeder Cables for Use in Mines
- CSA Listed File # LL65300 FT1, FT4, FT5 CSA C22.2, No. 96 Portable Power Cables
- MSHA listed: passes MSHA flame test
- Meets or exceeds ICEA requirements as applicable for ICEA S-75-381/NEMA WC 58, ASTM B-3

### SAMPLE PRINT LEGEND:

SOUTHWIRE (R) RHINO™ BRAND CABLE # AWG CU 3/C EPR TYPE SHD-GC 5000V -50°C 90°C P-07-KA140005 MSHA

**Table 1 – Weights and Measurements**

| Stock Number | Cond. Size | Cond. Number | Cond. Strands | Diameter Over Conductor | Insul. Thickness | Diameter Over Insulation | Ground Size | Ground Strands | Ground Check Size | Ground Check Strands | Ground Check Insulation Thickness | Jacket Thickness | Approx. OD | Approx. Weight |
|--------------|------------|--------------|---------------|-------------------------|------------------|--------------------------|-------------|----------------|-------------------|----------------------|-----------------------------------|------------------|------------|----------------|
|              | AWG/Kcmil  | No.          | No.           | inch                    | mil              | inch                     | AWG         | No.            | AWG               | No.                  | mil                               | mil              | inch       | lb/1000ft      |
| 571484       | 6          | 3            | 133           | 0.21                    | 110              | 0.496                    | 10          | 104            | 8                 | 168                  | 45                                | 185              | 1.56       | 1480           |
| 589075       | 4          | 3            | 259           | 0.256                   | 110              | 0.542                    | 8           | 168            | 8                 | 168                  | 45                                | 185              | 1.68       | 1830           |
| TBA          | 3          | 3            | 259           | 0.285                   | 110              | 0.571                    | 7           | 49             | 8                 | 168                  | 45                                | 205              | 1.78       | 2100           |
| 597844       | 2          | 3            | 308           | 0.32                    | 110              | 0.606                    | 6           | 133            | 8                 | 168                  | 60                                | 205              | 1.85       | 2234           |
| 649553       | 2          | 3            | 308           | 0.32                    | 110              | 0.588                    | 6           | 133            | 8                 | 168                  | 60                                | 120              | 1.87       | 2624           |
| 587171       | 2          | 3            | 308           | 0.32                    | 110              | 0.606                    | 6           | 133            | 8                 | 168                  | 45                                | 205              | 1.87       | 2400           |
| TBA          | 1          | 3            | 385           | 0.355                   | 110              | 0.641                    | 5           | 133            | 8                 | 168                  | 45                                | 205              | 1.95       | 2730           |
| 585945       | 1/0        | 3            | 273           | 0.385                   | 110              | 0.671                    | 4           | 259            | 8                 | 168                  | 45                                | 220              | 2.08       | 3230           |
| 587859       | 2/0        | 3            | 324           | 0.42                    | 110              | 0.714                    | 3           | 259            | 8                 | 168                  | 60                                | 229              | 2.165      | 3017           |
| 646499       | 2/0        | 3            | 324           | 0.42                    | 110              | 0.714                    | 3           | 259            | 8                 | 168                  | 60                                | 248              | 2.17       | 3094           |
| 588906       | 2/0        | 3            | 324           | 0.42                    | 110              | 0.706                    | 3           | 259            | 8                 | 168                  | 45                                | 220              | 2.20       | 3780           |
| 643531       | 3/0        | 3            | 418           | 0.506                   | 110              | 0.792                    | 2           | 308            | 8                 | 168                  | 45                                | 235              | 2.36       | 4460           |
| 677992^      | 4/0        | 3            | 532           | 0.577                   | 110              | 0.83                     | 1           | 385            | 8                 | 168                  | 60                                | 340              | 2.48       | 4649           |
| 588801       | 4/0        | 3            | 532           | 0.577                   | 110              | 0.863                    | 1           | 385            | 8                 | 168                  | 45                                | 235              | 2.50       | 5230           |
| TBA          | 250        | 3            | 608           | 0.61                    | 120              | 0.916                    | 1/0         | 273            | 6                 | 133                  | 60                                | 250              | 2.69       | 6190           |
| TBA          | 300        | 3            | 735           | 0.680                   | 120              | 1.043                    | 1/0         | 273            | 6                 | 133                  | 60                                | 250              | 2.81       | 6790           |
| 589188       | 350        | 3            | 855           | 0.72                    | 120              | 1.026                    | 2/0         | 324            | 6                 | 133                  | 60                                | 265              | 2.95       | 7900           |
| 599538^^     | 500        | 3            | 1221          | 0.9                     | 120              | 1.188                    | 4/0         | 532            | 6                 | 133                  | 60                                | 280              | 3.31       | 8648           |
| TBA          | 500        | 3            | 1221          | 0.9                     | 120              | 1.206                    | 4/0         | 532            | 6                 | 133                  | 60                                | 280              | 3.31       | 10530          |

All dimensions are nominal and subject to normal manufacturing tolerances

◊ Cable marked with this symbol is a standard stock item

^ red jacket with stripe

^^ red jacket



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**Table 2 – Electrical and Engineering Data**

| Stock Number | Cond. Size | Cond. Number | DC Resistance @ 25°C | AC Resistance @ 90°C | Capacitive Reactance | Inductive Reactance | Working Tension | Min Bending Radius | Allowable Ampacity In Air 90°C† |
|--------------|------------|--------------|----------------------|----------------------|----------------------|---------------------|-----------------|--------------------|---------------------------------|
|              | AWG/Kcmil  | No.          | Ω/1000ft             | Ω/1000ft             | MΩ*1000ft            | MΩ/1000ft           | lb              | inch               | Amp                             |
| 571484       | 6          | 3            | 0.421                | 0.526                | 0.046                | 0.041               | 179.000         | 9.4                | 93                              |
| 589075       | 4          | 3            | 0.267                | 0.334                | 0.040                | 0.039               | 285.000         | 10.1               | 122                             |
| TBA          | 3          | 3            | 0.212                | 0.265                | 0.038                | 0.038               | 360.000         | 10.7               | 140                             |
| 597844       | 2          | 3            | 0.168                | 0.210                | 0.034                | 0.036               | 454.000         | 11.2               | 159                             |
| 649553       | 2          | 3            | 0.168                | 0.210                | 0.034                | 0.036               | 454.000         | 11.2               | 159                             |
| 587171       | 2          | 3            | 0.168                | 0.210                | 0.034                | 0.036               | 454.000         | 11.2               | 159                             |
| TBA          | 1          | 3            | 0.133                | 0.166                | 0.032                | 0.035               | 572.000         | 11.7               | 184                             |
| 585945       | 1/0        | 3            | 0.111                | 0.139                | 0.030                | 0.034               | 722.000         | 12.5               | 211                             |
| 587859       | 2/0        | 3            | 0.085                | 0.106                | 0.028                | 0.034               | 910.000         | 13.0               | 243                             |
| 646499       | 2/0        | 3            | 0.085                | 0.106                | 0.028                | 0.034               | 910.000         | 13.2               | 243                             |
| 588906       | 2/0        | 3            | 0.085                | 0.106                | 0.028                | 0.034               | 910.000         | 13.2               | 243                             |
| 643531       | 3/0        | 3            | 0.067                | 0.084                | 0.024                | 0.032               | 1147.000        | 14.2               | 279                             |
| 677992^      | 4/0        | 3            | 0.053                | 0.066                | 0.022                | 0.031               | 1446.000        | 15                 | 321                             |
| 588801       | 4/0        | 3            | 0.053                | 0.066                | 0.022                | 0.031               | 1446.000        | 15                 | 321                             |
| TBA          | 250        | 3            | 0.045                | 0.056                | 0.022                | 0.031               | 1709.000        | 16.1               | 355                             |
| TBA          | 300        | 3            | 0.037                | 0.046                | 0.019                | 0.030               | 2051.000        | 16.9               | 398                             |
| 589188       | 350        | 3            | 0.032                | 0.040                | 0.019                | 0.030               | 2393.000        | 17.7               | 435                             |
| 599538^^     | 500        | 3            | 0.023                | 0.029                | 0.016                | 0.028               | 3418.000        | 19.9               | 536                             |
| TBA          | 500        | 3            | 0.023                | 0.029                | 0.016                | 0.028               | 3418.000        | 19.9               | 536                             |

† Ampacity based on ICEA S-75-381 Table H-1 and is for a single isolated cable in air operated with an open-circuited shield at an ambient temperature of 40°C and a conductor temperature of 90°C



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