

# ASTM B856

## Aluminum Conductor Steel Supported(ACSS)

**ACSS** is a composite concentric-lay-stranded cable. ACSS conductors are manufactured in accordance with the latest issue of ASTM B856. The steel strands form the central core of the cable, around which is stranded one or more layers of aluminum 1350-O wires. The "O" temper of the aluminum, a fully annealed or soft temper, causes most or all of the mechanical load on ACSS to be carried by the steel. Standard ACSS designs are manufactured with regular-strength

Class A zinc-5% aluminum mischmetal alloy-coated steel core (/MA2). The steel core may consist of 7, 19, 37 or more wires.

| Code Word      | Size kcmil | Stranding Al/St | Diameter (mm) |      |            |                | Weight kg/km |       |       | Rated Strength       |                  | Resistance Ω/km |           |
|----------------|------------|-----------------|---------------|------|------------|----------------|--------------|-------|-------|----------------------|------------------|-----------------|-----------|
|                |            |                 | Wires         |      | Steel Core | Complete Cable | Al           | Steel | Total | Standard Strength kN | High Strength kN | DC @ 20°C       | AC @ 75°C |
|                |            |                 | Al            | St   |            |                |              |       |       |                      |                  |                 |           |
| Partridge/ACSS | 266.8      | 26/7            | 2.57          | 2.00 | 6.00       | 16.31          | 374          | 172   | 546   | 39.50                | 43.28            | 0.2063          | 0.2537    |
| Juno/ACSS      | 266.8      | 30/7            | 2.40          | 2.40 | 7.19       | 16.76          | 375          | 246   | 621   | 52.04                | 57.83            | 0.2050          | 0.2520    |
| Ostrich/ACSS   | 300        | 26/7            | 2.73          | 2.12 | 6.37       | 17.27          | 421          | 193   | 614   | 44.48                | 48.49            | 0.1837          | 0.2257    |
| Linnet/ACSS    | 336.4      | 26/7            | 2.89          | 2.25 | 6.74       | 18.29          | 471          | 217   | 688   | 49.82                | 54.71            | 0.1637          | 0.2013    |
| Oriole/ACSS    | 336.4      | 30/7            | 2.69          | 2.69 | 8.07       | 18.82          | 473          | 311   | 783   | 65.83                | 72.51            | 0.1627          | 0.2000    |
| Brant/ACSS     | 397.5      | 24/7            | 3.27          | 2.18 | 6.54       | 19.61          | 557          | 204   | 761   | 48.93                | 53.82            | 0.1390          | 0.1713    |
| Ibis/ACSS      | 397.5      | 26/7            | 3.14          | 2.44 | 7.33       | 19.89          | 557          | 256   | 813   | 57.83                | 63.16            | 0.1387          | 0.1707    |
| Lark/ACSS      | 397.5      | 30/7            | 2.92          | 2.92 | 8.77       | 20.47          | 558          | 367   | 925   | 77.84                | 85.85            | 0.1377          | 0.1693    |
| Flicker/ACSS   | 477        | 24/7            | 3.58          | 2.39 | 7.16       | 21.49          | 669          | 245   | 913   | 57.83                | 63.16            | 0.1160          | 0.1430    |
| Hawk/ACSS      | 477        | 26/7            | 3.44          | 2.67 | 8.03       | 21.79          | 669          | 307   | 976   | 69.39                | 76.06            | 0.1153          | 0.1423    |
| Hen/ACSS       | 477        | 30/7            | 3.20          | 3.20 | 9.61       | 22.43          | 670          | 440   | 1110  | 93.41                | 100.97           | 0.1147          | 0.1413    |
| Parakeet/ACSS  | 556.5      | 24/7            | 3.87          | 2.58 | 7.73       | 23.22          | 780          | 285   | 1065  | 67.61                | 73.84            | 0.0993          | 0.1227    |
| Dove/ACSS      | 556.5      | 26/7            | 3.72          | 2.89 | 8.67       | 23.55          | 780          | 358   | 1138  | 80.96                | 88.52            | 0.0990          | 0.1220    |
| Eagle/ACSS     | 556.5      | 30/7            | 3.46          | 3.46 | 10.38      | 24.21          | 782          | 514   | 1295  | 108.98               | 117.88           | 0.0983          | 0.1210    |
| Peacock/ACSS   | 605        | 24/7            | 4.03          | 2.69 | 8.06       | 24.21          | 848          | 310   | 1158  | 73.40                | 80.51            | 0.0913          | 0.1130    |
| Squab/ACSS     | 605        | 26/7            | 3.87          | 3.01 | 9.04       | 24.54          | 848          | 390   | 1238  | 87.63                | 94.75            | 0.0910          | 0.1123    |
| Wood Duck/ACSS | 605        | 30/7            | 3.61          | 3.61 | 10.82      | 25.25          | 850          | 558   | 1408  | 115.65               | 125.88           | 0.0903          | 0.1113    |
| Teal/ACSS      | 605        | 30/19           | 3.61          | 2.16 | 10.82      | 25.25          | 850          | 547   | 1397  | 118.32               | 130.33           | 0.0907          | 0.1117    |
| Rock/ACSS      | 636        | 24/7            | 4.14          | 2.76 | 8.27       | 24.82          | 891          | 326   | 1217  | 76.95                | 84.52            | 0.0870          | 0.1073    |
| Grosbeak/ACSS  | 636        | 26/7            | 3.97          | 3.09 | 9.27       | 25.17          | 891          | 410   | 1301  | 92.08                | 99.64            | 0.0867          | 0.1070    |
| Scooter/ACSS   | 636        | 30/7            | 3.70          | 3.70 | 11.09      | 25.88          | 894          | 587   | 1481  | 121.88               | 132.11           | 0.0860          | 0.1060    |
| Egret/ACSS     | 636        | 30/19           | 3.70          | 2.22 | 11.09      | 25.88          | 894          | 575   | 1468  | 124.55               | 137.45           | 0.0860          | 0.1063    |
| Flamingo/ACSS  | 666.6      | 24/7            | 4.23          | 2.82 | 8.47       | 25.40          | 934          | 342   | 1276  | 80.96                | 88.52            | 0.0830          | 0.1027    |

# ASTM B856

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| Code Word       | Size kcmil | Stranding Al/St | Diameter (mm) |      |            |                | Weight kg/km |       |       | Rated Strength       |                  | Resistance $\Omega$ /km |           |
|-----------------|------------|-----------------|---------------|------|------------|----------------|--------------|-------|-------|----------------------|------------------|-------------------------|-----------|
|                 |            |                 | Wires         |      | Steel Core | Complete Cable | Al           | Steel | Total | Standard Strength kN | High Strength kN | DC @ 20°C               | AC @ 75°C |
|                 |            |                 | Al            | St   |            |                |              |       |       |                      |                  |                         |           |
| Gannet/ACSS     | 666.6      | 26/7            | 4.07          | 3.16 | 9.49       | 25.76          | 934          | 429   | 1364  | 96.53                | 104.09           | 0.0827                  | 0.1020    |
| Stilt/ACSS      | 715.5      | 24/7            | 4.39          | 2.92 | 8.77       | 26.31          | 1003         | 367   | 1370  | 86.74                | 94.75            | 0.0773                  | 0.0957    |
| Starling/ACSS   | 715.5      | 26/7            | 4.21          | 3.28 | 9.83       | 26.70          | 1003         | 461   | 1464  | 103.64               | 112.10           | 0.0770                  | 0.0953    |
| Redwing/ACSS    | 715.5      | 30/19           | 3.92          | 2.35 | 11.77      | 27.46          | 1005         | 647   | 1652  | 137.01               | 151.24           | 0.0767                  | 0.0947    |
| Cuckoo/ACSS     | 795        | 24/7            | 4.62          | 3.08 | 9.25       | 27.74          | 1114         | 408   | 1522  | 96.53                | 103.64           | 0.0697                  | 0.0863    |
| Drake/ACSS      | 795        | 26/7            | 4.44          | 3.45 | 10.36      | 28.12          | 1114         | 512   | 1626  | 115.21               | 124.55           | 0.0697                  | 0.0857    |
| Macaw/ACSS      | 795        | 42/7            | 3.50          | 1.94 | 5.82       | 26.80          | 1114         | 162   | 1276  | 52.49                | 56.05            | 0.0703                  | 0.0873    |
| Tern/ACSS       | 795        | 45/7            | 3.38          | 2.25 | 6.75       | 27.00          | 1114         | 217   | 1332  | 63.16                | 67.61            | 0.0700                  | 0.0877    |
| Condor/ACSS     | 795        | 54/7            | 3.08          | 3.08 | 9.25       | 27.74          | 1114         | 408   | 1522  | 96.53                | 103.64           | 0.0697                  | 0.0887    |
| Mallard/ACSS    | 795        | 30/19           | 4.14          | 2.48 | 12.41      | 28.93          | 1117         | 718   | 1835  | 152.57               | 168.59           | 0.0690                  | 0.0850    |
| Ruddy/ACSS      | 900        | 45/7            | 3.59          | 2.40 | 7.18       | 28.73          | 1261         | 246   | 1507  | 70.28                | 75.62            | 0.0620                  | 0.0777    |
| Canary/ACSS     | 900        | 54/7            | 3.28          | 3.28 | 9.84       | 29.51          | 1261         | 461   | 1723  | 109.43               | 117.43           | 0.0613                  | 0.0787    |
| Redbird/ACSS    | 954        | 24/7            | 5.06          | 3.38 | 10.13      | 30.38          | 1337         | 489   | 1826  | 115.65               | 124.55           | 0.0580                  | 0.0723    |
| Rail/ACSS       | 954        | 45/7            | 3.70          | 2.47 | 7.40       | 29.59          | 1337         | 261   | 1598  | 74.29                | 80.07            | 0.0583                  | 0.0733    |
| Towheel/ACSS    | 954        | 48/7            | 3.58          | 2.79 | 8.36       | 29.85          | 1337         | 333   | 1670  | 87.63                | 94.75            | 0.0583                  | 0.0727    |
| Cardinal/ACSS   | 954        | 54/7            | 3.38          | 3.38 | 10.13      | 30.38          | 1337         | 489   | 1826  | 115.65               | 124.55           | 0.0580                  | 0.0743    |
| Canvasback/ACSS | 954        | 30/19           | 4.53          | 2.72 | 13.59      | 31.70          | 1340         | 862   | 2202  | 182.82               | 201.95           | 0.0573                  | 0.0713    |
| Snowbird/ACSS   | 1033.5     | 42/7            | 3.99          | 2.21 | 6.64       | 30.56          | 1448         | 210   | 1659  | 68.50                | 73.40            | 0.0540                  | 0.0680    |
| Ortolan/ACSS    | 1033.5     | 45/7            | 3.85          | 2.57 | 7.70       | 30.78          | 1448         | 283   | 1731  | 80.51                | 86.74            | 0.0540                  | 0.0680    |
| Curlew/ACSS     | 1033.5     | 54/7            | 3.51          | 3.51 | 10.54      | 31.62          | 1448         | 530   | 1978  | 125.44               | 134.78           | 0.0537                  | 0.0687    |
| Bluejay/ACSS    | 1113       | 45/7            | 4.00          | 2.66 | 7.99       | 31.95          | 1560         | 304   | 1864  | 86.74                | 93.86            | 0.0500                  | 0.0633    |
| Finch/ACSS      | 1113       | 54/19           | 3.65          | 2.19 | 10.94      | 32.82          | 1567         | 559   | 2126  | 135.23               | 147.68           | 0.0500                  | 0.0643    |
| Bunting/ACSS    | 1192.5     | 45/7            | 4.14          | 2.76 | 8.27       | 33.07          | 1671         | 326   | 1997  | 95.19                | 104.53           | 0.0467                  | 0.0593    |

# ASTM B856

## Aluminum Conductor Steel Supported(ACSS)

| Code Word        | Size kcmil | Stranding Al/St | Diameter (mm) |      |            |                | Weight kg/km |       |       | Rated Strength       |                  | Resistance $\Omega$ /km |           |
|------------------|------------|-----------------|---------------|------|------------|----------------|--------------|-------|-------|----------------------|------------------|-------------------------|-----------|
|                  |            |                 | Wires         |      | Steel Core | Complete Cable | Al           | Steel | Total | Standard Strength kN | High Strength kN | DC @ 20°C               | AC @ 75°C |
|                  |            |                 | Al            | St   |            |                |              |       |       |                      |                  |                         |           |
| Bittern/ACSS     | 1272       | 45/7            | 4.27          | 2.85 | 8.54       | 34.16          | 1783         | 348   | 2131  | 99.20                | 106.76           | 0.0437                  | 0.0557    |
| Pheasant/ACSS    | 1272       | 54/19           | 3.90          | 2.34 | 11.69      | 35.08          | 1791         | 639   | 2430  | 151.68               | 165.92           | 0.0437                  | 0.0563    |
| Dipper/ACSS      | 1351       | 45/7            | 4.40          | 2.93 | 8.80       | 35.20          | 1893         | 369   | 2263  | 105.42               | 113.43           | 0.0413                  | 0.0527    |
| Martin/ACSS      | 1351       | 54/19           | 4.02          | 2.41 | 12.05      | 36.17          | 1903         | 678   | 2581  | 161.03               | 176.15           | 0.0410                  | 0.0533    |
| Bobolink/ACSS    | 1431       | 45/7            | 4.53          | 3.02 | 9.06       | 36.25          | 2006         | 391   | 2397  | 111.65               | 120.10           | 0.0390                  | 0.0500    |
| Plover/ACSS      | 1431       | 54/19           | 4.14          | 2.48 | 12.41      | 37.21          | 2015         | 718   | 2734  | 170.81               | 186.38           | 0.0390                  | 0.0503    |
| Nuthatch/ACSS    | 1510       | 45/7            | 4.65          | 3.10 | 9.31       | 37.21          | 2116         | 413   | 2529  | 117.88               | 125.00           | 0.0370                  | 0.0477    |
| Parrot/ACSS      | 1510       | 54/19           | 4.25          | 2.55 | 12.74      | 38.23          | 2127         | 758   | 2885  | 179.71               | 196.61           | 0.0367                  | 0.0480    |
| Ratite/ACSS      | 1590       | 42/7            | 4.94          | 2.75 | 8.24       | 37.90          | 2228         | 323   | 2552  | 104.09               | 111.21           | 0.0350                  | 0.0453    |
| Lapwing/ACSS     | 1590       | 45/7            | 4.78          | 3.18 | 9.55       | 38.20          | 2228         | 435   | 2663  | 124.11               | 131.67           | 0.0350                  | 0.0453    |
| Falcon/ACSS      | 1590       | 54/19           | 4.36          | 2.62 | 13.08      | 39.22          | 2239         | 798   | 3038  | 189.49               | 207.29           | 0.0350                  | 0.0457    |
| Chukar/ACSS      | 1780       | 84/19           | 3.70          | 2.22 | 11.09      | 40.67          | 2507         | 575   | 3081  | 157.47               | 169.92           | 0.0313                  | 0.0407    |
| Mockingbird/ACSS | 2034.5     | 72/7            | 4.27          | 2.85 | 8.54       | 42.70          | 2865         | 348   | 3213  | 120.99               | 128.55           | 0.0277                  | 0.0367    |
| Roadrunner/ACSS  | 2057       | 76/19           | 4.18          | 1.95 | 9.75       | 43.18          | 2897         | 444   | 3341  | 141.01               | 150.79           | 0.0273                  | 0.0360    |
| Bluebird/ACSS    | 2156       | 84/19           | 4.07          | 2.44 | 12.21      | 44.75          | 3036         | 696   | 3732  | 187.27               | 202.39           | 0.0260                  | 0.0343    |
| Kiwi/ACSS        | 2167       | 72/7            | 4.41          | 2.94 | 8.81       | 44.07          | 3052         | 370   | 3422  | 129.00               | 137.01           | 0.0260                  | 0.0347    |
| Thrasher/ACSS    | 2312       | 76/19           | 4.43          | 2.07 | 10.34      | 45.77          | 3256         | 499   | 3755  | 158.36               | 169.48           | 0.0243                  | 0.0327    |
| Joree/ACSS       | 2515       | 76/19           | 4.62          | 2.16 | 10.78      | 47.75          | 3542         | 543   | 4085  | 172.15               | 184.16           | 0.0223                  | 0.0307    |