



ACSS/AW

Aluminum Conductor, Aluminum-Clad Steel Supported

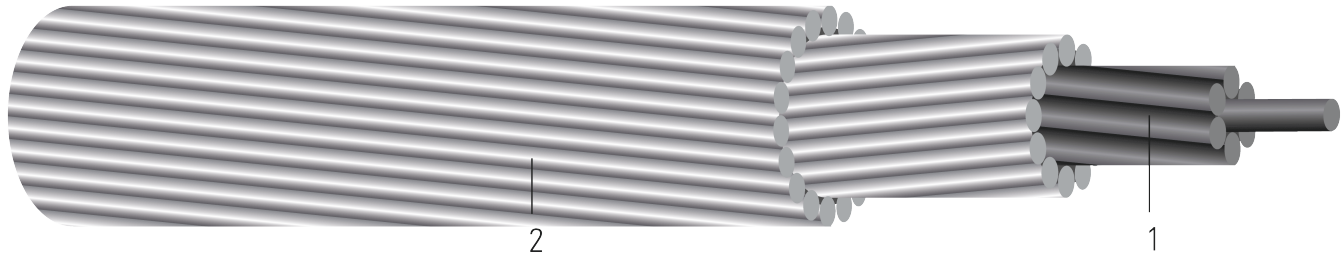


Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

1. **Core:** Steel strands form the central core of the conductor with one or more layers of aluminum 1350-0 wire stranded around it.
2. **Stranding:** ACSS/AW is a composite concentric-lay-stranded conductor.
 - The steel core carries most or all of the mechanical load of the conductor due to the "0" (fully annealed or soft) temper aluminum.
 - Steel core wires are protected from corrosion by an aluminum coating.

APPLICATIONS AND FEATURES:

ACSS/AW is used for overhead distribution and transmission lines. It is designed to operate continuously at elevated temperatures up to 250°C without loss of strength; it sags less under emergency electrical loadings than ACSR/AW; it is self-damping if prestretched during installation; and its final sags are not affected by long term creep of aluminum. The advantages make ACSS/AW especially useful in reconductoring applications requiring increased current with existing tensions and clearances, new line applications where structures can be economized because of reduced conductor sag, new line applications requiring high emergency loadings, and lines where aeolian vibration is a problem. ACSS/AW offers strength characteristics similar to ACSS, along with slightly greater ampacity and resistance to corrosion due to aluminum-cladding of the steel core wires.

SPECIFICATIONS:

- ASTM B502 Aluminum-Clad Steel Core Wire for Aluminum conductors, Aluminum-Clad Steel Reinforced
- ASTM B609 Standard Specification for Aluminum 1350 Round Wire, Annealed and Intermediate Tempers, for Electrical Purposes
- ASTM B856 Concentric-Lay-Stranded Aluminum Conductors, Coated Steel Supported (ACSS)



Table 1 – Weights and Measurements

| Code Word | Size (AWG or kcmil) | Stranding (Al/Stl) | AL Strand Dia inch | Steel Strand Dia inch | Steel Core inch | Overall OD inch | AL Weight lbs/1,000' | Steel Weight lbs/1,000' | Overall Weight lbs/1,000' |
|--------------------|------------------------|-----------------------|-----------------------|--------------------------|--------------------|--------------------|-------------------------|----------------------------|------------------------------|
| Junco/ACSS/AW | 266.8 | 30/7 | 0.0943 | 0.0943 | 0.2829 | 0.66 | 252 | 140 | 392 |
| Ostrich/ACSS/AW | 300 | 26/7 | 0.1074 | 0.0835 | 0.2506 | 0.68 | 283 | 110 | 393 |
| Linnet/ACSS/AW | 336.4 | 26/7 | 0.1137 | 0.0885 | 0.2654 | 0.72 | 317 | 123 | 440 |
| Oriole/ACSS/AW | 336.4 | 30/7 | 0.1059 | 0.1059 | 0.3177 | 0.741 | 318 | 177 | 494 |
| Brant/ACSS/AW | 397.5 | 24/7 | 0.1287 | 0.0858 | 0.2574 | 0.772 | 374 | 116 | 490 |
| Ibis/ACSS/AW | 397.5 | 26/7 | 0.1236 | 0.0962 | 0.2885 | 0.783 | 374 | 146 | 520 |
| Lark/ACSS/AW | 397.5 | 30/7 | 0.1151 | 0.1151 | 0.3453 | 0.806 | 375 | 209 | 584 |
| Flicker/ACSS/AW | 477 | 24/7 | 0.141 | 0.094 | 0.2819 | 0.846 | 449 | 139 | 589 |
| Hawk/ACSS/AW | 477 | 26/7 | 0.1354 | 0.1053 | 0.316 | 0.858 | 449 | 175 | 624 |
| Hen/ACSS/AW | 477 | 30/7 | 0.1261 | 0.1261 | 0.3783 | 0.883 | 450 | 251 | 701 |
| Parakeet/ACSS/AW | 556.5 | 24/7 | 0.1523 | 0.1015 | 0.3045 | 0.914 | 524 | 163 | 687 |
| Dove/ACSS/AW | 556.5 | 26/7 | 0.1463 | 0.1138 | 0.3413 | 0.927 | 524 | 204 | 728 |
| Eagle/ACSS/AW | 556.5 | 30/7 | 0.1362 | 0.1362 | 0.4086 | 0.953 | 525 | 293 | 818 |
| Peacock/ACSS/AW | 605 | 24/7 | 0.1588 | 0.1058 | 0.3175 | 0.953 | 570 | 177 | 746 |
| Squab/ACSS/AW | 605 | 26/7 | 0.1525 | 0.1186 | 0.3559 | 0.966 | 570 | 222 | 792 |
| Wood Duck/ACSS/AW | 605 | 30/7 | 0.142 | 0.142 | 0.426 | 0.994 | 571 | 318 | 889 |
| Teal/ACSS/AW | 605 | 30/19 | 0.142 | 0.0852 | 0.426 | 0.994 | 571 | 311 | 883 |
| Rook/ACSS/AW | 636 | 24/7 | 0.1628 | 0.1085 | 0.3256 | 0.977 | 599 | 186 | 785 |
| Grosbeak/ACSS/AW | 636 | 26/7 | 0.1564 | 0.1216 | 0.3649 | 0.991 | 599 | 233 | 832 |
| Scoter/ACSS/AW | 636 | 30/7 | 0.1456 | 0.1456 | 0.4368 | 1.019 | 600 | 334 | 935 |
| Egret/ACSS/AW | 636 | 30/19 | 0.1456 | 0.0874 | 0.4368 | 1.019 | 600 | 327 | 928 |
| Flamingo/ACSS/AW | 666.6 | 24/7 | 0.1667 | 0.1111 | 0.3333 | 1 | 628 | 195 | 823 |
| Gannet/ACSS/AW | 666.6 | 26/7 | 0.1601 | 0.1245 | 0.3736 | 1.014 | 628 | 245 | 872 |
| Stilt/ACSS/AW | 715.5 | 24/7 | 0.1727 | 0.1151 | 0.3453 | 1.036 | 674 | 209 | 883 |
| Starling/ACSS/AW | 715.5 | 26/7 | 0.1659 | 0.129 | 0.3871 | 1.051 | 674 | 263 | 936 |
| Redwing/ACSS/AW | 715.5 | 30/19 | 0.1544 | 0.0927 | 0.4633 | 1.081 | 676 | 368 | 1044 |
| Cuckoo/ACSS/AW | 795 | 24/7 | 0.182 | 0.1213 | 0.364 | 1.092 | 749 | 232 | 981 |
| Drake/ACSS/AW | 795 | 26/7 | 0.1749 | 0.136 | 0.408 | 1.107 | 749 | 292 | 1040 |
| Macaw/ACSS/AW | 795 | 42/7 | 0.1376 | 0.0764 | 0.2293 | 1.055 | 749 | 92 | 841 |
| Tern/ACSS/AW | 795 | 45/7 | 0.1329 | 0.0886 | 0.2658 | 1.063 | 749 | 124 | 873 |
| Condor/ACSS/AW | 795 | 54/7 | 0.1213 | 0.1213 | 0.364 | 1.092 | 749 | 232 | 981 |
| Mallard/ACSS/AW | 795 | 30/19 | 0.1628 | 0.0977 | 0.4884 | 1.139 | 751 | 409 | 1160 |
| Ruddy/ACSS/AW | 900 | 45/7 | 0.1414 | 0.0943 | 0.2828 | 1.131 | 848 | 140 | 988 |
| Canary/ACSS/AW | 900 | 54/7 | 0.1291 | 0.1291 | 0.3873 | 1.162 | 848 | 263 | 1111 |
| Rail/ACSS/AW | 954 | 45/7 | 0.1456 | 0.0971 | 0.2912 | 1.165 | 899 | 149 | 1047 |
| Towhee/ACSS/AW | 954 | 48/7 | 0.141 | 0.1097 | 0.329 | 1.175 | 899 | 190 | 1088 |
| Cardinal/ACSS/AW | 954 | 54/7 | 0.1329 | 0.1329 | 0.3987 | 1.196 | 899 | 279 | 1177 |
| Canvasback/ACSS/AW | 954 | 30/19 | 0.1783 | 0.107 | 0.535 | 1.248 | 901 | 491 | 1392 |
| Snowbird/ACSS/AW | 1033.5 | 42/7 | 0.1569 | 0.0871 | 0.2614 | 1.203 | 973 | 120 | 1093 |
| Curlew/ACSS/AW | 1033.5 | 54/7 | 0.1383 | 0.1383 | 0.415 | 1.245 | 973 | 302 | 1275 |
| Bluejay/ACSS/AW | 1113 | 45/7 | 0.1573 | 0.1048 | 0.3145 | 1.258 | 1048 | 173 | 1222 |



| Code Word | Size (AWG or kcmil) | Stranding (Al/Stl) | AL Strand Dia inch | Steel Strand Dia inch | Steel Core inch | Overall OD inch | AL Weight lbs/1,000' | Steel Weight lbs/1,000' | Overall Weight lbs/1,000' |
|---------------------|------------------------|-----------------------|-----------------------|--------------------------|--------------------|--------------------|-------------------------|----------------------------|------------------------------|
| Finch/ACSS/AW | 1113 | 54/19 | 0.1436 | 0.0861 | 0.4307 | 1.292 | 1053 | 318 | 1372 |
| Bunting/ACSS/AW | 1192.5 | 45/7 | 0.1628 | 0.1085 | 0.3256 | 1.302 | 1123 | 186 | 1309 |
| Grackle/ACSS/AW | 1192.5 | 54/19 | 0.1486 | 0.0892 | 0.4458 | 1.337 | 1129 | 341 | 1470 |
| Bittern/ACSS/AW | 1272 | 45/7 | 0.1681 | 0.1121 | 0.3362 | 1.345 | 1198 | 198 | 1396 |
| Pheasant/ACSS/AW | 1272 | 54/19 | 0.1535 | 0.0921 | 0.4604 | 1.381 | 1204 | 364 | 1568 |
| Dipper/ACSS/AW | 1351 | 45/7 | 0.1733 | 0.1155 | 0.3465 | 1.386 | 1272 | 210 | 1483 |
| Martin/ACSS/AW | 1351 | 54/19 | 0.1582 | 0.0949 | 0.4745 | 1.424 | 1279 | 386 | 1665 |
| Bobolink/ACSS/AW | 1431 | 45/7 | 0.1783 | 0.1189 | 0.3566 | 1.427 | 1348 | 223 | 1571 |
| Plover/ACSS/AW | 1431 | 54/19 | 0.1628 | 0.0977 | 0.4884 | 1.465 | 1354 | 409 | 1764 |
| Nuthatch/ACSS/AW | 1510 | 45/7 | 0.1832 | 0.1221 | 0.3664 | 1.465 | 1422 | 235 | 1657 |
| Parrot/ACSS/AW | 1510 | 54/19 | 0.1672 | 0.1003 | 0.5017 | 1.505 | 1429 | 432 | 1861 |
| Lapwing/ACSS/AW | 1590 | 45/7 | 0.188 | 0.1253 | 0.3759 | 1.504 | 1498 | 248 | 1745 |
| Falcon/ACSS/AW | 1590 | 54/19 | 0.1716 | 0.103 | 0.5148 | 1.544 | 1505 | 455 | 1960 |
| Chukar/ACSS/AW | 1780 | 84/19 | 0.1456 | 0.0873 | 0.4367 | 1.601 | 1685 | 327 | 2012 |
| Mockingbird/ACSS/AW | 2034.5 | 72/7 | 0.1681 | 0.1121 | 0.3362 | 1.681 | 1926 | 198 | 2124 |
| Roadrunner/ACSS/AW | 2057 | 76/19 | 0.1645 | 0.0768 | 0.3839 | 1.7 | 1947 | 253 | 2200 |
| Bluebird/ACSS/AW | 2156 | 84/19 | 0.1602 | 0.0961 | 0.4806 | 1.762 | 2041 | 396 | 2437 |
| Kiwi/ACSS/AW | 2167 | 72/7 | 0.1735 | 0.1157 | 0.347 | 1.735 | 2051 | 211 | 2262 |
| Thrasher/ACSS/AW | 2312 | 76/19 | 0.1744 | 0.0814 | 0.407 | 1.802 | 2188 | 284 | 2472 |
| Joree/ACSS/AW | 2515 | 76/19 | 0.1819 | 0.0849 | 0.4245 | 1.88 | 2380 | 309 | 2689 |

(1) Data based on a nominal cable manufactured in accordance with ASTM B 856.

(2) Resistance and ampacity based on an aluminum conductivity of 63% IACS at 20°C, and an aluminum-clad steel conductivity of 20.3% IACS at 20°C.

(3) Ampacity based on a 200°C conductor temperature, 25°C ambient temperature, 2 ft/sec wind, in sun, with emissivity of 0.5 and a coefficient of solar absorption of 0.5, at sea level.

(4) Rated strengths based on aluminum-clad steel core wire in accordance with ASTM B 502.



Table 2 - Electrical and Engineering Data

| Code Word | Size (AWG or kcmil) | Rated Strength lbs | DC Resistance @ 20C Ohms/1,000' | AC Resistance @ 75C Ohms/1,000' | Allowable Ampacity Amps |
|--------------------|------------------------|-----------------------|------------------------------------|------------------------------------|----------------------------|
| Junco/ACSS/AW | 266.8 | 11200 | 0.0589 | 0.0723 | 841 |
| Ostrich/ACSS/AW | 300 | 9360 | 0.0534 | 0.0656 | 891 |
| Linnet/ACSS/AW | 336.4 | 10500 | 0.0476 | 0.0585 | 960 |
| Oriole/ACSS/AW | 336.4 | 14200 | 0.0467 | 0.0573 | 979 |
| Brant/ACSS/AW | 397.5 | 10400 | 0.0407 | 0.0501 | 1061 |
| Ibis/ACSS/AW | 397.5 | 12400 | 0.0403 | 0.0496 | 1071 |
| Lark/ACSS/AW | 397.5 | 16700 | 0.0395 | 0.0486 | 1092 |
| Flicker/ACSS/AW | 477 | 12500 | 0.0339 | 0.0418 | 1195 |
| Hawk/ACSS/AW | 477 | 14900 | 0.0336 | 0.0413 | 1207 |
| Hen/ACSS/AW | 477 | 20100 | 0.0329 | 0.0405 | 1231 |
| Parakeet/ACSS/AW | 556.5 | 14600 | 0.0291 | 0.0359 | 1323 |
| Dove/ACSS/AW | 556.5 | 17500 | 0.0288 | 0.0355 | 1336 |
| Eagle/ACSS/AW | 556.5 | 22900 | 0.0282 | 0.0348 | 1362 |
| Peacock/ACSS/AW | 605 | 15900 | 0.0267 | 0.033 | 1397 |
| Squab/ACSS/AW | 605 | 19000 | 0.0265 | 0.0327 | 1411 |
| Wood Duck/ACSS/AW | 605 | 24400 | 0.026 | 0.032 | 1439 |
| Teal/ACSS/AW | 605 | 25000 | 0.026 | 0.032 | 1438 |
| Rook/ACSS/AW | 636 | 16700 | 0.0255 | 0.0314 | 1444 |
| Grosbeak/ACSS/AW | 636 | 19900 | 0.0252 | 0.0311 | 1458 |
| Scoter/ACSS/AW | 636 | 25100 | 0.0247 | 0.0305 | 1487 |
| Egret/ACSS/AW | 636 | 26300 | 0.0247 | 0.0305 | 1486 |
| Flamingo/ACSS/AW | 666.6 | 17500 | 0.0243 | 0.03 | 1489 |
| Gannet/ACSS/AW | 666.6 | 20900 | 0.024 | 0.0297 | 1504 |
| Stilt/ACSS/AW | 715.5 | 18800 | 0.0226 | 0.028 | 1559 |
| Starling/ACSS/AW | 715.5 | 22000 | 0.0224 | 0.0277 | 1576 |
| Redwing/ACSS/AW | 715.5 | 29500 | 0.022 | 0.0272 | 1605 |
| Cuckoo/ACSS/AW | 795 | 20900 | 0.0204 | 0.0252 | 1671 |
| Drake/ACSS/AW | 795 | 24400 | 0.0202 | 0.025 | 1688 |
| Macaw/ACSS/AW | 795 | 11400 | 0.0209 | 0.026 | 1630 |
| Tern/ACSS/AW | 795 | 13500 | 0.0208 | 0.026 | 1620 |
| Condor/ACSS/AW | 795 | 15800 | 0.0204 | 0.026 | 1639 |
| Mallard/ACSS/AW | 795 | 32900 | 0.0198 | 0.0245 | 1721 |
| Ruddy/ACSS/AW | 900 | 15300 | 0.0183 | 0.023 | 1767 |
| Canary/ACSS/AW | 900 | 23200 | 0.018 | 0.023 | 1779 |
| Rail/ACSS/AW | 954 | 16200 | 0.0173 | 0.0218 | 1836 |
| Towhee/ACSS/AW | 954 | 19000 | 0.0172 | 0.0214 | 1858 |
| Cardinal/ACSS/AW | 954 | 24600 | 0.017 | 0.0217 | 1848 |
| Canvasback/ACSS/AW | 954 | 39400 | 0.0165 | 0.0205 | 1939 |
| Snowbird/ACSS/AW | 1033.5 | 14800 | 0.0161 | 0.0202 | 1934 |
| Curlew/ACSS/AW | 1033.5 | 26100 | 0.0157 | 0.0201 | 1948 |
| Bluejay/ACSS/AW | 1113 | 18900 | 0.0148 | 0.0088 | 2031 |



| Code Word | Size (AWG or kcmil) | Rated Strength lbs | DC Resistance @ 20C Ohms/1,000' | AC Resistance @ 75C Ohms/1,000' | Allowable Ampacity Amps |
|---------------------|------------------------|-----------------------|------------------------------------|------------------------------------|----------------------------|
| Finch/ACSS/AW | 1113 | 28800 | 0.0146 | 0.0188 | 2040 |
| Bunting/ACSS/AW | 1192.5 | 20300 | 0.0138 | 0.0176 | 2124 |
| Grackle/ACSS/AW | 1192.5 | 30800 | 0.0137 | 0.0176 | 2135 |
| Bittern/ACSS/AW | 1272 | 21600 | 0.013 | 0.0165 | 2215 |
| Pheasant/ACSS/AW | 1272 | 32800 | 0.0128 | 0.0165 | 2227 |
| Dipper/ACSS/AW | 1351 | 23000 | 0.0122 | 0.0156 | 2304 |
| Martin/ACSS/AW | 1351 | 34900 | 0.012 | 0.0156 | 2307 |
| Bobolink/ACSS/AW | 1431 | 24300 | 0.0115 | 0.0148 | 2391 |
| Plover/ACSS/AW | 1431 | 36900 | 0.0114 | 0.0148 | 2405 |
| Nuthatch/ACSS/AW | 1510 | 25700 | 0.0109 | 0.0141 | 2476 |
| Parrot/ACSS/AW | 1510 | 38900 | 0.0108 | 0.0141 | 2491 |
| Lapwing/ACSS/AW | 1590 | 27000 | 0.0104 | 0.0134 | 2560 |
| Falcon/ACSS/AW | 1590 | 41100 | 0.0102 | 0.0134 | 2576 |
| Chukar/ACSS/AW | 1780 | 33600 | 0.0093 | 0.012 | 2772 |
| Mockingbird/ACSS/AW | 2034.5 | 26500 | 0.0082 | 0.0109 | 2972 |
| Roadrunner/ACSS/AW | 2057 | 30300 | 0.0081 | 0.0108 | 3007 |
| Bluebird/ACSS/AW | 2156 | 40700 | 0.0077 | 0.0102 | 3130 |
| Kiwi/ACSS/AW | 2167 | 28200 | 0.0077 | 0.0104 | 3092 |
| Thrasher/ACSS/AW | 2312 | 34100 | 0.0072 | 0.0097 | 3235 |
| Joree/ACSS/AW | 2515 | 37100 | 0.0066 | 0.0091 | 3407 |

(1) Data based on a nominal cable manufactured in accordance with ASTM B 856.

(2) Resistance and ampacity based on an aluminum conductivity of 63% IACS at 20°C, and an aluminum-clad steel conductivity of 20.3% IACS at 20°C.

(3) Ampacity based on a 200°C conductor temperature, 25°C ambient temperature, 2 ft/sec wind, in sun, with emissivity of 0.5 and a coefficient of solar absorption of 0.5, at sea level.

(4) Rated strengths based on aluminum-clad steel core wire in accordance with ASTM B 502.