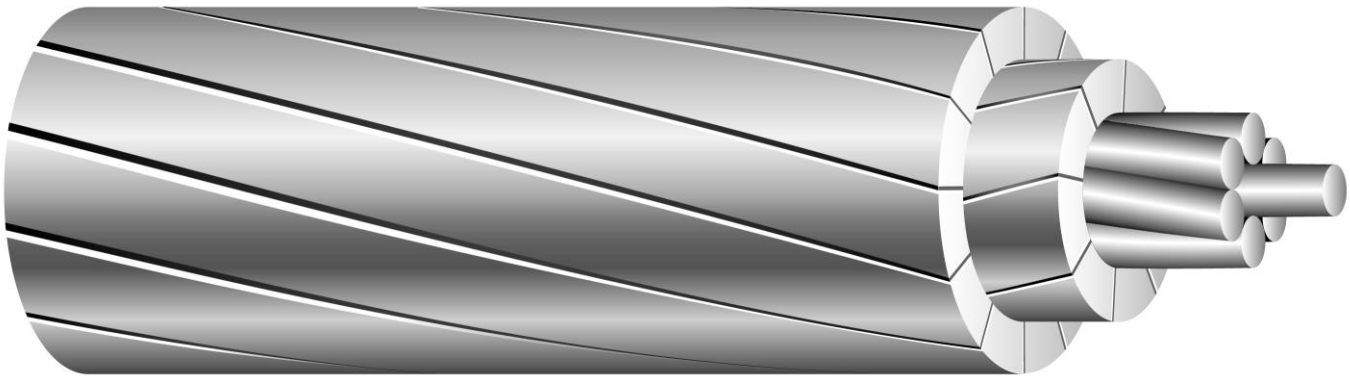
# ACSS/TW

**Aluminum Conductor, Steel Supported.**
**Trapezoidal Shaped Aluminum Strands. Bare.**



## APPLICATIONS

Southwire's ACSS/TW is designed 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/TW, excellent self-damping properties, and its final sags are not affected by long-term creep of aluminum. Southwire's ACSS/TW is available in equal area and equal diameter design. The equal area design allows equal ampacity in a smaller diameter conductor when compared with a standard ACSS conductor. The equal diameter design allows more ampacity in an equal diameter conductor when compared with a standard ACSS conductor. ACSS/TW also provides many design opportunities for new line construction: i.e., reduced tower cost, decreased sag, increased self-damping properties, increased operating temperature and improved corrosion resistance.

## SPECIFICATIONS

Southwire's ACSS/TW conductor meets or exceeds the following ASTM specifications:

- B500 Metallic Coated Stranded Steel Core for Aluminum Conductors, Steel Reinforced.
- B609 Aluminum 1350 Round Wire, Annealed and Intermediate Tempers, for Electrical Purposes.
- B802 Zinc-5% Aluminum-Mischmetal Alloy-Coated Steel Core Wire for Aluminum Conductors, Steel Reinforced.
- B803 High-Strength Zinc-5% Aluminum-Mischmetal Alloy-Coated Steel Core Wire for Aluminum and Aluminum-Alloy Conductors, Steel Reinforced.
- B857 Shaped Wire Compact Concentric-Lay-Stranded Aluminum Conductors, Coated-Steel Supported (ACSS/TW).

## CONSTRUCTION

ACSS is a composite concentric-lay-stranded conductor. Steel strands form the central core of the conductor with one or more layers of 63% minimum average conductivity aluminum 1350-0 wire stranded around it. 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 Galfan® , zinc-5% aluminum-mischmetal alloy coating. High strength steel core, aluminized, and aluminum clad steel core is also available.

# ACSS/TW

| Shaped Wire Concentric-Lay Compact Aluminum Conductors Steel Supported (ACSS/TW) Area Equal to Standard ACSR Sizes | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Code Word | Size (kcmil) | Type No. | Cross Sectional Area ($in^2$) | | Stranding | | | Diameter (in) | | Weight (lbs/1000 ft) | | | Rated Breaking Strength (lbs) | | | Resistance (ohms/mile) | | Ampacity (amps) | | | | |
| | | | Aluminum | Total | No of Layers of Aluminum | No. of Aluminum Wires | No. & Diameter Individual Steel Wire | Steel Core | Complete Cable | Alum. | Steel | Total | Standard Strength | High Strength | HS-285 | DC @ 20°C | AC @ 75°C | @ 75°C | @ 100°C | @ 150°C | @ 200°C | @ 250°C |
| Partridge/ACSS/TW | 266.8 | 16 | 0.2094 | 0.2435 | 2 | 14 | 7 x 0.0788 | 0.2364 | 0.595 | 250.5 | 115.6 | 366.1 | 8,880 | 9,730 | 11,400 | 0.3262 | 0.4009 | 454 | 553 | 692 | 795 | 880 |
| Linnet/ACSS/TW | 336.4 | 16 | 0.2641 | 0.3070 | 2 | 16 | 7 x 0.0885 | 0.2655 | 0.667 | 316.1 | 145.8 | 461.9 | 11,200 | 12,300 | 14,400 | 0.2588 | 0.3181 | 523 | 638 | 801 | 921 | 1021 |
| Oriole/ACSS/TW | 336.4 | 23 | 0.2642 | 0.3258 | 2 | 16 | 7 x 0.1059 | 0.3177 | 0.692 | 318.2 | 209.2 | 527.4 | 14,800 | 16,300 | 19,100 | 0.2565 | 0.3151 | 533 | 650 | 816 | 940 | 1043 |
| Flicker/ACSS/TW | 477.0 | 13 | 0.3747 | 0.4233 | 2 | 18 | 7 x 0.0940 | 0.2820 | 0.776 | 447.8 | 164.5 | 612.3 | 13,000 | 14,200 | 16,400 | 0.1831 | 0.2255 | 648 | 793 | 998 | 1151 | 1279 |
| Hawk/ACSS/TW | 477.0 | 16 | 0.3746 | 0.4356 | 2 | 18 | 7 x 0.1054 | 0.3162 | 0.790 | 448.7 | 206.4 | 655.1 | 15,600 | 17,100 | 19,800 | 0.1825 | 0.2247 | 652 | 799 | 1005 | 1159 | 1289 |
| Hen/ACSS/TW | 477.0 | 23 | 0.3747 | 0.4621 | 2 | 20 | 7 x 0.1261 | 0.3783 | 0.820 | 451.1 | 296.6 | 747.8 | 21,000 | 22,700 | 26,700 | 0.1809 | 0.2225 | 663 | 813 | 1024 | 1181 | 1315 |
| Parakeet/ACSS/TW | 556.5 | 13 | 0.4371 | 0.4937 | 2 | 18 | 7 x 0.1015 | 0.3045 | 0.835 | 522.4 | 191.8 | 714.2 | 15,200 | 16,600 | 19,100 | 0.1569 | 0.1935 | 713 | 874 | 1102 | 1271 | 1415 |
| Dove/ACSS/TW | 556.5 | 16 | 0.4371 | 0.5083 | 2 | 20 | 7 x 0.1138 | 0.3414 | 0.850 | 523.4 | 241.1 | 764.5 | 18,200 | 19,900 | 23,100 | 0.1564 | 0.1928 | 719 | 881 | 1111 | 1282 | 1427 |
| Rook/ACSS/TW | 636.0 | 13 | 0.4995 | 0.5643 | 2 | 20 | 7 x 0.1085 | 0.3255 | 0.893 | 597.0 | 219.2 | 816.2 | 17,300 | 19,000 | 21,900 | 0.1373 | 0.1696 | 775 | 951 | 1200 | 1386 | 1544 |
| Grosbeak/ACSS/TW | 636.0 | 16 | 0.4995 | 0.5808 | 2 | 20 | 7 x 0.1216 | 0.3648 | 0.909 | 601.5 | 275.8 | 877.3 | 20,700 | 22,400 | 26,000 | 0.1369 | 0.1689 | 781 | 958 | 1210 | 1398 | 1557 |
| Scoter/ACSS/TW | 636.0 | 23 | 0.4995 | 0.6160 | 2 | 22 | 7 x 0.1456 | 0.4368 | 0.942 | 600.5 | 394.7 | 995.2 | 27,400 | 29,700 | 35,000 | 0.1356 | 0.1672 | 795 | 976 | 1234 | 1427 | 1591 |
| Tern/ACSS/TW | 795.0 | 7 | 0.6244 | 0.6675 | 2 | 17 | 7 x 0.0886 | 0.2658 | 0.960 | 745.2 | 146.1 | 891.3 | 14,200 | 15,200 | 17,400 | 0.1105 | 0.1373 | 878 | 1080 | 1366 | 1580 | 1762 |
| Puffin/ACSS/TW | 795.0 | 11 | 0.6244 | 0.6919 | 2 | 18 | 7 x 0.1056 | 0.3168 | 0.980 | 745.9 | 228.5 | 974.4 | 17,700 | 19,200 | 22,000 | 0.1101 | 0.1365 | 886 | 1090 | 1378 | 1595 | 1778 |
| Condor/ACSS/TW | 795.0 | 13 | 0.6244 | 0.7053 | 2 | 20 | 7 x 0.1213 | 0.3639 | 0.993 | 746.3 | 273.9 | 1020.0 | 21,700 | 23,300 | 26,900 | 0.1098 | 0.1361 | 890 | 1095 | 1386 | 1604 | 1789 |
| Drake/ACSS/TW | 795.0 | 16 | 0.6244 | 0.7261 | 2 | 20 | 7 x 0.1360 | 0.4080 | 1.010 | 747.0 | 344.3 | 1091.3 | 25,900 | 28,000 | 32,600 | 0.1095 | 0.1355 | 896 | 1103 | 1396 | 1616 | 1803 |
| Canary/ACSS/TW | 900.0 | 13 | 0.7069 | 0.7983 | 2 | 20 | 7 x 0.1291 | 0.3873 | 1.055 | 844.8 | 310.9 | 1155.7 | 24,600 | 26,400 | 30,500 | 0.0970 | 0.1205 | 962 | 1185 | 1501 | 1739 | 1942 |
| Phoenix/ACSS/TW | 954.0 | 5 | 0.7493 | 0.7876 | 3 | 30 | 7 x 0.0837 | 0.2511 | 1.044 | 897.7 | 130.4 | 1028.0 | 14,200 | 15,200 | 17,100 | 0.0927 | 0.1187 | 967 | 1189 | 1503 | 1740 | 1940 |
| Rail/ACSS/TW | 954.0 | 7 | 0.7493 | 0.8011 | 3 | 32 | 7 x 0.0971 | 0.2913 | 1.061 | 898.6 | 175.5 | 1074.1 | 16,700 | 18,000 | 20,400 | 0.0926 | 0.1183 | 972 | 1196 | 1512 | 1750 | 1953 |
| Cardinal/ACSS/TW | 954.0 | 13 | 0.7493 | 0.8464 | 2 | 20 | 7 x 0.1329 | 0.3987 | 1.080 | 895.5 | 328.8 | 1224.3 | 26,000 | 28,000 | 32,300 | 0.0915 | 0.1138 | 997 | 1229 | 1558 | 1806 | 2016 |
| Snowbird/ACSS/TW | 1033.5 | 5 | 0.8117 | 0.8534 | 3 | 30 | 7 x 0.0871 | 0.2613 | 1.089 | 972.5 | 141.2 | 1114.0 | 15,400 | 16,400 | 18,500 | 0.0856 | 0.1098 | 1016 | 1251 | 1584 | 1834 | 2048 |
| Ortolan/ACSS/TW | 1033.5 | 7 | 0.8117 | 0.8678 | 3 | 32 | 7 x 0.1010 | 0.3030 | 1.102 | 972.5 | 189.9 | 1162.0 | 18,100 | 19,500 | 22,000 | 0.0854 | 0.1095 | 1021 | 1257 | 1592 | 1843 | 2058 |
| Curlew/ACSS/TW | 1033.5 | 13 | 0.8117 | 0.9169 | 2 | 22 | 7 x 0.1383 | 0.4149 | 1.132 | 970.1 | 356.1 | 1326.2 | 28,200 | 30,300 | 35,000 | 0.0845 | 0.1053 | 1048 | 1293 | 1641 | 1903 | 2126 |
| Avocet/ACSS/TW | 1113.0 | 5 | 0.8742 | 0.9191 | 3 | 30 | 7 x 0.0904 | 0.2712 | 1.129 | 1047.0 | 152.1 | 1199.0 | 16,300 | 17,500 | 19,500 | 0.0794 | 0.1022 | 1063 | 1310 | 1661 | 1925 | 2150 |



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# ACSS/TW

**Shaped Wire Concentric-Lay Compact Aluminum Conductors Steel Supported (ACSS/TW)**
**Area Equal to Standard ACSR Sizes**

| Code Word | Size (kcmil) | Type No. | Cross Sectional Area ($in^2$) | | Stranding | | | Diameter (in) | | Weight (lbs/1000 ft) | | | Rated Breaking Strength (lbs) | | | Resistance (ohms/mile) | | Ampacity (amps) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aluminum | Total | No of Layers of Aluminum | No. of Aluminum Wires | No. & Diameter Individual Steel Wire | Steel Core | Complete Cable | Alum. | Steel | Total | Standard Strength | High Strength | HS-285 | DC @ 20°C | AC @ 75°C | @ 75°C | @ 100°C | @ 150°C | @ 200°C | @ 250°C |
| Bluejay/ACSS/TW | 1113.0 | 7 | 0.8742 | 0.9347 | 3 | 33 | 7 x 0.1049 | 0.3147 | 1.143 | 1048.0 | 204.8 | 1253.0 | 19,500 | 21,000 | 23,800 | 0.0793 | 0.1019 | 1068 | 1317 | 1669 | 1935 | 2161 |
| Finch/ACSS/TW | 1113.0 | 13 | 0.8743 | 0.9852 | 3 | 38 | 19 x 0.0862 | 0.4310 | 1.185 | 1051.0 | 376.1 | 1427.0 | 30,400 | 33,200 | 38,700 | 0.0789 | 0.1010 | 1084 | 1336 | 1695 | 1965 | 2196 |
| Oxbird/ACSS/TW | 1192.5 | 5 | 0.9366 | 0.9848 | 3 | 30 | 7 x 0.0936 | 0.2808 | 1.170 | 1122.9 | 163.1 | 1286.0 | 17,500 | 18,700 | 20,900 | 0.0741 | 0.0957 | 1108 | 1367 | 1735 | 2013 | 2249 |
| Bunting/ACSS/TW | 1192.5 | 7 | 0.9366 | 1.0013 | 3 | 34 | 7 x 0.1085 | 0.3255 | 1.181 | 1123.2 | 219.6 | 1342.8 | 20,900 | 22,500 | 25,400 | 0.0740 | 0.0954 | 1114 | 1374 | 1744 | 2023 | 2261 |
| Grackle/ACSS/TW | 1192.5 | 13 | 0.9366 | 1.0554 | 3 | 38 | 19 x 0.0892 | 0.4460 | 1.225 | 1127.8 | 402.9 | 1530.7 | 32,600 | 35,500 | 41,500 | 0.0737 | 0.0944 | 1130 | 1395 | 1771 | 2055 | 2298 |
| Scissortail/ACSS/TW | 1272.0 | 5 | 0.9991 | 1.0505 | 3 | 30 | 7 x 0.0967 | 0.2901 | 1.203 | 1197.0 | 174.0 | 1371.0 | 18,700 | 20,000 | 22,300 | 0.0695 | 0.0900 | 1152 | 1423 | 1807 | 2098 | 2346 |
| Bittern/ACSS/TW | 1272.0 | 7 | 0.9990 | 1.0681 | 3 | 38 | 7 x 0.1121 | 0.3363 | 1.224 | 1197.6 | 234.9 | 1432.5 | 22,300 | 24,000 | 27,100 | 0.0694 | 0.0897 | 1159 | 1431 | 1817 | 2110 | 2360 |
| Pheasant/ACSS/TW | 1272.0 | 13 | 0.9990 | 1.1256 | 3 | 39 | 19 x 0.0921 | 0.4605 | 1.260 | 1201.0 | 429.5 | 1630.5 | 34,100 | 37,300 | 43,000 | 0.0691 | 0.0887 | 1176 | 1452 | 1846 | 2143 | 2398 |
| Dipper/ACSS/TW | 1351.5 | 7 | 1.0615 | 1.1348 | 3 | 35 | 7 x 0.1155 | 0.3465 | 1.256 | 1273.0 | 248.3 | 1521.0 | 23,700 | 25,500 | 28,800 | 0.0653 | 0.0847 | 1202 | 1485 | 1888 | 2194 | 2455 |
| Martin/ACSS/TW | 1351.5 | 13 | 1.0615 | 1.1959 | 3 | 42 | 19 x 0.0949 | 0.4745 | 1.300 | 1276.1 | 456.0 | 1732.1 | 36,200 | 39,600 | 45,600 | 0.0650 | 0.0837 | 1220 | 1508 | 1918 | 2228 | 2494 |
| Bobolink/ACSS/TW | 1431.0 | 7 | 1.1236 | 1.2017 | 3 | 36 | 7 x 0.1189 | 0.3567 | 1.291 | 1347.0 | 263.1 | 1611.0 | 25,100 | 27,000 | 30,500 | 0.0617 | 0.0802 | 1243 | 1538 | 1958 | 2276 | 2549 |
| Plover/ACSS/TW | 1431.0 | 13 | 1.1239 | 1.2664 | 3 | 44 | 19 x 0.0977 | 0.4885 | 1.337 | 1351.0 | 483.2 | 1834.0 | 38,400 | 41,900 | 48,300 | 0.0614 | 0.0793 | 1263 | 1562 | 1989 | 2313 | 2590 |
| Lapwing/ACSS/TW | 1590.0 | 7 | 1.2488 | 1.3351 | 3 | 36 | 7 x 0.1253 | 0.3759 | 1.358 | 1497.6 | 292.3 | 1789.9 | 27,900 | 29,600 | 33,500 | 0.0555 | 0.0727 | 1324 | 1640 | 2092 | 2435 | 2730 |
| Falcon/ACSS/TW | 1590.0 | 13 | 1.2488 | 1.4071 | 3 | 42 | 19 x 0.1030 | 0.5150 | 1.410 | 1502.8 | 537.2 | 2040.0 | 42,600 | 46,600 | 53,700 | 0.0553 | 0.0717 | 1346 | 1668 | 2127 | 2477 | 2777 |
| Chukar/ACSS/TW | 1780.0 | 8 | 1.3986 | 1.5126 | 3 | 38 | 19 x 0.0874 | 0.4370 | 1.445 | 1680.6 | 386.8 | 2067.4 | 35,300 | 38,200 | 43,900 | 0.0495 | 0.0652 | 1421 | 1764 | 2255 | 2630 | 2952 |
| Bluebird/ACSS/TW | 2156.0 | 8 | 1.6933 | 1.8309 | 4 | 64 | 19 x 0.0961 | 0.4805 | 1.608 | 2045.0 | 467.5 | 2512 | 42,100 | 45,500 | 51,700 | 0.0412 | 0.0543 | 1601 | 1999 | 2573 | 3014 | 3396 |

1) Data based on a nominal cable manufactured in accordance with ASTM B 857.
2) Resistance and ampacity based on an aluminum conductivity of 63% IACS at 20°C and a steel conductivity of 8% IACS at 20°C.
3) Ampacity based on referenced conductor temperature, 25°C ambient temperature, 2 ft/sec wind, in sun, with an emmisivity of 0.5 and a coefficient of solar absorption of 0.5, at sea level.
4) Rated breaking strength for standard core based on Class A Galfan coated steel core wire in accordance with ASTM B 802.
5) Rated strength for high strength core based on Class A Galfan coated high strength steel core wire in accordance with ASTM B 803.
6) The final design of a shaped wire compact conductor is contingent upon several factors such as: layer diameter, wire width and wire thickness. The actual configuration of a given size may vary between manufacturers. This may result in a slight variation in the number of wires, number of layers and dimensions of individual wires from that shown in the chart.



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# ACSS/TW

| Shaped Wire Concentric-Lay Compact Aluminum Conductors Steel Supported (ACSS/TW)<br>Diameter Equal to Standard ACSR Sizes | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Code Word | Size (kcmil) | Type No. | Cross Sectional Area ($in^2$) | | Stranding | | | Diameter (in) | | Weight (lbs/1000 ft) | | | Rated Breaking Strength (lbs) | | | Resistance (ohms/mile) | | Ampacity (amps) | | | | |
| | | | Aluminum | Total | No of Layers of Aluminum | No. of Aluminum Wires | No. & Diameter Individual Steel Wire | Steel Core | Complete Cable | Alum. | Steel | Total | Standard Strength | High Strength | HS-285 | DC @ 20°C | AC @ 75°C | @ 75°C | @ 100°C | @ 150°C | @ 200°C | @ 250°C |
| Mohawk/ACSS/TW | 571.7 | 13 | 0.4490 | 0.5074 | 2 | 18 | 7 x 0.1030 | 0.3090 | 0.850 | 537.0 | 197.5 | 734.5 | 15,600 | 17,100 | 19,700 | 0.1527 | 0.1884 | 725 | 889 | 1121 | 1294 | 1441 |
| Calumet/ACSS/TW | 565.3 | 16 | 0.4439 | 0.5162 | 2 | 20 | 7 x 0.1146 | 0.3438 | 0.860 | 531.2 | 244.5 | 775.7 | 18,400 | 20,200 | 23,500 | 0.1540 | 0.1898 | 725 | 890 | 1122 | 1295 | 1442 |
| Mystic/ACSS/TW | 666.6 | 13 | 0.5236 | 0.5914 | 2 | 20 | 7 x 0.1244 | 0.3732 | 0.913 | 630.4 | 230.3 | 860.7 | 18,200 | 19,900 | 22,900 | 0.1310 | 0.1619 | 798 | 980 | 1238 | 1431 | 1595 |
| Oswego/ACSS/TW | 664.8 | 16 | 0.5221 | 0.6072 | 2 | 20 | 7 x 0.1244 | 0.3732 | 0.927 | 628.7 | 288.7 | 917.4 | 21,700 | 23,400 | 27,200 | 0.1309 | 0.1616 | 802 | 985 | 1244 | 1439 | 1604 |
| Maumee/ACSS/TW | 768.2 | 13 | 0.6034 | 0.6819 | 2 | 20 | 7 x 0.1195 | 0.3585 | 0.977 | 721.1 | 265.9 | 987.0 | 21,000 | 23,000 | 26,500 | 0.1137 | 0.1407 | 872 | 1072 | 1356 | 1569 | 1750 |
| Wabash/ACSS/TW | 762.8 | 16 | 0.5992 | 0.6966 | 2 | 20 | 7 x 0.1331 | 0.3993 | 0.990 | 716.7 | 329.8 | 1046.5 | 24,900 | 26,800 | 31,200 | 0.1141 | 0.1411 | 873 | 1074 | 1359 | 1573 | 1755 |
| Kettle/ACSS/TW | 957.2 | 7 | 0.7518 | 0.8038 | 3 | 32 | 7 x 0.0973 | 0.2919 | 1.060 | 901.6 | 176.2 | 1078.0 | 16,800 | 18,100 | 20,400 | 0.0922 | 0.1180 | 973 | 1197 | 1514 | 1753 | 1955 |
| Fraser/ACSS/TW | 946.7 | 10 | 0.7436 | 0.8168 | 3 | 35 | 7 x 0.1154 | 0.3462 | 1.077 | 892.6 | 247.9 | 1141.0 | 21,100 | 22,900 | 26,200 | 0.0930 | 0.1187 | 974 | 1199 | 1517 | 1756 | 1959 |
| Columbia/ACSS/TW | 966.2 | 13 | 0.7589 | 0.8573 | 2 | 21 | 7 x 0.1338 | 0.4014 | 1.092 | 906.9 | 333.2 | 1240.0 | 26,400 | 28,300 | 32,800 | 0.0904 | 0.1124 | 1005 | 1239 | 1571 | 1822 | 2035 |
| Suwannee/ACSS/TW | 959.6 | 16 | 0.7537 | 0.8762 | 2 | 22 | 7 x 0.1493 | 0.4479 | 1.110 | 901.6 | 415.0 | 1316.6 | 30,700 | 33,100 | 38,600 | 0.0907 | 0.1127 | 1008 | 1243 | 1576 | 1828 | 2042 |
| Cheyenne/ACSS/TW | 1168.1 | 5 | 0.9175 | 0.9646 | 3 | 30 | 7 x 0.0926 | 0.2778 | 1.155 | 1099.0 | 159.6 | 1259.0 | 17,200 | 18,300 | 20,500 | 0.0757 | 0.0979 | 1095 | 1350 | 1712 | 1986 | 2219 |
| Genesee/ACSS/TW | 1158.0 | 7 | 0.9095 | 0.9733 | 3 | 34 | 7 x 0.1078 | 0.3234 | 1.165 | 1092.0 | 216.0 | 1308.0 | 20,500 | 22,100 | 25,000 | 0.0762 | 0.0981 | 1094 | 1350 | 1712 | 1985 | 2218 |
| Hudson/ACSS/TW | 1158.4 | 13 | 0.9098 | 1.0281 | 2 | 24 | 7 x 0.1467 | 0.4401 | 1.196 | 1087.3 | 400.7 | 1488.0 | 31,100 | 33,500 | 38,800 | 0.0754 | 0.0943 | 1124 | 1389 | 1766 | 2051 | 2295 |
| Catawba/ACSS/TW | 1272.0 | 5 | 0.9991 | 1.0505 | 3 | 30 | 7 x 0.0967 | 0.2901 | 1.203 | 1197.0 | 174.0 | 1371.0 | 18,700 | 20,000 | 22,300 | 0.0695 | 0.0900 | 1152 | 1423 | 1807 | 2098 | 2346 |
| Nelson/ACSS/TW | 1257.1 | 7 | 0.9874 | 1.0557 | 3 | 35 | 7 x 0.1115 | 0.3345 | 1.213 | 1184.0 | 231.4 | 1415.0 | 22,100 | 23,800 | 26,900 | 0.0702 | 0.0907 | 1150 | 1420 | 1804 | 2094 | 2342 |
| Yukon/ACSS/TW | 1233.6 | 13 | 0.9689 | 1.0925 | 3 | 38 | 19 x 0.0910 | 0.4550 | 1.245 | 1166.7 | 419.3 | 1586.0 | 33,200 | 36,300 | 41,900 | 0.0712 | 0.0914 | 1154 | 1425 | 1810 | 2101 | 2350 |
| Truckee/ACSS/TW | 1372.5 | 5 | 1.0780 | 1.1334 | 3 | 30 | 7 x 0.1004 | 0.3012 | 1.248 | 1292.0 | 187.6 | 1479.0 | 20,200 | 21,500 | 24,000 | 0.0644 | 0.0838 | 1206 | 1491 | 1896 | 2203 | 2466 |
| Mackenzie/ACSS/TW | 1359.7 | 7 | 1.0679 | 1.1418 | 3 | 36 | 7 x 0.1159 | 0.3477 | 1.259 | 1281.0 | 250.0 | 1531.0 | 23,900 | 25,700 | 29,000 | 0.0649 | 0.0842 | 1206 | 1490 | 1895 | 2202 | 2465 |
| Thames/ACSS/TW | 1334.6 | 13 | 1.0480 | 1.1809 | 3 | 38 | 19 x 0.0944 | 0.4720 | 1.290 | 1260.1 | 451.2 | 1711.3 | 35,800 | 39,100 | 45,100 | 0.0658 | 0.0847 | 1210 | 1495 | 1902 | 2209 | 2472 |
| St. Croix/ACSS/TW | 1467.8 | 5 | 1.1529 | 1.2124 | 3 | 33 | 7 x 0.1041 | 0.3123 | 1.292 | 1381.0 | 201.7 | 1583.0 | 21,600 | 23,100 | 25,800 | 0.0602 | 0.0787 | 1256 | 1554 | 1979 | 2302 | 2578 |
| Miramichi/ACSS/TW | 1455.3 | 7 | 1.1430 | 1.2222 | 3 | 36 | 7 x 0.1200 | 0.3600 | 1.302 | 1372.0 | 268.0 | 1640.0 | 25,600 | 27,100 | 30,700 | 0.0607 | 0.0790 | 1269 | 1573 | 2007 | 2338 | 2577 |



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# ACSS/TW

**Shaped Wire Concentric-Lay Compact Aluminum Conductors Steel Supported (ACSS/TW)**
**Diameter Equal to Standard ACSR Sizes**

| Code Word | Size (kcmil) | Type No. | Cross Sectional Area ($in^2$) | | Stranding | | | Diameter (in) | | Weight (lbs/1000 ft) | | | Rated Breaking Strength (lbs) | | | Resistance (ohms/mile) | | Ampacity (amps) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Aluminum | Total | No of Layers of Aluminum | No. of Aluminum Wires | No. & Diameter Individual Steel Wire | Steel Core | Complete Cable | Alum. | Steel | Total | Standard Strength | High Strength | HS-285 | DC @ 20°C | AC @ 75°C | @ 75°C | @ 100°C | @ 150°C | @ 200°C | @ 250°C |
| Merrimack/ACSS/TW | 1433.6 | 13 | 1.1250 | 1.2677 | 3 | 39 | 19 x 0.0978 | 0.4890 | 1.340 | 1355.8 | 484.3 | 1840.1 | 38,400 | 42,000 | 48,400 | 0.0613 | 0.0791 | 1277 | 1584 | 2021 | 2354 | 2595 |
| Platte/ACSS/TW | 1569.0 | 5 | 1.2323 | 1.2957 | 3 | 33 | 7 x 0.1074 | 0.3222 | 1.334 | 1478 | 215.0 | 1693 | 23,100 | 24,600 | 27,500 | 0.0564 | 0.0740 | 1319 | 1637 | 2092 | 2439 | 2692 |
| Potomac/ACSS/TW | 1557.4 | 7 | 1.2232 | 1.3079 | 3 | 36 | 7 x 0.1241 | 0.3723 | 1.350 | 1466.9 | 288.1 | 1755 | 27,300 | 29,000 | 32,800 | 0.0567 | 0.0741 | 1321 | 1639 | 2094 | 2441 | 2694 |
| Rio Grande/ACSS/TW | 1533.3 | 13 | 1.2043 | 1.3571 | 3 | 38 | 19 x 0.1012 | 0.5060 | 1.380 | 1449.0 | 519.0 | 1968.0 | 41,200 | 45,000 | 51,900 | 0.0573 | 0.0742 | 1329 | 1650 | 2108 | 2456 | 2710 |
| Schuylkill/ACSS/TW | 1657.4 | 7 | 1.3020 | 1.3920 | 3 | 36 | 7 x 0.1280 | 0.3840 | 1.386 | 1563 | 305.0 | 1868 | 29,100 | 30,900 | 34,900 | 0.0533 | 0.0700 | 1370 | 1702 | 2177 | 2539 | 2805 |
| Pecos/ACSS/TW | 1622.0 | 13 | 1.2739 | 1.4429 | 3 | 39 | 19 x 0.1064 | 0.5320 | 1.420 | 1533.7 | 573.2 | 2106.9 | 45,000 | 49,300 | 56,900 | 0.0541 | 0.0703 | 1377 | 1710 | 2187 | 2551 | 2816 |
| Pee Dee/ACSS/TW | 1758.6 | 7 | 1.3810 | 1.4770 | 3 | 38 | 7 x 0.1319 | 0.3957 | 1.427 | 1656.4 | 323.9 | 1980.3 | 30,900 | 32,800 | 37,100 | 0.0502 | 0.0663 | 1418 | 1763 | 2259 | 2637 | 2916 |
| James/ACSS/TW | 1730.6 | 13 | 1.3590 | 1.5314 | 3 | 34 | 19 x 0.1075 | 0.5375 | 1.470 | 1636 | 585.0 | 2221 | 46,400 | 50,800 | 58,500 | 0.0508 | 0.0663 | 1430 | 1778 | 2277 | 2657 | 2937 |
| Athabaska/ACSS/TW | 1949.6 | 7 | 1.5312 | 1.6377 | 3 | 44 | 7 x 0.1392 | 0.4176 | 1.504 | 1836 | 360.7 | 2197 | 34,300 | 36,500 | 41,300 | 0.0453 | 0.0595 | 1505 | 1873 | 2403 | 2808 | 3157 |
| Cumberland/ACSS/TW | 1926.9 | 13 | 1.5134 | 1.7049 | 3 | 42 | 19 x 0.1133 | 0.5665 | 1.550 | 1821 | 650.0 | 2471 | 51,600 | 56,400 | 65,000 | 0.0456 | 0.0600 | 1508 | 1875 | 2400 | 2802 | 3148 |
| Powder/ACSS/TW | 2153.8 | 8 | 1.6912 | 1.8290 | 4 | 64 | 19 x 0.0961 | 0.4805 | 1.602 | 2042.5 | 396.1 | 2438.6 | 42,100 | 45,500 | 51,700 | 0.0412 | 0.0543 | 1599 | 1996 | 2569 | 3009 | 3391 |
| Santee/ACSS/TW | 2627.3 | 8 | 2.0630 | 2.2268 | 4 | 64 | 19 x 0.1062 | 0.5310 | 1.761 | 2491.5 | 571.1 | 3062.6 | 51,300 | 55,600 | 63,100 | 0.0338 | 0.0459 | 1784 | 2237 | 2894 | 3403 | 3846 |

1) Data based on a nominal cable manufactured in accordance with ASTM B 857.
2) Resistance and ampacity based on an aluminum conductivity of 63% IACS at 20°C and a steel conductivity of 8% IACS at 20°C.
3) Ampacity based on referenced conductor temperature, 25°C ambient temperature, 2 ft/sec wind, in sun, with an emmisivity of 0.5 and a coefficient of solar absorption of 0.5, at sea level.
4) Rated breaking strength for standard core based on Class A Galfan coated steel core wire in accordance with ASTM B 802.
5) Rated strength for high strength core based on Class A Galfan coated high strength steel core wire in accordance with ASTM B 803.
6) The final design of a shaped wire compact conductor is contingent upon several factors such as: layer diameter, wire width and wire thickness. The actual configuration of a given size may vary between manufacturers. This may result in a slight variation in the number of wires, number of layers and dimensions of individual wires from that shown in the chart.



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