

Covered Conductors – Tree Wire Systems

Description:

Tree wire or covered open wire consists of the conductor (aluminum, aluminum alloy or ACSR) and the extruded covering (conductor shield, low density inner layer and protective outer layer). Covering thickness depends on the system voltage. It is designed for full span applications and is supported on polyethylene insulators. We also offer a two layer covered conductor design for 15kV systems that are not subject to heavy tree contact. Covered conductors are available in black or gray depending on visual preference.

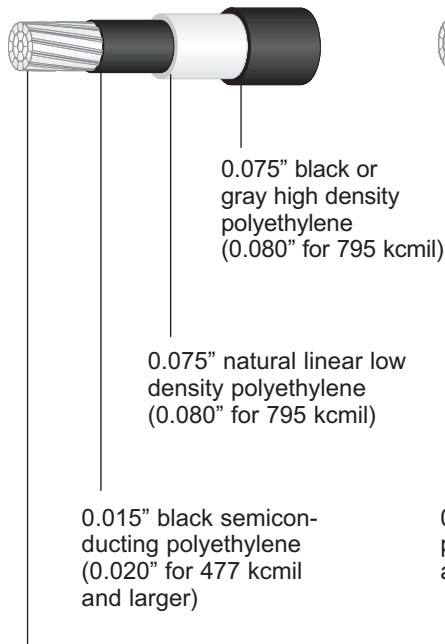
Benefits:

- Covering prevents faults due to contact
- Proprietary, high density outer layer resists abrasion, electrical tracking and UV degradation.
- Reduced NESC phase spacing is possible due to high impulse strength covering.
- Pole hardware is the same as bare wire construction except that Hendrix polyethylene insulators are required.

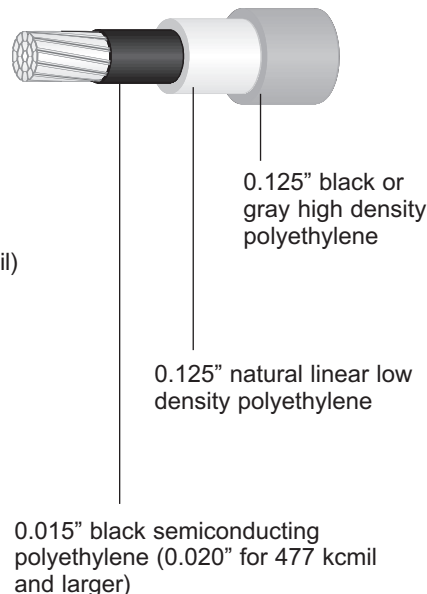
Application:

Hendrix provides tree wire designed for systems from 15kV through 46kV. Polyethylene insulators must be used to insure dielectric compatibility with conductor covering. Conductors are supported on crossarms or standoff brackets. Span lengths are limited by the conductor breaking strength and the amount of sag that is permissible. Covered conductors are rated for continuous operation at 75°C. (Consult Hendrix sales representative for 46kV tree wire systems).

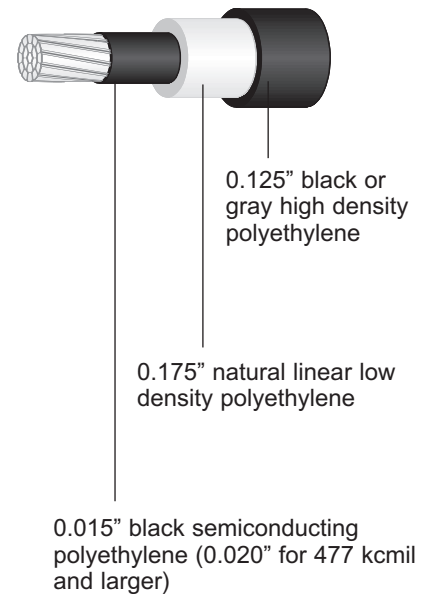
15kV Tree Wire



25kV Tree Wire



35kV Tree Wire



Aluminum, Aluminum Alloy or ACSR (copper, AWAC, ACAR conductors are also available)

continued

Covered Conductors – Tree Wire Systems



ACSR Concentric Round Conductors*

| Size | Strands (Al/Steel) | 15kV 2 layer Tree Wire | | | 15kV Tree Wire | | | 25kV Tree Wire | | | 35kV Tree Wire | | |
|-------------|-----------------------|-------------------------------|----------------------------------|--|-------------------------------|----------------------------------|--|-------------------------------|----------------------------------|--|-------------------------------|----------------------------------|--|
| | | Cable Diameter (inches) | Cable Weight (lbs/1000 ft) | | Cable Diameter (inches) | Cable Weight (lbs/1000 ft) | | Cable Diameter (inches) | Cable Weight (lbs/1000 ft) | | Cable Diameter (inches) | Cable Weight (lbs/1000 ft) | |
| #2 AWG | 6/1 | 0.616 | 190 | | 0.646 | 207 | | 0.846 | 304 | | NA | NA | |
| 1/0 AWG | 6/1 | 0.698 | 264 | | 0.728 | 284 | | 0.928 | 391 | | 1.028 | 454 | |
| 2/0 AWG | 6/1 | 0.747 | 314 | | 0.777 | 336 | | 0.977 | 450 | | 1.077 | 516 | |
| 3/0 AWG | 6/1 | 0.802 | 376 | | 0.832 | 400 | | 1.032 | 521 | | 1.132 | 591 | |
| 4/0 AWG | 6/1 | 0.863 | 452 | | 0.893 | 478 | | 1.093 | 607 | | 1.193 | 681 | |
| 266.8 kcmil | 18/1 | 0.909 | 454 | | 0.939 | 480 | | 1.139 | 615 | | 1.239 | 691 | |
| 266.8 kcmil | 26/7 | 0.942 | 534 | | 0.972 | 561 | | 1.172 | 700 | | 1.272 | 778 | |
| 336.4 kcmil | 18/1 | 0.984 | 547 | | 1.014 | 576 | | 1.214 | 720 | | 1.314 | 802 | |
| 336.4 kcmil | 26/7 | 1.020 | 648 | | 1.050 | 677 | | 1.250 | 826 | | 1.350 | 910 | |
| 336.4 kcmil | 30/7 | 1.041 | 717 | | 1.071 | 747 | | 1.271 | 899 | | 1.371 | 984 | |
| 397.5 kcmil | 18/1 | 1.043 | 629 | | 1.073 | 660 | | 1.273 | 812 | | 1.373 | 897 | |
| 397.5 kcmil | 24/7 | 1.072 | 710 | | 1.102 | 740 | | 1.302 | 896 | | 1.402 | 983 | |
| 397.5 kcmil | 26/7 | 1.083 | 747 | | 1.113 | 778 | | 1.313 | 935 | | 1.413 | 1,023 | |
| 477.0 kcmil | 18/1 | 1.114 | 733 | | 1.154 | 775 | | 1.354 | 938 | | 1.454 | 1,028 | |
| 477.0 kcmil | 24/7 | 1.146 | 830 | | 1.186 | 872 | | 1.386 | 1,039 | | 1.486 | 1,131 | |
| 477.0 kcmil | 26/7 | 1.158 | 875 | | 1.198 | 918 | | 1.398 | 1,086 | | 1.498 | 1,179 | |
| 477.0 kcmil | 30/7 | 1.183 | 971 | | 1.223 | 1,015 | | 1.423 | 1,186 | | 1.523 | 1,281 | |
| 556.5 kcmil | 18/1 | 1.179 | 835 | | 1.219 | 881 | | 1.419 | 1,052 | | 1.519 | 1,146 | |
| 556.5 kcmil | 24/7 | 1.214 | 948 | | 1.254 | 994 | | 1.454 | 1,169 | | 1.554 | 1,265 | |
| 556.5 kcmil | 26/7 | 1.227 | 1001 | | 1.267 | 1,047 | | 1.467 | 1,223 | | 1.567 | 1,321 | |
| 636.0 kcmil | 18/1 | 1.240 | 937 | | 1.280 | 986 | | 1.480 | 1,165 | | 1.580 | 1,263 | |
| 636.0 kcmil | 24/7 | 1.277 | 1066 | | 1.317 | 1,114 | | 1.517 | 1,297 | | 1.617 | 1,398 | |
| 636.0 kcmil | 26/7 | 1.290 | 1125 | | 1.330 | 1,174 | | 1.530 | 1,359 | | 1.630 | 1,460 | |
| 795.0 kcmil | 24/7 | 1.392 | 1298 | | 1.432 | 1,352 | | 1.632 | 1,550 | | 1.732 | 1,657 | |
| 795.0 kcmil | 26/7 | 1.408 | 1373 | | 1.448 | 1,428 | | 1.648 | 1,628 | | 1.748 | 1,736 | |
| 795.0 kcmil | 45/7 | 1.363 | 1158 | | 1.403 | 1,209 | | 1.603 | 1,403 | | 1.703 | 1,509 | |

continued

* Conductor selection must be based on rated breaking strength, span length and regional loading conditions.



Aluminum Alloy (6201-T81) Concentric Round Conductors*

* Conductor selection must be based on rated breaking strength, span length and regional loading conditions.

| Equivalent Size | Code Word | 15kV 2 layer Tree Wire | | 15kV Tree Wire | | 25kV Tree Wire | | 35kV Tree Wire | |
|-----------------|-----------|-------------------------|----------------------------|-------------------------|----------------------------|-------------------------|----------------------------|-------------------------|----------------------------|
| | | Cable Diameter (inches) | Cable Weight (lbs/1000 ft) | Cable Diameter (inches) | Cable Weight (lbs/1000 ft) | Cable Diameter (inches) | Cable Weight (lbs/1000 ft) | Cable Diameter (inches) | Cable Weight (lbs/1000 ft) |
| #2 AWG | Ames | 0.616 | 171 | 0.646 | 189 | 0.846 | 286 | NA | NA |
| 1/0 AWG | Azusa | 0.698 | 234 | 0.728 | 255 | 0.928 | 362 | 1.028 | 424 |
| 2/0 AWG | Anaheim | 0.747 | 276 | 0.777 | 299 | 0.977 | 413 | 1.077 | 478 |
| 3/0 AWG | Amherst | 0.802 | 328 | 0.832 | 353 | 1.032 | 474 | 1.132 | 543 |
| 4/0 AWG | Alliance | 0.863 | 392 | 0.893 | 419 | 1.093 | 548 | 1.193 | 621 |
| 266.8 kcmil | Butte | 0.942 | 464 | 0.972 | 493 | 1.172 | 632 | 1.272 | 709 |
| 336.4 kcmil | Canton | 1.021 | 559 | 1.051 | 592 | 1.251 | 741 | 1.351 | 822 |
| 397.5 kcmil | Cairo | 1.083 | 641 | 1.113 | 677 | 1.313 | 834 | 1.413 | 918 |
| 477.0 kcmil | Darien | 1.158 | 748 | 1.198 | 796 | 1.398 | 964 | 1.498 | 1,053 |
| 556.5 kcmil | Elgin | 1.227 | 853 | 1.267 | 904 | 1.467 | 1,081 | 1.567 | 1,175 |
| 636.0 kcmil | Flint | 1.291 | 941 | 1.331 | 994 | 1.531 | 1,179 | 1.631 | 1,276 |
| 795.0 kcmil | Greeley | 1.408 | 1144 | 1.448 | 1,204 | 1.648 | 1,404 | 1.748 | 1,507 |