

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.

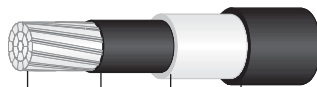
Benefits:

- 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

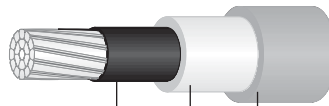


0.075" black or gray high density polyethylene (0.080" for 795 kcmil)

0.075" natural linear low density polyethylene (0.080" for 795 kcmil)

0.015" black semiconducting polyethylene (0.020" for 477 kcmil and larger)

25kV Tree Wire

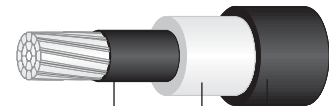


0.125" black or gray high density polyethylene

0.125" natural linear low density polyethylene

0.015" black semiconducting polyethylene (0.020" for 477 kcmil and larger)

35kV Tree Wire



0.125" black or gray high density polyethylene

0.175" natural linear low density polyethylene

0.015" black semiconducting polyethylene (0.020" for 477 kcmil and larger)

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 Kemil	18/1	0.909	454	0.939	480	1.139	615	1.239	691
266.8 Kemil	26/7	0.942	534	0.972	561	1.172	700	1.272	778
336.4 Kemil	18/1	0.984	547	1.014	576	1.214	720	1.314	802
336.4 Kemil	26/7	1.020	648	1.050	677	1.250	826	1.350	910
336.4 Kemil	30/7	1.041	717	1.071	747	1.271	899	1.371	984
397.5 Kemil	18/1	1.043	629	1.073	660	1.273	812	1.373	897
397.5 Kemil	24/7	1.072	710	1.102	740	1.302	896	1.402	983
397.5 Kemil	26/7	1.083	747	1.113	778	1.313	935	1.413	1,023
477.0 Kemil	18/1	1.114	733	1.154	775	1.354	938	1.454	1,028
477.0 Kemil	24/7	1.146	830	1.186	872	1.386	1,039	1.486	1,131
477.0 Kemil	26/7	1.158	875	1.198	918	1.398	1,086	1.498	1,179
477.0 Kemil	30/7	1.183	971	1.223	1,015	1.423	1,186	1.523	1,281
556.5 Kemil	18/1	1.179	835	1.219	881	1.419	1,052	1.519	1,146
556.5 Kemil	24/7	1.214	948	1.254	994	1.454	1,169	1.554	1,265
556.5 Kemil	26/7	1.227	1,001	1.267	1,047	1.467	1,223	1.567	1,321
636.0 Kemil	18/1	1.240	937	1.280	986	1.480	1,165	1.580	1,263
636.0 Kemil	24/7	1.277	1,066	1.317	1,114	1.517	1,297	1.617	1,398
636.0 Kemil	26/7	1.290	1,125	1.330	1,174	1.530	1,359	1.630	1,460
795.0 Kemil	24/7	1.392	1,298	1.432	1,352	1.632	1,550	1.732	1,657
795.0 Kemil	26/7	1.408	1,373	1.448	1,428	1.648	1,628	1.748	1,736
795.0 Kemil	45/7	1.363	1,158	1.403	1,209	1.603	1,403	1.703	1,509

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

continued



Covered Conductors – Tree Wire Systems

Aluminum (1350-H19) Compact Conductors*

Size	Strands	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)
1/0 AWG	7	0.636	197	0.668	215	0.868	321	0.968	384
2/0 AWG	7	0.676	231	0.711	251	0.911	363	1.011	429
3/0 AWG	7	0.723	273	0.756	297	0.956	414	1.056	483
4/0 AWG	7	0.775	326	0.808	351	1.008	476	1.108	548
266.8 kcmil	7	0.837	389	0.867	416	1.067	550	1.167	625
336.4 kcmil	19	0.903	469	0.937	497	1.137	640	1.237	721
397.5 kcmil	19	0.959	538	0.990	568	1.190	718	1.290	803
477.0 kcmil	19	1.022	626	1.062	662	1.262	815	1.362	903
556.5 kcmil	19	1.080	712	1.120	752	1.320	912	1.420	1,004
636.0 kcmil	19	1.135	799	1.175	839	1.374	1,005	1.476	1,102
795.0 kcmil	19	1.252	984	1.292	1,049	1.472	1,211	1.572	1,315

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