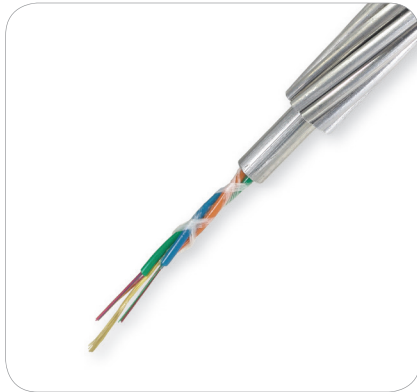


AlumaCore



Temperature Range

Operating -40°C to +85°C

Storage -50°C to +85°C

Installation -30°C to +85°C

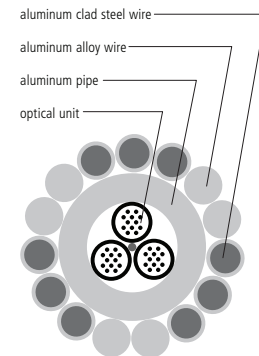
AlumaCore OPGW

AlumaCore Optical Ground Wire is preferred for its performance under the most rugged conditions. Its central aluminum pipe provides superb fiber protection making it ideal for everything from basic installations to those applications requiring high tensions or for extremely long spans.

Features

- Fiber counts up to 144
- Optical unit provides exceptional mechanical and thermal protection for fibers
- Thick-walled aluminum pipe provides hermetic seal for optical units, excellent crush resistance and low resistivity
- Stranded wires selected to optimize mechanical and electrical properties
- Dielectric optical units are available with 6, 8, 12, 18 and 24 fibers
- Supplied with up to 6 optical units, depending on fiber count

Cable Components



Typical Designs

FIBERS (max)	OPGW SIZE	FAULT CURRENT	TOTAL CONDUCTOR AREA		OVERALL DIAMETER		WEIGHT		RBS		SAG10 CHART #	MAX SHIP LENGTH (per reel type)	
		(kA)²sec	in²	mm²	in	mm	lbs/ft	kg/m	lbs	kgf		Wood (m)	Steel (m)
12	AC-57/465	41	0.1210	78.08	0.465	11.8	0.300	0.447	16,214	7,355	1-1421	7,000	7,000
12	AC-29/29/465	51	0.1210	78.08	0.465	11.8	0.224	0.333	10,344	4,692	1-1439	7,000	7,000
12	AC-72/504	56	0.1445	93.21	0.504	12.8	0.368	0.548	20,329	9,221	1-1442	6,500	7,000
12	AC-32/40/504	70	0.1445	93.21	0.504	12.8	0.282	0.420	13,732	6,229	1-917	7,000	7,000
24	AC-64/528	68	0.1510	97.43	0.528	13.4	0.359	0.535	18,391	8,342	1-1450	6,700	7,000
24	AC-29/34/528	81	0.1510	97.43	0.528	13.4	0.281	0.418	12,351	5,602	1-1439	7,000	7,000
24	AC-74/552	81	0.1666	107.51	0.552	14.0	0.405	0.602	21,132	9,585	1-1453	6,000	7,000
24	AC-37/37/552	98	0.1666	107.51	0.552	14.0	0.306	0.455	13,556	6,149	1-1438	7,000	7,000
36	AC-71/571	95	0.1758	113.39	0.571	14.5	0.411	0.611	20,546	9,320	1-1461	5,900	7,000
36	AC-33/38/571	110	0.1758	113.39	0.571	14.5	0.323	0.478	13,779	6,250	1-1438	7,000	7,000
36	AC-86/607	118	0.2002	129.14	0.607	15.4	0.481	0.713	24,829	11,263	1-1457	5,000	6,900
36	AC-40/47/607	141	0.2002	129.14	0.607	15.4	0.375	0.558	16,646	7,551	1-1439	6,500	7,000
48	AC-86/646	151	0.2208	142.43	0.646	16.4	0.509	0.757	25,098	11,384	1-1461	4,700	6,600
48	AC-34/52/646	172	0.2208	142.43	0.646	16.4	0.417	0.621	18,053	8,189	1-1439	5,800	7,000
48	AC-129/724	239	0.2876	185.57	0.724	18.4	0.703	1.046	35,034	15,891	1-1453	3,400	4,700
48	AC-65/65/724	292	0.2876	185.57	0.724	18.4	0.530	0.789	22,524	10,217	1-1438	4,500	5,500
72	AC-88/659	154	0.2232	143.98	0.659	16.7	0.516	0.768	25,556	11,592	1-1461	4,700	6,500
72	AC-38/49/659	177	0.2232	143.98	0.659	16.7	0.414	0.615	17,698	8,028	1-1438	5,800	6,800
72	AC-102/691	182	0.2460	158.96	0.691	17.5	0.582	0.866	29,555	13,406	1-1450	4,100	5,700
72	AC-44/58/691	212	0.2460	158.96	0.691	17.5	0.465	0.692	20,566	9,329	1-1439	5,200	6,800
144	AC-82/646	144	0.2147	138.52	0.646	16.4	0.498	0.741	24,069	10,918	1-1461	4,800	6,500
144	AC-39/43/646	166	0.2147	138.52	0.646	16.4	0.395	0.588	16,145	7,323	1-355	6,100	6,500
144	AC-125/726	230	0.2813	181.48	0.726	18.4	0.6919	1.030	34,882	15,823	1-1453	3,500	4,800
144	AC-58/67/726	277	0.2813	181.48	0.726	18.4	0.5378	0.800	23,286	10,562	1-1439	4,500	6,100

This information denotes the input data needed for Sag10™ (sag and tension calculation) software. WIR files of all these catalog designs can be found on PLS-CADD web page.

NOTE: The designs above are only a sampling of the options available from AFL. Contact customer service for a cable designed to your exact specifications.



APPLICATIONS

ACSS 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 than a comparable ACSR under electrical loadings; 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 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.

SPECIFICATIONS

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

- B 500 Metallic Coated Stranded Steel Core for Use in Overhead Electrical Conductors.
- 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 (ACSR).
- B803 High-Strength Zinc-5% Aluminum-Mischmetal Alloy-Coated Steel Core Wire for Use in Overhead Electrical Conductors.
- B856 Concentric-Lay-Stranded Aluminum Conductors, Coated Steel Supported (ACSS).
- B958 Extra-High-Strength and Ultra-High-Strength Class A Zinc-5% Aluminum-Mischmetal Alloy-Coated Steel Core Wire for Use in Overhead Electrical Conductors.

The strandings available are identical to those listed in ASTM specification B232.

CONSTRUCTION

ACSS is a composite concentric-lay stranded conductor. Steel strands form the central core of the conductor with two or more layers of aluminum 1350-O wire stranded around it. The steel core carries most or all of the mechanical load of the conductor due to the "O" temper (fully annealed or soft) aluminum. Steel core wires are protected from corrosion by a zinc-5% aluminum-mischmetal alloy coating. For aluminum-clad (AW) ACSS, please refer to the ACSS/AW catalog sheet. Corrosion protection should be selected to suit the environment to which the conductor will be exposed.

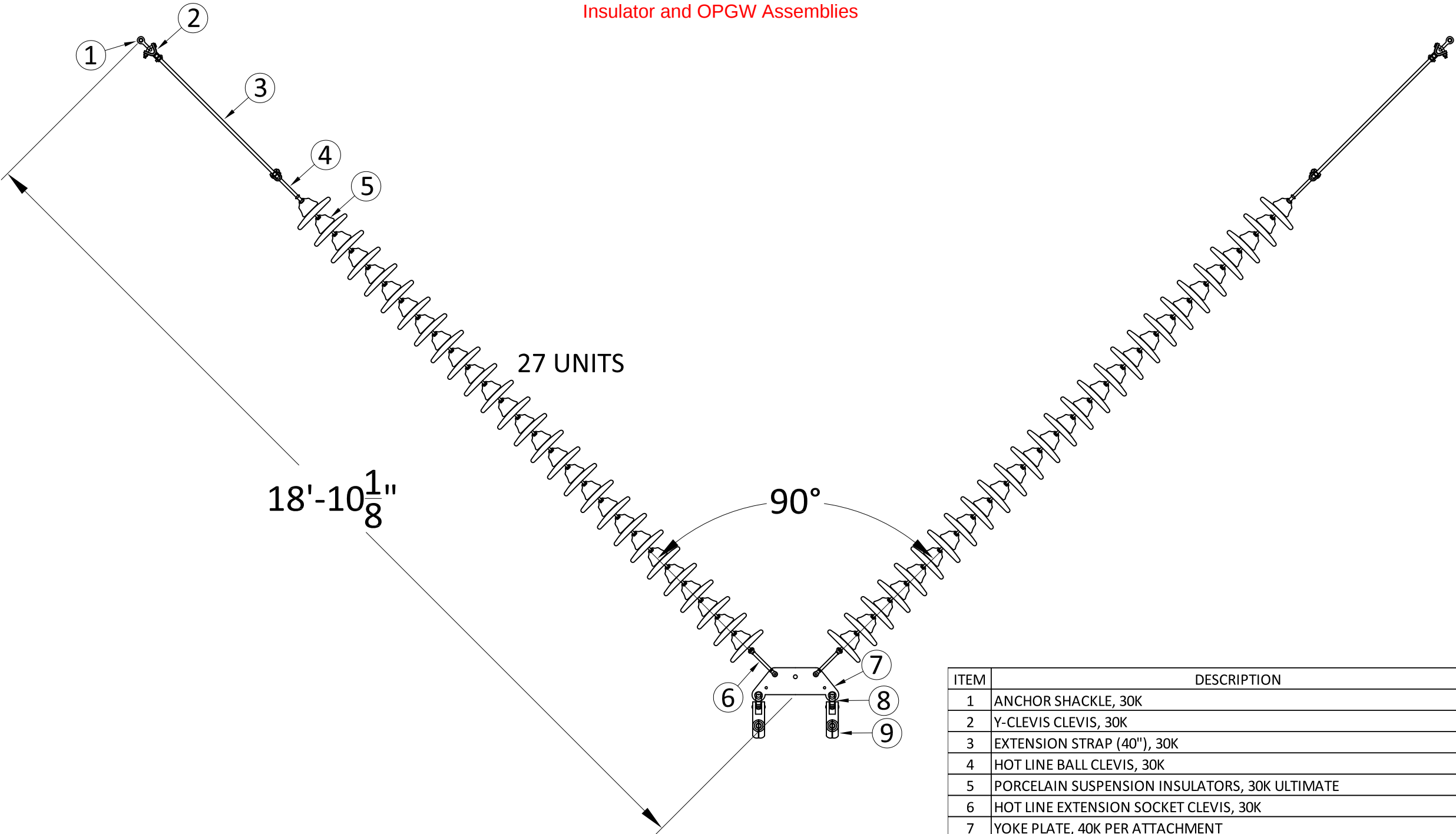
Code Word	Size (kcmil)	Stranding (Al/St)	Diameter (in)				Weight Per 1000 ft (lb)			Rated Strength			Resistance OHMS/1000 ft		Ampacity at 200°C (AMPS)
			Individual Wires		Steel Core	Complete Cable							DC @ 20°C	AC @ 75°C	
			Al	Steel			Al	Steel	Total	Standard Strength lb	High* Strength lb	HS285** Strength lb			
Partridge/ACSS	266.8	26/7	0.1013	0.0788	0.2363	0.642	251.3	115.5	366.8	8880	9730	11400	.0619	.0761	812
Junco/ACSS	266.8	30/7	0.0943	0.0943	0.2829	0.660	251.9	165.5	417.4	11700	13000	15200	.0615	.0756	822
Ostrich/ACSS	300.0	26/7	0.1074	0.0835	0.2506	0.680	282.6	129.9	412.4	10000	10900	12800	.0551	.0677	877
Linnet/ACSS	336.4	26/7	0.1137	0.0885	0.2654	0.720	316.8	145.7	462.5	11200	12300	14400	.0491	.0604	945
Oriole/ACSS	336.4	30/7	0.1059	0.1059	0.3177	0.741	317.6	208.7	526.3	14800	16300	19100	.0488	.0600	957
Brant/ACSS	397.5	24/7	0.1287	0.0858	0.2574	0.772	374.4	137.0	511.4	11000	12100	14100	.0417	.0514	1047
Ibis/ACSS	397.5	26/7	0.1236	0.0962	0.2885	0.783	374.4	172.1	546.5	13000	14200	16500	.0416	.0512	1054
Lark/ACSS	397.5	30/7	0.1151	0.1151	0.3453	0.806	375.3	246.5	621.9	17500	19300	22600	.0413	.0508	1068
Flicker/ACSS	477	24/7	0.1410	0.0940	0.2819	0.846	449.3	164.4	613.6	13000	14200	16400	.0348	.0429	1180
Hawk/ACSS	477	26/7	0.1354	0.1053	0.3160	0.858	449.3	206.5	655.8	15600	17100	19800	.0346	.0427	1188
Hen/ACSS	477	30/7	0.1261	0.1261	0.3783	0.883	450.4	295.9	746.3	21000	22700	26700	.0344	.0424	1204
Dove/ACSS	556.5	26/7	0.1463	0.1138	0.3413	0.927	524.2	240.9	765.1	18200	19900	23200	.0297	.0366	1315
Eagle/ACSS	556.5	30/7	0.1362	0.1362	0.4086	0.953	525.4	345.2	870.6	24500	26500	31100	.0295	.0363	1331
Peacock/ACSS	605	24/7	0.1588	0.1058	0.3175	0.953	569.8	208.5	778.3	16500	18100	20800	.0274	.0339	1379
Squab/ACSS	605	26/7	0.1525	0.1186	0.3559	0.966	569.8	261.9	831.8	19700	21300	25200	.0273	.0337	1389
Wood Duck/ACSS	605	30/7	0.1420	0.1420	0.4260	0.994	571.2	375.3	946.5	26000	28300	33300	.0271	.0334	1407
Teal/ACSS	605	30/19	0.1420	0.0852	0.4260	0.994	571.2	367.4	938.6	26600	29300	34800	.0272	.0335	1406
Rook/ACSS	636	24/7	0.1628	0.1085	0.3256	0.977	599.0	219.2	818.2	17300	19000	21900	.0261	.0322	1425
Grosbeak/ACSS	636	26/7	0.1564	0.1216	0.3649	0.991	599.0	275.4	874.4	20700	22400	26000	.0260	.0321	1435
Scoter/ACSS	636	30/7	0.1456	0.1456	0.4368	1.019	600.5	394.5	995.0	27400	29700	35000	.0258	.0318	1454
Egret/ACSS	636	30/19	0.1456	0.0874	0.4368	1.019	600.5	386.3	986.8	28000	30900	36600	.0258	.0319	1453
Flamingo/ACSS	666.6	24/7	0.1667	0.1111	0.3333	1.000	627.9	229.7	857.6	18200	19900	22900	.0249	.0308	1470
Gannet/ACSS	666.6	26/7	0.1601	0.1245	0.3736	1.014	627.8	288.6	916.4	21700	23400	27300	.0248	.0306	1480
Stilt/ACSS	715.5	24/7	0.1727	0.1151	0.3453	1.036	673.9	246.5	920.5	19500	21300	24600	.0232	.0287	1540
Starling/ACSS	715.5	26/7	0.1659	0.1290	0.3871	1.051	673.9	309.8	983.7	23300	25200	29800	.0231	.0286	1550
Redwing/ACSS	715.5	30/19	0.1544	0.0927	0.4633	1.081	675.6	434.6	1110.1	30800	34000	39800	.0230	.0284	1570
Cuckoo/ACSS	795	24/7	0.1820	0.1213	0.3640	1.092	748.8	274.0	1022.7	21700	23300	26900	.0209	.0259	1650
Drake/ACSS	795	26/7	0.1749	0.1360	0.4080	1.107	748.8	344.2	1093.0	25900	28000	32600	.0209	.0257	1662
Macaw/ACSS	795	42/7	0.1376	0.0764	0.2293	1.055	748.8	108.7	857.5	11800	12600	14300	.0211	.0262	1621
Tern/ACSS	795	45/7	0.1329	0.0886	0.2658	1.063	748.8	146.1	894.9	14200	15200	17400	.0210	.0263	1618
Condor/ACSS	795	54/7	0.1213	0.1213	0.3640	1.092	748.8	274.0	1022.7	21700	23300	26900	.0209	.0266	1618
Mallard/ACSS	795	30/19	0.1628	0.0977	0.4884	1.139	750.6	482.8	1233.4	34300	37900	44300	.0207	.0255	1683
Ruddy/ACSS	900	45/7	0.1414	0.0943	0.2828	1.131	847.7	165.4	1013.1	15800	17000	19200	.0186	.0233	1755
Canary/ACSS	900	54/7	0.1291	0.1291	0.3873	1.162	847.7	310.1	1157.8	24600	26400	30500	.0184	.0236	1756
Redbird/ACSS	954	24/7	0.1994	0.1329	0.3987	1.196	898.5	328.7	1227.3	26000	28000	32300	.0174	.0217	1859

Rail/ACSS	954	45/7	0.1456	0.0971	0.2912	1.165	898.5	175.3	1073.9	16700	18000	20400	.0175	.0220	1824
Towhee/ACSS	954	48/7	0.1410	0.1097	0.3290	1.175	898.5	223.7	1122.3	19700	21300	24300	.0175	.0218	1842
Cardinal/ACSS	954	54/7	0.1329	0.1329	0.3987	1.196	898.6	328.7	1227.3	26000	28000	32300	.0174	.0223	1825
Canvasback/ACSS	954	30/19	0.1783	0.1070	0.5350	1.248	900.7	579.4	1480.1	41100	45400	53100	.0172	.0214	1897
Snowbird/ACSS	1033.5	42/7	0.1569	0.0871	0.2614	1.203	973.4	141.3	1114.7	15400	16500	18500	.0162	.0204	1924
Ortolan/ACSS	1033.5	45/7	0.1515	0.1010	0.3031	1.212	973.4	190.0	1163.4	18100	19500	22000	.0162	.0204	1921
Curlew/ACSS	1033.5	54/7	0.1383	0.1383	0.4150	1.245	973.4	356.2	1329.6	28200	30300	35000	.0161	.0206	1924
Bluejay/ACSS	1113	45/7	0.1573	0.1048	0.3145	1.258	1048.3	204.5	1252.8	19500	21100	23800	.0150	.0190	2017
Finch/ACSS	1113	54/19	0.1436	0.0861	0.4307	1.292	1053.4	375.5	1428.9	30400	33200	38700	.0150	.0193	2015
Bunting/ACSS	1192.5	45/7	0.1628	0.1085	0.3256	1.302	1123.2	219.2	1342.4	21400	23500	25400	.0140	.0178	2110
Pheasant/ACSS	1272	54/19	0.1535	0.0921	0.4604	1.381	1203.9	429.2	1633.0	34100	37300	43000	.0131	.0169	2200
Dipper/ACSS	1351	45/7	0.1733	0.1155	0.3465	1.386	1272.5	248.3	1520.8	23700	25500	28800	.0124	.0158	2289
Martin/ACSS	1351	54/19	0.1582	0.0949	0.4745	1.424	1278.7	455.8	1734.5	36200	39600	45600	.0123	.0160	2288
Bobolink/ACSS	1431	45/7	0.1783	0.1189	0.3566	1.427	1347.8	263.0	1610.8	25100	27000	30500	.0117	.0150	2375
Plover/ACSS	1431	54/19	0.1628	0.0977	0.4884	1.465	1354.4	482.8	1837.2	38400	41900	48300	.0117	.0151	2375
Nuthatch/ACSS	1510	45/7	0.1832	0.1221	0.3664	1.465	1422.2	277.5	1699.8	26500	28100	31800	.0111	.0143	2459
Parrot/ACSS	1510	54/19	0.1672	0.1003	0.5017	1.505	1429.2	509.5	1938.6	40400	44200	51000	.0110	.0144	2460
Ratite/ACSS	1590	42/7	0.1946	0.1081	0.3243	1.492	1497.6	217.4	1715.0	23400	25000	27900	.0105	.0136	2543
Lapwing/ACSS	1590	45/7	0.1880	0.1253	0.3759	1.504	1497.6	292.2	1789.8	27900	29600	33500	.0105	.0136	2543
Falcon/ACSS	1590	54/19	0.1716	0.1030	0.5148	1.544	1504.9	536.5	2041.4	42600	46600	53700	.0105	.0137	2545
Chukar/ACSS	1780	84/19	0.1456	0.0873	0.4367	1.601	1684.7	386.1	2070.8	35400	38200	43900	.0094	.0122	2751
Mockingbird/ACSS	2034.5	72/7	0.1681	0.1121	0.3362	1.681	1925.6	233.7	2159.3	27200	28900	32000	.0083	.0110	2960
Roadrunner/ACSS	2057	76/19	0.1645	0.0768	0.3839	1.700	1946.9	298.3	2245.2	31700	33900	38300	.0082	.0108	2992
Bluebird/ACSS	2156	84/19	0.1602	0.0961	0.4806	1.762	2040.6	467.6	2508.2	42100	45500	51700	.0078	.0103	3106
Kiwi/ACSS	2167	72/7	0.1735	0.1157	0.3470	1.735	2051.0	248.9	2299.9	29000	30800	34100	.0078	.0104	3080
Thrasher/ACSS	2312	76/19	0.1744	0.0814	0.4070	1.802	2188.2	335.3	2523.5	35600	38100	43000	.0073	.0098	3218
Joree/ACSS	2515	76/19	0.1819	0.0849	0.4245	1.880	2380.4	364.7	2745.1	38700	41400	46800	.0067	.0092	3390

Notes:

- (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 a steel conductivity of 8% IACS at 20°C.
 - (3) Ampacity based on a 200°C conductor temperature, 25°C ambient temperature, 2 ft/sec. wind, in sun, with an emissivity of 0.5 and a coefficient of solar absorption of 0.5, at sea level.
 - (4) Rated strength for standard strength 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 B 803.
- * Designated by "/HS" (e.g. Drake/ACSS/HS)
- ** Designated by "/HS285" (e.g. Drake/ACSS/HS285)

Insulator and OPGW Assemblies

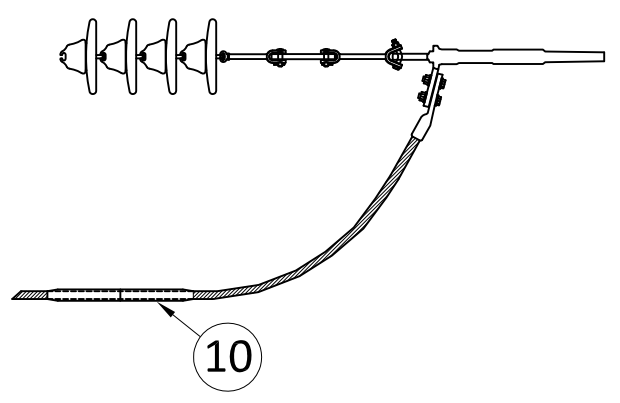
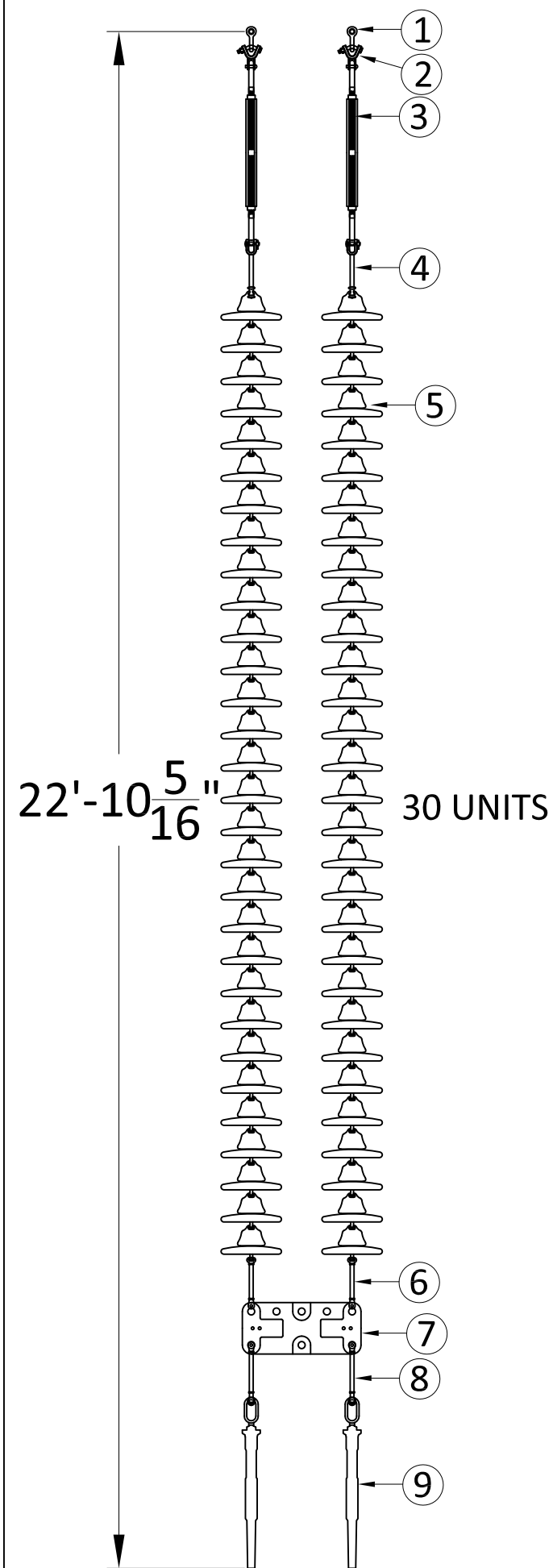


ITEM	DESCRIPTION	MANUFACTURER	PART NUMBER	QUANTITY
1	ANCHOR SHACKLE, 30K	HUBBELL	AS25WBNK	2
2	Y-CLEVIS CLEVIS, 30K	HUBBELL	YCC30	2
3	EXTENSION STRAP (40"), 30K	HUBBELL	ES30781940	2
4	HOT LINE BALL CLEVIS, 30K	HUBBELL	HBC30	2
5	PORCELAIN SUSPENSION INSULATORS, 30K ULTIMATE	LAPP	5960A-70	54
6	HOT LINE EXTENSION SOCKET CLEVIS, 30K	HUBBELL	HSC100	2
7	YOKE PLATE, 40K PER ATTACHMENT	HUBBELL	930064004	1
8	STANDARD CLEVIS EYE, 30K	AFL	SCE-55-1375	2
9	HIBUS, CONDUCTOR SUSPENSION CLAMP, 25K	AFL	HCSHT1116	2

30K ULTIMATE CAPACITY PER STRING
15K WORKING CAPACITY PER STRING
WEIGHT OF ASSEMBLY

867.69 LB

STANDARD V-STRING SUSPENSION
(0 TO 3 DEG)

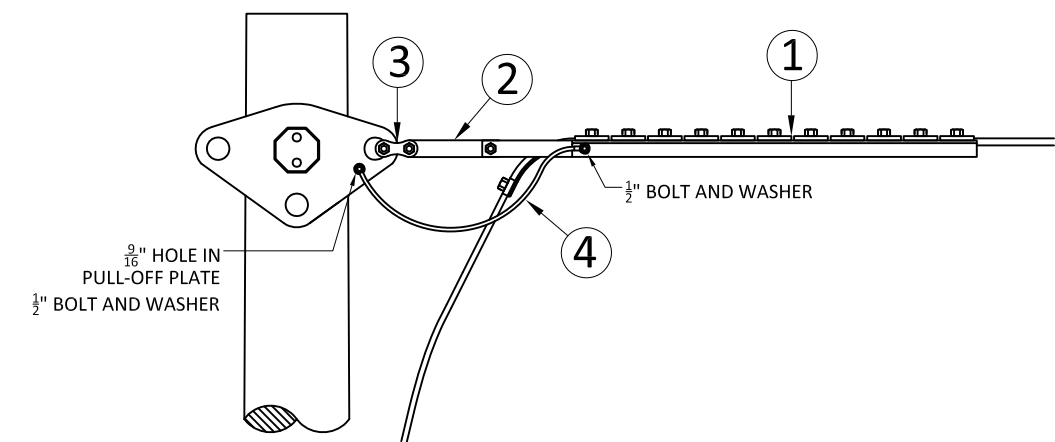


ITEM	DESCRIPTION	MANUFACTURER	PART NUMBER	QUANTITY
1	ANCHOR SHACKLE, 30K	HUBBELL	AS25WBNK	2
2	Y-CLEVIS CLEVIS, 30K	HUBBELL	YCC30	2
3	TURNBUCKLE (32\"), 36K	HUBBELL	TB78EE18	2
4	HOT LINE BALL CLEVIS, 50K	HUBBELL	HBC50	2
5	PORCELAIN SUSPENSION INSULATORS, 40K ULTIMATE	LAPP	61236H-70	60
6	HOT LINE EXTENSION SOCKET CLEVIS, 50K	HUBBELL	HSC110501	2
7	YOKE PLATE, 60K PER ATTACHMENT	HUBBELL	YPR6019401	1
8	HOT LINE Y-CLEVIS CLEVIS, 30K	HUBBELL	HYCC30	2
9	HI TEMP COMPRESSION DEAD END ASSEMBLY (MALLARD ACSS)	AFL	E33143HTEHV	2
10	HI TEMP JUMPER CONNECTOR (MALLARD ACSS)	AFL	5030.122HT	1

60K ULTIMATE CAPACITY PER ASSEMBLY
40K WORKING CAPACITY PER ASSEMBLY
WEIGHT OF ASSEMBLY

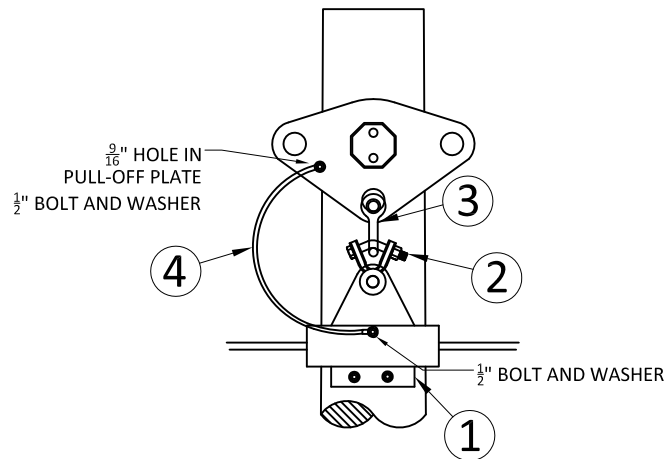
1116.725 LB

STANDARD STRAIN ASSEMBLY



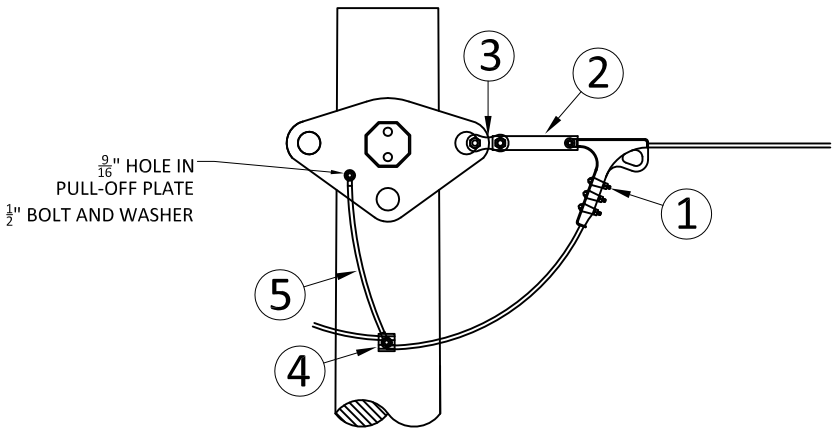
ITEM	DESCRIPTION	MANUFACTURER	PART NUMBER	QUANTITY
1	BOLTED DEAD END FOR OPGW, 29.6K	AFL	ODEC690/699G11	1
2	EXTENSION LINK (10")	AFL	ODELP10	1
3	Y-CLEVIS CLEVIS	AFL	YCC	1
4	GROUNDING LEAD	AFL	BWAL50H/50H-36	1

OPGW DEAD END ASSEMBLY



ITEM	DESCRIPTION	MANUFACTURER	PART NUMBER	QUANTITY
1	HIBUS, OPGW SUSPENSION CLAMP, 20K FOR OPGW	AFL	HOS682/696	1
1	HIBUS, OPGW SUSPENSION CLAMP, 20K FOR OHGW	AFL	HOS532/546	1
2	Y-CLEVIS EYE	HUBBELL	YCS0690	1
3	ANCHOR SHACKLE	HUBBELL	AS25WBNK	1
4	GROUNDING LEAD	AFL	BWAL50H/50H-36	1

OPGW & OHGW SUSPENSION ASSEMBLY



ITEM	DESCRIPTION	MANUFACTURER	PART NUMBER	QUANTITY
1	BOLTED QUADRANT STRAIN CLAMP, ALUMINUM	HUBBELL	SD86	1
2	EXTENSION LINK (10")	HUBBELL	ES30781910	1
3	Y-CLEVIS CLEVIS	HUBBELL	YCC30	1
4	BONDING CLAMP	AFL	OBCF2F21M	1
5	GROUNDING LEAD	AFL	BWAL50H/50H-36	1

OHGW DEAD END ASSEMBLY

Alumoweld™ Wire and Strand



Applications

- Utility Market
- Telecommunications Market
- Military
- General Industry Applications

Alumoweld wire consists of a thick cladding of pure aluminum over a high-strength steel core. Alumoweld wire offers the advantages of each metal. It is ideal for overhead ground wire, neutral messengers, line wire and guy strand. Alumoweld wire and strand is used by power utilities, as well as formed wire and optical ground wire manufacturers. Alumoweld outlasts other options by as much as 200% in corrosive environments, significantly lowering maintenance and replacement costs. When compared to solid aluminum wire, Alumoweld offers tremendous savings.

How is Alumoweld made?

The Alumoweld process consists of a continuous application of a pure atomized aluminum powder to a high strength steel rod. Proper control of heat and pressure refines the cladding and develops a controlled atomic weld. The resulting bimetallic rod is then cold drawn into finished wire sizes without changing original proportions of aluminum and steel.

Features

Thick Aluminum Covering

Alumoweld wire is produced with the concentric aluminum covering comprising 25% of the cross-sectional area, with the aluminum thickness 10% minimum of the wire radius. The high proportion of aluminum offers an excellent degree of electrical conductivity and permanently protects the high strength steel core.

High Conductivity

Compared to solid aluminum wire of the same diameter, Alumoweld wire has a direct current conductance of 33%. It has about three times the conductivity of galvanized steel wire. For high frequency currents where "skin effect" is a factor, the conductivity of Alumoweld wire approaches 100% of solid aluminum. When Alumoweld wires are combined with aluminum wires in composite conductors, a wide range of strength and conductivity characteristics is possible.

Corrosion Resistance

The thick aluminum cladding of Alumoweld wire provides a high degree of corrosion resistance, resulting in longer service life and reduced maintenance. Accelerated laboratory tests exposing Alumoweld wire to various types of corrosive conditions have proven that Alumoweld wires have corrosion resistance comparable to EC grade aluminum. The conditions simulated in the test included industrial, marine and tropical.

Combines High Strength with Low Weight

Alumoweld wire has a higher strength-to-weight ratio than any other wire commonly used on overhead lines. Size for size, it has about the same tensile strength as extra high strength steel wire, but weighs less. It has eight times the strength of solid aluminum wire of the same diameter and only a little more than twice the weight. This high strength-to-weight ratio provides a maximum margin of safety for long-span construction. The strength of Alumoweld's steel core is protected by the thick aluminum covering.

Alumoweld™ Overhead Ground Wire



Applications

- Overhead ground wire
- Shield wire protecting transmission lines against lightning damage

Alumoweld wire and strand is used by power utilities, as well as formed wire and optical ground wire manufacturers. Alumoweld outlasts other options by as much as 200% in corrosive environments, significantly lowering maintenance and replacement costs. When compared to solid aluminum wire, Alumoweld offers tremendous savings.

Features

Corrosion Resistance

Alumoweld overhead ground wire has excellent corrosion resistance. Its strength and conductivity remain unchanged in any atmosphere where aluminum is satisfactory, especially those known to be corrosive from industrial or atmospheric conditions.

This assurance against corrosion is obtained through the application of a thick covering of pure aluminum, which provides a substantial barrier of protective metal. The minimum cladding thickness of Alumoweld is 10% of the radius of the wire. The cladding has a continuous, strong metallic bond to the steel core that will not crack or flake.

Strength Comparable to Steel

Alumoweld also provides strength greater than or comparable to other overhead ground wires. For commonly used wire sizes, the tensile strength of the individual wire can approach 200,000 pounds per square inch. When used in a strand for overhead ground wire, this high strength permits greater span lengths, less sag, and heavier loads under storm loading conditions.

Lightweight

Directly related to strength and sag performance is the lighter weight of Alumoweld. Due to its thick cladding of aluminum, Alumoweld is 15% lighter than a steel strand of equivalent size. This lighter weight, combined with high strength, permits Alumoweld to be installed to the same sags as steel with correspondingly lower tensions and lower stresses on the towers or supporting structures.

Alumoweld™ Overhead Ground Wire (cont.)

ALUMOWELD STRAND ASTM B-416												
NUMBER & SIZE OF WIRES	NOMINAL WIRE DIAMETER		NOMINAL STRAND DIAMETER		BREAKING LOAD		WEIGHT		RESISTANCE		CROSS SECTION	
	AWG	IN	MM	IN	MM	LB	KG	LB/1000 FT	KG/ KM	OHMS/1000 FT@68°F	OHMS/ KM@20°C	SQ IN
37 No. 6	0.1620	4.115	1.130	28.80	120,200	54,500	2222.00	3307.0	0.05356	0.1757	0.76264	492.20
37 No. 7	0.1443	3.665	1.010	25.70	100,700	45,690	1762.00	2623.0	0.06754	0.2216	0.60509	390.30
37 No. 8	0.1285	3.264	0.899	22.90	84,200	38,190	1398.00	2080.0	0.08516	0.2794	0.47984	309.50
37 No. 9	0.1144	2.906	0.801	20.30	66,770	30,290	1108.00	1649.0	0.10740	0.3523	0.38032	245.50
37 No.10	0.1019	2.588	0.713	17.90	52,950	24,020	879.00	1308.0	0.13540	0.4443	0.30174	194.70
19 No. 5	0.1819	4.620	0.910	23.10	73,350	33,270	1430.00	2129.0	0.08224	0.2698	0.49438	318.70
19 No. 6	0.1620	4.115	0.810	20.60	61,700	27,990	1134.00	1688.0	0.10370	0.3402	0.39163	252.70
19 No. 7	0.1443	3.665	0.721	18.30	51,730	23,460	899.50	1339.0	0.13080	0.4290	0.31073	200.40
19 No. 8	0.1285	3.264	0.642	16.30	43,240	19,610	713.50	1062.0	0.16490	0.5409	0.24641	158.90
19 No. 9	0.1144	2.906	0.572	14.50	34,290	15,550	565.80	842.0	0.20790	0.6821	0.19530	126.10
19 No.10	0.1019	2.588	0.509	12.90	27,190	12,330	448.70	667.7	0.26220	0.8601	0.15495	99.96
7 No. 5	0.1819	4.620	0.546	13.90	27,030	12,260	524.90	781.1	0.22640	0.7426	0.18193	117.40
7 No. 6	0.1620	4.115	0.486	12.40	22,730	10,310	416.30	619.5	0.28030	0.9198	0.14435	93.10
7 No. 7	0.1443	3.665	0.433	11.00	19,060	8,645	330.00	491.1	0.35350	1.1600	0.11448	73.87
7 No. 8	0.1285	3.264	0.385	9.78	15,930	7,226	261.80	389.6	0.44580	1.4630	0.09077	58.56
7 No. 9	0.1144	2.906	0.343	8.71	12,630	5,729	207.60	308.9	0.56210	1.8440	0.07198	46.44
7 No.10	0.1019	2.588	0.306	7.76	10,020	4,545	164.70	245.1	0.70880	2.3250	0.05708	36.83
7 No.11	0.0907	2.304	0.272	6.91	7,945	3,604	130.60	194.4	0.89380	2.9320	0.04527	29.21
7 No.12	0.0808	2.052	0.242	6.16	6,301	2,858	103.60	154.2	1.12700	3.6970	0.03590	23.16
3 No. 5	0.1819	4.620	0.392	9.96	12,230	5,547	224.50	334.1	0.51770	1.6990	0.07796	50.32
3 No. 6	0.1620	4.115	0.349	8.87	10,280	4,663	178.10	265.0	0.65280	2.1420	0.06185	39.90
3 No. 7	0.1443	3.665	0.311	7.90	8,621	3,910	141.20	210.1	0.82320	2.7010	0.04905	31.65
3 No. 8	0.1285	3.264	0.277	7.03	7,206	3,269	112.00	166.7	1.03800	3.4060	0.03890	25.10
3 No. 9	0.1144	2.906	0.247	6.26	5,715	2,592	88.81	132.2	1.30900	4.2940	0.03085	19.90
3 No.10	0.1019	2.588	0.220	5.58	4,532	2,056	70.43	104.8	1.65100	5.4150	0.02446	15.78

ALUMOWELD STRAND ASTM B-415												
No. 4	0.2043	5.189	115	109.0	5,081	2,305	93.63	139.3	1.222	4.009	0.03278	21.15
No. 5	0.1819	4.620	165	116.0	4,290	1,946	74.25	110.5	1.541	5.056	0.02599	16.77
No. 6	0.1620	4.115	175	123.0	3,608	1,637	58.88	87.6	1.943	6.375	0.02062	13.30
No. 7	0.1443	3.665	185	130.1	3,025	1,372	46.69	69.5	2.450	8.038	0.01635	10.55
No. 8	0.1285	3.264	195	137.1	2,529	1,147	37.03	55.1	3.089	10.130	0.01297	8.37
No. 9	0.1144	2.906	195	137.1	2,005	909	29.37	43.7	3.896	12.780	0.01028	6.63
No.10	0.1019	2.588	195	137.1	1,590	721	23.29	34.7	4.912	16.120	0.00816	5.26
No.11	0.0907	2.304	195	137.1	1,261	572	18.47	27.5	6.194	20.320	0.00647	4.17
No.12	0.0808	2.052	195	137.1	1,000	454	14.65	21.8	7.811	25.630	0.00513	3.31

Modulus of Elasticity: Strand 23,000,000; Solid Wire 23,500,000. Coefficient of Linear Expansion: 0.000,007,2 per degree F.
 Modulus of Elasticity: Strand 16,200 kg/mm²; Solid Wire 16,500 kg/mm². Coefficient of Linear Expansion: 0.000,013 per degree C.

ALUMOWELD™