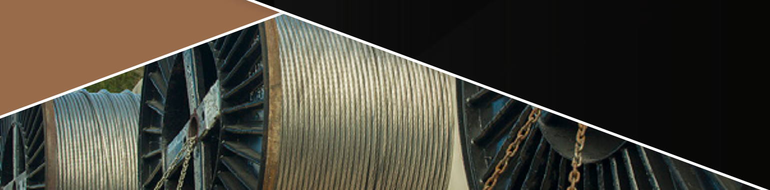
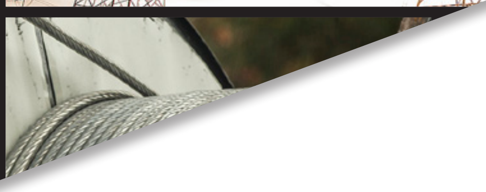
Southwire®

C7® OVERHEAD CONDUCTOR BROCHURE





SOUTHWIRE.COM

INNOVATION STARTS AT THE CORE

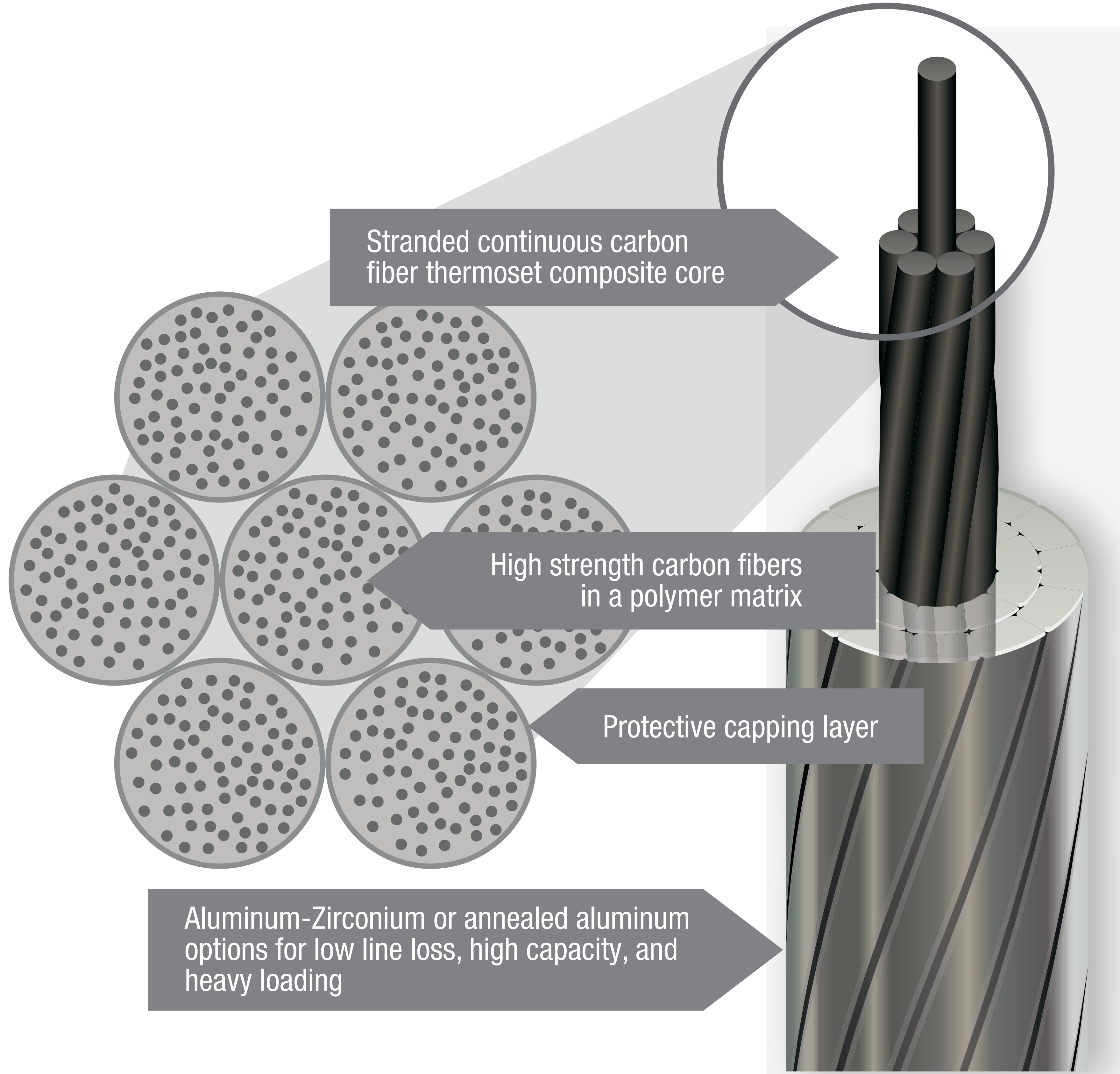
Lighter, Stronger, Tougher.
Southwire is revolutionizing the industry with its innovative C^{7}® Overhead Conductor. With its unique stranded construction, Southwire's C^{7}® Overhead Conductor is the most durable, rugged, and reliable composite core conductor on the market - and the only composite core conductor developed by a conductor manufacturer with full knowledge of utility needs and practices.

INTRODUCING C7®
OVERHEAD CONDUCTOR

- **Minimal Thermal Expansion** – minimal sag increase at high power transfer
- **Stranded Core** – no single point of failure
- **Flexible** – robust, installs like traditional conductor
- **Less Sag** – for lines with clearance or structure limitations
- **Easy Installation** – uses traditional methods and familiar hardware
- **Designs For All Loading Conditions** – light loading to heavy ice loading
- **Trapezoidal Wire (TW) or Round Wire Available**
- **Aluminum-Zirconium (Al-Zr) or Annealed Aluminum (1350-O Temper)**

New Lines:
Reduce new line costs by saving on structures and foundations. Cross challenging terrain or reduce the visual profile in sensitive areas. Build for the future with high capacity, low sag lines.

Reconductoring:
Double the capacity of existing ACSR lines. Light conductor weight and low sag allow use of existing structures and ROW, even for lines previously designed with all-aluminum or aluminum alloy (AAC, AAAC, ACAR) conductors.



PERFORMANCE ADVANTAGES

Proven Robust Materials
- Matrix materials have been used in demanding environments for over 50 years
- Resists harsh chemicals, high temperatures, and corrosion
- Resistant to abrasion and high-tension fatigue

Low Sag
- Minimal sag increase at high temperature
- For lines with clearance or structure limitations
- Reduce land requirements, structure size and height, and foundation costs
- Overcome objections to high-visual-profile lines
- Capacity for future system rating increases without sag increase consideration

Stranded Core
- Multi-strand, NO single-point of failure like single-rod designs
- More flexible than single-rod core designs
- Increased tolerance for bending

Suitable for Extreme Weather Loading
- Al-Zr option bolsters carbon fiber to carry heavy ice and wind loads with low sag

Increase Capacity
- Double the capacity of same-diameter ACSR round-wire conductor
- 180°C continuous, 200°C emergency ratings are material property based
- No losses due to core magnetization

Conventional Installation & Inspection
- Uses standard work practices and traditional hardware
- Same stringing blocks and installation equipment as ACSS

CASE STUDY: RECONDUCTORING

C7® Overhead Conductor Solves Erosion Issue:
A utility in the U.S. was planning to reconductor an existing 138 kV transmission line in a residential area to address encroaching erosion at a nearby river. To prevent issues related to river bank erosion near a structure, the utility was planning to move the structure further inland. The move would increase the river crossing span by approximately 168 meters, to 561 meters. The existing conductor was 402.8 mm² 26/7 ACSR "Drake". The conductor solution was required to maintain existing clearances (design considerations limited sag to 12 meters) while also maintaining existing ampacity and tensions. The design considered NESC "Heavy" loading with an additional Extreme Ice/Wind load.

C7® Overhead Conductor was pinpointed early on for its high-temperature, low-sag properties and its corrosion resistance. The proposed solution utilized a 7-strand carbon fiber thermoset core with trapezoidal-shaped annealed aluminum strands. Due to its high conductivity and high temperature rating, the C7® overhead conductor solution, 241.7 mm² Type 23 ACCS/TW/C7-TS, required 40% less aluminum to maintain the existing rating. The high strength of the carbon fiber composite core also allowed for a 16% smaller core to be used.

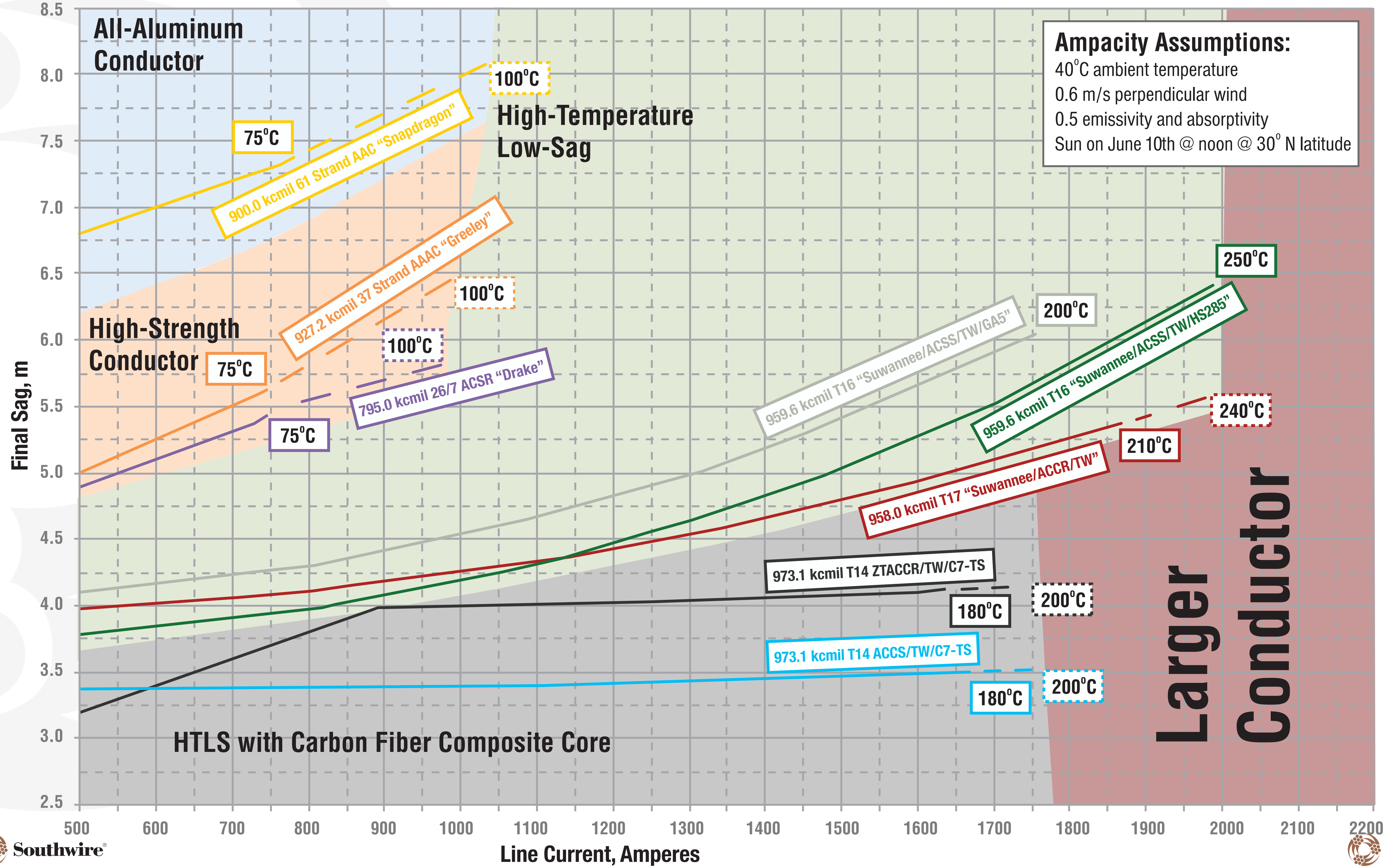
Showing Up and Showing Out:
Using the C7® overhead conductor solution, the sag in the 561-m span decreased by 66% compared to the existing Drake. Conductor weight also decreased by 53%. .

Conductor Type	Size mm²	Stranding/ Type No.	Outside Diameter mm	Weight kg/m	RBS kN	Evaluation Results					
						Max Tension		Loaded Weight kg/m	Cond. Temp. °C	Current A	Final Sag m
						kg	%RBS				
ACSR*	402.8	26/7	28.1	1.627	140	5,661	40%	4.409	100	994	29.87
ACCS/TW/C7-TS	241.7	23	20.8	0.760	129	5,455	41%	3.167	180	1049	10.24

*Sag-tension results assume movement of the structure and use of existing Drake

COMPARING THE
ALTERNATIVES

Conductor Performance Map, 28.1 mm OD, 244m RS, NESC "Medium", NESC Tension Limits



Shaped Wire Concentric-Lay-Stranded Compact Aluminum Conductor, Composite Supported (ACCS/TW/C7®-TS)

Code Word	Conductor Size, mm²	Type No.	Cross-Sectional Area, mm²		Layers of Al-Zr	Stranding		Diameter		Weight/km		
			Al-Zr	Total		No. of Al-Zr Strands	C7 Strands, mm	C7 Core, mm	Complete Conductor, mm	Al-Zr, kg	C7, kg	Total, kg
Fundy/TW	103.0	43	103.0	147.1	1	8	7 x 2.83	8.5	14.9	289.0	71.7	360.7
Shenandoah/TW	135.2	21	135.2	163.4	1	8	7 x 2.27	6.8	15.4	379.5	46.0	425.3
Olympic/TW	164.7	17	164.7	192.9	2	20	7 x 2.27	6.8	**17.0**	460.1	46.0	506.1
Wrangell/TW	170.5	17	170.5	198.7	2	20	7 x 2.27	6.8	17.3	476.4	46.0	522.3
Badlands/TW	170.5	22	170.5	207.6	2	20	7 x 2.60	7.8	17.4	476.4	60.4	536.8
Andes/TW	201.4	14	201.4	229.7	2	18	7 x 2.27	6.8	18.0	562.7	46.0	608.5
Joshua Tree/TW	201.4	16	201.4	234.0	2	18	7 x 2.43	7.3	18.2	555.8	53.0	608.8
Sequoia/TW	201.4	22	201.4	245.5	2	18	7 x 2.83	8.5	18.7	562.7	71.7	634.4
Rogers/TW	241.7	13	241.7	274.3	2	18	7 x 2.43	7.3	19.8	665.8	53.0	719.2
Yosemite/TW	241.7	15	241.7	278.8	2	18	7 x 2.60	7.8	20.0	675.2	60.4	735.6
Capitol Reef/TW	241.7	23	241.7	296.8	2	20	7 x 3.17	9.5	**20.8**	670.3	89.6	759.9
Tortugas/TW	322.3	10	322.3	354.8	2	20	7 x 2.43	7.3	22.4	888.0	53.0	941.0
Yellowstone/TW	322.3	12	322.3	359.4	2	16	7 x 2.60	7.8	22.5	900.9	60.4	961.4
Glacier/TW	322.3	15	322.3	371.7	2	20	7 x 3.00	9.0	23.0	900.6	80.5	981.0
Carlsbad/TW	322.3	22	322.3	393.5	2	20	7 x 3.60	10.8	23.8	900.6	115.8	1016.4
Congaree/TW	325.2	11	325.2	362.3	2	16	7 x 2.60	7.8	**22.6**	909.0	60.4	969.4
Vinson/TW	361.8	10	361.8	399.0	2	16	7 x 2.60	7.8	23.7	996.9	60.4	1057.3
Kilimanjaro/TW	402.8	7	402.8	431.1	2	20	7 x 2.27	6.8	24.4	1108.8	46.0	1154.8
Alps/TW	402.8	9	402.8	440.0	2	20	7 x 2.60	7.8	24.7	1125.8	60.4	1186.2
Wind Cave/TW	402.8	12	402.8	452.3	2	20	7 x 3.00	9.0	25.1	1125.8	80.5	1206.2
Denali/TW	402.8	16	402.8	468.9	2	20	7 x 3.47	10.4	25.7	1111.7	107.4	1219.1
Rocky/TW	402.8	22	402.8	490.8	2	24	7 x 4.00	12.0	26.5	1125.5	143.0	1268.5
Crater Lake/TW	483.4	7	483.4	515.9	3	34	7 x 2.43	7.3	26.9	1337.3	53.0	1390.1
Grand Canyon/TW	483.4	10	483.4	532.9	3	34	7 x 3.00	9.0	27.2	1338.5	80.5	1419.0
Fuji/TW	483.4	12	483.4	543.3	2	20	7 x 3.30	9.9	27.4	1351.0	97.3	1448.3
Jasper/TW	483.4	16	483.4	560.0	2	22	7 x 3.73	11.2	28.0	1334.0	124.6	1458.6
Arches/TW	483.4	20	483.4	578.8	2	20	7 x 4.17	12.5	**28.6**	1351.0	155.2	1506.0
Everglades/TW	493.1	14	493.1	564.3	2	20	7 x 3.60	10.8	**28.1**	1377.9	115.8	1493.8
Big Bend/TW	523.7	5	523.7	551.9	3	34	7 x 2.27	6.8	27.8	1447.2	46.0	1493.2
Lassen/TW	523.7	7	523.7	560.8	3	34	7 x 2.60	7.8	28.0	1448.6	60.4	1509.0
Tahoe/TW	523.7	11	523.7	578.8	3	34	7 x 3.17	9.5	28.4	1459.7	89.6	1549.5
Samoa/TW	523.7	13	523.7	589.7	2	22	7 x 3.47	10.4	28.7	1443.7	107.4	1551.1
Cook/TW	564.0	5	564.0	592.2	3	30	7 x 2.27	6.8	28.6	1558.6	46.0	1604.5
Blanc/TW	564.0	7	564.0	601.2	3	34	7 x 2.60	7.8	28.9	1560.0	60.4	1620.5
Niagara/TW	564.0	10	564.0	619.1	3	34	7 x 3.17	9.5	29.3	1561.5	89.6	1651.3
Gannett/TW	564.0	13	564.0	635.2	3	38	7 x 3.60	10.8	30.0	1563.9	115.8	1679.7
Washington/TW	604.2	5	604.2	632.5	3	34	7 x 2.27	6.8	29.6	1669.9	46.0	1715.9
Elbert/TW	604.2	7	604.2	648.4	3	34	7 x 2.83	8.5	30.1	1671.5	71.7	1743.2
Kings Canyon/TW	604.2	10	604.2	664.1	3	34	7 x 3.30	9.9	30.6	1673.1	97.3	1770.5
Acadia/TW	604.2	13	604.2	680.9	3	38	7 x 3.73	11.2	31.1	1675.5	124.6	1800.2
Redwood/TW	625.1	7	625.1	669.2	3	38	7 x 2.83	8.5	30.6	1729.1	71.7	1800.8
Mesa Verde/TW	625.1	10	625.1	685.0	3	38	7 x 3.30	9.9	31.0	1730.7	97.3	1828.2
Biscayne/TW	625.1	13	625.1	707.3	3	38	7 x 3.87	11.6	**31.6**	1733.3	133.6	1866.9
Saguaro/TW	644.5	5	644.5	677.1	3	38	7 x 2.43	7.3	30.8	1781.2	53.0	1834.2
Sierra Nevada/TW	644.5	7	644.5	688.6	3	38	7 x 2.83	8.5	31.1	1783.0	71.7	1854.7
Eldorado/TW	644.5	10	644.5	710.6	3	38	7 x 3.47	10.4	31.6	1784.8	107.4	1892.1
Voyageurs/TW	644.5	13	644.5	726.7	3	39	7 x 3.87	11.6	32.0	1787.3	133.6	1920.9
Cascades/TW	684.8	7	684.8	734.3	3	38	7 x 3.00	9.0	32.1	1894.4	80.5	1974.8
Banff/TW	684.8	10	684.8	750.9	3	42	7 x 3.47	10.4	32.5	1896.2	107.4	2003.7
Elbrus/TW	684.8	13	684.8	772.8	3	42	7 x 4.00	12.0	33.0	1899.0	143.0	2042.1
Bryce Canyon/TW	805.7	7	805.7	860.8	3	36	7 x 3.17	9.5	34.5	2228.7	89.6	2318.3
Adirondack/TW	805.7	10	805.7	887.9	3	38	7 x 3.87	11.6	35.2	2230.9	133.6	2364.5
Zion/TW	805.7	12	805.7	901.1	3	42	7 x 4.17	12.5	**35.7**	2246.2	155.2	2401.5
Teton/TW	901.9	5	901.9	951.4	3	38	7 x 3.00	9.0	36.1	2492.5	80.5	2573.0
Everest/TW	901.9	8	901.9	973.2	3	38	7 x 3.60	10.8	36.6	2491.3	115.8	2607.1
Katmai/TW	901.9	10	901.9	989.9	3	38	7 x 4.00	12.0	37.2	2497.4	143.0	2640.5

Notes: (1) The final design of a TW conductor is contingent upon several factors such as: layer diameter, wire width, and wire thickness. This may result in a slight variation in the number of wires, number of layers, and outside diameter from that shown in the table.
(2) Resistance and ampacity based on an aluminum-zirconium alloy conductivity of 60% IACS at 20°C.

RBS, kN	Resistance				GMR, m	Reactance @ 0.3m Spacing 60 Hz		Ampacity		Type No.	Conductor Size, mm²	Code Word
	dc @ 20°C, Ω/km	ac–60 Hz @ 25°C, Ω/km	ac–60 Hz @ 180°C, Ω/km	ac–60 Hz @ 200°C, Ω/km		Inductive Xa, Ω/km	Capacitive X'a, MΩ-km	@ 180°C, A	@ 200°C, A			
98.3	0.2762	0.2820	0.4599	0.4829	0.0062	0.2932	0.1773	644	677	43	103.0	Fundy/TW
66.7	0.2105	0.2151	0.3506	0.3681	0.0062	0.2935	0.1754	746	784	21	135.2	Shenandoah/TW
68.5	0.1721	0.1759	0.2867	0.3010	0.0070	0.2841	0.1708	851	894	17	164.7	Olympic/TW
68.9	0.1662	0.1700	0.2770	0.2908	0.0071	0.2832	0.1701	869	914	17	170.5	Wrangell/TW
87.6	0.1662	0.1699	0.2769	0.2907	0.0073	0.2815	0.1698	871	916	22	170.5	Badlands/TW
70.7	0.1406	0.1440	0.2344	0.2461	0.0073	0.2819	0.1680	957	1006	14	201.4	Andes/TW
79.6	0.1389	0.1422	0.2315	0.2431	0.0074	0.2804	0.1675	966	1016	16	201.4	Joshua Tree/TW
104.1	0.1406	0.1438	0.2343	0.2459	0.0077	0.2769	0.1662	969	1019	22	201.4	Sequoia/TW
81.8	0.1156	0.1186	0.1929	0.2025	0.0079	0.2752	0.1637	1085	1141	13	241.7	Rogers/TW
91.6	0.1172	0.1201	0.1954	0.2051	0.0081	0.2738	0.1632	1082	1138	15	241.7	Yosemite/TW
129.4	0.1163	0.1191	0.1939	0.2036	0.0087	0.2677	0.1613	1100	1157	23	241.7	Capitol Reef/TW
86.3	0.0867	0.0893	0.1448	0.1520	0.0090	0.2657	0.1579	1300	1369	10	322.3	Tortugas/TW
96.1	0.0879	0.0905	0.1469	0.1542	0.0091	0.2652	0.1574	1294	1363	12	322.3	Yellowstone/TW
121.9	0.0879	0.0904	0.1468	0.1541	0.0094	0.2618	0.1564	1303	1372	15	322.3	Glacier/TW
164.1	0.0879	0.0902	0.1467	0.1540	0.0100	0.2577	0.1548	1318	1388	22	322.3	Carlsbad/TW
96.1	0.0872	0.0897	0.1456	0.1529	0.0091	0.2650	0.1572	1302	1371	11	325.2	Congaree/TW
98.3	0.0772	0.0797	0.1291	0.1355	0.0095	0.2618	0.1550	1403	1477	10	361.8	Vinson/TW
81.8	0.0693	0.0718	0.1161	0.1219	0.0096	0.2604	0.1535	1493	1574	7	402.8	Kilimanjaro/TW
100.5	0.0703	0.0728	0.1177	0.1236	0.0099	0.2584	0.1529	1489	1568	9	402.8	Alps/TW
126.3	0.0703	0.0727	0.1177	0.1235	0.0102	0.2559	0.1522	1497	1577	12	402.8	Wind Cave/TW
161.0	0.0695	0.0716	0.1161	0.1219	0.0106	0.2532	0.1513	1516	1598	16	402.8	Denali/TW
202.8	0.0703	0.0724	0.1175	0.1233	0.0112	0.2492	0.1497	1523	1605	22	402.8	Rocky/TW
94.7	0.0580	0.0606	0.0975	0.1023	0.0105	0.2542	0.1490	1679	1770	7	483.4	Crater Lake/TW
130.3	0.0581	0.0605	0.0974	0.1022	0.0109	0.2515	0.1484	1686	1778	10	483.4	Grand Canyon/TW
152.6	0.0586	0.0609	0.0982	0.1031	0.0111	0.2495	0.1482	1682	1773	12	483.4	Fuji/TW
184.2	0.0578	0.0600	0.0969	0.1017	0.0115	0.2475	0.1469	1706	1799	16	483.4	Jasper/TW
222.9	0.0586	0.0606	0.0981	0.1030	0.0120	0.2441	0.1460	1707	1800	20	483.4	Arches/TW
173.5	0.0575	0.0597	0.0963	0.1010	0.0116	0.2467	0.1468	1714	1808	14	493.1	Everglades/TW
88.1	0.0535	0.0562	0.0901	0.0945	0.0107	0.2525	0.1474	1765	1861	5	523.7	Big Bend/TW
106.8	0.0536	0.0561	0.0901	0.0945	0.0109	0.2508	0.1471	1770	1866	7	523.7	Lassen/TW
144.6	0.0540	0.0564	0.0907	0.0951	0.0113	0.2482	0.1465	1772	1869	11	523.7	Tahoe/TW
168.1	0.0534	0.0556	0.0896	0.0940	0.0115	0.2469	0.1458	1788	1886	13	523.7	Samoa/TW
89.9	0.0497	0.0524	0.0838	0.0879	0.0108	0.2517	0.1461	1846	1948	5	564.0	Cook/TW
109.0	0.0497	0.0524	0.0838	0.0879	0.0113	0.2487	0.1455	1854	1955	7	564.0	Blanc/TW
146.3	0.0498	0.0522	0.0838	0.0879	0.0117	0.2461	0.1448	1862	1965	10	564.0	Niagara/TW
177.0	0.0498	0.0521	0.0838	0.0879	0.0122	0.2428	0.1437	1875	1978	13	564.0	Gannett/TW
92.1	0.0464	0.0492	0.0784	0.0822	0.0113	0.2482	0.1444	1931	2037	5	604.2	Washington/TW
125.4	0.0464	0.0490	0.0784	0.0821	0.0118	0.2454	0.1437	1941	2048	7	604.2	Elbert/TW
158.8	0.0465	0.0489	0.0783	0.0821	0.0121	0.2430	0.1429	1951	2059	10	604.2	Kings Canyon/TW
189.9	0.0465	0.0488	0.0783	0.0821	0.0126	0.2402	0.1421	1962	2070	13	604.2	Acadia/TW
126.8	0.0449	0.0475	0.0758	0.0795	0.0120	0.2437	0.1427	1985	2095	7	625.1	Redwood/TW
159.7	0.0449	0.0474	0.0757	0.0795	0.0124	0.2415	0.1421	1993	2104	10	625.1	Mesa Verde/TW
202.8	0.0450	0.0472	0.0757	0.0794	0.0129	0.2386	0.1413	2006	2117	13	625.1	Biscayne/TW
103.6	0.0435	0.0463	0.0736	0.0772	0.0119	0.2447	0.1426	2017	2129	5	644.5	Saguaro/TW
127.7	0.0435	0.0462	0.0736	0.0772	0.0122	0.2427	0.1421	2024	2136	7	644.5	Sierra Nevada/TW
173.9	0.0436	0.0460	0.0735	0.0771	0.0127	0.2398	0.1413	2036	2149	10	644.5	Eldorado/TW
203.7	0.0436	0.0459	0.0735	0.0771	0.0131	0.2374	0.1407	2043	2157	13	644.5	Voyageurs/TW
141.5	0.0409	0.0437	0.0693	0.0727	0.0126	0.2400	0.1405	2106	2224	7	684.8	Cascades/TW
176.1	0.0410	0.0435	0.0693	0.0727	0.0131	0.2374	0.1400	2114	2232	10	684.8	Banff/TW
218.0	0.0411	0.0434	0.0693	0.0726	0.0135	0.2349	0.1392	2126	2244	13	684.8	Elbrus/TW
159.7	0.0348	0.0377	0.0593	0.0622	0.0133	0.2361	0.1371	2329	2461	7	805.7	Bryce Canyon/TW
212.6	0.0349	0.0375	0.0592	0.0621	0.0141	0.2316	0.1362	2348	2480	10	805.7	Adirondack/TW
239.8	0.0351	0.0376	0.0595	0.0624	0.0145	0.2294	0.1355	2352	2485	12	805.7	Zion/TW
153.0	0.0311	0.0343	0.0534	0.0559	0.0140	0.2322	0.1349	2493	2636	5	901.9	Teton/TW
195.3	0.0311	0.0340	0.0532	0.0557	0.0145	0.2297	0.1342	2509	2652	8	901.9	Everest/TW
229.5	0.0311	0.0339	0.0532	0.0557	0.0149	0.2277	0.1336	2521	2665	10	901.9	Katmai/TW

Notes: (3) Ampacity based on 25°C ambient temperature, 0.61 m/s perpendicular wind, 0.5 emissivity, 0.5 absorptivity, 60 Hz, clear atmosphere, sea level, 30° N. latitude, N-S line azimuth, noon on June 10th.

Shaped Wire Concentric-Lay-Stranded Compact Thermal-Resistant Aluminum Conductor, Composite Reinforced (ZTACCR/TW/C7®-TS)

Code Word	Conductor Size, mm²	Type No.	Cross-Sectional Area, mm²		Layers of Al-Zr	Stranding		Diameter		Weight/km		
			Al-Zr	Total		No. of Al-Zr Strands	C7 Strands, mm	C7 Core, mm	Complete Conductor, mm	Al-Zr, kg	C7, kg	Total, kg
Fundy/TW	103.0	43	103.0	147.1	1	8	7 x 2.83	8.5	14.9	287.5	71.7	359.2
Shenandoah/TW	135.2	21	135.2	163.4	1	8	7 x 2.27	6.8	15.4	377.5	46.0	423.4
Olympic/TW	164.7	17	164.7	192.9	2	20	7 x 2.27	6.8	**17.0**	457.9	46.0	503.7
Wrangell/TW	170.5	17	170.5	198.7	2	20	7 x 2.27	6.8	17.3	474.0	46.0	519.8
Badlands/TW	170.5	22	170.5	207.6	2	20	7 x 2.60	7.8	17.4	474.0	60.4	534.4
Andes/TW	201.4	14	201.4	229.7	2	18	7 x 2.27	6.8	18.0	559.7	46.0	605.7
Joshua Tree/TW	201.4	16	201.4	234.0	2	18	7 x 2.43	7.3	18.2	553.0	53.0	605.8
Sequoia/TW	201.4	22	201.4	245.5	2	18	7 x 2.83	8.5	18.7	559.7	71.7	631.4
Rogers/TW	241.7	13	241.7	274.3	2	18	7 x 2.43	7.3	19.8	663.0	53.0	715.8
Yosemite/TW	241.7	15	241.7	278.8	2	18	7 x 2.60	7.8	20.0	671.6	60.4	732.0
Capitol Reef/TW	241.7	23	241.7	296.8	2	20	7 x 3.17	9.5	**20.8**	666.8	89.6	756.4
Tortugas/TW	322.3	10	322.3	354.8	2	20	7 x 2.43	7.3	22.4	883.4	53.0	936.4
Yellowstone/TW	322.3	12	322.3	359.4	2	16	7 x 2.60	7.8	22.5	896.2	60.4	956.6
Glacier/TW	322.3	15	322.3	371.7	2	20	7 x 3.00	9.0	23.0	896.0	80.5	976.4
Carlsbad/TW	322.3	22	322.3	393.5	2	20	7 x 3.60	10.8	23.8	896.0	115.8	1011.8
Congaree/TW	325.2	11	325.2	362.3	2	16	7 x 2.60	7.8	**22.6**	904.2	60.4	964.6
Vinson/TW	361.8	10	361.8	399.0	2	16	7 x 2.60	7.8	23.7	991.7	60.4	1052.1
Kilimanjaro/TW	402.8	7	402.8	431.1	2	20	7 x 2.27	6.8	24.4	1103.2	46.0	1149.2
Alps/TW	402.8	9	402.8	440.0	2	20	7 x 2.60	7.8	24.7	1120.0	60.4	1180.4
Wind Cave/TW	402.8	12	402.8	452.3	2	20	7 x 3.00	9.0	25.1	1120.0	80.5	1200.4
Denali/TW	402.8	16	402.8	468.9	2	20	7 x 3.47	10.4	25.7	1105.9	107.4	1213.3
Rocky/TW	402.8	22	402.8	490.8	2	24	7 x 4.00	12.0	26.5	1119.7	143.0	1262.7
Crater Lake/TW	483.4	7	483.4	515.9	3	34	7 x 2.43	7.3	26.9	1330.4	53.0	1383.3
Grand Canyon/TW	483.4	10	483.4	532.9	3	34	7 x 3.00	9.0	27.2	1331.6	80.5	1412.1
Fuji/TW	483.4	12	483.4	543.3	2	20	7 x 3.30	9.9	27.4	1344.0	97.3	1441.3
Jasper/TW	483.4	16	483.4	560.0	2	22	7 x 3.73	11.2	28.0	1327.1	124.6	1451.7
Arches/TW	483.4	20	483.4	578.8	2	20	7 x 4.17	12.5	**28.6**	1344.0	155.2	1499.2
Everglades/TW	493.1	14	493.1	564.3	2	20	7 x 3.60	10.8	**28.1**	1370.9	115.8	1486.7
Big Bend/TW	523.7	5	523.7	551.9	3	34	7 x 2.27	6.8	27.8	1439.8	46.0	1485.8
Lassen/TW	523.7	7	523.7	560.8	3	34	7 x 2.60	7.8	28.0	1441.3	60.4	1501.7
Tahoe/TW	523.7	11	523.7	578.8	3	34	7 x 3.17	9.5	28.4	1452.3	89.6	1541.9
Samoa/TW	523.7	13	523.7	589.7	2	22	7 x 3.47	10.4	28.7	1436.2	107.4	1543.7
Cook/TW	564.0	5	564.0	592.2	3	30	7 x 2.27	6.8	28.6	1550.5	46.0	1596.5
Blanc/TW	564.0	7	564.0	601.2	3	34	7 x 2.60	7.8	28.9	1552.0	60.4	1612.4
Niagara/TW	564.0	10	564.0	619.1	3	34	7 x 3.17	9.5	29.3	1553.6	89.6	1643.2
Gannett/TW	564.0	13	564.0	635.2	3	38	7 x 3.60	10.8	30.0	1555.9	115.8	1671.7
Washington/TW	604.2	5	604.2	632.5	3	34	7 x 2.27	6.8	29.6	1661.4	46.0	1707.2
Elbert/TW	604.2	7	604.2	648.4	3	34	7 x 2.83	8.5	30.1	1662.9	71.7	1734.8
Kings Canyon/TW	604.2	10	604.2	664.1	3	34	7 x 3.30	9.9	30.6	1664.5	97.3	1761.8
Acadia/TW	604.2	13	604.2	680.9	3	38	7 x 3.73	11.2	31.1	1667.0	124.6	1791.6
Redwood/TW	625.1	7	625.1	669.2	3	38	7 x 2.83	8.5	30.6	1720.3	71.7	1792.0
Mesa Verde/TW	625.1	10	625.1	685.0	3	38	7 x 3.30	9.9	31.0	1722.0	97.3	1819.3
Biscayne/TW	625.1	13	625.1	707.3	3	38	7 x 3.87	11.6	**31.6**	1724.5	133.6	1858.1
Saguaro/TW	644.5	5	644.5	677.1	3	38	7 x 2.43	7.3	30.8	1772.1	53.0	1824.9
Sierra Nevada/TW	644.5	7	644.5	688.6	3	38	7 x 2.83	8.5	31.1	1773.7	71.7	1845.6
Eldorado/TW	644.5	10	644.5	710.6	3	38	7 x 3.47	10.4	31.6	1775.5	107.4	1883.0
Voyageurs/TW	644.5	13	644.5	726.7	3	39	7 x 3.87	11.6	32.0	1778.1	133.6	1911.7
Cascades/TW	684.8	7	684.8	734.3	3	38	7 x 3.00	9.0	32.1	1884.6	80.5	1965.1
Banff/TW	684.8	10	684.8	750.9	3	42	7 x 3.47	10.4	32.5	1886.5	107.4	1993.8
Elbrus/TW	684.8	13	684.8	772.8	3	42	7 x 4.00	12.0	33.0	1889.2	143.0	2032.2
Bryce Canyon/TW	805.7	7	805.7	860.8	3	36	7 x 3.17	9.5	34.5	2217.2	89.6	2307.0
Adirondack/TW	805.7	10	805.7	887.9	3	38	7 x 3.87	11.6	35.2	2219.5	133.6	2353.1
Zion/TW	805.7	12	805.7	901.1	3	42	7 x 4.17	12.5	**35.7**	2234.8	155.2	2390.0
Teton/TW	901.9	5	901.9	951.4	3	38	7 x 3.00	9.0	36.1	2479.7	80.5	2560.2
Everest/TW	901.9	8	901.9	973.2	3	38	7 x 3.60	10.8	36.6	2478.5	115.8	2594.5
Katmai/TW	901.9	10	901.9	989.9	3	38	7 x 4.00	12.0	37.2	2484.6	143.0	2627.7

Notes: (1) The final design of a TW conductor is contingent upon several factors such as: layer diameter, wire width, and wire thickness. This may result in a slight variation in the number of wires, number of layers, and outside diameter from that shown in the table.
(2) Resistance and ampacity based on an aluminum-zirconium alloy conductivity of 60% IACS at 20°C.

RBS, kN	Resistance				GMR, m	Reactance @ 0.3m Spacing 60 Hz		Ampacity		Type No.	Conductor Size, mm²	Code Word
	dc @ 20°C, Ω/km	ac–60 Hz @ 25°C, Ω/km	ac–60 Hz @ 180°C, Ω/km	ac–60 Hz @ 200°C, Ω/km		Inductive Xa, Ω/km	Capacitive X'a, MΩ-km	@ 180°C, A	@ 200°C, A			
96.1	0.2899	0.2958	0.4753	0.4985	0.0062	0.2932	0.1773	634	666	43	103.0	Fundy/TW
80.1	0.2209	0.2256	0.3623	0.3800	0.0062	0.2935	0.1754	734	772	21	135.2	Shenandoah/TW
85.4	0.1806	0.1845	0.2963	0.3107	0.0070	0.2841	0.1708	837	880	17	164.7	Olympic/TW
85.4	0.1745	0.1783	0.2863	0.3002	0.0071	0.2832	0.1701	855	899	17	170.5	Wrangell/TW
104.1	0.1744	0.1782	0.2862	0.3001	0.0073	0.2815	0.1698	857	901	22	170.5	Badlands/TW
90.3	0.1476	0.1509	0.2423	0.2540	0.0073	0.2819	0.1680	941	990	14	201.4	Andes/TW
99.2	0.1458	0.1491	0.2393	0.2509	0.0074	0.2804	0.1675	950	1000	16	201.4	Joshua Tree/TW
123.7	0.1476	0.1508	0.2421	0.2539	0.0077	0.2769	0.1662	953	1003	22	201.4	Sequoia/TW
105.0	0.1214	0.1243	0.1993	0.2090	0.0079	0.2752	0.1637	1067	1123	13	241.7	Rogers/TW
114.3	0.1230	0.1259	0.2019	0.2118	0.0081	0.2738	0.1632	1064	1120	15	241.7	Yosemite/TW
152.1	0.1221	0.1249	0.2004	0.2101	0.0087	0.2677	0.1613	1082	1139	23	241.7	Capitol Reef/TW
117.0	0.0910	0.0936	0.1497	0.1570	0.0090	0.2657	0.1579	1279	1348	10	322.3	Tortugas/TW
125.4	0.0923	0.0949	0.1518	0.1592	0.0091	0.2652	0.1574	1273	1342	12	322.3	Yellowstone/TW
152.6	0.0923	0.0948	0.1517	0.1591	0.0094	0.2618	0.1564	1282	1351	15	322.3	Glacier/TW
183.7	0.0923	0.0946	0.1516	0.1589	0.0100	0.2577	0.1548	1296	1366	22	322.3	Carlsbad/TW
125.9	0.0915	0.0940	0.1505	0.1578	0.0091	0.2650	0.1572	1280	1349	11	325.2	Congaree/TW
131.2	0.0810	0.0835	0.1335	0.1399	0.0095	0.2618	0.1550	1380	1454	10	361.8	Vinson/TW
118.8	0.0727	0.0752	0.1199	0.1257	0.0096	0.2604	0.1535	1469	1549	7	402.8	Kilimanjaro/TW
137.5	0.0738	0.0762	0.1217	0.1276	0.0099	0.2584	0.1529	1464	1544	9	402.8	Alps/TW
163.2	0.0738	0.0762	0.1216	0.1274	0.0102	0.2559	0.1522	1472	1552	12	402.8	Wind Cave/TW
197.9	0.0729	0.0751	0.1200	0.1258	0.0106	0.2532	0.1513	1492	1573	16	402.8	Denali/TW
227.7	0.0738	0.0759	0.1214	0.1273	0.0112	0.2492	0.1497	1498	1580	22	402.8	Rocky/TW
139.7	0.0609	0.0634	0.1007	0.1055	0.0105	0.2542	0.1490	1652	1743	7	483.4	Crater Lake/TW
175.3	0.0610	0.0633	0.1007	0.1055	0.0109	0.2515	0.1484	1659	1750	10	483.4	Grand Canyon/TW
197.1	0.0615	0.0638	0.1015	0.1064	0.0111	0.2495	0.1482	1655	1746	12	483.4	Fuji/TW
216.6	0.0608	0.0629	0.1002	0.1050	0.0115	0.2475	0.1469	1679	1771	16	483.4	Jasper/TW
252.7	0.0615	0.0635	0.1013	0.1063	0.0120	0.2441	0.1460	1679	1772	20	483.4	Arches/TW
208.2	0.0603	0.0624	0.0995	0.1043	0.0116	0.2467	0.1468	1686	1779	14	493.1	Everglades/TW
136.6	0.0562	0.0588	0.0930	0.0975	0.0107	0.2525	0.1474	1736	1832	5	523.7	Big Bend/TW
155.2	0.0562	0.0587	0.0931	0.0975	0.0109	0.2508	0.1471	1741	1837	7	523.7	Lassen/TW
193.1	0.0567	0.0590	0.0936	0.0981	0.0113	0.2482	0.1465	1743	1840	11	523.7	Tahoe/TW
216.2	0.0560	0.0582	0.0926	0.0970	0.0115	0.2469	0.1458	1759	1857	13	523.7	Samoa/TW
140.6	0.0521	0.0548	0.0866	0.0907	0.0108	0.2517	0.1461	1817	1918	5	564.0	Cook/TW
161.0	0.0522	0.0547	0.0866	0.0907	0.0113	0.2487	0.1455	1824	1925	7	564.0	Blanc/TW
198.8	0.0523	0.0546	0.0865	0.0907	0.0117	0.2461	0.1448	1833	1934	10	564.0	Niagara/TW
218.4	0.0523	0.0546	0.0866	0.0907	0.0122	0.2428	0.1437	1845	1948	13	564.0	Gannett/TW
146.3	0.0487	0.0514	0.0810	0.0848	0.0113	0.2482	0.1444	1900	2006	5	604.2	Washington/TW
179.7	0.0487	0.0513	0.0809	0.0848	0.0118	0.2454	0.1437	1910	2017	7	604.2	Elbert/TW
213.1	0.0488	0.0511	0.0808	0.0847	0.0121	0.2430	0.1429	1920	2027	10	604.2	Kings Canyon/TW
234.9	0.0488	0.0511	0.0809	0.0848	0.0126	0.2402	0.1421	1930	2038	13	604.2	Acadia/TW
185.0	0.0471	0.0497	0.0783	0.0820	0.0120	0.2437	0.1427	1953	2062	7	625.1	Redwood/TW
218.0	0.0472	0.0496	0.0782	0.0820	0.0124	0.2415	0.1421	1961	2071	10	625.1	Mesa Verde/TW
248.2	0.0472	0.0495	0.0782	0.0820	0.0129	0.2386	0.1413	1974	2084	13	625.1	Biscayne/TW
163.2	0.0456	0.0484	0.0760	0.0796	0.0119	0.2447	0.1426	1985	2096	5	644.5	Saguaro/TW
187.7	0.0457	0.0483	0.0760	0.0796	0.0122	0.2427	0.1421	1992	2103	7	644.5	Sierra Nevada/TW
234.0	0.0457	0.0481	0.0759	0.0795	0.0127	0.2398	0.1413	2003	2115	10	644.5	Eldorado/TW
251.3	0.0458	0.0480	0.0759	0.0795	0.0131	0.2374	0.1407	2011	2123	13	644.5	Voyageurs/TW
202.8	0.0430	0.0456	0.0716	0.0750	0.0126	0.2400	0.1405	2073	2189	7	684.8	Cascades/TW
239.8	0.0431	0.0455	0.0716	0.0750	0.0131	0.2374	0.1400	2081	2198	10	684.8	Banff/TW
268.2	0.0431	0.0454	0.0716	0.0749	0.0135	0.2349	0.1392	2092	2210	13	684.8	Elbrus/TW
232.2	0.0365	0.0394	0.0613	0.0641	0.0133	0.2361	0.1371	2293	2423	7	805.7	Bryce Canyon/TW
272.2	0.0366	0.0391	0.0611	0.0640	0.0141	0.2316	0.1362	2311	2443	10	805.7	Adirondack/TW
297.6	0.0368	0.0393	0.0615	0.0644	0.0145	0.2294	0.1355	2314	2447	12	805.7	Zion/TW
234.0	0.0326	0.0357	0.0551	0.0576	0.0140	0.2322	0.1349	2455	2597	5	901.9	Teton/TW
265.6	0.0326	0.0355	0.0549	0.0574	0.0145	0.2297	0.1342	2470	2612	8	901.9	Everest/TW
297.1	0.0327	0.0354	0.0549	0.0574	0.0149	0.2277	0.1336	2481	2624	10	901.9	Katmai/TW

Notes: (3) Ampacity based on 25°C ambient temperature, 0.61 m/s perpendicular wind, 0.5 emissivity, 0.5 absorptivity, 60 Hz, clear atmosphere, sea level, 30° N. latitude, N-S line azimuth, noon on June 10th.

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