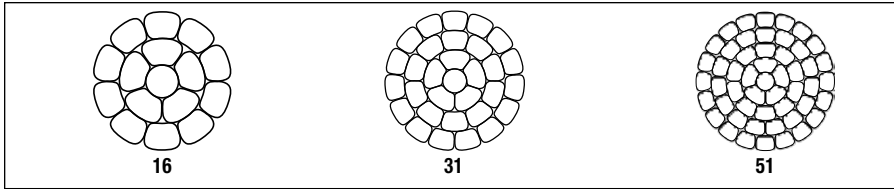


TransPowr® AAC/TW Bare Overhead Conductor

Trapezoidal All-Aluminum 1350 Concentric-Lay-Stranded



Product Construction:

Complete Conductor:

TransPowr® AAC/TW is a trapezoidal 1350 H19 aluminum (AAC) concentric-lay-stranded conductor. The aluminum strands are trapezoidal in shape. The wedge-shaped aluminum strands enable a more compact alignment of the aluminum wires.

Conductor designs that maintain the same circular mil cross-sectional area of aluminum as a conventional round conductor result in a TW conductor that is 10 to 15 percent smaller in overall diameter.

Conductor designs that maintain the same overall diameter as a conventional round conductor result in a TW conductor that has 20 to 25 percent more aluminum cross-sectional area packed in.

The AAC/TW conductors are manufactured in accordance with the requirements of the latest issue of ASTM B778.

The conductor consists of two, three, four or five layers of aluminum 1350-H19 wires. The sizes and constructions listed on this and the following pages are examples used in overhead lines.

Features and Benefits:

TransPowr® AAC/TW has a continuous operating temperature rating of 75°C. Operation of the conductor at elevated temperatures may increase the conductor sag properties and lower the rated tensile strength of the conductor.

AAC/TW conductors constructed of equivalent aluminum circular mil cross-sectional area provide a conductor that is smaller in overall diameter than the equivalent conventional round wire AAC conductor. The reduced conductor diameter is advantageous in reducing the effects of ice and wind loading on the conductor.

AAC/TW conductors constructed to equivalent overall diameter enable a greater circular mil cross-sectional area of aluminum within the conductor, allowing a significant increase in conductor current-carrying capacity.

Applications:

Trapezoidal 1350 H19 aluminum conductors (AAC/TW) are used for overhead transmission lines where design parameters do not require the higher strength or temperature ratings provided by ACSR, ACSS, or other type conductors.

Electrical Parameters:

The electrical parameters for the trapezoidal AAC equivalent circular mil area and equivalent overall diameter conductors may be found in the last table of this section.

Options:

- Compact aluminum strands
- Trapezoidal-shaped aluminum strands (/TW)
- High-Conductivity aluminum (/HC) (62.2% IACS)
- Non-Specular surface finish (/NS)
- E3X® surface coating (/E3X)

At the present time, CAN/CSA C61089 does not recognize TW conductor designs. The information provided on the following pages is from our US catalog.

For more information, contact your General Cable sales representative or e-mail info@generalcable.com.

TransPowr® AAC/TW Bare Overhead Conductor

Trapezoidal All-Aluminum 1350 Concentric-Lay-Stranded

AAC/TW CONDUCTORS (MECHANICAL PROPERTIES) – REDUCED DIAMETER – CONDUCTORS SIZED TO HAVE EQUIVALENT CIRCULAR MIL AREA TO REGULAR AAC

CODE WORD	SIZE AWG OR kcmil	NO. OF AL WIRES	EQUIVALENT STRAND WIRE DIA. INCHES	FILL FACTOR	CROSS-SECTION SQ. INCHES	O.D. INCHES	APPROX. WEIGHT LB/1000 FT	RATED STRENGTH LBS	STANDARD PACKAGES (1)		
									REEL DESIGNATION	WEIGHT LBS	LENGTH FT
Tulip/AAC/TW	336.4	16	0.1453	89.8	0.2654	0.61	315	6050	RMT 84.36 NR 60.28	4700 2360	14900 7500
Canna/AAC/TW	397.5	16	0.1579	91.0	0.3135	0.66	373	7000	RMT 84.36 NR 60.28	4690 2350	12600 6300
Cosmos/AAC/TW	477.0	16	0.1730	91.1	0.3760	0.72	447	8390	RMT 84.36 NR 60.28	4690 2370	10500 5300
Zinnia/AAC/TW	500	16	0.1771	92.3	0.3940	0.74	469	8790	RMT 84.36 NR 60.28	4690 2340	10000 5000
Mistletoe/AAC/TW	556.5	16	0.1868	92.6	0.4387	0.78	522	9790	RMT 84.36 NR 60.28	4690 2350	9000 4500
Meadowsweet/AAC/TW	600	16	0.1940	93.0	0.4729	0.80	562	10500	RMT 84.36 NR 60.28	4720 2360	8400 4200
Orchid/AAC/TW	636	16	0.1996	93.4	0.5007	0.83	596	11200	RMT 84.36 RM 68.38	4710 2320	7900 3900
Verbena/AAC/TW	700	16	0.2095	93.8	0.5514	0.86	656	12300	RMT 84.36 NR 60.28	4720 2360	7200 3600
Nasturtium/AAC/TW	750	16	0.2168	94.0	0.5908	0.89	703	12900	RMT 84.36 NR 60.28	4710 2390	6700 3400
Arbutus/AAC/TW	795	16	0.2231	94.1	0.6257	0.92	745	13600	RMT 84.36 NR 60.28	4690 2380	6300 3200
Cockscomb/AAC/TW	900	16	0.2376	91.8	0.7092	0.99	844	15400	RMT 84.36 NR 60.28	4720 2360	5600 2800
Magnolia/AAC/TW	954	31	0.1756	92.0	0.7509	1.02	894	16400	RMT 96.60 RMT 84.36	9120 4560	10200 5100
Hawkweed/AAC/TW	1000	31	0.1798	92.3	0.7868	1.04	937	17200	RMT 96.60 RMT 84.36	9090 4590	9700 4900
Bluebell/AAC/TW	1033.5	31	0.1827	92.5	0.8130	1.06	969	17700	RMT 96.60 RMT 84.36	9110 4550	9400 4700
Marigold/AAC/TW	1113	31	0.1897	92.8	0.8759	1.10	1043	19100	RMT 96.60 RMT 84.36	9080 4590	8700 4400
Hawthorn/AAC/TW	1192.5	31	0.1963	93.1	0.9382	1.13	1118	20500	RMT 96.60 RMT 84.36	9170 4580	8200 4100
Narcissus/AAC/TW	1272	31	0.2027	93.2	1.0006	1.17	1192	21800	RMT 96.60 RMT 84.36	9060 4530	7600 3800
Columbine/AAC/TW	1351.5	31	0.2090	93.6	1.0634	1.20	1267	23200	RMT 96.60 RMT 84.36	9120 4560	7200 3600
Carnation/AAC/TW	1431	31	0.2151	93.7	1.1260	1.24	1341	24000	RMT 96.60 RMT 84.36	9120 4560	6800 3400
Coreopsis/AAC/TW	1590	51	0.1767	91.9	1.2508	1.32	1490	27000	RMT 96.60 RMT 90.45	9980 7450	6700 5000
Jessamine/AAC/TW	1750	51	0.1853	92.3	1.3760	1.38	1640	29700	RMT 96.60 RMT 90.45	10010 7550	6100 4600
Cowslip/AAC/TW	2000	51	0.1981	92.8	1.5720	1.47	1875	33900	RMT 96.60 RMT 90.45	10030 7570	5300 4000
Lupine/AAC/TW	2500	71	0.1877	92.1	1.9655	1.65	2366	41900	RMT 108.74 RMT 96.60	19400 10410	8200 4400
Trillium/AAC/TW	3000	71	0.2056	92.7	2.3565	1.80	2839	50300	RMT 108.74 RMT 96.60	20070 10320	7000 3600

(1) Weights shown are for conductor only and do not include the reel. Normal length and shipping tolerances apply.

Dimensions and weights not designated minimum or maximum are nominal values and subject to manufacturing tolerances. In this context, weight means mass.

TransPwr[®] AAC/TW Bare Overhead Conductor

Trapezoidal All-Aluminum 1350 Concentric-Lay-Stranded

AAC/TW CONDUCTORS (ELECTRICAL PROPERTIES) – REDUCED DIAMETER – CONDUCTORS SIZED TO HAVE EQUIVALENT CIRCULAR MIL AREA TO REGULAR AAC

CODE WORD	SIZE kcmil	NO. OF AL WIRES	EQUIVALENT STRAND WIRE DIA. INCHES	FILL FACTOR	CROSS-SECTION SQ. INCHES	O.D. INCHES	RESISTANCE (2) OHMS/1000 FT			AMPACITY 75°C (3)	GEOMETRIC MEAN RADIUS FT	INDUCTIVE REACTANCE OHM/1000 FT (4)	CAPACITIVE REACTANCE MEGA OHM 1000 FT (4)
							DC @ 20°C	AC @ 25°C	AC @ 75°C				
Tulip/AAC/TW	336.4	16	0.1453	89.8	0.2654	0.61	0.0514	0.0526	0.0630	500	0.0193	0.0907	0.5751
Canna/AAC/TW	397.5	16	0.1579	91.0	0.3135	0.66	0.0435	0.0446	0.0534	555	0.0209	0.0889	0.5630
Cosmos/AAC/TW	477	16	0.1730	91.1	0.3760	0.72	0.0362	0.0373	0.0445	625	0.0228	0.0869	0.5488
Zinnia/AAC/TW	500	16	0.1771	92.3	0.3940	0.74	0.0346	0.0356	0.0425	640	0.0232	0.0865	0.5461
Mistletoe/AAC/TW	556.5	16	0.1868	92.6	0.4387	0.78	0.0311	0.0320	0.0382	685	0.0245	0.0852	0.5380
Meadowsweet/AAC/TW	600	16	0.1940	93.0	0.4729	0.80	0.0288	0.0298	0.0355	715	0.0254	0.0844	0.5324
Orchid/AAC/TW	636	16	0.1996	93.4	0.5007	0.83	0.0272	0.0281	0.0335	745	0.0261	0.0838	0.5282
Verbena/AAC/TW	700	16	0.2095	93.8	0.5514	0.86	0.0247	0.0256	0.0305	790	0.0273	0.0827	0.5210
Nasturtium/AAC/TW	750	16	0.2168	94.0	0.5908	0.89	0.0230	0.0240	0.0286	820	0.0282	0.0820	0.5157
Arbutus/AAC/TW	795	16	0.2231	94.1	0.6257	0.92	0.0217	0.0227	0.0270	850	0.0291	0.0813	0.5112
Cockscomb/AAC/TW	900	16	0.2376	91.8	0.7092	0.99	0.0192	0.0201	0.0239	925	0.0313	0.0796	0.4997
Magnolia/AAC/TW	954	31	0.1756	92.0	0.7509	1.02	0.0181	0.0191	0.0226	955	0.0326	0.0787	0.4951
Hawkweed/AAC/TW	1000	31	0.1798	92.3	0.7868	1.04	0.0173	0.0182	0.0216	985	0.0333	0.0782	0.4917
Bluebell/AAC/TW	1033.5	31	0.1827	92.5	0.8130	1.06	0.0167	0.0177	0.0210	1005	0.0338	0.0778	0.4892
Marigold/AAC/TW	1113	31	0.1897	92.8	0.8759	1.10	0.0155	0.0165	0.0195	1050	0.0350	0.0770	0.4837
Hawthorn/AAC/TW	1192.5	31	0.1963	93.1	0.9382	1.13	0.0145	0.0155	0.0183	1095	0.0362	0.0763	0.4785
Narcissus/AAC/TW	1272	31	0.2027	93.2	1.0006	1.17	0.0136	0.0146	0.0173	1135	0.0374	0.0755	0.4736
Columbine/AAC/TW	1351.5	31	0.2090	93.6	1.0634	1.20	0.0128	0.0139	0.0163	1175	0.0384	0.0749	0.4691
Carnation/AAC/TW	1431	31	0.2151	93.7	1.1260	1.24	0.0121	0.0132	0.0155	1215	0.0395	0.0742	0.4647
Coreopsis/AAC/TW	1590	51	0.1767	91.9	1.2508	1.32	0.0109	0.0120	0.0141	1295	0.0423	0.0727	0.4549
Jessamine/AAC/TW	1750	51	0.1853	92.3	1.3760	1.38	0.00988	0.0111	0.0129	1370	0.0443	0.0716	0.4478
Cowslip/AAC/TW	2000	51	0.1981	92.8	1.5720	1.47	0.00864	0.00994	0.0115	1475	0.0472	0.0702	0.4377
Lupine/AAC/TW	2500	71	0.1877	92.1	1.9655	1.65	0.00698	0.00844	0.00969	1660	0.0531	0.0675	0.4196
Trillium/AAC/TW	3000	71	0.2056	92.7	2.3565	1.80	0.00582	0.00743	0.00843	1820	0.0580	0.0654	0.4059

(2) Based on a conductivity of 61.2% (minimum lot average) IACS at 20°C. To convert to ohms/mile, multiply by 5.28. To convert to ohms/km, multiply by 3.281.

(3) Based on a conductor temperature of 75°C at 60 Hz and the following conditions: 25°C ambient temperature, 2 ft/sec crosswind (90° to conductor), 0.5 coefficient of emissivity, 0.5 coefficient of absorptivity, 30° northern latitude, sea level elevation, 90° azimuth of line (East-West), clear atmosphere, and a date and time of noon on July 1 (resulting in 96.0 W/ft² of solar and sky radiated heat). Actual ampacity will differ based on local conditions. For specific ampacities, please contact your General Cable sales representative.

(4) Values for inductive reactance and capacitive reactance are expressed in terms of a 1 ft radius.



TransPowr® AAC/TW Bare Overhead Conductor

Trapezoidal All-Aluminum 1350 Concentric-Lay-Stranded

AAC/TW CONDUCTORS (MECHANICAL PROPERTIES) – REDUCED DIAMETER – CONDUCTORS SIZED TO HAVE EQUIVALENT CIRCULAR MIL AREA TO REGULAR AAC

CODE WORD	SIZE AWG OR kcmil	NO. OF AL WIRES	EQUIVALENT STRAND WIRE DIA. INCHES	FILL FACTOR	CROSS-SECTION SQ. INCHES	O.D. INCHES	APPROX. WEIGHT LB/1000 FT	RATED STRENGTH LBS	STANDARD PACKAGES (1)		
									REEL DESIGNATION	WEIGHT LBS	LENGTH FT
Logan/AAC/TW	322.5	16	0.1423	89.5	0.2546	0.60	302	5800	RMT 84.36 NR 60.28	4720 2360	15600 7800
- none -	384.5	16	0.1553	91.0	0.3032	0.65	360	6700	RMT 84.36 NR 60.28	4720 2340	13100 6500
Wheeler/AAC/TW	449.4	16	0.1679	91.7	0.3542	0.70	421	7900	RMT 84.36 NR 60.28	4720 2360	11200 5600
- none -	521.7	16	0.1808	92.7	0.4108	0.75	489	9100	RMT 84.36 NR 60.28	4690 2350	9600 4800
Robson/AAC/TW	595.8	16	0.1933	93.0	0.4693	0.80	558	10400	RMT 84.36 NR 60.28	4690 2350	8400 4200
- none -	678.2	16	0.2062	93.8	0.5343	0.85	636	11900	RMT 84.36 NR 60.28	4700 2350	7400 3700
McKinley/AAC/TW	761.5	16	0.2184	94.0	0.5995	0.90	714	13100	RMT 84.36 RM 68.38	4710 2360	6600 3300
- none -	854.2	16	0.2314	94.6	0.6726	0.95	801	14700	RMT 84.36 NR 60.28	4720 2320	5900 2900
Rainier/AAC/TW	918.8	31	0.1723	91.8	0.7227	1.00	861	15800	RMT 96.60 RMT 84.36	9130 4560	10600 5300
- none -	1020	31	0.1815	92.5	0.8023	1.05	956	17500	RMT 96.60 RMT 84.36	9080 4590	9500 4800
Helens/AAC/TW	1123.1	31	0.1905	92.8	0.8839	1.10	1053	19300	RMT 96.60 RMT 84.36	9160 4530	8700 4300
- none -	1234.2	31	0.1997	93.3	0.9707	1.15	1157	21200	RMT 96.60 RMT 84.36	9140 4510	7900 3900
Mazama/AAC/TW	1346.8	31	0.2085	93.5	1.0588	1.20	1262	23100	RMT 96.60 RMT 84.36	9090 4540	7200 3600
- none -	1467.9	31	0.2177	93.9	1.1542	1.25	1376	24700	RMT 96.60 RMT 84.36	9080 4540	6600 3300
Hood/AAC/TW	1583.2	31	0.2262	93.6	1.2457	1.30	1484	26600	RMT 96.60 RMT 84.36	9050 4600	6100 3100
- none -	1682.7	51	0.1817	92.3	1.3225	1.35	1577	28500	RMT 96.60 RMT 90.45	9940 7570	6300 4800
Whitney/AAC/TW	1812.7	51	0.1886	92.5	1.4243	1.40	1699	30800	RMT 96.60 RMT 90.45	10020 7480	5900 4400
- none -	1954.3	51	0.1959	92.9	1.5370	1.45	1832	33200	RMT 96.60 RMT 90.45	10070 7510	5500 4100
Powell/AAC/TW	2093.6	51	0.2027	93.0	1.6456	1.50	1982	35500	RMT 96.60 RMT 90.45	9910 7530	5000 3800
- none -	2245.4	51	0.2099	93.5	1.7653	1.55	2125	38100	RMT 96.60 RMT 90.45	9990 7440	4700 3500
Jefferson/AAC/TW	2388.1	51	0.2165	93.2	1.8782	1.60	2260	39700	RMT 96.60 RMT 90.45	9950 7460	4400 3300
- none -	2514.8	71	0.1883	92.4	1.9771	1.65	2380	42200	RMT 108.74 RMT 96.60	19520 10470	8200 4400
Shasta/AAC/TW	2667.2	71	0.1939	92.2	2.0957	1.70	2524	44700	RMT 108.74 RMT 96.60	19690 10350	7800 4100
- none -	2844.5	71	0.2003	92.9	2.2362	1.75	2692	47700	RMT 108.74 RMT 96.60	18850 10500	7000 3900
Adams/AAC/TW	3006.2	71	0.2058	92.7	2.3623	1.80	2873	50400	RMT 108.74 RMT 96.60	20110 10340	7000 3600

(1) Weights shown are for conductor only and do not include the reel. Normal length and shipping tolerances apply.

Dimensions and weights not designated minimum or maximum are nominal values and subject to manufacturing tolerances. In this context, weight means mass.

TransPwr[®] AAC/TW Bare Overhead Conductor

Trapezoidal All-Aluminum 1350 Concentric-Lay-Stranded

AAC/TW CONDUCTORS (ELECTRICAL PROPERTIES) – REDUCED DIAMETER – CONDUCTORS SIZED TO HAVE EQUIVALENT CIRCULAR MIL AREA TO REGULAR AAC

CODE WORD	SIZE AWG OR kcmil	NO. OF AL WIRES	EQUIVALENT STRAND WIRE DIA. INCHES	FILL FACTOR	CROSS-SECTION SQ. INCHES	O.D. INCHES	RESISTANCE (2) OHMS/1000 FT			AMPACITY 75°C (3)	GEOMETRIC MEAN RADIUS FT	INDUCTIVE REACTANCE OHM/1000 FT (4)	CAPACITIVE REACTANCE MEGA OHM 1000 FT (4)
							DC @ 20°C	AC @ 25°C	AC @ 75°C				
Logan/AAC/TW	322.5	16	0.1423	89.5	0.2546	0.60	0.0536	0.0549	0.0657	490	0.0189	0.0912	0.5782
- none -	384.5	16	0.1553	91.0	0.3032	0.65	0.0450	0.0461	0.0551	545	0.0205	0.0893	0.5656
Wheeler/AAC/TW	449.4	16	0.1679	91.7	0.3542	0.70	0.0385	0.0395	0.0472	600	0.0221	0.0876	0.5540
- none -	521.7	16	0.1808	92.7	0.4108	0.75	0.0331	0.0341	0.0408	660	0.0237	0.0860	0.5431
Robson/AAC/TW	595.8	16	0.1933	93.0	0.4693	0.80	0.0290	0.0300	0.0358	715	0.0253	0.0845	0.5330
- none -	678.2	16	0.2062	93.8	0.5343	0.85	0.0255	0.0264	0.0315	775	0.0269	0.0831	0.5234
McKinley/AAC/TW	761.5	16	0.2184	94.0	0.5995	0.90	0.0227	0.0236	0.0281	830	0.0285	0.0818	0.5145
- none -	854.2	16	0.2314	94.6	0.6726	0.95	0.0202	0.0212	0.0252	890	0.0300	0.0805	0.5060
Rainier/AAC/TW	918.8	31	0.1723	91.8	0.7227	1.00	0.0188	0.0198	0.0235	935	0.0320	0.0791	0.4979
- none -	1020	31	0.1815	92.5	0.8023	1.05	0.0169	0.0179	0.0212	995	0.0336	0.0780	0.4903
Helens/AAC/TW	1123.1	31	0.1905	92.8	0.8839	1.10	0.0154	0.0164	0.0194	1055	0.0352	0.0769	0.4830
- none -	1234.2	31	0.1997	93.3	0.9707	1.15	0.0140	0.0150	0.0177	1115	0.0368	0.0759	0.4760
Mazama/AAC/TW	1346.8	31	0.2085	93.5	1.0588	1.20	0.0128	0.0139	0.0164	1175	0.0384	0.0749	0.4693
- none -	1467.9	31	0.2177	93.9	1.1542	1.25	0.0118	0.0129	0.0151	1235	0.0400	0.0740	0.4629
Hood/AAC/TW	1583.2	31	0.2262	93.6	1.2457	1.30	0.0109	0.0121	0.0141	1290	0.0416	0.0731	0.4567
- none -	1682.7	51	0.1817	92.3	1.3225	1.35	0.0103	0.0115	0.0134	1340	0.0434	0.0721	0.4508
Whitney/AAC/TW	1812.7	51	0.1886	92.5	1.4243	1.40	0.00954	0.0108	0.0125	1395	0.0450	0.0712	0.4452
- none -	1954.3	51	0.1959	92.9	1.5370	1.45	0.00884	0.0101	0.0118	1455	0.0467	0.0704	0.4396
Powell/AAC/TW	2093.6	51	0.2027	93.0	1.6456	1.50	0.00834	0.00966	0.0112	1505	0.0483	0.0697	0.4343
- none -	2245.4	51	0.2099	93.5	1.7653	1.55	0.00777	0.00915	0.0106	1565	0.0498	0.0689	0.4292
Jefferson/AAC/TW	2388.1	51	0.2165	93.2	1.8782	1.60	0.00731	0.00873	0.0100	1615	0.0515	0.0682	0.4242
- none -	2514.8	71	0.1883	92.4	1.9771	1.65	0.00694	0.00841	0.00964	1665	0.0532	0.0674	0.4194
Shasta/AAC/TW	2667.2	71	0.1939	92.2	2.0957	1.70	0.00654	0.00806	0.00921	1715	0.0548	0.0667	0.4146
- none -	2844.5	71	0.2003	92.9	2.2362	1.75	0.00614	0.00770	0.00877	1770	0.0564	0.0661	0.4102
Adams/AAC/TW	3006.2	71	0.2058	92.7	2.3623	1.80	0.00586	0.00746	0.00848	1815	0.0581	0.0654	0.4057

(2) Based on a conductivity of 61.2% (minimum lot average) IACS at 20°C. To convert to ohms/mile, multiply by 5.28. To convert to ohms/km, multiply by 3.281.

(3) Based on a conductor temperature of 75°C at 60 Hz and the following conditions: 25°C ambient temperature, 2 ft/sec crosswind (90° to conductor), 0.5 coefficient of emissivity, 0.5 coefficient of absorbtivity, 30° northern latitude, sea level elevation, 90° azimuth of line (East-West), clear atmosphere, and a date and time of noon on July 1 (resulting in 96.0 W/ft² of solar and sky radiated heat). Actual ampacity will differ based on local conditions. For specific ampacities, please contact your General Cable sales representative.

(4) Values for inductive reactance and capacitive reactance are expressed in terms of a 1 ft radius.

