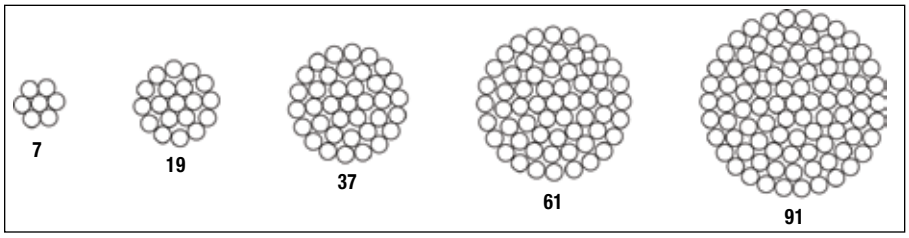
TransPowr® A1 (ASC) Bare Overhead Conductor

All-Aluminum 1350 Conductor Concentric-Lay-Stranded



Product Construction:

Complete Conductor:

Bare all-aluminum 1350 (A1 or ASC) are concentric-lay-stranded conductors consisting of one or more layers of wire wrapped helically around a straight round central wire. Each successive layer has six wires more than the layer immediately beneath. Greater flexibility is provided by increasing the number of strands for a specific cross-sectional area. A1 or ASC conductors are manufactured in accordance with the requirements of the latest applicable issue of CAN/CSA C61089.

A1 or ASC (Aluminum Stranded Conductor) conductors are CSA reference terms. The Canadian constructions are similar in design (strand component size and configuration) to the ASTM B231 specifications. Differences lie in the methods used to calculate the rated strength and dc resistance values.

The commonly used strandings are 7, 19, 37, 61 and 91. The sizes and strandings listed on the following pages are common examples used in overhead lines. Metric (mm^2) sizes are also available.

Complete Conductor (cont'd.):

Class AA strandings are used for bare overhead lines. The direction of lay of the outer layer is right-hand and is normally reversed in successive layers. The temper is full hard drawn (H19).

Class A strandings are used primarily for overhead conductors which are to be covered with weather-resistant materials. Greater flexibility is provided than Class AA. The outer layer is right-hand, and the temper is generally H19. Successive layers are normally reverse lay.

Features and Benefits:

Optimum economy is provided since the lighter weight means lower unit length costs, easier handling in installation and less complex fittings. All-aluminum conductors have an inherent high corrosion resistance due to their homogeneous construction.

Applications:

Stranded bare A1 or ASC 1350 all-aluminum conductors are used for overhead line installations where design parameters do not require the higher strength or temperature ratings provided by ACSR, ACSS or other type of bare conductor.

Options:

- Compact aluminum strands (CSA C49.5)
- Trapezoidal-shaped aluminum strands (/TW)
- High-Conductivity aluminum (/HC) (62.2% IACS)
- Non-Specular surface finish (/NS)
- E3X® surface coating (/E3X)

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

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A1 (ASC), ALUMINUM CONDUCTOR, CONCENTRIC-LAY-STRANDED (MECHANICAL PROPERTIES)								
CODE WORD	CSA DESIGNATION	CONDUCTOR SIZE		STRANDING NO. X DIA. (mm)	CLASS	O.D. (mm)	NOMINAL MASS KG/KM	RATED STRENGTH kN
		AWG or kcmil	mm²					
Peachbell	13-A1-7	#6	13.3	7x1.56	A	4.68	36.66	2.61
Rose	21-A1-7	#4	21.2	7x1.96	A	5.88	57.87	4.12
Iris	34-A1-7	#2	33.6	7x2.47	A, AA	7.41	91.91	6.21
Pansy	42-A1-7	#1	42.4	7x2.78	A, AA	8.34	116.4	7.44
Poppy	54-A1-7	1/0	53.5	7x3.12	A, AA	9.36	146.6	9.10
Aster	67-A1-7	2/0	67.4	7x3.50	A, AA	10.5	184.5	11.4
Phlox	85-A1-7	3/0	85.0	7x3.93	A, AA	11.8	232.7	14.0
Oxlip	107-A1-7	4/0	107.2	7x4.42	A, AA	13.3	294.3	17.7
Daisy	135-A1-7	266.8	135.2	7x4.96	AA	14.9	370.6	22.3
Laurel	135-A1-19	266.8	135.2	19x3.01	A	15.1	372.0	23.0
Peony	152-A1-19	300	152.0	19x3.19	A	16.0	417.9	25.8
Tulip	170-A1-19	336.4	170.5	19x3.38	A	16.9	469.1	29.0
Daffodil	177-A1-19	350	177.4	19x3.45	A	17.3	488.7	30.2
Canna	201-A1-19	397.5	201.4	19x3.67	A,AA	18.4	553.1	34.2
Cosmos	242-A1-19	477	241.7	19x4.02	AA	20.1	663.6	39.8
Syringa	242-A1-37	477	241.7	37x2.88	A	20.2	665.5	42.2
Zinnia	500-A1-19	500	253.4	19x4.12	AA	20.6	697.0	41.8
Hyacinth	253-A1-37	500	253.4	37x2.95	A	20.7	698.2	44.3
Dahlia	282-A1-19	556.5	282.0	19x4.35	AA	21.8	777.0	46.6
Mistletoe	282-A1-37	556.5	282.0	37x3.12	A	21.8	781.0	48.1
Meadowsweet	304-A1-37	600	304.0	37x3.23	A, AA	22.6	837.0	51.5
Orchid	322-A1-37	636	322.3	37x3.33	A, AA	23.3	889.7	54.8
Violet	363-A1-37	715.5	362.6	37x3.53	AA	24.7	999.7	61.6
Nasturtium	363-A1-61	715.5	362.6	61x2.75	A	24.8	1005	65.2
Petunia	380-A1-37	750	380.0	37x3.62	AA	25.3	1051	64.7
Arbutus	403-A1-37	795	402.8	37x3.72	AA	26.0	1110	68.4
Lilac	403-A1-61	795	402.8	61x2.90	A	26.1	1117	70.5
Fuchsia	405-A1-37	800	405.4	37x3.73	AA	26.1	1116	68.7
Heliotrope	405-A1-61	800	405.4	61x2.91	A	26.2	1125	71.0
Anemone	443-A1-37	874.5	443.1	37x3.90	AA	27.3	1220	72.9
Crocus	443-A1-61	874.5	443.1	61x3.04	A	27.4	1228	75.3
Magnolia	483-A1-37	954	483.4	37x4.08	AA	28.6	1336	79.8
Goldenrod	483-A1-61	954	483.4	61x3.18	A	28.6	1343	82.4
Camellia	507-A1-61	1000	506.7	61x3.25	A	29.3	1403	86.0
Bluebell	524-A1-37	1033.5	523.7	37x4.25	AA	29.8	1449	86.6
Larkspur	524-A1-61	1033.5	523.7	61x3.31	A	29.8	1455	89.2
Marigold	564-A1-61	1113	564.0	61x3.43	A, AA	30.9	1563	95.8
Hawthorn	604-A1-61	1192.5	604.3	61x3.55	A, AA	32.0	1674	103
Narcissus	645-A1-61	1272	644.5	61x3.67	A, AA	33.0	1789	110
Columbine	685-A1-61	1351.5	684.8	61x3.78	A, AA	34.0	1898	113
Carnation	725-A1-61	1431	725.1	61x3.89	A, AA	35.0	2010	120

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

TransPowr® A1 (ASC) Bare Overhead Conductor

All-Aluminum 1350 Conductor Concentric-Lay-Stranded

A1 (ASC), ALUMINUM CONDUCTOR, CONCENTRIC-LAY-STRANDED (ELECTRICAL PROPERTIES)										
CODE WORD	CONDUCTOR SIZE		RESISTANCE (1)OHMS/KM			AMPACITY @75°C (2)		GEOMETRIC MEAN RADIUS CM	INDUCTIVE REACTANCE OHM/KM (3)	CAPACITIVE REACTANCE MEGAOHM-KM (3)
	AWG or kcmil	mm²	DC @20°C	AC @25°C	AC @75°C	STANDARD	E3X®			
Peachbell	#6	13.3	2.153	2.196	2.631	95	102	0.171	0.3911	0.2326
Rose	#4	21.2	1.354	1.381	1.655	127	137	0.213	0.3740	0.2215
Iris	#2	33.6	0.8514	0.8687	1.041	170	185	0.268	0.3570	0.2105
Pansy	#1	42.4	0.6751	0.6889	0.8252	196	214	0.302	0.3481	0.2050
Poppy	1/0	53.5	0.5351	0.5460	0.6541	227	249	0.338	0.3393	0.1994
Aster	2/0	67.4	0.4246	0.4333	0.5190	262	289	0.381	0.3304	0.1939
Phlox	3/0	85.0	0.3367	0.3437	0.4117	303	336	0.427	0.3219	0.1884
Oxlip	4/0	107.2	0.2671	0.2727	0.3266	351	391	0.482	0.3127	0.1828
Daisy	266.8	135.2	0.2118	0.2164	0.2591	406	455	0.539	0.3041	0.1773
Laurel	266.8	135.2	0.2127	0.2174	0.2603	406	455	0.570	0.2999	0.1767
Peony	300	152.0	0.1892	0.1935	0.2316	437	491	0.604	0.2956	0.1739
Tulip	336.5	170.5	0.1687	0.1726	0.2066	469	530	0.640	0.2914	0.1712
Daffodil	350	177.4	0.1621	0.1659	0.1986	481	543	0.652	0.2897	0.1703
Canna	397.5	201.4	0.1428	0.1463	0.1750	521	590	0.695	0.2851	0.1672
Cosmos	477	241.7	0.1190	0.1222	0.1461	584	665	0.762	0.2782	0.1628
Syringa	477	241.7	0.1194	0.1226	0.1466	583	664	0.774	0.2769	0.1627
Zinnia	500	253.4	0.1135	0.1166	0.1394	601	686	0.780	0.2763	0.1617
Hyacinth	500	253.4	0.1139	0.1171	0.1399	600	685	0.792	0.2753	0.1616
Dahlia	556.5	282.0	0.1020	0.1049	0.1254	642	735	0.823	0.2723	0.1592
Mistletoe	556.5	282.0	0.1023	0.1054	0.1259	642	734	0.838	0.2710	0.1590
Meadowsweet	600	304.0	0.09490	0.09790	0.1169	672	771	0.869	0.2684	0.1572
Orchid	636	322.3	0.08951	0.09247	0.1104	697	801	0.896	0.2658	0.1558
Violet	715.5	362.6	0.07956	0.08246	0.09832	750	865	0.948	0.2618	0.1530
Nasturtium	715.5	362.6	0.07991	0.08286	0.09879	748	863	0.957	0.2608	0.1529
Petunia	750	380.0	0.07592	0.07880	0.09392	772	891	0.972	0.2599	0.1519
Arbutus	795	402.8	0.07162	0.07450	0.08873	800	925	1.000	0.2576	0.1505
Lilac	795	402.8	0.07192	0.07486	0.08915	799	924	1.01	0.2569	0.1504
Fuchsia	800	405.4	0.07117	0.07404	0.08819	803	929	1.00	0.2576	0.1504
Heliotrope	800	405.4	0.07147	0.07441	0.08860	802	927	1.01	0.2569	0.1503
Anemone	874.5	443.1	0.06511	0.06799	0.08089	848	984	1.05	0.2539	0.1482
Crocus	874.5	443.1	0.06538	0.06833	0.08128	847	982	1.06	0.2533	0.1482
Magnolia	954	483.4	0.05968	0.06259	0.07437	895	1041	1.10	0.2507	0.1461
Goldenrod	954	483.4	0.05993	0.06291	0.07474	893	1039	1.10	0.2503	0.1461
Camellia	1000	506.7	0.05718	0.06018	0.07144	919	1070	1.13	0.2484	0.1450
Bluebell	1033.5	523.7	0.05509	0.05804	0.06887	939	1095	1.14	0.2477	0.1443
Larkspur	1033.5	523.7	0.05532	0.05835	0.06922	937	1093	1.15	0.2471	0.1442
Marigold	1113	564.0	0.05137	0.05446	0.06451	980	1146	1.19	0.2444	0.1424
Hawthorn	1192.5	604.3	0.04794	0.05109	0.06044	1022	1197	1.23	0.2418	0.1407
Narcissus	1272	644.5	0.04495	0.04818	0.05690	1062	1247	1.27	0.2395	0.1392
Columbine	1351.5	684.8	0.04231	0.04561	0.05378	1101	1295	1.31	0.2372	0.1378
Carnation	1431	725.1	0.03996	0.04334	0.05102	1139	1342	1.35	0.2349	0.1364

(1) Based on a conductivity of 61.0% IACS at 20°C for aluminum.

(2) Based on a conductor temperature of 75°C at 60 Hz and the following conditions, 32°C ambient temperature, 1.98 ft/sec (0.6 m/sec) crosswind (90° to conductor), 0.5 coefficient of emissivity for a standard conductor and 0.9 for a E3X coated conductor, 0.5 coefficient of absorptivity for a standard conductor and 0.2 for a E3X coated conductor, 42° 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 95.0 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.

(3) Values for inductive reactance and capacitive reactance are expressed in terms of a 1 ft radius (30.48 cm).

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CODE WORD	CSA DESIGNATION	CONDUCTOR SIZE		STRANDING NO. X DIA. (mm)	CLASS	O.D. (mm)	NOMINAL MASS KG/KM	RATED STRENGTH kN
		AWG or kcmil	mm²					
Gladiolus	765-A1-61	1510.5	765.4	61x4.00	A, AA	36.0	2125	126
Coreopsis	806-A1-61	1590	805.7	61x4.10	AA	36.9	2233	133
Jessamine	887-A1-61	1750	886.7	61x4.30	AA	38.7	2456	146
Cowslip	1013-A1-91	2000	1013.4	91x3.77	A	41.5	2827	168
Sagebrush	1140-A1-91	2250	1140.0	91x3.99	A	43.9	3166	188
Pigweed	1165-A1-61	2300	1165.4	61x4.93	A	44.4	3229	192
Lupine	1267-A1-91	2500	1266.8	91x4.21	A	46.3	3525	209
Bitterroot	1393-A1-91	2750	1393.5	91x4.42	A	48.6	3886	230
Trillium	1520-A1-127	3000	1520.1	127x3.90	A	50.7	4232	250
Bluebonnet	1773-A1-127	3500	1773.5	127x4.22	A	54.9	4955	293

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	AWG or kcmil	mm²	DC @20°C	AC @25°C	AC @75°C	STANDARD	E3X®			
Gladiolus	1510.5	765.4	0.03785	0.04133	0.04856	1175	1388	1.39	0.2330	0.1351
Coreopsis	1590	805.7	0.03596	0.03952	0.04636	1211	1433	1.43	0.2310	0.1339
Jessamine	1750	886.7	0.03267	0.03641	0.04256	1280	1519	1.49	0.2274	0.1316
Cowslip	2000	1013.4	0.02869	0.03278	0.03808	1376	1642	1.60	0.2221	0.1284
Sagebrush	2250	1140.0	0.02551	0.02987	0.03450	1468	1759	1.70	0.2175	0.1256
Pigweed	2300	1165.4	0.02486	0.02922	0.03372	1489	1785	1.71	0.2172	0.1251
Lupine	2500	1266.8	0.02295	0.02759	0.03168	1553	1868	1.79	0.2136	0.1231
Bitterroot	2750	1393.5	0.02087	0.02575	0.02941	1632	1969	1.88	0.2100	0.1208
Trillium	3000	1520.1	0.01917	0.02432	0.02764	1703	2062	1.97	0.2067	0.1187
Bluebonnet	3500	1773.5	0.01644	0.02198	0.02477	1836	2236	2.12	0.2008	0.1150

(1) Based on a conductivity of 61.0% IACS at 20°C for aluminum.

(2) Based on a conductor temperature of 75°C at 60 Hz and the following conditions, 32°C ambient temperature, 1.98 ft/sec (0.6 m/sec) crosswind (90° to conductor), 0.5 coefficient of emissivity for a standard conductor and 0.9 for a E3X coated conductor, 0.5 coefficient of absorptivity for a standard conductor and 0.2 for a E3X coated conductor, 42° 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 95.0 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.

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