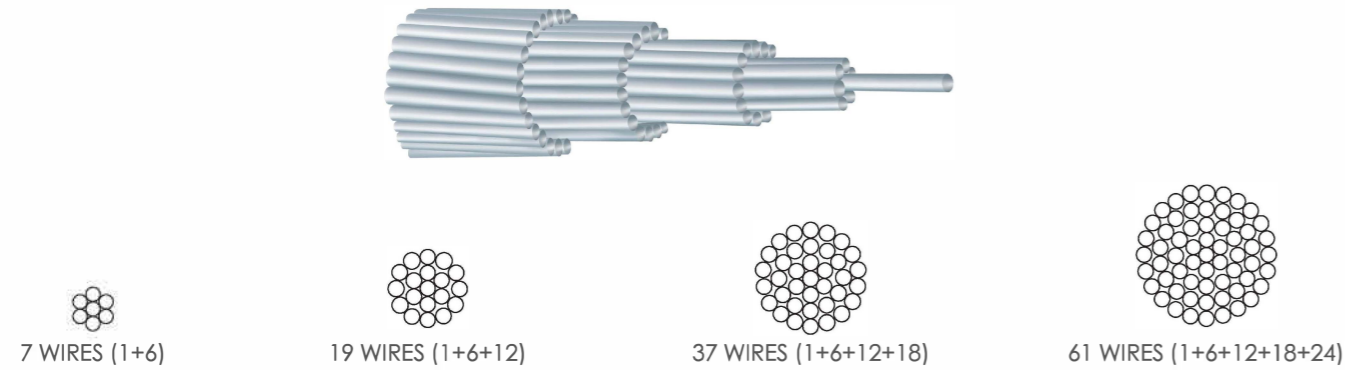


All Aluminium Conductors (Type AAC)

All Aluminium Conductors (AAC) are concentrically stranded conductors of EC grade (alloy 1350) aluminium wires only. The conductor may be made up of 7, 19, 37, 61 or more wires in 1, 2, 3, 4 or more layer around a central wire. AAC conductors are typically used in installations where spacing is short and supports are close.

Full hard drawn temper wires are used with the wires stranded in each successive layer having an opposite direction of lay, the outermost layer being right-handed. The illustration below shows the stranding patterns.



Aluminium conductors manufactured to AS 1531 (AAC/1350) Physical and Mechanical Properties

Conductor code	Stranding and wire diameter	Nominal Overall diameter	Cross sectional area	Approximate mass	Minimum breaking load	Coefficient of linear expansion
	No/mm	mm	mm ²	kg/km	kN	x10 ⁻⁶ /°C
Leo	7/2.50	7.5	34.4	94.3	5.71	23.0
Leonids	7/2.75	8.25	41.6	113	6.72	23.0
Libra	7/3.00	9.00	49.5	135	7.98	23.0
Mars	7/3.75	11.3	77.3	211	11.8	23.0
Mercury	7/4.50	13.5	111	304	16.9	23.0
Moon	7/4.75	14.3	124	339	18.9	23.0
Neptune	19/3.25	16.3	158	433	24.7	23.0
Orion	19/3.50	17.5	183	503	28.7	23.0
Pluto	19/3.75	18.8	210	576	31.9	23.0
Saturn	37/3.00	21.0	262	721	42.2	23.0
Sirius	37/3.25	22.8	307	845	48.2	23.0
Taurus	19/4.75	23.8	337	924	51.3	23.0
Triton	37/3.75	26.3	409	1120	62.2	23.0
Uranus	61/3.25	29.3	506	1400	75.2	23.0
Ursula	61/3.50	31.5	587	1620	87.3	23.0
Venus	61/3.75	33.8	673	1860	97.2	23.0

Electrical Properties

Conductor code	DC resist at 20°C	AC Resist at 50Hz 75°C	Inductive reactance to 0.3m at 50Hz	Continuous current carrying capacity. A											
				Rural weathered						Industrial weathered					
				Winter night			Summer noon			Winter night			Summer noon		
				still air	1m/s wind	2m/s wind	still air	1m/s wind	2m/s wind	still air	1m/s wind	2m/s wind	still air	1m/s wind	2m/s wind
Leo	0.833	1.022	0.294	128	219	253	104	191	238	141	223	258	92	192	218
Leonids	0.689	0.840	0.286	149	238	286	109	215	252	159	248	293	102	212	238
Libra	0.579	0.705	0.285	163	265	338	121	241	293	172	275	349	123	243	271
Mars	0.370	0.451	0.271	224	356	425	167	322	372	236	378	423	151	314	374
Mercury	0.258	0.316	0.257	273	437	519	203	386	458	295	463	538	179	387	459
Moon	0.232	0.287	0.256	293	468	539	212	418	489	323	489	565	183	411	493
Neptune	0.183	0.223	0.243	352	552	643	251	483	583	381	578	659	209	475	563
Orion	0.157	0.190	0.242	379	615	710	273	532	636	413	625	722	227	516	628
Pluto	0.137	0.166	0.231	415	677	776	302	577	680	456	696	789	269	559	674
Saturn	0.110	0.137	0.228	497	769	873	345	656	781	528	782	914	312	639	763
Sirius	0.094	0.112	0.223	546	846	973	368	726	864	584	871	1023	341	702	828
Taurus	0.0857	0.104	0.218	585	879	1056	408	769	923	642	922	1087	359	739	875
Triton	0.0706	0.0870	0.211	669	996	1195	449	853	1038	736	1038	1238	401	824	1011
Uranus	0.0572	0.0713	0.208	787	1128	1388	535	973	1173	855	1189	1427	452	936	1163
Ursula	0.0493	0.0615	0.202	856	1254	1534	582	1063	1326	938	1312	1581	502	1018	1289
Venus	0.0429	0.0537	0.194	943	1376	1685	644	1129	1438	1027	1430	1724	543	1091	1434

Note: Current ratings are based to the following conditions

- Conductor temperature rise above ambient of 40°C
- Ambient air temp. of 35°C for summer noon or 10°C for winter night
- Direct solar radiation intensity of 1000W/m² for summer noon or zero for winter night
- Diffuse solar radiation intensity of 100W/m² for summer noon or zero for winter night
- Ground reflectance of 0.2
- Emissivity of 0.5 for rural weathered conductor or 0.85 for industrial weathered conductor
- Solar absorption coefficient of 0.5 for rural weathered conductor or 0.85 for industrial weathered conductor
- Cross sections not to scale