

ALL ALLUMINIUM ALLOY CONDUCTORS (AAAC) REC. spn. 33/1991 (R) & Sizes to IS 398 (Part IV): 1994

Mechanical Parameters

Sr. No	EQT. ACSR Code	Nom. Alloy Area sq. m	Stranding and wire diameter Nos./mm	Section Area sq. . mm	Approximate		Rated Strength		Span m	Tension				Sag		
					OD mm	Mass kg/km	kn.	Kgf		32°C Kgf	0°C with wind			53 C 75 C 90 C		
											Kgf			Nil wind		
										Wind pressure kg/sq. m 50 75 100						
1	Mole	15	3/2.50	14.73	5.39	40	4.33	442	67	111	196	211	227	0.33	0.63	0.90
2	Squirrel	20	7/2.00	21.99	6.00	60	6.45	658	67 107	165 165	279 292	292 320	309 348	0.33 0.79	0.61 1.25	0.87 160ss
3	Weasel	34	7/2.50	34.36	7.50	94	10.11	1031	67 107	258 258	427 440	442 472	460 506	0.32 0.78	0.61 1.24	0.86 1.59
4	Rabbit	55	7/3.15	54.55	9.45	149	16.03	1635	67 107 125	409 409 409	674 686 692	690 721 737	710 763 788	0.33 0.79 1.05	0.62 1.25 1.58	0.88 1.61 1.98
5	Raccoon	80	7/.3.81	79.81	11.43	218	23.41	2387	125	597	990	1040	1097	1.05	1.58	1.98
6	Dog	100	7/4.26	99.77	12.78	273	29.26	2984	125	746	1226	1278	1340	1.05	1.58	1.98
7	Dog (up)	125	19/2.89	124.60	14.45	342	36.64	3736	125	934	1507	1561	1627	1.05	1.56	1.95
										Wind pressure kg/sq. m 43 45 52						
8	Dog (up) Coyote	150	19/3.15	148.10	15.75	407	43.50	4436	260 275	1109 1109	1743 1740	1755 1753	1798 1800	3.92 1.33	4.85 5.30	5.47 5.95
9	Wolf	175	19/3.40	172.50	17.00	474	50.54	5154	260 275	1289 1289	2007 2002	2020 2015	2065 2065	3.93 4.34	4.86 5.30	5.49 5.96
10	Wolf (up)	200	19/3.66	199.90	18.30	549	58.66	5982	260 275	1496 1496	2306 2298	2319 2312	2366 2363	3.92 4.34	4.85 5.30	5.49 5.95
11	Panther	230	19/3.94	231.70	19.70	637	68.05	6939	320	1735	2609	2627	2693	5.69	6.76	7.47
12	Panther (up)	290	37/3.15	288.30	22.05	704	84.71	8638	320	2160	3163	3181	3249	5.68	6.73	7.43
13	Panther (up)	345	37/3.45	345.90	24.15	953	101.58	10358	320	2590	3754	3773	3844	5.68	6.73	7.43
14	Kundah	400	37/3.71	400.00	25.97	1102	117.40	11971	350 380	2993 2993	4255 4207	4277 4232	4360 4324	6.69 7.76	7.80 8.94	8.54 9.72
15	Zebra	465	37/4.00	465.00	28.00	1281	136.38	13907	350 380	3477 3477	4905 4844	4928 4869	5013 4964	6.69 7.77	7.80 8.94	8.54 9.72
16	Zebra (UP)	525	61/3.31	525.00	29.79	1448	146.03	14891	350 380	3723 3723	5176 5106	5200 5132	5288 5231	6.99 8.12	8.08 9.27	8.81 10.03
17	Moose	570	61/3.45	570.20	31.05	1574	158.66	16179	380 400	4045 4045	5522 5472	5549 5501	5649 5608	8.13 8.92	9.27 10.11	10.03 10.89
18	Morkulla	605	61/3.55	603.80	31.95	1666	167.99	17130	380 400	4283 4283	5831 5778	5858 5807	5959 5914	8.12 8.92	9.27 10.11	10.03 10.89
19	Moose (up) Morkulla (up)	640	61/3.66	641.80	32.94	1771	178.43	18195	380 400	4549 4549	6175 6117	6202 6146	6304 6255	8.13 8.93	9.28 10.11	10.04 10.89
20	Morkulla (up)	695	61/3.81	696.50	34.29	1919	193.25	19706	380 400	4927 4927	6663 6598	6690 6628	6794 6738	8.13 8.93	9.28 10.11	10.04 10.90
21	Bersimis	765	61/4.00	766.50	36.00	2116	213.01	21721	380 400	5430 5430	7314 7241	7342 7270	7447 7382	8.14 8.94	9.28 10.12	10.04 10.90

Rate: EDT = 25% of Rated Strength

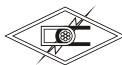


ALL ALUMINIUM ALLOY CONDUCTORS (AAAC) REC Spn. 33/1991/(R) & Sizes for IS 398 (Part IV)/1994

Electrical Parameters

Sr. No.	EQVT. ACSR code	Nom Alloy Area	Stranding And Wire Diameter	DC Resistance a)Standard b)Maximum	AC Resistance at			Current Capacity		
					65 C	75 C	90 C	65 C	75 C	90 C
		sq. mm	nos./mm	/km	/km	/km	/km	Amps	Amps	Amps
1.	Mole	15	3/2.50	a)2.2286 b)2.3040	2.5896 2.6559	2.6699 2.7381	2.7902 2.8616	33 72	88 87	105 104
2.	Squirrel	20	7/2.00	a)1.4969 b)1.5410	1.7395 1.7912	1.7934 1.8467	1.8742 1.9299	92 90	110 109	132 130
3.	Weasel	34	7/2.50	a)0.9580 b)0.9900	1.1133 1.1418	1.1478 1.1772	1.9950 1.2302	121 119	146 144	175 173
4.	Rabbit	55	7/3.15	a)0.6034 b)0.6210	0.7013 0.7215	0.7230 0.7438	0.7556 0.7773	160 158	194 191	234 231
5.	Raccoon	80	7/3.81	a)0.4125 b)0.4250	0.4795 0.4942	0.4943 0.5095	0.5166 0.5325	202 199	246 242	297 293
6.	Dog	100	7/4.26	a)0.3299 b)0.3390	0.3836 0.3945	0.3955 0.4067	0.4133 0.4250	232 229	283 272	343 338
7.	Dog(up)	125	19/2.89	a)0.2654 b)0.2735	0.3087 0.3181	0.3182 0.3279	0.3325 0.3427	266 262	325 320	394 389
8.	Dog(up)/Coyote	150	19/3.15	a)0.2234 b)0.2290	0.2599 0.2674	0.2680 0.2756	0.2800 0.2880	395 291	362 357	440 434
9.	Wolf	175	19/3.40	a)0.1918 b)0.1969	0.2232 0.2293	0.2301 0.2363	0.2404 0.2470	324 320	398 393	485 478
10.	Wolf(up)	200	19/3.66	a)0.1655 b)0.1710	0.1927 0.1988	0.1987 0.2049	0.2076 0.2141	354 349	436 430	532 524
11.	Panther	232	19/3.94	a)0.1428 b)0.1471	0.1664 0.1714	0.1716 0.1767	0.1792 0.1846	387 382	478 471	584 575
12.	Panther (up)	290	37/3.15	a)0.11500 b)0.11820	0.13420 0.13800	0.13830 0.14230	0.14450 0.14860	442 436	548 540	670 661
13.	Panther (up)	345	37/3.45	a)0.09585 b)0.09840	0.11211 0.11510	0.11554 0.11863	0.12069 0.12391	493 487	613 605	752 742
14.	Kundah	400	37/3.71	a)0.08289 b)0.08550	0.09717 0.10015	0.10013 0.10320	0.10457 0.10779	538 530	670 660	824 811
15.	Zebra	465	37/4.00	a) 0.07130 b) 0.07340	0.08383 0.08627	0.08637 0.08888	0.09018 0.09281	589 580	736 725	905 892
16.	Zebra (up)	525	61/3.31	a) 0.06330 b) 0.06510	0.07466 0.07668	0.07691 0.07899	0.08028 0.08246	632 623	792 781	976 963
17.	Moose	570	61/3.45	a) 0.05827 b) 0.05980	0.06891 0.07070	0.07097 0.07282	0.07407 0.07601	663 655	833 822	1028 1015
18.	Morkulla	605	61/3.55	a) 0.05503 b) 0.0580	0.06521 0.06724	0.06716 0.06925	0.07008 0.07227	686 676	862 849	1065 1049
19.	Moose(up)	640	61/3.66	a) 0.05177 b) 0.05340	0.06150 0.06337	0.06332 0.06525	0.06607 0.06808	711 700	894 881	1106 1089
20.	Morkulla (up)	695	61/3.81	a) 0.04778 b) 0.04920	0.05697 0.05864	0.05865 0.06037	0.06117 0.06297	745 734	939 925	1162 1145
21.	Bersimis	765	61/4.00	a) 0.04335 b) 0.04460	0.05196 0.05341	0.05348 0.05497	0.05576 0.05732	788 777	995 981	1234 1217

Note:
Resistance
(a) At resistivity 0.0325 Ω -mm²/mm and nominal diameter of wires
(b) At resistivity 0.0325 Ω -mm²/mm and minimum diameter of wires



ALL ALUMINIUM ALLOY CONDUCTORS (AAAC) REC Spn-No. 33/1984 (R-1991)

Distribution Conductors to REC Standards

AAAC Size to Size equivalent to ACSR Code	Nominal Alu-Area	Stranding And Wire Diameter	Sectional Area	Approx. Overall Diameter	Approx. Mass	Calculated Resistance at 20 C (Maximum)	Approx. Calculated Breaking Load
	mm ²	mm	mm ²	mm	kg/km	/km	kN
Mole	14	3/2.50	14.73	5.38	40.13	2.304	4.331
Squirrel	20	7/2.00	21.99	6.00	60.13	1.541	6.467
Weasel	30	7/2.50	34.36	7.50	94.00	0.990	10.106
Rabbit	50	7/3.15	54.55	9.45	149.20	0.621	16.044
Raccoon	80	7/3.81	79.81	11.43	218.26	0.425	23.473
Dog	100	7/4.26	99.77	12.78	272.86	0.339	29.344

ALUMINIUM ALLOY WIRES USED IN THE CONSTRUCTION OF STRANDED ALUMINIUM ALLOY CONDUCTORS as per IS – 398 Part IV/1994

Diameter			Cross Sectional Area of Nominal Diameter of Wire	Mass	Minimum Breaking Load		Resistance at 20 C Maximum
Nom.	Min.	Max.			Before Stranding	After Stranding	
mm	mm	mm	mm ²	kg/km	kN	kN	/km
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2.00	1.98	2.02	3.142	8.482	0.97	0.92	10.653
2.50	2.47	2.53	4.909	13.25	1.52	1.44	6.845
2.89	2.86	2.92	6.560	17.71	2.03	1.93	5.106
3.15	3.12	3.18	7.793	21.04	2.41	2.29	4.290
3.31	3.28	3.34	8.605	23.23	2.66	2.53	3.882
3.40	3.37	3.43	9.079	24.51	2.80	2.66	3.677
3.45	3.42	3.48	9.348	25.24	2.89	2.75	3.571
3.55	3.51	3.59	9.998	26.72	3.60	2.91	3.390
3.66	3.62	3.70	10.52	26.41	3.25	3.09	3.187
3.71	3.67	3.75	10.81	21.19	3.34	3.17	3.101
3.81	3.77	3.85	11.40	30.78	3.52	3.34	2.938
3.94	3.90	3.98	12.19	32.92	3.77	3.58	2.746
4.00	3.96	4.04	12.57	33.93	3.88	3.69	2.663
4.26	4.22	4.30	14.25	38.48	4.40	4.18	2.345

