Technical Data Sheet

Product Range

- AAAC – All Aluminium Alloy Conductors
- ACSR – Aluminium Conductor Steel Reinforced
- AAC – All Aluminium Conductors



Aluminium Wire Products – EC Grade/Alloy/T4/De-oxi Wire Rod, Aluminium Conductors – AAC, ACSR, AAAC, Bare & Insulated Aluminium Wire & Strip, Aerial Bunched Cable.

All Aluminium Alloy Conductor – AAAC

AAAC conductor is made from aluminum-magnesium-silicon alloy of high electrical conductivity containing Magnesium (0.6-0.9%) & Silicon (0.5-0.9%) to give it better mechanical properties after treatment.

AAAC conductors are generally made out of aluminum alloy 6201 (Minimum Conductivity is 54%). AAAC Conductor has a better corrosion resistance and better strength to weight ratio and improved electrical conductivity than ACSR Conductor on equal diameter basis.

Key Benefits

- Higher Strength to weight ratio compared to ACSR Conductor.
- Better Corrosion resistant than ACSR Conductor.
- Better sag Characteristics

Sizes as per global standards are given on the following pages.

KJV
A ZETWERK COMPANY

AAAC – All Aluminium Alloy Conductor

ALL ALUMINIUM ALLOY CONDUCTOR (IS:398 PART 4)						
Serial No.	Actual Area (mm²)	Stranding & Wire Diameter (mm)	Approx. Overall Dia (mm)	Approx. Mass (kg/km)	Calculated Maximum Resistance at 20°C (Ω/km)	Approx. Calculated Breaking Load (kN)
1	15	3/2.50	5.39	40.150	2.3040	4.33
2	22	7/2.00	6.00	60.160	1.5410	6.45
3	34	7/2.50	7.50	94.000	0.9900	10.11
4	55	7/3.15	9.45	149.200	0.6210	16.03
5	80	7/3.81	11.43	218.260	0.4250	23.41
6	100	7/4.26	12.78	272.860	0.3390	29.26
7	125	19/2.89	14.45	342.510	0.2735	36.64
8	148	19/3.15	15.75	406.910	0.2290	43.50
9	173	19/3.40	17.00	474.020	0.1969	54.54
10	200	19/3.66	18.30	549.400	0.1710	58.66
11	232	19/3.94	19.70	636.670	0.1471	68.05
12	288	37/3.15	22.05	794.050	0.1182	84.71
13	346	37/3.45	24.15	952.560	0.0984	101.58
14	400	37/3.71	25.97	1101.630	0.0829	117.40
15	465	37/4.00	28.00	1280.500	0.0734	136.38
16	525	61/3.31	29.79	1448.390	0.0651	146.03
17	570	61/3.45	31.05	1573.710	0.0598	158.66
18	604	61/3.55	31.95	1666.000	0.0568	167.99
19	642	61/3.66	32.94	1771.360	0.0534	178.43
20	695	61/3.81	34.29	1919.130	0.0492	193.25
21	767	61/4.00	36.00	2115.540	0.0446	213.01

AAAC – All Aluminium Alloy Conductor

AAAC (ASTM B399)									
Code Name	Conductor Size (MCM)	Number of Wires & Diameter (mm)	Cross-sectional Area (mm²)	Overall Diameter (mm)	Weight (kg/km)	Calculated Breaking Load		DC Resistance at 20°C (Ω/km)	Breaking Length (km)
						(kgf)	(kN)		
	66.36	7/2.47	33.54	7.41	92	1087	10.66	0.99870	11.82
Ames	77.47	7/2.67	39.19	8.01	108	1270	12.45	0.85470	11.76
	105.60	7/3.12	53.52	9.36	148	1734	17.00	0.62590	11.72
Azusa	123.30	7/3.37	62.44	10.01	172	2023	19.84	0.53640	11.76
	133.10	7/3.50	67.35	10.50	186	2091	20.51	0.49730	11.24
Anaheim	155.40	7/3.78	78.55	11.34	217	2439	23.92	0.42640	11.24
	167.80	7/3.93	84.91	11.79	234	2636	25.85	0.39450	11.26
Amherst	195.70	7/4.25	99.30	12.75	274	3083	30.23	0.33730	11.25
	211.60	7/4.42	107.40	13.26	296	3335	32.71	0.31190	11.27
Alliance	246.90	7/4.77	125.10	14.31	345	3884	38.09	0.26780	11.26
Canton	394.50	19/3.66	199.90	18.30	551	6012	58.96	0.16760	10.91
	400.00	19/3.69	203.20	18.45	560	6112	59.94	0.16480	10.91
	450.00	19/3.91	228.10	19.55	629	6861	67.28	0.14680	10.91
Cairo	465.40	19/3.98	236.40	19.90	652	7110	69.73	0.14170	10.90
	500.00	19/4.12	253.30	20.60	698	7619	74.72	0.13220	10.92
	550.00	37/3.10	279.30	21.70	770	8577	84.11	0.11990	11.08
Darien	559.50	19/4.36	283.70	21.80	782	8533	83.68	0.11810	10.97
	600.00	37/3.23	303.20	22.61	836	9311	91.31	0.11050	11.14
	650.00	37/3.37	330.00	23.59	910	10134	99.38	0.10150	11.14
Elgin	652.40	19/4.71	331.00	23.55	913	9956	97.64	0.10120	10.90
	700.00	37/3.49	354.00	24.43	976	10418	102.20	0.09462	10.67
Flint	740.80	37/3.59	374.50	25.13	1033	11022	108.10	0.08944	10.67
	750.00	37/3.62	380.80	25.34	1050	11207	109.90	0.08796	10.67
	800.00	37/3.73	404.30	26.11	1115	11899	116.70	0.08285	10.67
	900.00	37/3.96	455.70	27.72	1256	13411	131.50	0.07350	10.68
Greeley	927.20	37/4.02	469.60	28.14	1295	13821	135.50	0.07133	10.67
	1000.00	37/4.18	507.70	29.26	1400	14942	146.50	0.06598	10.67

AAAC – All Aluminium Alloy Conductor

AAAC (DIN 48201-6)								
Nominal Aluminium Area (mm²)	Number & Diameter of Wires (mm)	Cross-sectional Area (mm²)	Overall Diameter (mm)	Weight (kg/km)	Calculated Breaking Load		DC Resistance at 20°C (Ω/km)	Breaking Length (km)
					(kgf)	(kN)		
16	7/1.70	15.89	5.10	43	453	4.44	2.09080	10.530
25	7/2.10	24.25	6.30	66	690	6.77	1.37000	10.450
35	7/2.50	34.36	7.50	94	979	9.6	0.96690	10.410
50	7/3.00	49.48	9.00	135	1409	13.82	0.67130	10.440
50	19/1.80	48.35	9.00	133	1377	13.5	0.69030	10.350
70	19/2.10	65.81	10.50	181	1874	18.38	0.50720	10.350
95	19/2.50	93.27	12.50	256	2656	26.05	0.35790	10.380
120	19/2.80	117.00	14.00	322	3332	32.68	0.28530	10.350
150	37/2.25	147.10	15.75	405	4190	41.09	0.22750	10.350
185	37/2.50	181.60	17.50	500	5172	50.73	0.18420	10.340
240	61/2.25	242.50	20.25	669	6906	67.74	0.13830	10.340
300	61/2.50	299.40	22.50	826	8527	83.63	0.11200	10.340
400	61/2.89	400.10	26.01	1104	11390	111.7	0.08381	10.330
500	61/3.23	499.80	29.07	1379	14235	139.6	0.06709	10.340
625	91/2.96	626.20	32.56	1733	17835	174.9	0.05367	10.290
800	91/3.35	802.10	36.85	2219	22852	224	0.04190	10.300
1000	91/3.74	999.70	41.14	2766	28470	279.2	0.03362	20.290

KJV
A ZETWERK COMPANY

AAAC – All Aluminium Alloy Conductor

AAAC (BS 3242:1970)									
Code Name	Nominal Aluminium Area (mm²)	Strands & Diameter of Wires (mm)	Cross-sectional Area (mm²)	Overall Diameter (mm)	Weight (kg/km)	Breaking Load		Calculated Resistance at 20°C Max (Ω/km)	Breaking Length (km)
						(kgf)	(kN)		
-	10	7/1.47	11.80	4.41	32	340	3.34	2.7710	10.63
Box	15	7/1.85	18.82	5.55	51	537	5.27	1.7490	10.53
Acacia	20	7/2.08	23.79	6.24	65	680	6.67	1.3840	10.46
Almond	25	7/2.34	30.10	7.02	82	861	8.45	1.0930	10.50
Cedar	30	7/2.54	35.47	7.62	97	1014	9.95	0.9281	10.45
-	35	7/2.77	42.18	8.31	115	1205	11.82	0.7804	10.48
Fir	40	7/2.95	47.84	8.85	131	1367	13.41	0.6881	10.44
Hazel	50	7/3.30	59.87	9.90	164	1711	16.78	0.5498	10.43
Pine	60	7/3.61	71.65	10.83	196	2048	20.09	0.4594	10.45
-	70	7/3.91	84.05	11.73	230	2402	23.56	0.3917	10.44
Willow	75	7/4.04	89.73	12.12	245	2565	25.16	0.3669	10.47
-	80	7/4.19	96.52	12.57	264	2758	27.06	0.3411	10.45
-	90	7/4.45	108.90	13.35	298	3112	30.53	0.3023	10.44
Oak	100	7/4.65	118.90	13.95	325	3398	33.33	0.2769	10.46
-	100	19/2.82	118.70	14.10	326	3393	33.29	0.2787	10.41
Mulberry	125	19/3.18	150.90	15.90	415	4312	42.30	0.2192	10.39
Ash	150	19/3.48	180.70	17.40	497	5164	50.66	0.1831	10.39
Elm	175	19/3.76	211.00	18.80	580	6030	59.15	0.1568	10.40
Poplar	200	37/2.87	239.40	20.09	659	6841	67.11	0.1385	10.38
-	225	37/3.05	270.30	21.35	744	7724	75.77	0.1227	10.38
Sycamore	250	37/3.23	303.20	22.61	835	8664	84.99	0.1093	10.38
Upas	300	37/3.53	362.10	24.71	997	10350	101.53	0.0916	10.38
Walnut	350	37/3.81	421.80	26.67	1162	12053	118.24	0.0786	10.37
Yew	400	37/4.06	479.00	28.43	1319	13685	134.25	0.0692	10.38
Totara	425	37/4.14	498.10	28.98	1372	14223	139.53	0.0666	10.37
Rubus	500	61/3.50	586.90	31.50	1620	16771	164.52	0.0566	10.35
Araucaria	700	61/4.14	821.10	37.26	2266	23450	230.04	0.0405	10.35

All Aluminium Conductor – AAC

AAC conductor is also known as aluminum stranded conductor. AAC conductor is manufactured from electrolytically refined (E.C.GRADE) aluminum, having purity of minimum 99.5% of aluminium (with minimum Conductivity of 61%). AAC conductor is used mainly in urban areas because the spacing is short and the supports are close.

All aluminum conductors are made up of one or more strands of aluminum wire depending on the end usage. AAC conductors are also used extensively in coastal areas because they have a very high degree of corrosion resistance.

Key Benefits

- Conductivity of AAC Conductor is high.
- AAC Conductor is corrosion resistant.

Sizes as per global standards are given on the following pages.

KJV
A ZETWERK COMPANY

AAC – All Aluminium Conductor

ALL ALUMINIUM CONDUCTORS (IS:398 PART 1)

Code Word	Nominal Aluminium (mm²)	Stranding & Wire Diameter (mm)	Sectional Area (mm²)	Approximate Overall Diameter (mm)	Approximate Mass (kg/km)	Calculated Resistance at 20°C Max (Ω/km)	Approximate Calculated Breaking Load (kN)
GNAT	25	7/2.21	26.85	6.63	74	1.1	4.52
ANT	50	7/3.10	52.83	9.3	145	0.55	8.25
WASP	100	7/4.39	106	13.17	290	0.28	15.96
	150	19/3.18	150.9	15.9	415	0.19	23.28
Spider	240	19/3.99	237.6	19.95	654	0.12	35.74
Butter-Fly	300	19/4.65	322.7	23.25	888	0.09	48.74

AAC (DIN 48201-5)

Nominal Aluminium Area (mm²)	Number & Diameter of Wires (mm)	Cross-sectional Area (mm²)	Overall Diameter (mm)	Weight (kg/km)	Calculated Breaking Load		DC Resistance at 20°C (Ω/km)	Breaking Length (km)
					(kgf)	(kN)		
16	7/1.70	15.89	5.10	43	290	2.84	1.80170	6.740
25	7/2.10	24.25	6.30	66	425	4.17	1.18060	6.440
35	7/2.50	34.36	7.50	94	589	5.78	0.83320	6.270
50	7/3.00	49.48	9.00	135	810	7.94	0.57860	6.000
50	19/1.80	48.35	9.00	133	862	8.45	0.59500	6.480
70	19/2.10	85.81	10.50	181	1154	11.32	0.43710	6.380
95	19/2.50	93.27	12.50	256	1599	15.68	0.30840	6.260
120	19/2.80	117.00	14.00	322	1915	18.78	0.24590	5.950
150	37/2.25	147.10	15.75	405	2580	25.30	0.19600	6.370
185	37/2.50	181.60	17.50	500	3114	30.54	0.15880	6.230
240	61/2.25	242.50	20.25	669	4029	39.51	0.11920	6.030
300	61/2.50	299.40	22.50	826	4864	47.70	0.09651	5.900
400	61/2.89	400.10	26.01	1104	6206	60.86	0.72220	5.630
500	61/3.23	499.80	29.07	1379	7614	74.67	0.05782	5.530
625	91/2.96	626.20	32.56	1733	9713	95.25	0.04625	5.600
800	91/3.35	802.10	36.85	2219	12072	118.39	0.03610	5.440
1000	91/3.74	999.70	41.14	2766	14863	145.76	0.02897	5.370

KJV
A ZETWERK COMPANY

AAC – All Aluminium Conductor

AAC (BS 215 PART 1:1970)									
Code Name	Nominal Aluminium Area (mm²)	Strands & Diameter of Wires (mm)	Cross-sectional Area (mm²)	Overall Diameter (mm)	Breaking Load		Weight (kg/km)	Calculated Resistance at 20°C Max (Ω/km)	Breaking Length (km)
					(kgf)	(kN)			
Midge	22	7/2.06	23.33	6.18	407	3.99	64	1.2270	6.36
Aphis	25	3/3.35	26.44	7.22	420	4.12	73	1.0830	5.68
Gnat	25	7/2.21	26.85	6.63	468	4.59	74	1.0660	6.32
Weevil	30	3/3.66	31.56	7.89	495	4.86	87	0.9070	5.63
Mosquito	35	7/2.59	36.88	7.77	614	6.02	101	0.7763	6.08
Ladybird	40	7/2.79	42.80	8.37	701	6.88	117	0.6689	5.99
Ant	50	7/3.10	52.83	9.30	844	8.28	145	0.5419	5.82
Fly	60	7/3.40	63.55	10.20	1010	9.91	174	0.4505	5.80
Bluebottle	70	7/3.66	73.65	10.98	1156	11.34	202	0.3887	5.72
Earwig	75	7/3.78	78.55	11.34	1217	11.94	215	0.3645	5.66
Grasshopper	80	7/3.91	84.05	11.73	1303	12.78	230	0.3406	5.67
Clegg	90	7/4.17	95.60	12.51	1482	14.54	262	0.2995	5.66
Wasp	100	7/4.39	106.00	13.17	1633	16.02	290	0.2702	5.63
Beetle	100	19/2.67	106.40	13.35	1773	17.39	293	0.2704	6.05
Bee	125	7/4.90	132.00	14.70	2033	19.94	361	0.2169	5.63
Cricket	150	7/5.36	157.90	16.08	2432	23.86	432	0.1813	5.63
Hornet	150	19/3.25	157.60	16.25	2519	24.71	434	0.1825	5.80
Caterpillar	175	19/3.53	185.90	17.65	2917	28.62	511	0.1547	5.71
Chafer	200	19/3.78	213.20	18.90	3305	32.42	587	0.1349	5.63
Spider	225	19/3.99	237.60	19.95	3683	36.13	654	0.1211	5.63
Cockroach	250	19/4.22	265.70	21.10	4118	40.40	731	0.1083	5.63
Butterfly	300	19/4.65	322.70	23.25	4970	48.76	888	0.0892	5.60
Moth	350	19/5.00	373.10	25.00	5746	56.37	1027	0.0771	5.59
Drone	350	37/3.58	372.40	25.06	5844	57.33	1027	0.0774	5.69
Locust	400	19/5.36	428.70	26.80	6603	64.78	1180	0.0671	5.60
Centipede	400	37/3.78	415.20	26.46	6435	63.13	1145	0.0694	5.62
Maybug	450	37/4.09	486.10	28.63	7535	73.92	1340	0.0593	5.62
Scorpion	500	37/4.27	529.80	29.89	8160	80.05	1461	0.0544	5.59
Cicada	600	37/4.65	628.30	32.55	9678	94.94	1732	0.0459	5.59
Tarantula	750	37/5.23	794.90	36.61	12244	120.11	2192	0.0363	5.59

KJV
A ZETWERK COMPANY

AAC – All Aluminium Conductor

AAC (ASTM B231)

Code Name	Conductor Size (MCM)	Number of Wires & Diameter (mm)	Cross-sectional Area (mm²)	Overall Diameter (mm)	Weight (kg/km)	Calculated Breaking Load		DC Resistance at 20°C (Ω/km)	Breaking Length (km)
						(kgf)	(kN)		
Peachbell	6.00	7/1.55	13.21	4.65	36	254	2.49	2.1750	7.06
Rose	4.00	7/1.96	21.12	5.88	58	399	3.91	1.3610	6.88
Iris	2.00	7/2.47	33.54	7.41	92	611	5.99	0.8568	6.64
Pansy	1.00	7/2.78	42.49	8.34	117	746	7.31	0.6763	6.38
Poppy	1/0	7/3.12	53.52	9.36	148	903	8.86	0.5369	6.10
Aster	2/0	7/3.50	67.35	10.50	186	1136	11.14	0.4267	6.11
Phlox	3/0	7/3.93	84.91	11.79	234	1375	13.48	0.3384	5.88
Oxlip	4/0	7/4.42	107.40	13.26	296	1740	17.06	0.2676	5.88
Sneezewort	250.00	7/4.80	126.70	14.40	349	2052	20.12	0.2268	5.88
Valerian	250.00	19/2.91	126.40	14.55	348	2107	20.66	0.2273	6.06
Daisy	266.80	7/4.96	135.30	14.88	373	2191	21.49	0.2124	5.87
Laurel	266.80	19/3.01	135.20	15.05	373	2254	22.10	0.2125	6.04
Peony	300.00	19/3.19	151.90	15.95	419	2482	24.34	0.1892	5.93
Tulip	336.40	19/3.38	170.50	16.90	470	2787	27.33	0.1685	5.93
Daffodil	350.00	19/3.45	177.60	17.25	490	2903	28.47	0.1618	5.93
Canna	397.50	19/3.68	202.10	18.40	557	3237	31.74	0.1422	5.81
Goldentuft	450.00	19/3.91	228.10	19.55	629	3580	35.11	0.1260	5.69
Cosmos	477.00	19/4.02	241.20	20.10	665	3784	37.11	0.1191	5.69
Syringa	477.00	37/2.88	241.00	20.16	664	3932	38.56	0.1192	5.92
Hyacinth	500.00	37/2.95	252.90	20.65	697	4126	40.46	0.1136	5.92
Zinnia	500.00	19/4.12	253.30	20.60	698	3975	38.98	0.1134	5.69
Dahlia	556.50	19/4.35	282.40	21.75	779	4431	43.45	0.1018	5.69
Mistletoe	556.50	37/3.11	181.10	21.77	775	4496	44.09	0.1022	5.80
Meadowsweet	600.00	37/3.23	303.20	22.61	836	4849	47.55	0.0948	5.80
Orchid	636.00	37/3.33	322.20	23.31	888	5154	50.54	0.0892	5.80
Heuchera	650.00	37/3.37	330.00	23.59	910	5279	51.77	0.0871	5.80
Verbena	700.00	37/3.49	354.00	24.43	976	5661	55.52	0.0812	5.80
Flag	700.00	61/2.72	354.50	24.48	977	5831	57.18	0.0811	5.97
Violet	715.50	37/3.53	362.10	24.71	998	5792	56.80	0.0794	5.80
Nasturtium	715.50	61/2.75	362.30	24.75	999	5961	58.46	0.0793	5.97
Petunia	750.00	37/3.62	380.80	25.34	1050	5969	58.54	0.0755	5.69
Cattail	750.00	61/2.82	381.00	25.38	1050	6147	60.28	0.0754	5.86
Arbutus	795.00	37/3.72	402.10	26.04	1109	6303	61.81	0.0715	5.69
Lilac	795.00	61/2.90	402.90	26.10	1111	6501	63.75	0.0713	5.85
Cockscomb	900.00	37/3.96	455.70	27.72	1256	6997	68.62	0.06306	5.57
Snapdragon	900.00	61/3.09	457.40	27.81	1261	7236	70.96	0.06282	5.74
Magnolia	954.00	37/4.08	483.70	28.56	1334	7428	72.84	0.05941	5.57
Goldenrod	954.00	61/3.18	484.50	28.62	1336	7664	75.16	0.05931	5.74
Hawkweed	1000.00	37/4.18	507.70	29.26	1400	7796	76.45	0.05660	5.57
Camellia	1000.00	61/3.25	506.00	29.25	1395	8005	78.50	0.05679	5.74
Bluebell	1033.50	37/4.24	522.40	29.68	1440	8022	78.67	0.05501	5.57
Larkspur	1033.50	61/3.31	524.90	29.79	1447	8304	81.43	0.05474	5.74

Marigold	1113.00	61/3.43	563.60	30.87	1554	8917	87.45	0.05099	5.74
Hawthorn	1192.50	61/3.55	603.80	31.95	1665	9551	93.66	0.04759	5.74
Narcissus	1272.00	61/3.67	645.30	33.03	1779	10004	98.11	0.04453	5.63
Columbine	1351.50	61/3.78	684.50	34.02	1887	10612	104.10	0.04198	5.63
Carnation	1431.00	61/3.89	725.00	35.01	1999	11010	108.00	0.03964	5.51
Gladiolus	1510.50	61/4.00	766.50	36.00	2113	11641	114.20	0.03749	5.51
Coreopsis	1590.00	41/4.10	805.40	36.90	2221	12231	119.90	0.03568	5.51
Jessamine	1750.00	61/4.30	885.80	38.70	2442	13453	131.90	0.03244	5.51
Cowslip	2000.00	91/3.76	1010.00	41.36	2785	15490	151.90	0.02845	5.56
Sagebrush	2250.00	91/3.99	1138.00	43.89	3168	17088	167.60	0.02550	5.39
Lupine	2500.00	91/4.21	1267.00	46.31	3527	19024	186.60	0.02290	5.39
Bitterroot	2750.00	91/4.41	1390.00	48.51	3870	20875	204.70	0.02088	5.39
Trillium	3000.00	127/3.90	1517.00	50.70	4223	22784	223.40	0.01913	5.39
Bluebonnet	3500.00	127/4.22	1776.00	54.86	4993	26676	261.60	0.01650	5.34

Aluminium Conductor Steel Reinforced – ACSR

ACSR conductor consists of a solid or stranded steel core surrounded by strands of aluminum (E.C. GRADE). ACSR Conductor is available in a wide range of steel, containing carbon from 0.5% to 0.85 %. The higher strength ACSR Conductor are used for river crossings, overhead ground wires, installations involving extra long spans etc. Against any given resistance of conductor, ACSR may be manufactured for having a wide range of tensile strength as per requirement. The principal advantage of these conductors are high tensile strength so that they are used for longer spans with less supports. Due to the greater diameter of ACSR Conductor a much higher corona limit can be obtained causing big advantages on high as well as extra high voltage Overhead lines.

Key Benefits

- ACSR Conductor has high Tensile Strength.
- Variable steel core stranding enables desired strength to be achieved without sacrificing ampacity.
- Additional corrosion protection is available through the application of grease to the core or infusion of the complete cable with grease

Sizes as per global standards are given on the following pages.

KJV
A ZETWERK COMPANY

ACSR – Aluminium Conductor Steel Reinforced

ALUMINIUM CONDUCTOR STEEL REINFORCED (IS:398 PART 2)								
Nominal Aluminium (mm²)	Stranding & Wire Diameter		Sectional Area of Aluminium (mm²)	Total Sectional Area (mm²)	Approximate Overall Diameter (mm)	Approximate Mass (kg/km)	Calculated Resistance at 20°C Max (Ω/km)	Approximate Calculated Breaking Load (kN)
	Aluminium (mm)	Steel (mm)						
10	6/1.50	1/1.50	10.6	12.37	4.5	43	2.78	3.97
18	6/1.96	1/1.96	18.1	21.12	5.88	73	1.62	6.74
20	6/2.11	1/2.11	20.98	24.48	6.33	85	1.39	7.61
30	6/2.59	1/2.59	31.61	36.88	7.77	128	0.93	11.12
50	6/3.35	1/3.35	52.88	61.7	10.05	214	0.55	18.25
80	6/4.09	1/4.09	78.83	91.97	12.27	319	0.37	26.91
100	6/4.72	7/1.57	105	118.5	14.15	394	0.28	32.41
150	30/2.59	7/2.59	158.1	194.9	18.13	726	0.19	67.34
200	30/3.00	7/3.00	212.1	261.5	21	974	0.14	89.67
400	42/3.50	7/1.96	404.1	425.2	26.88	1281	0.07	88.79
420	54/3.18	7/3.18	428.9	484.5	28.62	1621	0.07	130.32
520	54/3.53	7/3.53	528.5	597	31.77	1998	0.06	159.6
560	42/4.13	7/2.30	562.7	591.7	31.68	1781	0.05	120.16

ACSR – Aluminium Conductor Steel Reinforced

ACSR (DIN 48204)												
Nominal Cross Sections (mm²)	Construction Number and Diameter of Wires		Cross-sectional Area			Overall Diameter (mm)	Weight			Calculated Breaking Load		Calculated DC Resistance at 20°C (Ω/km)
	Al (mm)	S (mm)	Al (mm²)	Steel (mm²)	Total (mm²)		Al (kg/km)	S (kg/km)	Total (kg/km)	(kgf)	(kN)	
16/2.5	6/1.8	1/1.8	15.27	2.25	17.81	5.50	42	20	62	592	5.81	1.87900
25/4	6/2.25	1/2.25	23.86	3.98	27.84	6.75	65	31	96	920	9.02	1.20300
35/6	6/2.7	1/2.7	34.35	5.73	40.08	8.10	94	45	139	1295	12.70	0.83530
44/32	14/2.0	7/2.4	43.98	31.67	75.65	11.20	122	248	370	4636	45.46	0.65730
50/8	6/3.2	1/3.2	48.25	8.04	56.29	9.60	132	63	195	1752	17.18	0.59460
50/30	12/2.33	7/2.33	51.17	29.85	81.02	11.65	141	234	375	4515	44.28	0.56440
70/12	26/1.85	7/1.44	69.89	11.40	81.29	11.72	193	89	282	2683	26.31	0.41300
95/15	26/2.15	7/1.67	94.39	15.33	109.72	13.61	260	120	380	3586	35.17	0.30580
95/55	12/3.2	7/3.2	96.51	56.30	152.81	16.00	266	441	707	8178	80.20	0.29920
105/75	14/3.1	19/2.25	105.67	75.55	181.22	17.45	292	594	886	10879	106.69	0.27360
120/20	26/2.44	7/1.9	121.57	19.85	141.42	15.46	335	156	491	4583	44.94	0.23740
120/70	12/3.6	7/3.6	122.15	71.25	193.40	18.00	337	558	895	10009	98.16	0.23640
125/30	30/2.33	7/2.33	127.92	29.85	157.77	16.31	353	234	587	5900	57.86	0.22590
150/25	26/2.7	7/2.1	148.86	24.25	173.11	17.10	411	190	601	5544	54.37	0.19390
170/40	30/2.7	7/2.7	171.77	40.08	211.85	18.90	474	314	788	7853	77.01	0.16820
185/30	26/3.0	7/2.33	183.78	29.85	213.63	18.99	507	234	741	6759	66.28	0.15710
210/35	26/3.2	7/2.49	209.10	34.09	243.19	20.27	577	267	844	7642	74.94	0.13800
210/50	30/3.0	7/.3.0	212.06	49.48	261.54	21.00	585	388	973	9407	92.25	0.13630
230/30	24/3.5	7/2.33	230.90	29.85	260.75	20.99	636	234	870	7453	73.09	0.12490
240/40	26/3.45	7/2.68	243.05	39.49	282.54	21.84	670	309	979	8816	86.46	0.11880
265/35	24/3.74	7/2.49	236.66	34.09	293.75	22.43	727	267	994	8457	82.94	0.10940
300/50	26/3.86	7/3.0	304.26	49.48	353.74	24.44	839	388	1227	10716	105.09	0.09487
305/40	54/2.68	7/2.68	304.62	39.49	344.11	24.12	841	309	1150	10126	99.30	0.09490
340/30	48/3.0	7/2.33	339.29	29.85	369.14	24.99	936	234	1170	9438	92.56	0.08513
380/50	54/3.0	7/3.0	381.70	49.48	431.18	27.00	1054	388	1442	12329	120.91	0.07573
385/35	48/3.2	7/2.49	386.04	34.09	420.13	26.67	1065	267	1332	10637	104.31	0.07482
435/55	54/3.2	7/3.2	434.29	56.30	490.59	28.80	1199	441	1640	13896	136.27	0.06656
450/40	48/3.45	7/2.68	448.71	39.49	488.20	28.74	1238	309	1547	12256	120.19	0.06437
490/65	54/3.4	7/3.4	490.28	63.55	553.83	30.60	1354	498	1852	15586	152.85	0.05896
495/35	45/3.74	7/2.49	494.36	34.09	528.48	29.91	1364	267	1631	12268	120.31	0.05843
510/45	48/3.68	7/2.87	510.54	45.28	555.82	30.69	1409	355	1764	13698	134.33	0.05657
550/70	54/3.6	7/3.6	549.65	71.25	620.90	32.40	1518	558	2076	17072	167.42	0.05259
560/50	48/3.86	7/3.0	561.70	49.48	611.18	32.16	1550	388	1938	14916	146.28	0.05142
570/40	45/4.02	7/2.68	571.16	39.49	610.65	32.16	1576	309	1885	14070	137.98	0.05057
650/45	45/4.3	7/2.87	653.49	45.28	698.77	34.41	1803	355	2155	15859	155.52	0.04420
680/85	54/4.0	19/2.4	678.58	85.95	764.53	36.00	1874	676	2550	21413	209.99	0.04260
1045/45	72/4.3	7/2.87	1045.58	45.28	1090.86	43.01	2889	355	3244	22216	217.87	0.02766

KJV
A ZETWERK COMPANY

ACSR – Aluminium Conductor Steel Reinforced

ACSR (BS 215 PART 2:1970)

Code Name	Nominal Aluminium Area (mm²)	Strands & Diameter of Wires		Cross-Sectional Area		Weight			Breaking Load		Calculated Resistance at 20°C Max (Ω/km)
		Al (mm)	Steel (mm)	Al (mm²)	Steel (mm²)	Al (kg/km)	Steel (kg/km)	Total (kg/km)	(kgf)	(kN)	
Mole	10	6/1.50	1/1.50	10.60	1.77	29	14	43	421	4.13	2.7070
Squirrel	20	6/2.11	1/2.11	20.98	3.50	58	27	85	807	7.92	1.3680
Gopher	25	6/2.36	1/2.36	26.25	4.37	72	34	106	979	9.60	1.0930
Weasel	30	6/2.59	1/2.59	31.61	5.27	87	41	128	1167	11.45	0.9077
Fox	35	6/2.79	1/2.79	36.88	6.11	101	48	149	1342	13.17	0.7823
Ferret	40	6/3.00	1/3.00	42.41	7.07	116	55	171	1553	15.23	0.6766
Rabbit	50	6/3.35	1/3.35	52.88	8.81	145	69	214	1872	18.36	0.5426
Mink	60	6/3.66	1/3.66	63.13	10.52	173	82	255	2223	21.81	0.4545
Skunk	60	12/2.59	7/2.59	63.22	36.88	175	289	464	5396	52.93	0.4568
Beaver	70	6/3.99	1/3.99	75.02	12.50	205	98	303	2626	25.76	0.3825
Horse	70	12/2.79	7/2.79	73.36	42.80	203	335	538	6240	61.21	0.3936
Racoon	75	6/4.10	1/4.10	79.22	13.20	217	103	320	2774	27.21	0.3622
Otter	80	6/4.22	1/4.22	83.92	13.99	230	109	339	2939	28.83	0.3419
Cat	90	6/4.50	1/4.50	95.43	15.90	262	124	386	3330	32.67	0.3007
Hare	100	6/4.72	1/4.72	105.00	17.50	288	137	425	3666	35.96	0.2733
Dog	100	6/4.72	7/1.57	105.00	13.55	288	106	394	3332	32.69	0.2733
Hyena	100	7/4.39	7/1.93	106.00	20.48	293	160	453	4183	41.04	0.2728
Cougar	125	18/3.05	1/3.05	131.50	7.31	362	57	419	3062	30.04	0.2190
Leopard	125	6/5.28	7/1.75	131.40	16.84	361	132	493	4156	40.77	0.2184
Tiger	125	30/2.36	7/2.36	131.20	30.62	363	240	603	5914	58.02	0.2203
Dingo	150	18/3.35	1/3.35	158.70	8.81	437	69	506	3642	35.73	0.1814
Wolf	150	30/2.59	7/2.59	158.10	36.88	437	289	726	7061	69.27	0.1828
Caracal	175	18/3.61	1/3.61	184.20	10.24	507	80	587	4191	41.11	0.1563
Lynx	175	30/2.79	7/2.79	183.40	42.80	507	335	842	8136	79.81	0.1576
Jaguar	200	18/3.86	1/3.86	210.60	11.70	580	91	671	4749	46.59	0.1367
Panther	200	30/3.00	7/3.00	212.10	49.48	586	388	974	9407	92.28	0.1362
Lion	225	30/3.18	7/3.18	238.30	55.60	659	436	1095	10248	100.53	0.1213
Bear	250	30/3.35	7/3.35	264.40	61.70	731	483	1214	11339	111.24	0.1093
Goat	300	30/3.71	7/3.71	324.30	75.67	896	593	1489	13848	135.85	0.0891
Sheep	350	30/3.99	7/3.99	375.10	87.53	1037	686	1723	15938	156.35	0.0770
Antelope	350	54/2.97	7/2.97	374.10	48.50	1034	380	1414	12084	118.54	0.0773
Bison	350	54/3.00	7/3.00	381.70	49.48	1055	388	1443	12328	120.94	0.0757
Deer	400	30/4.27	7/4.27	429.60	100.20	1187	785	972	18202	178.56	0.0673
Zebra	400	54/3.18	7/3.18	428.90	55.60	1186	436	1622	13450	131.94	0.0674
Elk	450	30/4.50	7/4.50	477.10	113.30	1318	872	2190	20221	198.37	0.0606
Camel	450	54/3.35	7/3.35	476.00	61.70	1316	483	1799	14878	145.95	0.0607
Moose	500	54/3.53	7/3.53	528.50	68.51	1461	537	1998	16417	161.05	0.0547
Coyote	125	26/2.54	7/1.91	137.74	20.06	365	157	522	4820	47.30	0.3035

KJV
A ZETWERK COMPANY

ACSR – Aluminium Conductor Steel Reinforced

ACSR (ASTM B232)

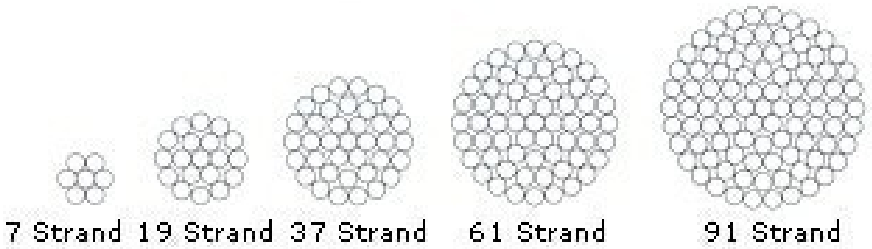
Code Name	Conductor Size		Number and Diameter of Wires		Cross-sectional Area			Overall Diameter (mm)	Weight			Calculated Breaking Load		Calculated Resistance at 20°C Max (Ω/km)
	AWG	MCM	Al (mm)	Steel (mm)	Al (mm²)	Steel (mm²)	Total (mm²)		Al (kg/km)	Steel (kg/km)	Total (kg/km)	(kgf)	(kN)	
Turkey	6	26.24	6/1.68	1/1.68	13.30	2.22	15.52	5.04	37	17	54	540	5.29	2.1500
Thrush	5	33.22	6/1.89	1/1.89	16.83	2.81	19.64	5.67	46	22	68	678	6.65	1.6990
Swan	4	41.74	6/2.12	1/2.12	21.18	3.53	24.71	6.36	58	27	85	846	8.30	1.3500
Swanate	4	41.74	7/1.96	1/2.61	21.12	5.35	26.47	6.53	58	42	100	1067	10.46	1.3540
Swallow	3	52.68	6/2.38	1/2.38	26.69	4.45	31.14	7.14	73	35	108	1042	10.22	1.0710
Sparrow	2	66.36	6/2.67	1/2.67	33.59	5.60	39.19	8.01	92	44	136	1289	12.64	0.8513
Sparate	2	66.36	7/2.47	1/3.30	33.54	8.55	42.09	8.24	92	67	159	1650	16.18	0.8526
Robin	1	83.69	6/3.00	1/3.00	42.41	7.07	49.48	9.00	116	55	171	1612	15.81	0.6742
Raven	1/0	105.60	6/3.37	1/3.37	53.52	8.92	62.44	10.11	147	69	216	1987	19.49	0.5343
Quail	2/0	133.10	6/3.78	1/3.78	67.33	11.22	78.55	11.34	185	87	272	2401	23.55	0.4247
Pigeon	2/0	167.80	6/4.25	1/4.25	85.12	14.19	99.31	12.75	234	110	334	3006	29.48	0.3359
Penguin	4/0	211.60	6/4.77	1/4.77	107.20	17.87	125.10	14.31	294	139	433	3787	37.14	0.2667
Waxwing		266.80	18/3.09	1/3.09	135.00	7.50	142.50	15.45	372	58	430	3118	30.58	0.2129
Owl		266.80	6/5.36	7/1.79	135.40	17.62	153.00	16.09	371	138	509	4406	43.21	0.2112
Partridge		266.80	26/2.57	7/2.00	134.90	21.99	156.90	16.28	374	172	546	5113	50.14	0.2141
Ostrich		300.00	26/2.73	7/2.12	152.20	24.71	176.90	17.28	422	193	615	5756	56.45	0.1897
Merlin		336.40	18/3.47	1/3.47	170.20	9.46	179.70	17.35	469	74	543	3931	38.55	0.1688
Linnet		336.40	26/2.89	7/2.25	170.60	27.83	198.40	18.31	473	217	690	6413	62.89	0.1693
Oriole		336.40	30/2.69	7/2.69	170.50	39.78	210.30	18.83	474	311	785	7866	77.14	0.1698
Chickadee		397.50	18/3.77	1/3.77	200.90	11.16	212.10	18.85	554	87	641	4500	44.13	0.1430
Brant		397.50	24/3.27	7/2.18	201.60	26.13	227.70	19.62	559	204	763	6645	65.16	0.1432
Ibis		397.50	26/3.14	7/2.44	201.30	32.73	234.00	19.88	558	256	814	7378	72.35	0.1434
Lark		397.50	30/2.92	7/2.92	200.90	46.88	247.80	20.44	558	367	925	9203	90.25	0.1441
Pelican		477.00	18/4.14	1/4.14	242.30	13.46	255.80	20.7	668	105	773	5347	52.43	0.1186
Flicker		477.00	24/3.58	7/3.29	241.60	31.40	273.00	21.49	669	245	914	7791	76.40	0.1195
Hawk		477.00	26/3.44	7/2.67	241.60	39.19	280.80	21.77	669	306	975	8844	86.73	0.1195
Hen		477.00	30/3.20	7/3.20	241.30	56.30	297.60	22.4	670	440	1110	10784	105.75	0.1200
Osprey		556.50	18/4.47	1/4.47	282.50	15.69	298.20	22.35	779	112	891	6233	61.12	0.1017
Parakeet		556.50	24/3.87	7/2.58	282.30	36.60	318.90	23.22	782	286	1068	9000	88.26	0.1023
Dove		556.50	26/3.72	7/2.89	282.60	45.92	328.50	23.55	783	359	1142	10260	100.62	0.1022
Eagle		556.50	30/3.46	7/3.46	282.10	65.82	347.90	24.22	783	515	1298	12607	123.63	0.1026
Peacock		605.00	24/4.03	7/2.69	306.10	39.78	345.90	24.19	848	311	1159	9771	95.82	0.9434
Squab		605.00	26/3.87	7/3.01	305.80	49.81	355.60	24.51	847	389	1236	11019 108.06		0.09443
Wood Duck		605.00	30/3.61	7/3.61	307.10	71.65	378.80	25.27	853	560	1413	13140	128.86	0.09426

Teal		605.00	30/3.61	19/2.16	307.10	69.62	376.70	25.24	853	545	1398	13568	133.06	0.09426
Kingbird		636.00	18/4.78	1/4.78	323.00	17.95	341.00	23.90	891	140	1031	7128	69.90	0.08896
Swift		636.00	36/3.38	1/3.38	232.00	8.97	382.00	23.66	891	70	961	6253	61.32	0.08896
Rook		636.00	24/4.14	7/2.76	323.10	41.88	365.00	24.84	891	327	1218	10299	101.00	0.08937
Grosbeak		636.00	26/3.97	7/3.09	321.80	52.49	374.30	25.15	892	410	1302	11428	112.07	0.08973
Scoter		636.00	30/3.70	7/3.70	322.60	75.26	397.90	25.90	896	588	1484	13803	135.36	0.08973
Egret		636.00	30/3.70	19/2.22	322.60	73.54	596.10	25.90	896	576	1472	14304	140.27	0.08973
Flamingo		666.60	24/4.23	7/2.82	337.30	43.72	381.00	25.38	935	342	1277	10752	105.44	0.08561
Gannet		666.60	26/4.07	7/3.16	338.30	54.90	393.20	25.76	937	429	1366	11978	117.46	0.08536
Stilt		715.50	24/4.39	7/2.92	363.30	46.88	410.20	26.32	1007	366	1373	11554	113.31	0.07948
Starling		715.50	24/4.21	7/3.28	361.90	59.15	421.10	26.68	1003	462	1932	12865	126.16	0.07979
Crow		715.50	54/2.92	7/3.92	361.60	46.88	408.50	26.28	1002	366	1368	11753	115.26	0.07986
Redwing		715.50	30/3.92	19/2.35	362.10	82.41	444.50	27.43	1006	645	1651	15650	153.47	0.07994
Coot		795.00	36/3.77	1/3.77	401.90	11.16	413.10	26.39	1108	87	1195	7580	74.33	0.07150
Cuckoo		795.00	24/4.62	7/3.08	402.30	52.15	454.50	27.72	1115	407	1522	12650	124.05	0.07178
Drake		795.00	26/4.44	7/3.45	402.60	65.44	468.00	28.11	1115	511	1626	14267	139.91	0.07172
Tern		795.00	45/3.38	7/2.25	403.80	27.83	431.60	27.03	1119	217	1336	10027	98.33	0.07151
Condor		795.00	54/3.08	7/3.08	402.30	52.15	454.50	27.72	1115	407	1522	12771	125.24	0.07178
Mallard		795.00	30/4.14	19/2.48	403.80	91.78	495.60	28.96	1121	718	1839	17439	171.02	0.07169
Crane		874.50	54/3.23	7/3.23	442.50	57.36	499.90	29.07	1226	448	1674	14046	137.74	0.06526
Ruddy		900.00	45/3.59	7/2.40	455.50	31.67	487.20	28.74	1262	247	1509	11094	108.79	0.06339
Canary		900.00	54/3.88	7/3.28	456.30	59.15	515.50	29.52	1264	462	1726	14484	142.04	0.06328
Catbird		954.00	36/4.14	1/4.14	484.60	13.46	498.10	28.98	1336	105	1441	8986	88.12	0.05930
Rail		954.00	45/3.70	7/2.47	483.80	33.54	517.30	29.61	1340	262	1602	11772	115.44	0.05969
Cardinal		954.00	54/3.38	7/3.38	484.50	62.81	547.30	30.42	1342	490	1832	15381	150.84	0.05900
Tanager		1033.50	36/4.30	1/4.30	522.80	14.52	537.30	30.10	1441	113	1554	9694	95.06	0.05496
Ortian		1033.50	45/3.85	7/2.57	523.90	36.31	560.20	30.81	1452	284	1736	12578	123.35	0.05512
Curlew		1033.50	54/3.51	7/3.51	522.50	67.73	590.20	31.59	1448	529	1977	16586	162.65	0.05527
Bluejay		1133.00	45/4.00	7/2.66	565.50	38.90	604.40	31.98	1567	304	1871	13540	132.78	0.05106
Finch		1133.00	54/3.65	19/2.19	565.00	71.57	636.60	32.85	1573	560	2133	17748	174.05	0.05136
Grackle		1192.50	54/3.77	19/2.27	602.80	76.89	679.70	33.97	1678	602	2280	19001	186.34	0.05
Skylark		1272.00	36/4.78	1/4.78	646.00	17.95	664.00	33.46	1781	140	1921	11978	117.46	0.04
Bittern		1272.00	45/4.27	7/2.85	644.40	44.66	689.10	34.17	1785	349	2134	15471	151.72	0.04
Pheasant		1272.00	54/3.90	19/2.34	645.10	81.71	726.80	35.10	1796	640	2436	19789	194.06	0.04
Dipper		1351.50	45/3.40	7/2.93	684.20	47.20	731.40	35.15	1896	369	2265	16380	160.63	0.04220
Martin		1351.50	54/4.02	19/2.41	685.40	86.67	772.10	36.17	1908	678	2586	21008	206.02	0.04
Bobolink		1431.00	45/4.53	7/3.02	752.30	50.14	802.40	36.24	2084	392	2476	17398	170.62	0.04

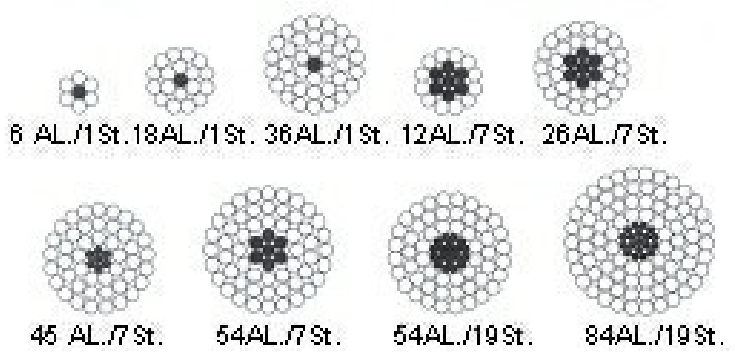
Plover		1431.00	54/4.14	19/2.48	726.90	91.78	818.70	37.24	2024	718	2742	22264	218.33	0.04
Nuthatch		1510.50	45/4.65	7/3.10	764.20	52.83	817.00	37.20	2117	413	2530	18153	178.02	0.04
Parrot		1510.50	54/4.25	19/2.55	766.10	97.03	863.10	38.25	2133	759	2892	23500	230.46	0.04
Lapwing		1590.00	45/4.78	7/3.18	807.50	55.60	863.10	38.22	2237	434	2671	19154	187.84	0.04
Falcon		1590.00	54/4.36	19/2.62	806.20	102.40	908.60	39.26	2245	801	3046	24770	242.91	0.04
Chukar		1780.00	84/3.70	19/2.22	903.20	73.54	976.70	40.70	2515	576	3091	23138	226.91	0.03
Bluebird		2156.00	84/4.07	19/2.44	1093.00	88.84	1182.00	44.76	3043	695	3738	27343	268.14	0.03
Kiwi		2167.00	72/4.41	7/2.94	1100.00	47.52	1148.00	44.10	3062	371	3433	22635	221.97	0.03
Kiwi		2312.00	76/4.43	19/2.07	1171.00	63.94	1235.00	45.75	3260	500	3760	25733	252.35	0.02

Conductor Construction

Construction of AAC & AAAC Conductors



Construction of ACSR Conductors



Conversion Factors and Formulae

Conversion Factors Table

These units	Multiplied by	Equal
Amperes per sq. cm	6.452	Amperes per sq. in
Ampere-turns	1.257	Gilbert
Ampere-turns per cm	2.540	Ampere-turns per in
British thermal units	778.3	Foot pounds
	3.930×10^{-4}	Horsepower hours
	1.055	Joules
	2.931×10^{-4}	Kilowatt hours
B.t.u. per min	12.97	Foot-pounds per sec
	0.02357	Horsepower
	0.01758	Kilowatts
	17.58	Watts
Centimeters	3.281×10^{-2}	Feet
	0.3937	Inches
	6.214×10^{-6}	Miles
	393.7	Miles
	1.094×10^{-2}	Yards
Centimeter-dynes	7.376×10^{-8}	Pound-feet
Centimeter-grams	7.233×10^{-5}	Pound-feet
Centimeter per sec	1.969	Feet per minute
	0.03281	Feet per sec
	0.02237	Miles per hour
	3.728×10^{-4}	Miles per minute
Circular mils	7.854×10^{-7}	Sq. inches
	0.7854.	Sq. mils
Cms Per sec Per sec	0.03281	Feet per sec Per sec
Cubic Centimeters	3.531×10^{-5}	Cubic feet
	3.102×10^{-2}	Cubic inches
Cubic feet	7.481	Gallons U.S./6.228 imp. gal
	59.83	Pints (liquid) US
	29.92	Quarts (liquid) US
	49.83	Pints (imperial)
	24.915	Quarts (imperial)
Cubic meters	35.31	Cubic feet
	61.024×10^{3}	Cubic inches
	1.308	Cubic yards
	264.2	Gallons US
	2113	(1,759 imperial) pints (liquid)
	1057	(879 imperial) quarts (liquid)
Degrees (angle)	0.01745	Radians
Degrees per sec	0.1667	Revolutions per minute
Dynes	2.248×10^{-6}	Pounds
Ergs (dyne- Centimeters)	9.480×10^{-11}	British thermal units
	7.378×10^{-8}	Foot pounds
	10^{7}	Joules
Ergs per sec	5.688×10^{-9}	B.t. units per minute
	4.427×10^{-8}	Foot-pounds per minute
	7.378×10^{-8}	Foot-pounds per sec
	1.341×10^{-10}	Horsepower
	10^{-10}	Kilowatts
Feet of Water	62.43	Pounds per sq. foot
	0.4335	Pounds per sq. inch
Feet per minute	0.01667	Feet per seconds
	0.01136	Miles per hour
Feet per sec	0.5921	Knots
	0.6813	Miles per hour

These units	Multiplied by	Equal
Foot-pounds	1.285×10^{3}	British thermal units
	1.356×10^{7}	Ergs
	5.050×10^{-7}	horsepower hours
	1.356	joules
	3.766×10^{-7}	kilowatt hours
Foot-pounds per sec	7.709×10^{-2}	B.t. units per minute
	1.818×10^{-3}	Horse power
	1.356×10^{-3}	Kilowatts
Gallons U S	0.1337	Cubic feet
	231	Cubic inches
Gallons per minute	2.228×10^{-3}	Cubic feet per sec
Gausses	6.452	Lines per sq. inch
Gilbert	0.7958	Ampere-turns
Gilbert per centimeter	2.021.	Ampere-turns per inch
Grams	980.7	Dynes
	15.43	Grains
	0.03527	Ounces
Grams	0.03215	Ounces (troy)
	2.205×10^{-3}	Pounds
Horsepower	42.42	B.t. units per minute
	33,000	Foot-pounds per minute
	550	Foot-pounds per second
	1.014	Horsepower (metric).
	0.7457	Kilowatts.
	745.7	Watts.
Horsepower (boiler)	33.250	B.t.u. per hour.
	9.804	Kilowatts.
Horsepower hours	2,545	B.t. units
	1.98×10^{6}	Foot-Pounds
	2.684×10^{6}	Joules.
Inches of water	0.5781	Ounce per sq. in.
	5.202	Pounds per sq. ft.
	0.03613	Pounds per sq. in.
Inches of water	0.5781	Ounces per sq. in.
	5.202	Pounds per sq. ft.
	0.03613	Pounds per sq. in.
Joules (Int.)	9.480×10^{-4}	B.t. Units
	10^{7}	Ergs
	0.7378	Foot-pounds.
	2.778×10^{-4}	Watt-hours.
Kilograms	980.665×10^{3}	Dynes.
	2.205	Pounds
	1.102×10^{-3}	Tons (short)
Kilogram per sq. mm.	14.223	Pounds per sq. inch.
	0.0063497	Tons per sq. inch.
Kilogram per sq. mm.	1,422.3	Pounds per sq. inch.
Kilometer	0.62137	Miles.
	1,093.61	Yds
	3,280.84	Ft.
Kilolines	10^{3}	Maxwells
Kilowatts	56.88	B.t. units per min
	4.427×10^{4}	Foot-pounds per min.
	737.8	Foot pounds per sec.
	1,341	Horsepower
	10^{3}	Watts.

These units	Multiplied by	Equal
Kilowatt-hours	3,413	B.t. units per min.
	2.656×10^{6}	Foot-pounds
	1,341	Horsepower hours.
	3.6×10^{6}	Joules.
Lumens per sq. ft.	1	Footcandles.
Megalines	106	Maxwells
Megohms	10^{6}	Ohms.
Metre	3.281	Feet.
	39.37	Inches.
	6.214×10^{-4}	Miles.
Metres per minute	0.05468	Feet per second.
	0.03728	Miles per hour.
Metres per sec.	196.8	Feet per min.
	3.281	Feet per second.
	2.237	Miles per hour.
	0.03728	Miles per min.
Microhms	10^{-12}	Megohms.
	10^{-6}	Ohms.
Mils	8.333×10^{-6}	Feet.
	10^{3}	Inches.
Mil-foot	9.425×10^{-6}	Cubic inches.
Millihenries	10^{3}	Henries.
Milimetres	3.281×10^{-3}	Feet.
	0.03937	Inches.
	6.214×10^{-7}	Miles.
	39.37	Mils.
Miles	1.6093	Kilometres.
	1,760	Yds.
	5,280	Ft.
	63,360	Inches.
Miles per hour	88	Feet per min.
	1.467	Feet per second.
Miles per hr. per sec.	1.467	Feet per sec. Per sec.
Miles per min.	88	Feet per second.
	52.10	Knots.
	60	Miles per hour.
Minutes (angle)	2.909×10^{-4}	Radians.
Ohms	10^{6}	Megohms.
	10^{6}	Microhms.
Ounces	0.0625	Pounds.
Ounces per sq. in.	0.0625	Pounds per sq. in.
Pounds	44.823	Dynes.
	16	Ounces.
Pounds (troy)	0.8229	Pounds (av.).
Pounds of water	0.01602	Cubic feet
	27.68	Cubic inches.
	0.1198	Gallons U.S.
Pounds per cubic foot	5.787×10^{-4}	Pounds per cubic inch.
	5.456×10^{-4}	Pounds per mil-foot.
Pounds per cubic inch	9.425×10^{-4}	Pounds per mil-foot.
Pounds per square foot	0.01602	Feet of water.
	6.944×10^{-3}	Pounds per sq. inch.
Pounds per square inch	2.307	Feet of water.
	144	Pounds per square foot.
Pounds of water per min.	2.669×10^{-4}	Cubic feet per sec.
Quadrants (angle)	90	Degrees.
	5,400	Minutes.
	1.571	Radians.

These units	Multiplied by	Equal
Quarts (dry)	67.20	Cubic inches.
Quarts (liq.) U.S.	3.342×10^{-2}	Cubic feet.
	57.75	Cubic inches.
Radians	57.30	Degrees
	3,438	Minutes
	0.6366	Quadrants.
Radians per sec.	57.30	Degrees per second.
	9.549	Revolutions per min.
	0.1592	Revolutions per sec.
Revolutions	360	Degrees
	6.283	Radians
	4	Quandrants.
Revolutions per minute	6	Degrees per second.
	0.1047	Radians per second.
	0.01667	Revolutions per sec.
Revs. Per sec. Per sec.	6.283	Radians per sec. Per sec.
	3,600	Revs. Per min. per min.
	60	Revs. Per min. per sec.
Seconds (angle)	4.8×10^{-6}	Radians
Square centimetres	1.973×10^{-5}	Circular mils.
	1.076×10^{-3}	Square feet.
	0.1550	Square inches.
Square foot	2.296×10^{-5}	Acres.
	1.833×10^{-4}	Circular mils.
	144	Square inches.
Square inches	1.273×10^{6}	Circular mils.
	6.944×10^{3}	Square feet.
	10^{6}	Square mils.
Square metres	2.471×10^{-4}	Acres
	10.76	Square feet
	1,550	Square inches.
	3.861×10^{-7}	Square mils.
Square miles	640	Acres
	27.88×10^{6}	Square feet.
	3.098×10^{6}	Square yards.
Square millimetres	1.973×10^{3}	Circular mils.
Square mils	1.273	Circular mils.
	10^{6}	Square inches.
Temp. (degs. C.) + 273	1	Abs. Temp. (degs.).
Temp. (degs. C.) + 17.8	1.8	Temp. (degs.) Fahr.
Temp. (degs. Fahr.) -32	0.5556	Temp. (degs.) C.
Temp. (degs. Fahr.) + 460	1	Abs. Two (degs. Fahr.).
Tons (long)	2,240	Pounds
	1.01605	Tons (metric)
Tons (metric)	2,204.6	Pounds.
	0.09842	Tons (longs).
Tons (short)	2,000	Pounds.
	0.90719	Tons (metric).
Tons (short) per sq. ft.	13.89	Pounds per square inch.
Tons (short) per sq. in.	2,000	Pounds per square inch.
Tons (long) per sq. in.	157.488	Kilogram per sq. cm.
	1,574.88	Kilogram per sq. cm.
	0.157488	Tonnes per sq. mm.
Webers	10^{8}	Maxwells.
Yards	0.9144	Metres.
	0.000568	Miles.

Conversion Factors and Formulae

CONVERSION FORMULAE			
To Convert	**Multiply by**	**To Convert**	**Multiply by**
LENGTH		**MASS**	
Milli-inches into micrometers	**25.4**	Grains into milligrams	**64.79891**
Inches into millimetres	**25.4**	Grains into metric carats	**0.323995**
Inches into centimetres	**2.54**	Grains into grams	**0.064799**
Inches into metres	**0.0254**	Penny weights into grams	**1.555174**
Feet into millimetres	**304.8**	Drams into grams	**1.77185**
Feet into centimetres	**30.48**	Ounces into grams	**28.349523**
Feet into metres	**0.3048**	Ounces troy into grams	**31.103477**
Yards into metres	**0.9144**	Ounces troy into metric carats	**155.5174**
Fathoms into metres	**1.8288**	Ounces into kilograms	**0.0283495**
Chains into metres	**20.1168**	Pounds into kilograms	**0.4535924**
Furlongs into metres	**201.168**	Stones into kilograms	**6.3502932**
Miles, statute into kilometres	**1.609344**	Hundred weights into kilograms	**50.802345**
Miles, nautical into kilometres	**1.852**	Tons into kilograms	**1016.0469**
VOLUME & CAPACITY		Tons into metric tonnes	**1.01604**
Cubic inches into cubic centimetres	**16.387064**	Tahils into grams	**37.799**
Cubic inches into litres	**0.016387**	Kati into kilograms	**0.60479**
Cubic feet into cubic metres	**0.0283168**	**POWER**	
Cubic feet into litres	**28.316847**	Foot pounds-force per second into watts	**1.35582**
Pints into litres	**0.5682613**	Horsepower into watts	**745.7**
Quarts into litres	**1.1365225**	Foot pounds-force per second into kilowatts	**0.001356**
Cubic yards into cubic metres	**0.7645549**	Horsepower into kilowatts	**0.7457**
Gallons into litres	**4.54609**	Horsepower into metric horsepower	**1.01387**
Gallons into cubic metres	**0.0045461**	1 Kgf	**= 9.81 N**
Fluid ounces into cubic centimetres	**28.413063**	1 N	**= 0.1019 kg**
AREA		1 KN	**= 0.1019 X 1000**
Square inches into square millimetres	**645.16**		
Square inches into square centimetres	**6.4516**		
Square feet into square centimetres	**929.0304**		
Square feet into square metres	**0.092903**		
Square yards into square metres	**0.836123**		
Acres into ares	**40.468564**		
Acres into hectares	**0.4046856**		
Square miles into hectares	**258.9988**		
Square miles into square kilometres	**2.589988**		

Conductor Packing: Drum Dimensions to IS 1778/1980

Drum Component (mm)	Constructional Details for Drum Components										
	2	3	4	5	6	7	8	9	10	11	12
Flange diameter	965	1065	1195	1220	1345	1370	1475	1615	1725	1100	1900
Barrel diameter	585	600	600	600	600	600	600	685	710	750	1500
Traverse	510	710	710	710	710	710	710	812	812	600	600
Flange thickness	2x 25	2x 32	2x 32	2x 32	2x 32	2x 32	2x 32	2x 33	2x 33	2x 32	2x 33
Bore Diameter	80	80	80	80	80	80	80	100	100	54x 54	105x 105
Nail Circle	3	5	5	5	5	5	5	6	6	5	5
Nail length	65	75	75	75	75	75	75	89	89	75	75
Nail Size (Min.)	3.25	3.25	3.25	3.25	3.25	3.25	3.25	3.65	3.65	3.25	3.25
Thickness of Barrel end supports	38	38	38	38	38	50	50	50	50	38	50
Thickness of Barrel end lagging	38	38	38	38	38	38	50	50	50	38	50
No. of stretchers	4	4	4	4	4	6	6	6	6	4	4
Stretchers size	100x 38	100x 38	100x 38	100x 38	100x 38	100x 33	100x 50	100x 50	100x 50	75x 50	75x 75
No. of Bolts	4	4	4	4	4	6	6	6	6	4	4
Diameter of bolt (Min.)	12	12	12	12	12	12	19	19	19	19	22
Size of square washer	50x 6	50x 6	50x 6	50x 6	50x 6	50x 6	50x 6	50x 63	50x 6	75x 6	100x 6
Size of spindle plate	150x 150x 6	150x 150x 6	150x 150x 6	150x 150x 6	150x 150x 6	230x 230x 6	230x 230x 6	230x 230x 6	230x 230x 6	230x 230x 6	380x 380x 6
Diameter of spindle plate hole	90	90	90	90	90	90	90	90	90	-	-
No. of Spindle plate bolt	4	4	4	4	4	4	4	4	4	4	4
Spindle plate bolt diameter	12	12	12	12	12	12	12	12	12	16	16
Thickness of external lagging	38	38	38	38	38	38	50	50	50	38	50
No. of binders over external lagging	2	2	2	2	2	3	3	3	3	2	3

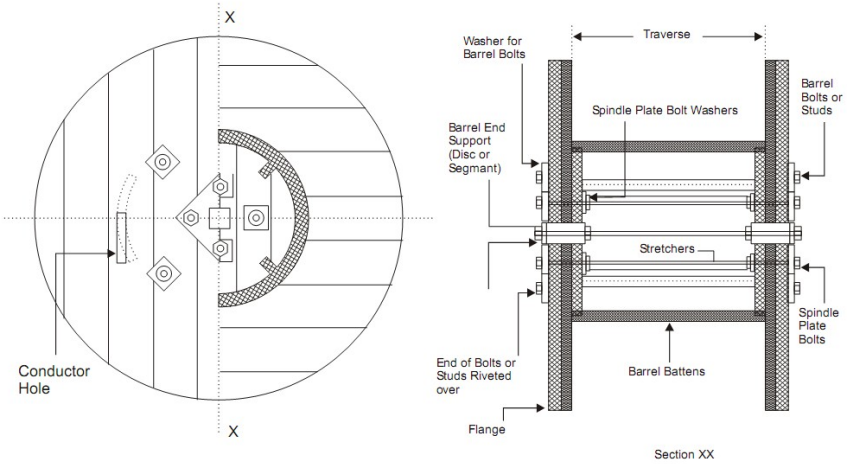


Fig. 1 Drum Nomenclature

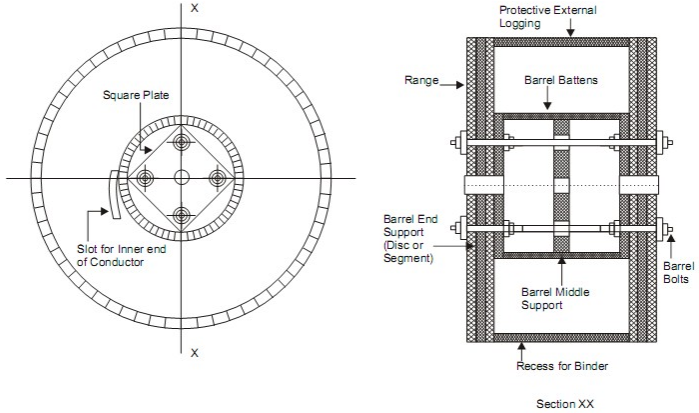


Fig. 2 Drum having 3 ply flange construction with barrel middle supports.