

APPLICATION

Due to its excellent characteristics, this product is used extensively in the cable industry for the manufacturing of Optical Ground Wire (OPGW), conventional stranded earth wired and steel reinforced cores for phases conductors, all to be used in overheads lines. Also, it can be used in alternative applications an helical hardware for overhead lines or those where the resistance to the corrosion is an important factor.

DESCRIPTION

Bare concentric-lay-stranded conductors made from bare, hard-drawn, round, aluminum clad steel wires for general use of electrical purposes. Conductors are classified as follows: 14 % conductivity, 20.3 % conductivity, 27 % conductivity, 35 % conductivity, 40 % conductivity.

SPECIFICATIONS

- IEC 61089 Round Wire Concentric Lay Overhead Electrical Stranded Conductors
- ASTM B 416 Concentric-Lay-Stranded Aluminum-Clad Steel Conductors
- AS 1222.2 Steel Conductors and stays Bare Overhead Part 2:Aluminum clad (SC/AC)
- GB/T 1179 Round Wire Concentric Lay Overhead Electrical Stranded Conductors

Parameter

ASTM B 416

Size Designation	Nominal Cross Section	Number and Diameter of		Conductor	Mass per Unit Length	Min.Rated Breaking Strength	Max.Resistance at 20°C
		Individual Wires		Diameter			
		Number	Nominal				
			Diameter				
mm ²		mm	mm	kg/km	kN	Ω/km	
37 No. 5 AWG	620.58	37	4.62	32.26	4169.8	635.42	0.1393
37 No. 6 AWG	492.19	37	4.115	28.7	3306.7	534.86	0.1757
37 No. 7 AWG	390.32	37	3.665	25.65	2622.1	448.09	0.2216
37 No.8 AWG	309.55	37	3.264	22.83	2080.4	374.67	0.2794
37 No. 9 AWG	245.48	37	2.906	20.35	1648.9	297.11	0.3524
37 No. 10 AWG	194.64	37	2.588	18.11	1308.1	235.61	0.4442
19 No. 5 AWG	318.71	19	4.62	23.11	2128.1	326.39	0.2698
19 No. 6 AWG	252.71	19	4.115	20.57	1687.6	274.55	0.3402
19 No. 7 AWG	200.45	19	3.665	18.31	1338.6	230.18	0.4292
19 No. 8 AWG	158.97	19	3.264	16.31	1061.8	192.41	0.541
19 No. 9 AWG	126.06	19	2.906	14.53	842	152.58	0.6821
19 No. 10 AWG	99.94	19	2.588	12.93	667.7	120.99	0.8603
7 No. 5 AWG	117.42	7	4.62	13.87	781.1	120.28	0.7428
7 No. 6 AWG	93.1	7	4.115	12.34	619.5	101.14	0.9197
7 No. 7 AWG	73.87	7	3.665	11	491.1	84.81	1.1598

7 No. 8 AWG	58.56	7	3.264	9.78	389.6	70.88	1.4627
7 No. 9 AWG	46.44	7	2.906	8.71	308.9	56.2	1.8443
7 No. 10 AWG	36.83	7	2.588	7.77	245.1	44.59	2.3256
7 No. 11 AWG	29.18	7	2.304	6.91	194.4	35.35	2.9326
7 No. 12 AWG	23.16	7	2.052	6.15	154.2	28.04	3.6977
3 No. 5 AWG	50.32	3	4.62	9.96	334.1	54.42	1.6986
3 No. 6 AWG	39.9	3	4.115	8.86	265	45.74	2.1418
3 No. 7 AWG	31.65	3	3.665	7.9	210.1	38.36	2.7009
3 No. 8 AWG	25.1	3	3.264	7.04	166.7	32.06	3.4057
3 No. 9 AWG	19.9	3	2.906	6.27	132.2	25.43	4.2948
3 No. 10 AWG	15.78	3	2.588	5.59	104.8	20.17	5.4169

AS 1222.2 ACS(SC/AC)

Stranding and wire diameter	Approx. overall diameter	Cross-sectional	Approx. mass per km	Calculated breaking load (CBL)	Equivalent aluminium area	Direct current resistance per km at 20°C
		area				
mm	mm	mm ²	kg	kN	mm ²	Ω
3/2.75	5.93	17.82	118	22.7	5.91	4.8
3/3.00	6.47	21.21	141	27	7.03	4.02
3/3.25	7	24.89	165	31.6	8.26	3.42
3/3.75	8.08	33.12	220	39.3	11	2.58
7/2.75	8.25	41.58	277	50.1	13.7	2.06
7/3.00	9	49.48	330	59.7	16.3	1.73
7/3.25	9.75	58.07	387	69.9	19.2	1.47
7/3.75	11.3	77.28	515	86.9	25.5	1.11
7/4.25	12.8	99.33	662	105	32.8	0.864
19/2.75	13.8	112.9	755	136	37.1	0.764
19/3.00	15	134.3	899	162	44.1	0.642
19/3.25	16.3	157.6	1060	189	51.8	0.545
19/3.75	18.8	209.8	1410	236	68.9	0.411
19/4.25	21.3	269.6	1800	286	88.6	0.32

GB/T 1179

Code Number	Area	No. of Wires	Diameter		Linear Mass		Rated Strength		DC Resistance	
			Wire	Cond.	JLB14	JLB20A	JLB14	JLB20A	JLB14	JLB20A
	mm ²		mm	mm	kg/km	kg/km	kN	kN	Ω/km	Ω/km
30	29.1	7	2.3	6.9	210.4	194.2	46.24	38.97	4.2899	2.954

35	34.4	7	2.5	7.5	248.6	229.4	54.63	46.04	3.6309	2.5002
40	41.6	7	2.75	8.25	300.7	277.6	66.11	55.71	3.0008	2.0663
45	46.2	7	2.9	8.7	334.5	308.7	73.52	61.96	2.6984	1.8581
50	49.5	7	3	9	357.9	330.3	78.67	66.3	2.5215	1.7363
55	56.3	7	3.2	9.6	407.2	375.9	87.26	75.44	2.2161	1.526
65	67.3	7	3.5	10.5	487.2	449.6	104.4	85.53	1.8525	1.2756
70	71.3	7	3.6	10.8	515.4	475.7	108.3	90.49	1.751	1.2057
80	79.4	7	3.8	11.4	574.3	530	120.7	99.24	1.5716	1.0822
90	90.2	7	4.05	12.2	652.3	602.1	137.1	109.1	1.3835	0.9527
95	95.1	7	4.16	12.5	688.2	635.2	144.6	112.3	1.3113	0.903
80	80.3	19	2.32	11.6	583.8	538.8	127.7	107.6	1.5609	1.0748
100	101	19	2.6	13	733.2	676.7	160.4	135.2	1.2428	0.8558
120	121	19	2.85	14.3	881	813.1	192.7	162.4	1.0343	0.7122
150	148	19	3.15	15.8	1076.2	993.3	229.5	198.4	0.8467	0.583
170	173	19	3.4	17	1253.9	1157.3	267.4	226	0.7267	0.5004
185	183	19	3.5	17.5	1328.7	1226.3	283.3	232.2	0.6858	0.4722
210	210	19	3.75	18.8	1525.3	1407.8	319	262.3	0.5974	0.4114
240	239	19	4	20	1735.4	1601.8	362.9	288.9	0.5251	0.3616
300	298	37	3.2	22.4	2168	2001	461.2	398.7	0.4223	0.2908
350	352	37	3.48	24.4	2564	2366.5	545.5	446.9	0.3571	0.2459
380	377	37	3.6	25.2	2743.9	2532.5	572.5	478.3	0.3337	0.2298
400	398	37	3.7	25.9	2898.4	2675.2	604.7	497.3	0.3159	0.2175
420	420	37	3.8	26.6	3057.2	2821.7	637.8	524.5	0.2995	0.2062
450	451	37	3.94	27.6	3286.6	3033.5	685.7	563.9	0.2786	0.1918
465	465	37	4	28	3387.5	3126.6	706.7	562.6	0.2703	0.1861
500	503	37	4.16	29.1	3663.9	3381.7	764.4	593.4	0.2499	0.1721
590	588	37	4.5	31.5	4287.3	3957.1	894.5	670.8	0.2135	0.147
600	599	37	4.54	31.9	4363.9	4027.1	910.4	682.8	0.2098	0.1445
600	600	61	3.54	32.7	4380.6	4043.2	866.9	724.4	0.2096	0.1443
630	631	61	3.63	32.7	4606.2	4251.3	911.6	761.7	0.1993	0.1373
670	670	37	4.8	33.6	4878	4502.3	1004.3	716.4	0.1877	0.1292
800	805	61	4.1	36.9	5876.2	5423.5	1162.9	925.8	0.1563	0.1076

Code	Area	No. of Wires	Diameter		Linear Mass			Rated Strength			DC Resistance		
			Wire	Cond.	JLB27	JLB35	JLB40	JLB27	JLB35	JLB40	JLB27	JLB35	JLB40
	mm ²		mm	mm	kg/km	kg/km	kg/km	kN	kN	kN	Ω/km	Ω/km	Ωkm
35	34.4	7	2.5	7.5	205.7	179.3	161.5	37.11	27.83	23.37	1.8828	1.4524	1.2708
40	41.6	7	2.75	8.25	248.9	216.9	195.4	44.9	33.68	28.27	1.5561	1.2003	1.0502
45	46.2	7	2.9	8.7	276.8	241.2	217.3	49.94	37.45	31.44	1.3993	1.0794	0.9444
50	49.5	7	3	9	296.3	258.2	232.6	53.44	40.08	33.65	1.3075	1.0086	0.8825
55	56.3	7	3.2	9.6	337.1	293.7	264.6	60.8	45.6	38.28	1.1492	0.8865	0.7756

65	67.3	7	3.5	10.5	403.2	351.4	316.6	72.74	54.55	45.8	0.9606	0.741	0.6483
70	71.3	7	3.6	10.8	426.6	371.8	334.9	76.95	57.71	48.45	0.908	0.7004	0.6128
80	79.4	7	3.8	11.4	475.3	414.2	373.2	85.74	64.3	53.98	0.8149	0.6286	0.55
90	90.2	7	4.05	12.2	539.9	470.5	423.9	97.39	73.04	61.32	0.7174	0.5534	0.4842
95	95.1	7	4.16	12.5	569.7	496.4	447.2	102.8	77.07	64.7	0.68	0.5245	0.4589
100	101	19	2.6	13	606.9	528.9	476.5	108.9	81.71	68.6	0.6444	0.4971	0.4349
120	121	19	2.85	14.3	729.2	635.5	572.5	130.9	98.18	82.42	0.5363	0.4137	0.362
150	148	19	3.15	15.8	890.8	776.3	699.4	159.9	119.9	100.7	0.439	0.3387	0.2963
170	173	19	3.4	17	1037.9	904.4	814.8	186.3	139.7	117.3	0.3769	0.2907	0.2543
185	183	19	3.5	17.5	1099.8	958.4	863.5	197.4	148.1	124.3	0.3556	0.2743	0.24
210	210	19	3.75	18.8	1262.5	1100.2	991.2	226.6	170	142.7	0.3098	0.239	0.2091
240	239	19	4	20	1436.5	1251.8	1127.8	257.9	193.4	162.4	0.2723	0.21	0.1838
300	298	37	3.2	22.4	1794.5	1563.8	1408.9	321.4	241	202.3	0.219	0.1689	0.1478
350	352	37	3.48	24.4	2122.3	1849.4	1666.2	381	285.1	239.3	0.1852	0.1428	0.125
380	377	37	3.6	25.2	2271.2	1979.1	1783.1	406.7	305.1	256.1	0.173	0.1335	0.1168
400	398	37	3.7	25.9	2399.1	2090.6	1883.6	429.7	322.2	270.5	0.1638	0.1263	0.1105
420	420	37	3.8	26.6	2530.6	2205.1	1986.8	453.2	339.9	285.3	0.1553	0.1198	0.1048
450	451	37	3.94	27.6	2720.5	2370.6	2135.9	487.2	365.4	306.8	0.1444	0.1114	0.0975
465	465	37	4	28	2803.9	2443.4	2201.4	502.2	376.6	316.2	0.1401	0.1081	0.0946
500	503	37	4.16	29.1	3032.7	2642.7	2381	543.1	407.3	342	0.1296	0.1	0.0875
510	513	37	4.2	29.4	3091.3	2693.8	2427	553.6	415.2	348.6	0.1271	0.0981	0.0858
590	588	37	4.5	31.5	3548.7	3092.4	2786.2	635.5	476.7	400.2	0.1107	0.0854	0.0747
600	599	37	4.54	31.9	3612.1	3147.6	2835.9	646.9	485.2	407.3	0.1088	0.0839	0.0734
600	600	61	3.54	32.7	3626	3159.7	2846.8	616	462	387.8	0.1087	0.0838	0.0734
630	631	61	3.63	32.7	3812.7	3322.4	2993.4	647.7	485.8	407.8	0.1034	0.0797	0.0698
670	670	37	4.8	33.6	4037.7	3518.5	3170	723.1	542.3	455.3	0.0973	0.0751	0.0657
800	805	61	4.1	36.9	4863.9	4238.4	3818.7	826.3	619.7	520.3	0.081	0.0625	0.0547