

**CONSTRUCTION GUIDELINE**

**BARE CONDUCTORS MECHANICAL AND ELECTRICAL PROPERTIES**

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ORIGINATOR	Stock No.	Ultimate Strength Pounds	Code Word	Size #AWG or kcmil	Number of Wires	Overall Diameter Inches	Weight Lbs./K ft.	Phase to Neutral 75° C, 60 Hz, 1 Ft. Equivalent Spacing		Resistance 60 Hz, 50° C ohms/K ft.	Normal Conductor Temp.	Note 1 Ampacity Rating		Note 3 Temp. Coefficient of Resistance $\alpha$ at 50° C
								Inductive $X_L$ ohms/K ft.	Note 2 Capacitive $X_C$ K ohms/K ft.			Winter at 10° C, Wind and No Sun	Summer at 30° C, Wind and Sun	
Charles J. Shaffer	610008	1,970	-	#4 CU, HD	1	0.2043	0126.3	0.1153	0.7471	0.28470	80° C	185	150	0.00344
	610006	3,003	-	#2 CU, HD	1	0.2576	0200.9	0.1100	0.7102	0.17900	80° C	250	200	0.00344
	610434	2,110	-	#2 CU, SD	7	0.2920	0204.9	0.1087	0.6906	0.18260	80° C	255	205	0.00344
	610521	4,642	-	#2/0 CU, MHD	7	0.4140	0411.0	0.1008	0.6362	0.09110	80° C	400	315	0.00344
	610425	4,062	-	#2/0 CU, SD	7	0.4140	0411.0	0.1008	0.6362	0.09110	80° C	400	315	0.00344
	610524	7,281	-	#4/0 CU, MHD	7	0.5220	0653.4	0.0953	0.5998	0.05740	80° C	540	425	0.00344
	610414	6,453	-	#4/0 CU, SD	19	0.5280	0653.4	0.0941	0.5977	0.05740	80° C	540	425	0.00344
	610415	-	-	#4/0 CU, SD	133	0.5990	0668.0	0.0941	0.5977	0.05740	80° C	565	440	0.00344
	610412	7,940	-	250 CU, SD	37	0.5750	0772.0	0.0922	0.5850	0.04870	80° C	605	470	0.00344
	610413	-	-	250 CU, SD	259	0.6530	0795.0	0.0922	0.5850	0.04870	80° C	625	490	0.00344
	610409	13,510	-	300 CU, HD	19	0.6290	0926.3	0.0902	0.5702	0.04070	80° C	680	530	0.00344
610407	12,200	-	350 CU, MHD	19	0.6790	1080.7	0.0883	0.5586	0.03490	80° C	750	580	0.00344	
610397	15,240	-	500 CU, SD	37	0.8140	1543.8	0.0839	0.5301	0.02470	80° C	940	725	0.00344	
James M. Horn	Normal Conductor Temperature 80° C													97.5% IACS
	600012	8,350	Penguin	#4/0 ACSR	6/1	0.5630	0291.1	0.1053	0.5966	0.10663	90° C	425	345	0.00361
	600018	14,100	Linnet	336.4 ACSR	26/7	0.7200	0462.6	0.0854	0.5491	0.05680	90° C	625	505	0.00361
	600020	9,940	Chickadee	397.5 ACSR	18/1	0.7430	0431.6	0.0856	0.5438	0.04870	90° C	685	555	0.00361
	600021	16,300	Ibis	397.5 ACSR	26/7	0.7830	0546.6	0.0835	0.5386	0.04810	90° C	705	565	0.00361
	ex600026	23,800	Hen*	477 ACSR	30/7*	0.8980	0760.0	0.0803	0.5174	0.03980	90° C	805	645	0.00361
	600040	31,500	Drake	795 ACSR	26/7	1.1080	1094.0	0.0756	0.4815	0.02420	90° C	1,105	880	0.00361
	600041	38,400	Mallard	795 ACSR	30/19	1.1400	1235.0	0.0744	0.4773	0.02410	90° C	1,115	890	0.00361
	600042	25,900	Rail	954 ACSR	45/7	1.1650	1076.0	0.0748	0.4736	0.02060	90° C	1,215	970	0.00361
	Normal Conductor Temperature 90° C													61.2% IACS
Al Neimber	600112	6,150	Tulip	336.4 AAC	19	0.6660	0315.8	0.0888	0.5597	0.05780	80° C	575	450	0.00361
	600113	7,110	Canna	397.5 AAC	19	0.7240	0373.2	0.0689	0.5491	0.04890	80° C	645	500	0.00361
	600121	13,900	Arbutus	795 AAC	37	1.0260	0746.4	0.0786	0.4937	0.02480	80° C	1,005	770	0.00361
	600126	16,900	Goldenrod	954 AAC	61	1.1260	0896.1	0.0763	0.4794	0.02080	80° C	1,130	860	0.00361
	600128	18,300	Larkspur	1,033.5 AAC	61	1.1720	0970.7	0.0754	0.4731	0.01930	80° C	1,190	905	0.00361
	Hudson Fry	Normal Conductor Temperature 80° C												
*Not standard "Hen". 7 Steel strands of 0.130 inch dia. and 30 aluminum strands of 0.127 inch dia. credit: ksj (1986)														
<b>Notes:</b> 1 0.5 emissivity, 2 feet per second wind at 15° to conductor, sun at, noon, latitude 48° north, sea level.														
2 Shunt capacitive reactance (megohms per 1000 ft.) varies inversely with line length.														
3 $\alpha T$ is used to calculate resistance at other temperatures: $R_{T2} = R_{T1} [1 + \alpha_{T1} (T2 - T1)]$ .														

Charles J. Shaffer

James M. Horn

Al Neimber

Hudson Fry

ORIGINATOR

STANDARDS COORDINATOR

STANDARDS SUPERVISOR

UNIT DIRECTOR