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## Standard Specification for ACSR Twisted Pair Conductor (ACSR/TP)<sup>1</sup>

This standard is issued under the fixed designation B911/B911M; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 1. Scope

1.1 This specification covers ACSR Twisted Pair Conductor (ACSR/TP) for use as overhead electric conductors (see Notes 1 and 2).

NOTE 1—The conductor is fabricated from two component ACSR conductors of the same size twisted helically around each other. This conductor is identified by the code name of the component ACSR conductor followed by /TP or the size and type of the component ACSR conductor followed by /TP.

NOTE 2—There are registered trademark symbols that are also used to identify the twisted pair notation. Consult cable manufacturers for additional details.

1.2 The values stated in ~~inch-pound~~ either SI units or S~~inch-pound~~ units are to be regarded separately as standard. ~~Each~~The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the ~~specification~~ specification.

1.2.1 For conductor sizes designated by AWG or kcmil, the requirements in SI units have been numerically converted from corresponding values stated or derived in inch-pound units. For conductor sizes designated by SI units only, the requirements are stated or derived in SI units. ~~1.2.1 For~~For density, resistivity, and temperature, the values stated in SI units are to be regarded as standard.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

### 2. Referenced Documents

2.1 The following documents of the issue in effect on the date of material purchase form a part of this specification to the extent referenced herein:

2.2 *ASTM Standards*:<sup>2</sup>

B232/B232M [Specification for Concentric-Lay-Stranded Aluminum Conductors, Coated-Steel Reinforced \(ACSR\)](#)

### 3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*

3.1.1 *component conductors*—the two conductors twisted to fabricate the finished ACSR/TP.

### 4. Ordering Information

4.1 Orders for material under this specification shall include the following information:

4.1.1 Quantity of each size,

4.1.1.1 *Conductor Size*—kcmil area of the fabricated ACSR/TP ( $2 \times$  kcmil area of one of the component conductors),

4.1.2 Conductor type and the number of wires of the component conductors,

4.1.3 The type of steel core wire and type of coating,

4.1.4 Place of inspection,

4.1.5 Package size and type,

4.1.6 Special package markings, if required, and

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

4.1.7 Heavy wood lagging, if required.

## 5. Requirements for Component Conductors

5.1 Before twisting, the component conductors shall conform to the requirements of Specification B232/B232M.

## 6. Twist

6.1 The component conductors shall be twisted about themselves with a complete twist every 9 ft ± 1 ft. This twist length shall be measured between the twisting machine and the take-up reel with normal take-up tension on the ACSR/TP.

NOTE 3—The twist length can be altered as the ACSR/TP is wound up onto the take-up reel. It may not have the same twist length as when the TP is removed from the reel.

6.2 The direction of the twist shall be left hand.

## 7. Construction Requirements

7.1 Construction requirements are given in Table 1 for ACSR/TP.

**TABLE 1 Construction Requirements for TP Type Conductor Using Aluminum Conductor, Steel Reinforced (ACSR)**

Code Word <sup>A</sup>	Equivalent Size AWG or kcmil	Component Composition			Outer Dimensions in.		Nominal Mass <sup>B</sup> lb/1000ft	Rated Strg. lb <sup>C</sup>	Resistance <sup>D</sup> Ohms/1000ft dc at 20°C
		AWG or kcmil	Aluminum	Steel	minor	major			
Swan / TP	1	4	6 × 0.0834	1 × 0.0834	0.250 × 0.500	115	3700	0.2016	
Swanate / TP	1	4	7 × 0.0772	1 × 0.1029	0.257 × 0.514	115	4720	0.1994	
Swallow / TP	1/0	3	6 × 0.0937	1 × 0.0937	0.281 × 0.562	145	4600	0.1601	
Sparrow / TP	2/0	2	6 × 0.1052	1 × 0.1052	0.316 × 0.632	182	5660	0.1267	
Sparate / TP	2/0	2	7 × 0.0974	1 × 0.1299	0.325 × 0.650	213	7260	0.1253	
Robin / TP	3/0	1	6 × 0.1181	1 × 0.1181	0.354 × 0.708	230	7120	0.1005	
Raven / TP	4/0	1/0	6 × 0.1327	1 × 0.1327	0.398 × 0.796	290	8760	0.0796	
Quail / TP	266.2	2/0	6 × 0.1489	1 × 0.1489	0.447 × 0.894	336	10600	0.0633	
Pigeon / TP	335.6	3/0	6 × 0.1672	1 × 0.1672	0.502 × 1.004	461	13200	0.0502	
Penguin / TP	423.2	4/0	6 × 0.1878	1 × 0.1878	0.563 × 1.126	582	16700	0.0398	
Jaeger / TP	456.4	228.2	18 × 0.1126	1 × 0.1126	0.563 × 1.126	495	12100	0.0376	
Waxwing / TP	533.6	266.8	18 × 0.1217	1 × 0.1217	0.609 × 1.218	579	13700	0.0322	
Spoonbill / TP	533.6	266.8	22 × 0.1101	7 × 0.0612	0.624 × 1.248	642	17400	0.0321	
Scaup / TP	533.6	266.8	24 × 0.1054	7 × 0.0703	0.633 × 1.266	687	20000	0.0320	
Partridge / TP	533.6	266.8	26 × 0.1013	7 × 0.0788	0.642 × 1.284	734	22600	0.0319	
Junco / TP	533.6	266.8	30 × 0.0943	7 × 0.0943	0.660 × 1.320	835	27800	0.0316	
Ostrich / TP	600.0	300.0	26 × 0.1074	7 × 0.0835	0.680 × 1.360	825	25400	0.0283	
Merlin / TP	672.8	336.4	18 × 0.1367	1 × 0.1367	0.683 × 1.366	730	17400	0.0255	
Trogon / TP	672.8	336.4	20 × 0.1297	7 × 0.0576	0.692 × 1.384	757	19000	0.0256	
Woodcock / TP	672.8	336.4	22 × 0.1237	7 × 0.0687	0.701 × 1.402	809	21800	0.0255	
Widgeon / TP	672.8	336.4	24 × 0.1184	7 × 0.0789	0.710 × 1.420	866	25000	0.0254	
Linnnet / TP	672.8	336.4	26 × 0.1137	7 × 0.0884	0.720 × 1.440	925	28200	0.0253	
Oriole / TP	672.8	336.4	30 × 0.1059	7 × 0.1059	0.741 × 1.482	1053	34600	0.0251	
Chickadee / TP	795.0	397.5	18 × 0.1486	1 × 0.1486	0.743 × 1.486	862	19900	0.0216	
Ptarmigan / TP	795.0	397.5	20 × 0.1410	7 × 0.0627	0.752 × 1.504	895	22200	0.0216	
Stork / TP	795.0	397.5	22 × 0.1344	7 × 0.0747	0.762 × 1.524	956	25800	0.0216	
Brant / TP	795.0	397.5	24 × 0.1287	7 × 0.0858	0.772 × 1.544	1023	29200	0.0215	
Ibis / TP	795.0	397.5	26 × 0.1236	7 × 0.0961	0.783 × 1.566	1093	32600	0.0214	
Lark / TP	795.0	397.5	30 × 0.1151	7 × 0.1151	0.806 × 1.612	1244	40600	0.0212	
Pelican / TP	954.0	477.0	18 × 0.1628	1 × 0.1628	0.814 × 1.628	1035	23600	0.0180	
Tailorbird / TP	954.0	477.0	20 × 0.1544	7 × 0.0686	0.823 × 1.646	1074	26200	0.0180	
Toucan / TP	954.0	477.0	22 × 0.1472	7 × 0.0818	0.834 × 1.668	1148	30400	0.0180	
Flicker / TP	954.0	477.0	24 × 0.1410	7 × 0.0940	0.846 × 1.692	1227	34400	0.0179	
Hawk / TP	954.0	477.0	26 × 0.1354	7 × 0.1053	0.858 × 1.716	1312	39000	0.0178	
Hen / TP	954.0	477.0	30 × 0.1261	7 × 0.1261	0.883 × 1.766	1493	47600	0.0177	
Heron / TP	1000.0	500.0	30 × 0.1291	7 × 0.1291	0.904 × 1.808	1565	50000	0.0169	
Nightingale/TP	1034.0	517.0	18 × 0.1694	1 × 0.1694	0.848 × 1.696	1121	25400	0.0166	
Creepier / TP	1034.0	517.0	20 × 0.1607	7 × 0.0714	0.858 × 1.716	1164	28400	0.0166	
Osprey / TP	1113.0	556.5	18 × 0.1758	1 × 0.1758	0.879 × 1.758	1207	27400	0.0154	
Tody / TP	1113.0	556.5	20 × 0.1668	7 × 0.0741	0.890 × 1.780	1253	30600	0.0155	
Sapsucker / TP	1113.0	556.5	22 × 0.1590	7 × 0.0883	0.901 × 1.802	1339	35200	0.0154	
Parakeet / TP	1113.0	556.5	24 × 0.1523	7 × 0.1015	0.914 × 1.828	1432	39600	0.0153	
Dove / TP	1113.0	556.5	26 × 0.1463	7 × 0.1138	0.927 × 1.854	1530	45200	0.0153	
Eagle / TP	1113.0	556.5	30 × 0.1362	7 × 0.1362	0.953 × 1.906	1741	55600	0.0152	
Kittiwake / TP	1192.0	596.0	18 × 0.1820	1 × 0.1820	0.910 × 1.820	1293	29400	0.0144	
Skua / TP	1210.0	605.0	20 × 0.1739	7 × 0.0773	0.928 × 1.856	1362	33200	0.0142	
Peacock / TP	1210.0	605.0	24 × 0.1588	7 × 0.1059	0.953 × 1.906	1557	43200	0.0141	
Squab / TP	1210.0	605.0	26 × 0.1525	7 × 0.1186	0.966 × 1.932	1664	48600	0.0141	
Wood Duck/ TP	1210.0	605.0	30 × 0.1420	7 × 0.1420	0.994 × 1.988	1893	57800	0.0140	
Teal / TP	1210.0	605.0	30 × 0.1420	19 × 0.0852	0.994 × 1.988	1877	60000	0.0140	