American National Standard

for zinc-coated ferrous pole-top insulator pins with lead threads for overhead line construction

Approved March 2, 1988 Secretariat: National Electrical Manufacturers Association

1 Scope and application

1.1 Scope

This standard covers ferrous pole-top insulator pins with 1-inch- and 1-3/8-inch-diameter lead threads used in overhead line construction.

1.2 Application

Pins conforming to this standard shall, in all respects, meet the dimensional and performance requirements hereinafter stated. The text, specifications or standards references, and associated figures supplement each other and shall be considered as parts of this standard.

2 Normative references

The following standard contains provisions which, through reference in this text, constitute provisions of this American National Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this American National Standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below.

ANSI/ASTM-A-153-82. *Standard specification for zinc coating (hot dip) on iron and steel hardware.*[1)]

3 Material

3.1 pins: Pins shall be made from one of the following materials: hot-rolled steel that has been produced by the open-hearth, basic-oxygen or electric-furnace process or malleable or ductile ferrous castings. These materials shall be of a grade and quality suitable to meet the strength and performance requirements of this standard.

1) This standard has been administratively withdrawn. Contact the Secretariat for more recent information.

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3.2 lead threads: Lead threads shall be made of a lead alloy of a grade and quality suitable to meet the strength and performance requirements of this standard.

4 Dimensions

4.1 Dimensions of pins shall be in accordance with figure 1.

4.2 Dimensions of lead threads shall conform to those on figure 2.

5 Strength

5.1 Cantilever test for ferrous pins

5.1.1 Pins shall be tested in accordance with the test procedures outlined in figure 1 and shall develop the cantilever strengths given in figure 1.

5.1.2 The load shall be applied at a point equal in height to the lever arm, at a rate of approximately 0.4 inch per minute, through a steel thimble screwed to the lead thread.

5.1.3 The angle of deflection is defined as that angle determined by the intersection of the centerline axis of the steel thimble in its initial position to the centerline axis of this thimble when the pin is subjected to a load as described in 5.1.2.

5.2 Lead threads for tests

5.2.1 torsion test: After an initial application of 150 inch-pounds of torque to the steel thimble, the lead threads shall withstand an additional 180 degrees of tightening rotation, without damage to the lead thread by stripping or breaking of the bond between the pin body and the lead thread.

5.2.2 tensile test: After installing the steel thimble on the lead thread with a torque of 150 inch-pounds, the lead thread shall withstand a minimum load of 3000 pounds in tension without stripping or pulling off the pin. The load shall be applied to the thimble while the pin is restrained by the shank.

6 Corrosion protection

6.1 All pins shall be zinc coated. The coating shall be applied by:

– the hot-dip process in accordance with ANSI/ASTM A-153-82; or

– another method producing a zinc coating that meets the requirements of ANSI/ASTM A-153-82 for adhesion, purity, and thickness applicable to the class of material being coated.

7 Finish

Pins shall be reasonably smooth on all surfaces and free of sharp projections.

8 Marking of pins

Pins shall bear the manufacturer's symbol or identification mark.

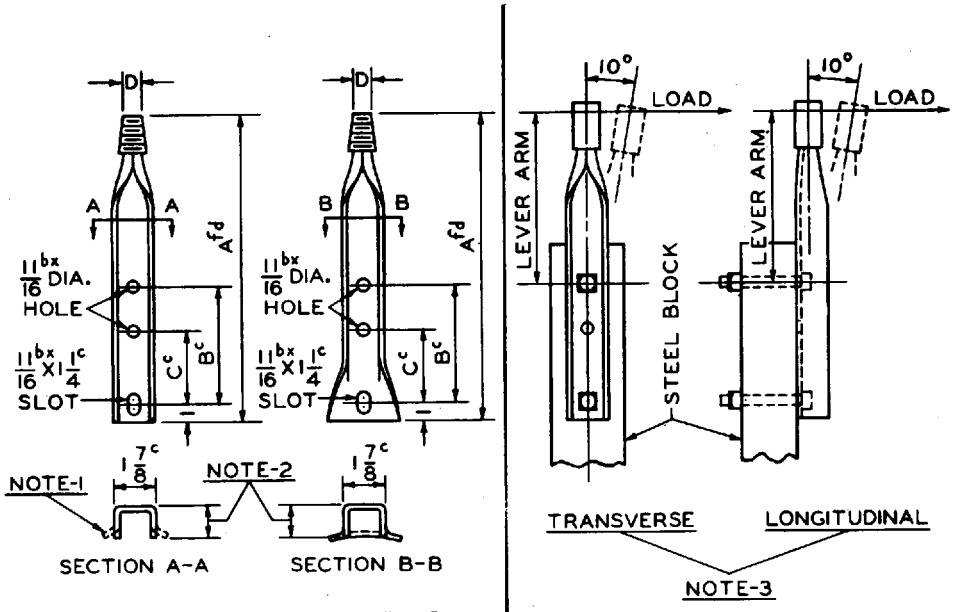
9 Protective packing

Lead threads shall be protected with a collar of cardboard or other suitable material to prevent damage during shipping and handling.

10 Marking of shipping packages

Each shipping container shall be marked with the manufacturer's name and catalog number.

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STYLE	ITEM NO.	DIMENSIONS, INCHES A	B	C	D	CANTILEVER TEST LEVER ARM	MIN. LOAD 10° DEFLECTION TRANSVERSE	LONGITUDINAL
1	1	15	5		1	9	1500	1200
	2	18	8	5	1	9		
	3	20	8		1	11		
	4	20	8	3	1	11		
	5	20	8	5	1	11		
	6	20	8		13/8	11		
	7	24	8	5	1	15		
2	8	16	5		1	10		
	9	18	8	5	1	9		
	10	24	8		1	15		

NOTE-1: CHANNEL LEGS MAY BE FLANGED OR OTHERWISE FORMED TO MEET STRENGTH REQUIREMENTS.

NOTE-2: THIS DIMENSION MAY BE VARIED TO PROVIDE REQUIRED STRENGTH.

NOTE-3: FLARED BASE (STYLE-2) PINS ARE MOUNTED WITH LEGS OF CHANNEL SECTION AGAINST RIGID STEEL SUPPORT FOR TESTING.

ALLOWABLE VARIATIONS

a = 1/64	d = 1/8	g = 3/8	k = 1
b = 1/32	e = 3/16	h = 1/2	x = 0
c = 1/16	f = 1/4	j = 3/4	

A single-letter superscript indicates that the plus and minus value are the same: for example,

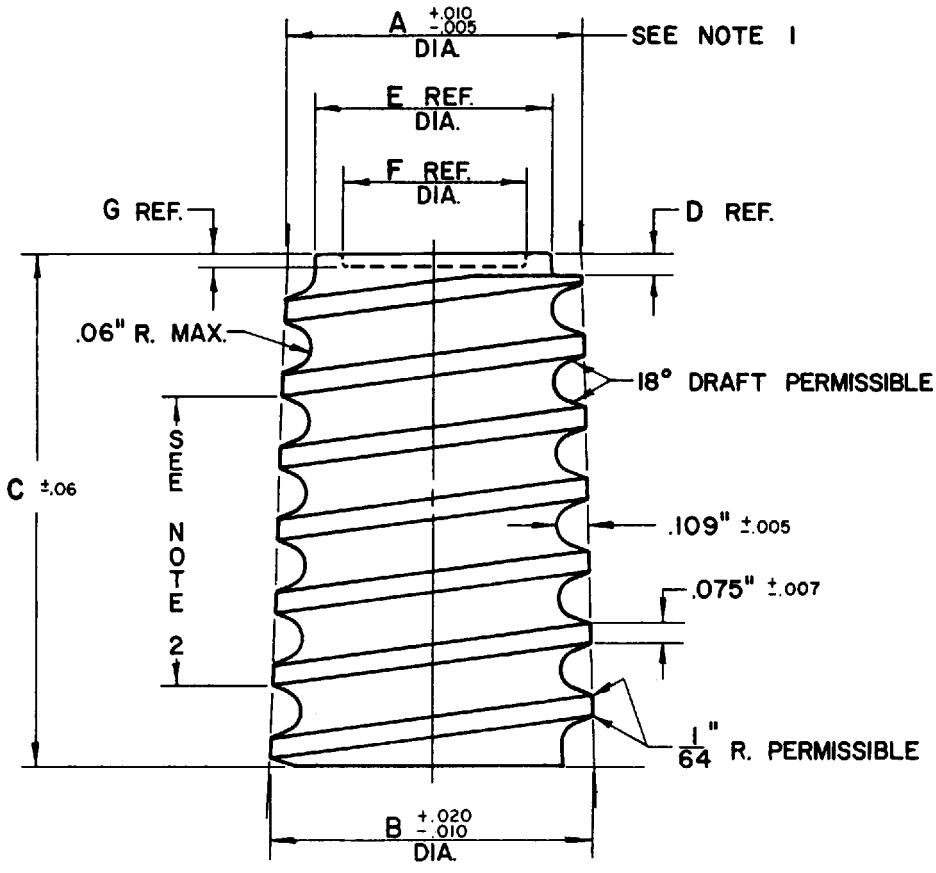
$1\text{–}7/8^{c} = 1\text{–}7/8 \pm 1/16$.

A double-letter superscript indicates that the plus value is that of the first letter and the minus value is that of the second letter: for example,

$11/16^{bx} = 11/16 + 1/32 - 0$.

Figure 1 – Dimensions for pole-top insulator pins (all dimensions in inches)

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NOTES

1 This is the diameter measured between the tapered lines projected along the outside surface of the threads at the top extremity of the lead head. Taper equals 1/16 inch in diameter per inch in length.

2 Four (4) threads per inch.

Dimensions of lead threads in inches							
Lead head	A	B	C	D	E	F	G
1	1.010	1.119	1.750	5/64	13/16	5/8	3/64
1-3/8	1.385	1.518	2.130	9/64	1-1/8	3/4	7/64

Figure 2 – Dimensions for 1-inch and 1-3/8-inch lead threads (all dimensions in inches)

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