



Designation: B418 – 09

## Standard Specification for Cast and Wrought Galvanic Zinc Anodes<sup>1</sup>

This standard is issued under the fixed designation B418; 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.

*This standard has been approved for use by agencies of the Department of Defense.*

### 1. Scope\*

1.1 This specification covers cast and wrought galvanic zinc anodes used for the cathodic protection of more noble metals and alloys in sea water, brackish water, other saline electrolytes, or other corrosive environments.

1.2 Type I anodes are most commonly used for such applications. The Type I anode composition in this specification meets the chemical composition requirements of MIL-A-18001K.

1.3 Zinc anodes conforming to this specification may be used in other waters, electrolytes, backfills, and soils where experience has shown that the specified composition is efficient and reliable. Type II anodes are most commonly used for such applications.

1.4 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.5 *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 become familiar with all hazards including those identified in the appropriate Material Safety Data Sheet (MSDS) for this product/material as provided by the manufacturer; to establish appropriate safety and health practices, and determine the applicability of regulatory limitations prior to use.*

### 2. Referenced Documents

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

[B6 Specification for Zinc](#)

[B899 Terminology Relating to Non-ferrous Metals and Alloys](#)

[E29 Practice for Using Significant Digits in Test Data to](#)

[Determine Conformance with Specifications](#)

[E527 Practice for Numbering Metals and Alloys in the Unified Numbering System \(UNS\)](#)

[E536 Test Methods for Chemical Analysis of Zinc and Zinc Alloys](#)

2.2 *Military Standard:*<sup>3</sup>

[MIL-A-18001K w/INT. AMENDMENT 3, 24 October 2007 Military Specification Anodes Sacrificial Zinc Alloy](#)

2.3 *ISO Standards:*<sup>4</sup>

[ISO 3815-1 Zinc and zinc alloys — Part 1: Analysis of solid samples by optical emission spectrometry](#)

[ISO 3815-2 Zinc and zinc alloys — Part 2: Analysis by inductively coupled plasma optical emission spectrometry](#)

### 3. Terminology

3.1 Terms shall be defined in accordance with Terminology [B899](#).

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *cathodic protection, n*—reduction of corrosion by making the protected metal the cathode in a conducting medium by applying direct current.

3.2.2 *galvanic anode, n*—a metal electrode that sacrificially corrodes when coupled to a more noble metal in a conducting medium, and thereby supplies a protective electric current to the noble electrode.

3.2.3 *ribbon anode, n*—a long, continuous sacrificial anode shape, with a diamond, square, rectangular, oval, or other cross-section, most commonly made of zinc, magnesium or aluminum, having a core wire normally made of steel, that is usually supplied in coils or reels of 100 to 3600 ft depending upon size and cross-section.

3.2.4 *saline electrolyte, n*—a solution consisting of mainly the chlorides of the alkali metals.

### 4. Ordering Information

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

4.1.1 ASTM designation and year of issue,

<sup>1</sup> This specification is under the jurisdiction of ASTM Committee B02 on Nonferrous Metals and Alloys and is the direct responsibility of Subcommittee B02.04 on Zinc and Cadmium.

Current edition approved Oct. 1, 2009. Published October 2009. Originally approved in 1964. Last previous edition approved in 2008 as B418–08. DOI: 10.1520/B0418-09.

<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.

<sup>3</sup> Available from Standardization Documents Order Desk, DODSSP, Bldg. 4, Section D, 700 Robbins Ave., Philadelphia, PA 19111-5098, <http://www.dodssp.daps.mil>.

<sup>4</sup> Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

\*A Summary of Changes section appears at the end of this standard.