



Designation: B 440 – 00

Standard Specification for Cadmium¹

This standard is issued under the fixed designation B 440; 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 approval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope*

1.1 This specification covers refined cadmium metal in slab, ball or stick form.

1.2 The values stated in inch-pound units are to be regarded as the standard.

1.3 *Toxicity*—Warning: Soluble and respirable forms of cadmium may be harmful to human health and the environment in certain forms and concentrations. Therefore, ingestion and inhalation of cadmium should be controlled under the appropriate regulations of the U.S. Occupational Safety and Health Administration (OSHA). Cadmium-containing alloys and coatings should not be used on articles that will contact food or beverages, or for dental and other equipment that is normally inserted in the mouth. Similarly, if articles using cadmium-containing alloys or coatings are welded, soldered, brazed, ground, “flame-cut,” or otherwise heated during fabrication, adequate ventilation must be provided to maintain occupational cadmium exposure below the OSHA Permissible Exposure Level (PEL).

1.4 *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:

E 899 Terminology Relating to Non-ferrous Metals and Alloys²

E 29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications³

E 88 Practice for Sampling Nonferrous Metals and Alloys In Cast Form for Determination of Chemical Composition⁴

E 396 Test Methods for Chemical Analysis of Cadmium⁴
E 527 Practice for Numbering Metals and Alloys⁵

3. Terminology

3.1 Terms shall be defined in accordance with Terminology **B 899**.

4. Ordering Information

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

- 4.1.1 ASTM designation,
- 4.1.2 Quantity (weight) and,
- 4.1.3 Grade (**Table 1**)
- 4.1.4 Shape and size (**Section 7**).

5. Materials and Manufacture

5.1 The cadmium shall be furnished in commercial standard forms or shapes requested by purchaser.

6. Chemical Requirements

6.1 The cadmium supplied shall conform to the requirements of **Table 1** for one of the three grades.

7. Shape and Size

7.1 Various forms and sizes of commercially available cadmium are:

Form	Shape and Size
Ball	Spherical, about 2 in. diameter
Stick	Bar, about $9 \times \frac{1}{2} \times 38$ in. or stick about $9 \times \frac{1}{2}$ in. in diameter.
Slab	Plate or bar, varying in weight from about 20 to 60 lb

7.2 Cadmium may be ordered in other shapes and sizes as mutually agreed.

8. Workmanship, Finish and Appearance

8.1 The supplier shall use care to have the quality of each lot of cadmium as uniform as possible.

8.2 The cadmium shall be reasonably free of adhering foreign material.

9. Sampling for Chemical Analysis

9.1 The producer may obtain representative samples from the molten metal during casting, and all or part of these samples may be cast into shapes suitable for analysis.

¹ 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 May 10, 2000. Published September 2000. Originally published as B 440 – 66 T. Last previous edition B 440 – 99.

² Annual Book of ASTM Standards, Vol 02.04.

³ Annual Book of ASTM Standards, Vol 14.02.

⁴ Annual Book of ASTM Standards, Vol 03.06.

⁵ Annual Book of ASTM Standards, Vol 01.01.

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