1. Scope

1.1 This specification covers grades of zinc alloys, commonly known as Continuous Galvanizing Grade (CGG) alloys that contain aluminum, or aluminum and lead and that are used in continuous hot-dip galvanizing of steel sheet. The compositions for CGG grades made from primary zinc are shown in Table 1. Exceptions for grades made from secondary zinc are found in footnote C.

1.2 Other alloy compositions not included in B852, and as may be agreed upon between the producer and the user, may be used for continuous galvanizing.

1.3 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.

1.4 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:

B897 Specification for Configuration of Zinc and Zinc Alloy Jumbo Block and Half Block Ingot
B899 Terminology Relating to Non-ferrous Metals and Alloys

3. Terminology

3.1 Terms shall be defined in accordance with Terminology B899.

4. Ordering Information

4.1 Orders for zinc alloy ingot under this specification shall include information as specified in Specification B949, Section 4.

5. Materials and Manufacture

5.1 The producer shall use care that each shipment of CGG alloy be as uniform in quality as possible.

6. Chemical Requirements

6.1 CGG alloy shall conform to the requirements of Table 1 as determined by chemical analysis by the producer on samples taken at his plant (see Section 9).

6.2 Chemical requirement procedures shall be in compliance with the provisions of Specification B949, Section 5.2.
7. Size and Shape

7.1 CGG alloy may be ordered as either jumbos, blocks, or slabs.

7.1.1 CGG alloy metal may be ordered in jumbos or blocks, as specified in Specification B897.

7.1.2 Jumbos—large castings of zinc or zinc alloy designed for handling by mechanical equipment. A jumbo usually weighs about 2400 lb (1087 kg). Jumbo shapes may vary, depending on the producer’s practice, and may be referred to as strip jumbos or as block jumbos. The nominal weight, dimensions, and location of holes or openings shall be as agreed upon between the producer and the customer.

7.1.3 Slabs—smaller castings of zinc or zinc alloy designed for manual handling, but often handled by mechanical equipment. A slab usually weighs about 55 lb (25 kg) but may weigh anywhere from 40 to 60 lb (18 to 27 kg). Slabs are usually shipped in strapped bundles weighing about 2200 lb (one metric ton). Other bundle weights may be as agreed upon between the producer and the customer.

7.1.4 Other shapes and sizes as may be agreed upon between the producer and the customer may be cast to the chemical requirements (Table 1) of this specification.

8. Appearance

8.1 CGG alloy castings (jumbos and slabs) shall be free of undue surface oxide, adhering foreign matter, and any “flash” that would interfere with handling and use.

9. Sampling for Chemical Analysis

9.1 Sampling procedures shall be in compliance with the provisions of Specification B949, Section 6.

10. Methods of Chemical Analysis

10.1 The determination of chemical composition shall be made in accordance with Test Methods E536, or ISO 3815-1, or ISO 3815-2 or other methods. In case of dispute, the results secured by Test Methods E536, or ISO 3815-1, or ISO 3815-2 shall be the basis of acceptance.

Note 1—Test Methods E536 is directly applicable, in an unmodified form, only to alloys 3, 5, and 7. ISO 3815-1 and ISO 3815-2 are generic methods applied to zinc and zinc alloys. Each of the methods may be modified and formatted for the alloy to be assayed. An experienced chemist, using suitable and/or traceable standards along with valid quality assurance techniques, will be able to perform and validate the methods and demonstrate acceptable precision and accuracy.

11. Rejection and Rehearing

11.1 Claims to be considered in accordance with the provisions of Specification B949, Section 8.

12. Investigation of Claims

12.1 Claims shall be investigated in accordance with the provisions of Specification B949, Section 8.

13. Settlement of Claims

13.1 Claims shall be settled in accordance with the provisions of Specification B949, Section 8.

14. Product Identification Marking and Packaging

14.1 Each slab, block, jumbo or ingot shall be marked for identification in accordance with the provisions of Specification B949, Section 10.

15. Certification

15.1 A certificate shall be provided by the producer with the following information:

15.1.1 The weight of shipment,

15.1.2 The chemical composition of each production lot or partial lot within the shipment.

15.1.3 A statement that the material was produced, sampled and analyzed in accordance with this specification, and

15.1.4 A statement that the requirements of this specification have been met.

16. Keywords

16.1 CGG alloy; Continuous Galvanizing Grade Zinc; zinc; zinc alloy; zinc metal

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TABLE 1 Chemical Requirements

<table>
<thead>
<tr>
<th>Grade (UNS)</th>
<th>Composition, %</th>
<th>Nominal Range</th>
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</thead>
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<tr>
<td></td>
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<tr>
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</tr>
</tbody>
</table>

Impurities, %:

- Iron<sup>c</sup> 0.0075 max
- Cadmium 0.01 max
- Copper 0.01 max
- Other Elements total of 0.01 max

Zinc: balance by difference

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<sup>A</sup> UNS numbers in conformance with Practice E527.

<sup>B</sup> For purposes of determining conformance with this specification, an observed value obtained from analysis shall be rounded to the nearest unit in the last right-hand place of figures used in expressing the limiting value, in accordance with the rounding method of Practice E29.

<sup>c</sup> Lead and Iron levels of 0.01 % max and 0.01 % max respectively are allowed for CGG alloys produced from secondary zinc.
SUMMARY OF CHANGES

Committee B02 has identified the location of selected changes to this standard since the last issue (B852 - 08) that may impact the use of this standard. (Approved May 1, 2012.)

(1) Revisions have been made to Sections 2, 4, 9, 10, 11, 12, 13, and 14 to reference Specification B949 and delete certain portions of these sections formerly a part of this standard.

(2) The titles of Sections 6, 12, 13, 14, 15, and 16 have been revised to be in agreement with a standard format for Subcommittee B02.04 standards.

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