



Designation: B750 – 09

# Standard Specification for GALFAN<sup>1</sup> (Zinc-5 % Aluminum-Mischmetal) Alloy in Ingot Form for Hot-Dip Coatings<sup>2</sup>

This standard is issued under the fixed designation B750; 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 GALFAN, zinc-5 % aluminum-mischmetal (Zn-5Al-MM) alloy (UNS Z38510)<sup>3</sup> in ingot form for remelting for use in the production of hot-dip coatings on steel. Alloy composition is specified in Table 1.

1.2 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.

1.3 *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 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>4</sup>

**B899** Terminology Relating to Non-ferrous Metals and Alloys

**E29** Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications

**E88** Practice for Sampling Nonferrous Metals and Alloys in Cast Form for Determination of Chemical Composition

**E527** Practice for Numbering Metals and Alloys in the Unified Numbering System (UNS)

TABLE 1 GALFAN, Zn-5Al-MM Alloy Ingot Chemical Requirements<sup>A,B,C,D,E</sup>

Element	UNS Z38510 Composition, %
Aluminum <sup>F</sup>	4.2–6.2
Cerium + lanthanum, total	0.03–0.10
Iron, max	0.075
Silicon, max	0.015
Lead <sup>G</sup> , max	0.005
Cadmium <sup>G</sup> , max	0.005
Tin <sup>G</sup> , max	0.002
Others <sup>H</sup> , each, max	0.02
Others <sup>H</sup> , total, max	0.04
Zinc	Remainder

<sup>A</sup> For purposes of acceptance and rejection, the observed value or calculated value obtained from analysis should be rounded to the nearest unit in the last right-hand place of figures, used in expressing the specified limit, in accordance with the rounding procedure prescribed in Section 3 of Practice E29.

<sup>B</sup> By agreement between purchaser and supplier, analysis may be required and limits established for elements or compounds not specified in the table of chemical composition.

<sup>C</sup> GALFAN, Zn-5Al-MM alloy ingot for hot-dip coatings may contain antimony, copper, and magnesium in amounts of up to 0.002, 0.1, and 0.05 %, respectively. No harmful effects have ever been noted due to the presence of these elements up to these concentrations and, therefore, analyses are not required for these elements.

<sup>D</sup> Magnesium may be specified by the buyer up to 0.1 % maximum.

<sup>E</sup> Zirconium and titanium may each be specified by the buyer up to 0.02 % maximum.

<sup>F</sup> Aluminum may be specified by the buyer up to 12 % maximum.

<sup>G</sup> Lead and cadmium, and to a lesser extent tin and antimony, are known to cause intergranular corrosion in zinc-aluminum alloys. For this reason it is important to maintain the levels of these elements below the limits specified.

<sup>H</sup> Except antimony, copper, magnesium, zirconium, and titanium.

**E1277** Test Method for Chemical Analysis of Zinc-5 % Aluminum-Mischmetal Alloys by ICP Emission Spectrometry

2.2 *Other Standard:*<sup>5</sup>

**GF-1** Standard Practice for Determination of Cerium and Lanthanum Compositions in GALFAN Alloy (5 % -0.04 % La-0.04 % Ce-Bal SHG Zn)

<sup>5</sup> Available from International Lead Zinc Research Organization, 2525 Meridian Parkway, P.O. Box 12036, Research Triangle Park, NC 27709 – 2036, <http://www.ilzro.org>.

<sup>1</sup> GALFAN is a registered trademark of the GALFAN Information Center, Inc.

<sup>2</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 November 2009. Originally approved in 1985. Last previous edition approved in 2008 as B750 – 08. DOI: 10.1520/B0750-09.

<sup>3</sup> UNS number in conformance with Practice E527.

<sup>4</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

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