



Designation: F 375 – 89 (Reapproved 1999)

Standard Specification for Integrated Circuit Lead Frame Material ¹

This standard is issued under the fixed designation F 375; 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 the special requirements for metal strip to be used to fabricate integrated-circuit lead frames by stamping or photochemical milling.

1.2 The metals that are applicable to these parts include copper and copper alloys, ferrous alloys usually containing nickel or cobalt or chromium, nickel and nickel alloys, and other metallic materials.

1.3 The general chemical, physical, and mechanical property requirements of these materials are covered by other ASTM specifications (specifically Specifications B 103/B 103M, B 122/B 122M, B 152, B 162, B 465, F 15, F 30, F 31, F 49 and F 68), and these should be consulted for properties and tempers that are different for the different metals. For metals for which no ASTM specification is available, other specifications should be adopted by agreement of the parties concerned.

1.4 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

2. Referenced Documents

2.1 ASTM Standards:

B 103/B 103M Specification for Phosphor Bronze Plate, Sheet, Strip, and Rolled Bar ²

B 122/B 122M Specification for Copper-Nickel-Tin Alloy, Copper-Nickel-Zinc Alloy (Nickel Silver), and Copper-Nickel Alloy Plate, Sheet, Strip, and Rolled Bar ²

B 152 Specification for Copper Sheet, Strip, Plate, and Rolled Bar ²

B 162 Specification for Nickel Plate, Sheet, and Strip ³

B 465 Specification for Copper-Iron Alloy Plate, Sheet, Strip, and Rolled Bar ²

E 112 Test Methods for Determining the Average Grain Size ⁴

F 15 Specification for Iron-Nickel-Cobalt Sealing Alloy ⁵

F 30 Specification for Iron-Nickel Sealing Alloys ⁵

F 31 Specification for 42 Percent Nickel-6 Percent Chromium-Iron Sealing Alloy ⁵

F 49 Specification for Molybdenum Strip for Electron Tubes ⁶

F 68 Specification for Oxygen-Free Copper in Wrought Forms for Electron Devices ²

3. Ordering Information

3.1 Orders for material under this specification shall include the following information:

3.1.1 Quantity of each size,

3.1.2 Material and specification number appropriate to the material (see 2.1),

3.1.3 Temper or mechanical properties (see 4.1),

3.1.4 Dimensions: thickness, width, length if applicable (see 6.2-6.4),

3.1.5 How furnished: coils and coil size or lengths (see 10.1),

3.1.6 ASTM designation, referencing this specification number, and the fabricating process to be used,

3.1.7 Certification or test report requirements (see 11.1), and

3.1.8 Packing and marking requirements (see 12.1 and 12.2).

4. Materials and Manufacture

4.1 The materials covered by this specification shall conform to the chemical, physical, and mechanical property requirements prescribed in the material specification covering the metal or alloy and the temper (see 2.1).

4.2 The material shall conform to the requirements for lead frames as prescribed in this specification and shall be characteristically suitable for fabrication into lead frames by the fabricating process to be specified. Any special requirements relating to the material properties or the fabricating process, to be specified by the user, shall be agreed upon between the supplier and purchaser.

¹ This specification is under the jurisdiction of ASTM Committee F-1 on Electronics and is the direct responsibility of Subcommittee F01.03 on Metallic Materials.

Current edition approved March 1, 1989. Published May 1989. Originally published as F 375 – 73 T. Last previous edition F 375 – 77 (1989).

² *Annual Book of ASTM Standards*, Vol 02.01.

³ *Annual Book of ASTM Standards*, Vol 02.04.

⁴ *Annual Book of ASTM Standards*, Vol 03.01.

⁵ *Annual Book of ASTM Standards*, Vol 10.04.

⁶ Discontinued—See 1977 *Annual Book of ASTM Standards*, Part 43.