



Designation: F375 – 20

Standard Specification for Integrated Circuit Lead Frame Material¹

This standard is issued under the fixed designation F375; 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 reappraisal. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reappraisal.

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 [B103/B103M](#), [B122/B122M](#), [B152/B152M](#), [B162](#), [B465](#), [F15](#), [F30](#), [F31](#), [F49](#) and [F68](#)), 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 SI units are to be regarded as standard. The values given in parentheses after SI units are provided for information only and are not considered standard.

1.5 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*²

[B103/B103M Specification for Phosphor Bronze Plate, Sheet, Strip, and Rolled Bar](#)

[B122/B122M Specification for Copper-Nickel-Tin Alloy, Copper-Nickel-Zinc Alloy \(Nickel Silver\), and Copper-](#)

[Nickel Alloy Plate, Sheet, Strip, and Rolled Bar](#)
[B152/B152M Specification for Copper Sheet, Strip, Plate, and Rolled Bar](#)

[B162 Specification for Nickel Plate, Sheet, and Strip](#)
[B465 Specification for Copper-Iron Alloy Plate, Sheet, Strip, and Rolled Bar](#)

[E112 Test Methods for Determining Average Grain Size](#)

[F15 Specification for Iron-Nickel-Cobalt Sealing Alloy](#)

[F30 Specification for Iron-Nickel Sealing Alloys](#)

[F31 Specification for Nickel-Chromium-Iron Sealing Alloys](#)

[F49 Specification for Molybdenum Strip for Electron Tubes \(Withdrawn 1977\)³](#)

[F68 Specification for Oxygen-Free Copper in Wrought Forms for Electron Devices](#)

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

¹ This specification is under the jurisdiction of ASTM Committee F01 on Electronics and is the direct responsibility of Subcommittee F01.03 on Metallic Materials, Wire Bonding, and Flip Chip.

Current edition approved Sept. 1, 2020. Published September 2020. Originally approved in 1973 as F375 – 73 T. Last previous edition approved in 2015 as F375 – 89 (2015). DOI: 10.1520/F0375-20.

² 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.

³ The last approved version of this historical standard is referenced on www.astm.org.