



Designation: B1032/B1032M – 25

Standard Guide for Melting Copper Granules (Choppings) to Cast a Test Block for Chemical Analysis and Copper Content Determination¹

This standard is issued under the fixed designation B1032/B1032M; 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 (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 In this guide, the key process steps are reviewed to melt a sample or designated sample portion, both of which are referred to as a sample in this guide, of copper granules (choppings) and cast a test block for laboratory analysis including determination of copper content of the sample.

1.2 *Units*—The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the 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 establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 *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

B170 [Specification for Oxygen-Free Electrolytic Copper—Refinery Shapes](#)

2.2 EN Standard:³

BS EN 12861:2018 [Copper and Copper Alloys—Scrap](#)

2.3 ReMA Standard:⁴

[ISRI Scrap Specifications Circular](#)

3. Significance and Use

3.1 This procedure describes the steps to prepare a sample to determine the actual copper content of a sample of copper granules (choppings) to evaluate compliance with applicable ASTM International, EN, or Recycled Materials Association (ReMA) (formerly ISRI) specifications that are referenced in a purchase order. It may also be applicable to determine the copper content of samples of other copper scrap shapes.

4. Procedure

4.1 Melting of Copper Granules (Choppings):

4.1.1 In general, follow the furnace manufacturer's recommendations, including venting requirements and compliance with local, state, and federal regulations.

4.1.2 A fuel-fired or induction sample melting furnace are both suitable to melt samples of copper granules. The crucible used shall accommodate the entire sample weight. Crucibles shall be non-whetting to molten copper, not absorb any molten metal, and materials of construction should not impart any tramp elements to the molten copper sample. All crucibles will have a life and will need to be replaced at some point. Typical materials of construction have been refractories, ceramics, and coated clay graphite.

4.1.2.1 Separate crucibles should be used if, for example, No. 1 and No. 2 copper scrap or C11040 and C11025 copper scrap is sampled and melted to reduce contamination concerns.

4.1.2.2 Periodic washout charges should be made to each crucible. The quality of copper for the washout charge should meet or exceed C11040.

4.1.3 Weigh the sample before charging into the crucible. Preferred sample weighing should be to the gram or 0.01 lb.

4.1.3.1 If a sample appears to contain, for example, excessive plastic insulation, an alternate physical evaluation can be performed before melting. Take a small portion of the sample and physically remove the tramp plastic insulation. Determine

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at www.astm.org/contact. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

³ Available from British Standards Institution (BSI), 389 Chiswick High Rd., London W4 4AL, U.K., <http://www.bsigroup.com>.

⁴ Available from the Recycled Materials Association, 1250 H Street, NW Suite 400, Washington, DC 20005, <https://www.isri.org/membership/rema-chapters/paper-stock-industries-chapter/psi---scrap-specifications-circular>.