



Designation: D8140 – 18 (Reapproved 2023)

Standard Guide for the Use of Foundry Sand in Asphalt Mixtures¹

This standard is issued under the fixed designation D8140; 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 This guide covers the physical and chemical requirements of virgin or recovered foundry sand for use as a fine aggregate in asphalt mixtures.

1.2 This guide is for use by contractors, foundry sand suppliers, or other purchasers as part of the purchase document describing the material to be furnished. Those responsible for selecting the proportions for the asphalt mixture should have the responsibility of determining the proportions of foundry sand as a fine aggregate.

1.3 The values stated in SI units are to be regarded as the standard. No other units of measurement are included in this standard.

1.4 The text of this standard references notes and footnotes which provide explanatory information. These notes and footnotes (excluding those in tables and figures) shall not be considered as requirements of this standard.

1.5 *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.*

1.6 *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

C88/C88M Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate

¹ This guide is under the jurisdiction of ASTM Committee D04 on Road and Paving Materials and is the direct responsibility of Subcommittee D04.50 on Aggregate Specifications.

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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.

C117 Test Method for Materials Finer than 75- μ m (No. 200) Sieve in Mineral Aggregates by Washing
C125 Terminology Relating to Concrete and Concrete Aggregates
C128 Test Method for Relative Density (Specific Gravity) and Absorption of Fine Aggregate
C136/C136M Test Method for Sieve Analysis of Fine and Coarse Aggregates
C566 Test Method for Total Evaporable Moisture Content of Aggregate by Drying
D8 Terminology Relating to Materials for Roads and Pavements
D75/D75M Practice for Sampling Aggregates
D2488 Practice for Description and Identification of Soils (Visual-Manual Procedures)
D3665 Practice for Random Sampling of Construction Materials

2.2 EPA Standards:³

SW-846 Test Method 1312 Synthetic Precipitation Leaching Procedure
SW-846 Test Method 9045 Soil and Waste pH
SW-846 Section 7.3.3 Interim Guidance for Reactive Cyanide
SW-846 Section 7.3.4 Interim Guidance for Reactive Sulfide

3. Terminology

3.1 Definitions:

3.1.1 *environmental consideration*—foundry sand should be evaluated for environmental consideration (air quality, water quality, and storage) using the required local, state, and federal test methods in effect at the time of use.

3.1.2 *foundry sand*—a fine aggregate used to produce molds or cores in foundry facilities, which are used to cast ferrous and non-ferrous metals, consisting mostly of silica sand, lake sand, olivine sand, or zircon sand.

3.2 For definitions of other terms used in this standard, refer to Terminologies D8 and C125 and EPA SW-846—Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods.

³ Available from United States Environmental Protection Agency (EPA), William Jefferson Clinton Bldg., 1200 Pennsylvania Ave., NW, Washington, DC 20460, <http://www.epa.gov>.