



Designation: D8021 – 23

Standard Guide for Blast Furnace and Steel Furnace Slag as Produced During the Manufacture of Iron and Steel¹

This standard is issued under the fixed designation D8021; 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 standard is intended to provide guidance as to the appropriate/typical mineralogy observed when iron and steel slag, produced during the manufacture of iron and steel, is designated as a product. The included information covers the mineral properties of blast furnace slag and steel slag when they are manufactured in conjunction with the production of iron or steel, or both (**Note 1**).

NOTE 1—This guide is not intended to be used to determine the applicability of iron or steel slag, or both, for various applications. Terminology **D8** designates steel slag as a product, while Terminology **C125** designates blast furnace slag as a product. Its sole intent is to provide guidance as to the typical mineralogy when the iron or steel slag, or both, is designated as a product.

1.2 The values stated in SI units are to be regarded as standard. No other units are utilized in this standard.

1.3 The text of this standard references notes and footnotes that provide explanatory material. These notes and footnotes (excluding those in tables and figures) should not be considered as requirements of the specification.

1.4 *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.*

1.5 *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.*

¹ This guide is under the jurisdiction of ASTM Committee **D04** on Road and Paving Materials and is the direct responsibility of Subcommittee **D04.99** on Sustainable Asphalt Pavement Materials and Construction.

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2. Referenced Documents

2.1 *ASTM Standards*:²

C125 Terminology Relating to Concrete and Concrete Aggregates

C595/C595M Specification for Blended Hydraulic Cements

C702/C702M Practice for Reducing Samples of Aggregate to Testing Size

C989/C989M Specification for Slag Cement for Use in Concrete and Mortars

C1252 Test Methods for Uncompacted Void Content of Fine Aggregate (as Influenced by Particle Shape, Surface Texture, and Grading)

D8 Terminology Relating to Materials for Roads and Pavements

D75/D75M Practice for Sampling Aggregates

3. Terminology

3.1 *Definitions*—For the definitions of terms used in this standard, refer to Terminology **D8**.

3.2 *Definitions of Terms Specific to This Standard*:

3.2.1 *blast furnace slag, n*—see Terminology **C125**.

3.2.1.1 *Discussion*—Slag, ferrous metal, blast furnace (granulated, GBS or air-cooled, ABFS or ABF)—Blast furnace slag is formed in a continuous process by the fusion of limestone (or dolomite, or a combination thereof) and other fluxes with the residues from the carbon source and the non-metallic components of the iron-bearing materials (for example, iron ore, iron sinter). Blast furnace slag is generated at temperatures above 1500 °C. Dependent on the manner of cooling of the liquid slag, it can be distinguished between crystalline, air-cooled blast furnace slag and glassy, granulated blast furnace slag. Various cooling processes are defined in Terminology **C125**.

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.