



Standard Classification for Rubber Products in Natural Gas Pipeline Applications¹

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1. Scope

1.1 This classification system covers the properties of vulcanized rubber materials (natural rubber, reclaimed rubber, synthetic rubbers, alone or in combination) that are intended for use in rubber products found in natural gas pipeline applications (for example, elastomeric couplings, o-rings, quad seals, and diaphragms).

1.2 This classification system is based on the premise that the material properties of all rubber products can be arranged into characteristic material designations. These designations are determined by types and classes as described in Classification System **D2000**. For gas industry pipeline applications, materials can be further described using additional requirements herein in conjunction with Classification System **D2000**. It must be noted that there are other types of elastomers covered in Classification System **D2000** that are not covered by this standard.

1.3 In all cases where the provisions of this classification system would conflict with those of the detailed specifications for a particular product, the latter shall take precedence.

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 and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:²

D297 Test Methods for Rubber Products—Chemical Analysis

D471 Test Method for Rubber Property—Effect of Liquids

D573 Test Method for Rubber—Deterioration in an Air Oven

D1418 Practice for Rubber and Rubber Latices—Nomenclature

D1566 Terminology Relating to Rubber

D2000 Classification System for Rubber Products in Automotive Applications

D6370 Test Method for Rubber—Compositional Analysis by Thermogravimetry (TGA)

D8015 Test Method for Dimensional Changes of Elastomer and Rubber Materials Due to Exposure to Gaseous Hydrocarbon Environments

3. Terminology

3.1 *Definitions*—For definitions of technical terms pertaining to rubber used in this specification, see Terminology **D1566**.

3.2 *Definitions*—The nomenclature and abbreviations used for natural and synthetic rubbers are in accordance with Practice **D1418**.

4. Purpose

4.1 The purpose of this classification system is to provide guidance to the engineer in the selection of practical, commercially available rubber materials, and further to provide a method for specifying these materials by the use of a simple “line call-out” designation.

4.2 This classification system was developed to permit the addition of descriptive values for future rubber materials without complete reorganization of classification system and to facilitate the incorporation of future new test methods to keep pace with changing industry requirements.

5. Classification

5.1 Rubber materials shall be specified using the convention set forth in Classification System **D2000** with additional rubber properties represented by supplemental suffix designations ZG_n as described in **Table 1**.

6. Basic Requirements

6.1 The basic requirements for the properties specified in this standard are based on values obtained from standard laboratory test specimens prepared and tested in accordance with the applicable ASTM test methods. *Test results from specimens prepared from finished products may not duplicate values obtained from standard test specimens.*

¹ This classification is under the jurisdiction of ASTM Committee **D11** on Rubber and is the direct responsibility of Subcommittee **D11.30** on Classification of Rubber Compounds.

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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.