



Designation: D6270 – 17

Standard Practice for Use of Scrap Tires in Civil Engineering Applications¹

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1. Scope

1.1 This practice provides guidance for testing the physical properties, design considerations, construction practices, and leachate generation potential of processed or whole scrap tires in lieu of conventional civil engineering materials, such as stone, gravel, soil, sand, lightweight aggregate, or other fill materials.

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

1.3 *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

- C127 Test Method for Relative Density (Specific Gravity) and Absorption of Coarse Aggregate
- C136 Test Method for Sieve Analysis of Fine and Coarse Aggregates
- D698 Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft³ (600 kN-m/m³))
- D1557 Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³))
- D1566 Terminology Relating to Rubber
- D2434 Test Method for Permeability of Granular Soils (Constant Head) (Withdrawn 2015)³

¹ This practice is under the jurisdiction of ASTM Committee D34 on Waste Management and is the direct responsibility of Subcommittee D34.03 on Treatment, Recovery and Reuse.

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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.

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

- D2974 Test Methods for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils
- D3080 Test Method for Direct Shear Test of Soils Under Consolidated Drained Conditions
- D4253 Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table
- D5681 Terminology for Waste and Waste Management
- D7760 Test Method for Measurement of Hydraulic Conductivity of Tire Derived Aggregates Using a Rigid Wall Permeameter
- F538 Terminology Relating to the Characteristics and Performance of Tires

2.2 American Association of State Highway and Transportation Officials Standards:

- T 274 Standard Method of Test for Resilient Modulus of Subgrade Soils⁴
- M 288 Standard Specification for Geotextiles⁵
- 2.3 U.S. Environmental Protection Agency Standard:
Method 1311 Toxicity Characteristics Leaching Procedure⁶

3. Terminology

3.1 *Definitions*—For definitions of common terms used in this practice, refer to Terminologies D5681 (waste management), F538 (tires), and D1566 (rubber), respectively.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 *bead wire, n*—a high-tensile steel wire surrounded by rubber, which forms the bead of a tire that provides a firm contact to the rim.

3.2.2 *casing, n*—the tire structure not including the tread portion of the tire.

3.2.3 *mineral soil, n*—soil containing less than 5 % organic matter as determined by a loss on ignition test. (D2974)

3.2.4 *preliminary remediation goal, n*—risk-based concentrations that the USEPA considers to be protective for lifetime exposure to humans.

⁴ *Standard Specifications for Transportation Materials and Methods of Sampling and Testing, Part II: Methods of Sampling and Testing*, American Association of State Highway and Transportation Officials, Washington, DC.

⁵ *Standard Specifications for Transportation Materials and Methods of Sampling and Testing, Part I: Specifications*, American Association of State Highway and Transportation Officials, Washington, DC.

⁶ *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*, 3rd ed., Report No. EPA 530/SW-846, U.S. Environmental Protection Agency, Washington, DC.