



Designation: ~~D5360~~—15 D5360/D5360M – 23

## Standard Practice for Design and Construction of Bituminous Asphalt Surface Treatments<sup>1</sup>

This standard is issued under the fixed designation ~~D5360~~; D5360/D5360M; 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 reappraisal. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reappraisal.

### 1. Scope

1.1 This practice covers the design and construction of bituminous asphalt surface treatments. It is a guide and should be used as such. End-use specifications should be adopted to conform to job and user requirements.

1.2 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered 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 nonconformance with the standard.

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

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, safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.* For specific precautions, see Section 9.

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.*

### 2. Referenced Documents

#### 2.1 ASTM Standards:<sup>2</sup>

- ~~D140~~D140/D140M Practice for Sampling Asphalt Materials
- D448 Classification for Sizes of Aggregate for Road and Bridge Construction
- D490 Specification for Road Tar (Withdrawn 2023)<sup>3</sup>
- ~~D946~~D946/D946M Specification for Penetration-Graded Asphalt Binder for Use in Pavement Construction
- D977 Specification for Emulsified Asphalt
- ~~D1139~~D1139/D1139M Specification for Aggregate for Single or Multiple Asphalt Surface Treatments
- D1369 Practice for Quantities of Materials for Asphalt-Aggregate Surface Treatments
- ~~D2027~~D2027/D2027M Specification for Cutback Asphalt (Medium-Curing Type)

<sup>1</sup> This practice is under the jurisdiction of ASTM Committee D04 on Road and Paving Materials and is the direct responsibility of Subcommittee D04.24 on Asphalt Surface Treatments.

Current edition approved Dec. 1, 2015; Dec. 1, 2023. Published January 2016; January 2024. Originally approved in 1998. Last previous edition approved in 2009 as ~~D5360-09~~ D5360 – 15. DOI: ~~10.1520/D5360-15~~.10.1520/D5360\_D5360M-23.

<sup>2</sup> 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.

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



- ~~D2028~~[D2028/D2028M](#) Specification for Cutback Asphalt (Rapid-Curing Type)
- ~~D2397~~[D2397/D2397M](#) Specification for Cationic Emulsified Asphalt
- [D2399](#) Practice for Selection of Cutback Asphalts
- [D2995](#) Practice for Estimating Application Rate and Residual Application Rate of Bituminous Distributors
- ~~D3381~~[D3381/D3381M](#) Specification for Viscosity-Graded Asphalt Binder for Use in Pavement Construction
- [D3628](#) Practice for Selection and Use of Emulsified Asphalts
- [D5624](#) Practice for Determining the Transverse-Aggregate Spread Rate for Surface Treatment Applications (Withdrawn 2022)<sup>3</sup>
- ~~D6114~~[D6114/D6114M](#) Specification for Asphalt-Rubber Binder
- [D6154](#) Specification for Chemically Modified Asphalt Cement for Use in Pavement Construction
- [D6373](#) Specification for Performance-Graded Asphalt Binder

### 3. Terminology

#### 3.1 Definitions of Terms Specific to This Standard:

- 3.1.1 *multiple surface treatment*—the bituminous asphalt surface produced by the repeat application of bitumen and aggregate a second or even a third time, with the aggregate size usually becoming smaller with each application. Each layer is immediately rolled, preferably with a pneumatic-tired roller.
- 3.1.2 *single surface treatment*—the bituminous asphalt surface produced by the application of bitumen to a prepared surface followed at once by an aggregate cover. The surface is immediately rolled, preferably with a pneumatic-tired roller.
- 3.1.3 *surface treatment*—an application of bituminous asphalt material followed by a layer of mineral aggregate. Multiple applications of bituminous asphalt material and mineral aggregate may be used.

##### 3.1.3.1 Discussion—

The terms “seal coat” and “chip seal” have been used interchangeably with the term “surface treatment.”

### 4. Significance and Use

- 4.1 This practice is to be used as a guide and not a specification.

### 5. Ordering Information

- 5.1 Orders for seal coat and surface treatment materials under this guide shall include the following information:

- 5.1.1 Type of bitumen (asphalt binder, emulsified asphalt, cutback asphalt, road tar) specification designation,
- 5.1.2 Grade of bitumen,
- 5.1.3 Quantity of bitumen required,
- 5.1.4 Type of aggregate (crushed stone, crushed gravel, crushed slag, gravel, slag) specification designation,
- 5.1.5 Size or sizes of aggregate to be furnished,
- 5.1.6 Quantity of aggregate required, and
- 5.1.7 Special requirements.

### 6. Aggregate

- 6.1 *Cover Aggregate*, shall conform to Specification ~~D1139~~[D1139/D1139M](#) and Classification [D448](#).

6.2 *Size*—Aggregate should be as close to one size as is economically practical, preferably in the range of  $\frac{1}{2}$  to  $\frac{1}{4}$  in. ( $\frac{12.5}{1}$  to  $\frac{6.35}{1}$  mm) for single surface treatments. For multiple surface treatments, aggregate in the range of  $\frac{1}{2}$  to  $\frac{1}{4}$  in. ( $\frac{12.5}{1}$  to  $\frac{6.35}{1}$  mm) is used for the bottom layer with each successive layer using aggregate approximately  $\frac{1}{2}$  half the size of the previous aggregate layer. Larger sizes may be used in multiple treatments.