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.

Designation: D6521 – 18

Standard Practice for Accelerated Aging of Asphalt Binder Using a Pressurized Aging Vessel (PAV)[1]

This standard is issued under the fixed designation D6521; 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 practice covers the conditioning of asphalt binders to simulate accelerated aging (oxidation) by means of pressurized air and elevated temperature. This is intended to simulate the changes in rheology which occur in asphalt binders during in-service oxidative aging, but may not accurately simulate the relative rates of aging. It is normally intended for use with residue from Test Method D2872 (RTFOT), which is designed to simulate plant aging.

NOTE 1—PAV conditioning has not been validated for materials containing particulate materials.

1.2 The aging of asphalt binders during service is affected by ambient temperature and by mixture-associated variables, such as the volumetric proportions of the mix, the permeability of the mix, properties of the aggregates, and possibly other factors. This conditioning process is intended to provide an evaluation of the relative resistance of different asphalt binders to oxidative aging at selected elevated aging temperatures and pressures, but cannot account for mixture variables or provide the relative resistance to aging at in-service conditions.

1.3 The values stated in SI units are to be regarded as 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 material. These notes and footnotes (excluding those in tables and figures) shall not be considered as requirements of the standard

NOTE 2—The quality of the results produced by this standard are dependent on the competence of the personnel performing the procedure and the capability, calibration, and maintenance of the equipment used. Agencies that meet the criteria of Specification D3666 are generally considered capable of competent and objective testing, sampling, inspection, etc. Users of this standard are cautioned that compliance with Specification D3666 alone does not completely ensure reliable results. Reliable results depend on many factors; following the suggestions of Specification D3666 or some similar acceptable guideline provides a means of evaluating and controlling some of those factors.

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]

D8 Terminology Relating to Materials for Roads and Pavements

D2872 Test Method for Effect of Heat and Air on a Moving Film of Asphalt (Rolling Thin-Film Oven Test)

D3666 Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials

D4753 Guide for Evaluating, Selecting, and Specifying Balances and Standard Masses for Use in Soil, Rock, and Construction Materials Testing

D6373 Specification for Performance Graded Asphalt Binder

E1137/E1137M Specification for Industrial Platinum Resistance Thermometers

2.2 *AASHTO Standard:*[3]

M 320 Specification for Performance-Graded Asphalt Binder

2.3 *CGA Standard:*[4]

CGA G-7.1–1997 Commodity Specification for Air, Fourth Edition

[1] This practice is under the jurisdiction of ASTM Committee D04 on Road and Paving Materials and is the direct responsibility of Subcommittee D04.46 on Durability and Distillation Tests.

Current edition approved July 1, 2018. Published July 2018. Originally approved in 2000. Last previous edition approved in 2013 as D6521 – 13. DOI: 10.1520/D6521-18.

[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] Available from American Association of State Highway and Transportation Officials (AASHTO), 444 N. Capitol St., NW, Suite 249, Washington, DC 20001, http://www.transportation.org.

[4] Available from Compressed Gas Association (CGA), 4221 Walney Rd., 5th Floor, Chantilly, VA 20151-2923, http://www.cganet.com.

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