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Standard Specification for RUBBER HOSE USED IN SOLAR ENERGY SYSTEMS¹

This standard is issued under the fixed designation D 3952; 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 specification establishes quality requirements for rubber hose used to convey liquids in solar energy systems. It provides producers, distributors, and users with criteria to evaluate this product. Particular applications may necessitate other requirements that would take precedence over these requirements when specified.

1.2 Annex A1 covers connections of rubber hose to the solar energy system.

1.3 This specification does not include requirements pertaining to the fabrication or installation of the hose.

1.4 This specification does not cover hose made from plastics.

2. Referenced Documents

2.1 ASTM Standards:

- D 380 Methods of Testing Rubber Hose²
- D 395 Test Method for Rubber Property—Compression Set³
- D 454 Test Method for Rubber Deterioration by Heat and Air Pressure³
- D 471 Test Method for Rubber Property—Effect of Liquids³
- D 572 Test Method for Rubber Deterioration by Heat and Oxygen³
- D 1349 Practice for Rubber—Standard Temperatures and Atmospheres for Testing and Conditioning⁴
- D 1566 Terminology Relating to Rubber⁴
- D 3832 Specification for Rubber Seals Contacting Liquids in Solar Energy Systems²
- D 4483 Practice for Rubber—Determining Precision for Test Method Standards⁴

2.2 Other Standards:

- ISO 1307 Rubber Hose—Bore Sizes, Test Pressures and Tolerances on Length⁵

3. Definitions

3.1 *nipple*—a cylindrical tubular attachment, one end of which is securely inserted and retained in the end of a hose, to convey fluid to or from the hose.

3.2 Definitions of other terms are given in Terminology D 1566.

4. Classification

4.1 Types:

4.1.1 *Type C*, intended for use in cold climates (below -10°C in winter).

4.1.2 *Type W*, intended for use in warm climates (above -10°C in winter).

4.2 Classes:

4.2.1 *Class A*, intended for use with aqueous fluids at 100°C or less.

4.2.2 *Class AT*, intended for use with aqueous fluids above 100°C .

4.2.3 *Class N*, intended for use with nonaqueous fluids.

NOTE 1—Aqueous fluids include water and anti-freeze solutions.

5. Ordering Information

5.1 Orders for rubber hose under this specification shall include the following information:

- 5.1.1 ASTM designation and year of issue,
- 5.1.2 Inside diameter,
- 5.1.3 Length,

¹ This specification is under the jurisdiction of ASTM Committee D-11 on Rubber and is the direct responsibility of Subcommittee D11.31 on Rubber Hose.

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² Annual Book of ASTM Standards, Vol 09.02.

³ Annual Book of ASTM Standards, Vol 09.01.

⁴ Annual Book of ASTM Standards, Vols 09.01 and 09.02.

⁵ Available from American National Standards Institute, 1430 Broadway, New York, NY 10018.