



Standard Test Methods for Vacuum Cleaner Hose—Durability and Reliability (Plastic)¹

This standard is issued under the fixed designation F450; 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 These test methods cover the determination of the effect of anticipated stresses and strains that vacuum cleaner and extractor hoses will receive in normal use.

1.2 These test methods apply to plastic (regular and reinforced) vacuum cleaner and extractor hoses for household use.

1.3 The following tests are included:

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Torsional flex	6
Hot and cold flex with aging	7
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Flex	9
Pull test on hose fittings with aging	10
Crush	11
Stretch ratio	12
Extractor hoses	13

1.4 These test methods are individual tests as agreed upon between the hose and vacuum manufacturer.

1.5 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.6 *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

D638 Test Method for Tensile Properties of Plastics

D695 Test Method for Compressive Properties of Rigid Plastics

F395 Terminology Relating to Vacuum Cleaners

¹ These methods are under the jurisdiction of ASTM Committee F11 on Vacuum Cleaners and are the direct responsibility of Subcommittee F11.30 on Durability-Reliability.

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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.

F595 Test Methods for Vacuum Cleaner Hose—Durability and Reliability (All-Plastic Hose) (Withdrawn 2010)³

3. Terminology

3.1 *Definitions*—Refer to Terminology F395.

4. Significance and Use

4.1 These test methods can be used by buyers of vacuum cleaner hose to specify the test criteria the hose must meet to be acceptable for their purposes.

5. Sampling

5.1 The sample size shall be one that is mutually agreed upon between the hose manufacturer and the vacuum cleaner manufacturer.

TEST METHODS

6. Torsional Flex Test

6.1 *Scope*—This test method covers the determination of the adhesion of the reinforcement wire coating to the hose jacket, the jacket strength, and the strength of the reinforcement wire for plastic hose with inside diameter from 1 to 2 in. (25 to 51 mm).

6.2 *Apparatus*—The apparatus shown in Fig. 1 is suitable for this test method with the following provisions:

6.2.1 Means to rotate test mandrel in a horizontal plane at 20 $\pm$ 1 rpm, both clockwise and counter-clockwise.

6.2.2 Test weight of 48 $\pm$ 1 oz (1360 $\pm$ 28 g) with provision to attach to sample hose.

6.2.3 Suitable clamp to attach sample hose to mandrel that retains the hose without causing failure at the clamp during the test.

6.2.4 Test mandrel with diameter same as inside diameter of hose with 0.078 in. (2.0 mm) radius at the ends of the mandrel (see Fig. 1).

6.2.5 Guide for weight to prevent hose sample from swinging during test cycle.

6.2.6 Instrument to measure cycles to failure or to a specified end point.

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