



Standard Guide for Industrial Woven Wire Filter Cloth¹

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INTRODUCTION

Industrial metal filter cloth is a special type of woven wire cloth that can be produced in many specifications, often proprietary in nature. Sometimes referred to as Dutch weave or Hollander weave, filter cloth can be woven in a variety of metals and is woven with a greater number of wires in one direction than the other, and utilizing two different wire diameters. This guide covers woven wire filter cloth for industrial use, which is commonly rated by its micron retention capability. Its purpose is to introduce standard terms and definitions, to observe common technical considerations that a user should be aware of, and to present a mathematical model that can be used to predict the micron retention of a filter cloth specification. It should be noted this guide excludes standard industrial woven wire cloth and sieve cloth from its scope, since these are covered under Specifications [E2016](#) and [E11](#), respectively, as well as excludes plastic and synthetic filter cloth.

1. Scope

1.1 This guide covers the special grade of industrial woven wire cloth, referred to as filter cloth, for general filtration including the separation of solids from fluids (liquids or gases), based on a desired particle size retention. Filter cloth can be made of any primary metal or metal alloy wire that is suitable for weaving.

1.2 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.

1.3 *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

[E11](#) Specification for Woven Wire Test Sieve Cloth and Test Sieves

[E1638](#) Terminology Relating to Sieves, Sieving Methods, and Screening Media

[E2016](#) Specification for Industrial Woven Wire Cloth

[F316](#) Test Methods for Pore Size Characteristics of Membrane Filters by Bubble Point and Mean Flow Pore Test

2.2 SAE Standards:³

[ARP901](#) Bubble-Point Test Method

3. Terminology

3.1 Definitions:

3.1.1 For additional terminology, refer to Terminology [E1638](#).

3.1.2 *bubble point test, n*—capillary flow bubble point methods are based on the fact that the pressure required to force an air bubble through filter cloth wetted under a test liquid of known surface tension is inversely proportional to the pore size.

3.1.2.1 *Discussion*—The pressure observed at the first bubble location is considered the absolute micron retention rating (see Test Method [F316](#)).

3.1.3 *cloth thickness, n*—overall thickness of the filter cloth, nominally estimated by adding the warp wire diameter plus two times the shute wire diameter.

3.1.4 *crimp, n*—corrugation in the warp and shute wires.

3.1.4.1 *Discussion*—The crimp in the wires is formed during the weaving process, and the tension existing between the warp and shute wires fundamentally determines the respective

¹ This guide is under the jurisdiction of ASTM Committee [E29](#) on Particle and Spray Characterization and is the direct responsibility of Subcommittee [E29.01](#) on Sieves, Sieving Methods, and Screening Media.

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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 Available from SAE International (SAE), 400 Commonwealth Dr., Warrendale, PA 15096-0001, <http://www.sae.org>.