



Designation: F 148 – 02

Standard Test Method for Binder Durability of Cork Composition Gasket Materials¹

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1. Scope

1.1 This test method covers three procedures for determination of the binder durability of cork-containing materials.

1.2 *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. Terminology

2.1 *Definition:*

2.1.1 *disintegration*—the loss of binder cohesiveness resulting in the specimen being reduced to separated cork granules.

3. Summary of Test Method

3.1 Specimen of the material are subjected to specific fluids to determine the chemical durability of the binder by visual examination for disintegration.

4. Significance and Use

4.1 This test method is designed to measure the chemical cure of the binder used in the manufacture of cork compositions. The results of this test method can be used only as a guide for its intended service in elevated temperature and environmental conditions.

5. Apparatus

5.1 *Die*, 645.2 mm² (1 in.²) in area, circular (28.6 mm (1.13 in.) in diameter).

5.2 *Reflux Condenser and Erlenmeyer Flask*, ground-glass, 250-mL capacity.

5.3 *Metal Containers with Lids*.

5.4 *Circulating Hot-Air Oven*, maintained at 100 ± 1°C (212 ± 2°F).

5.5 *Laboratory Hood with Strong Draft*.

6. Hazards

6.1 Conduct this test method inside a laboratory hood with a strong draft.

6.2 Place several glass boiling chips or stones into the Erlenmeyer flask to ensure smooth boiling where needed.

6.3 The tester conducting this test method should be equipped with suitable eye protection, acid-resistant gloves, and apron or laboratory coat.

6.4 The Erlenmeyer flask should be thoroughly cooled before handling so as to prevent the possibility of a burn.

7. Test Specimens

7.1 Test specimens shall be circular disks approximately 28 mm (1.1 in.) in diameter.

7.2 Test specimen thickness shall be as agreed upon between the producer and the user. A nominal thickness of 3.175 mm (0.125 in.) is commonly used.

8. Conditioning

8.1 Condition specimens for at least 46 h prior to testing in a cabinet or room with air circulation at 21 to 30°C (70 to 85°F) and 50 to 55 % relative humidity.

9. Procedures

9.1 *Procedure A, Water-Flotation Test*—Place 75 mL of distilled water in the Erlenmeyer flask and bring the fluid to a rolling boil. Then insert three test specimens in the flask atop the fluid and test for a period of 3 h. At the conclusion of the test, examine the specimens for any signs of disintegration.

9.2 *Procedure B, Acid-Flotation Test*—Using an Erlenmeyer flask with a reflux condenser on top, place 75 mL of hydrochloric acid solution (35 % by weight concentration) in the Erlenmeyer flask and bring the solution to a rolling boil. Then insert three test specimens in the flask atop the solution and test for a period of 0.5 h. At the conclusion of the test, examine the specimens for any signs of disintegration.

9.3 *Procedure C, Oil-Flotation Test*—Place approximately 75 mL of ASTM No. 1 Oil² in a metal container and heat to 100°C (212°F) in a hot-air oven. After the oil has reached 100°C, place three test specimens atop the oil and maintain the test temperature for a period of 2 h. At the conclusion of the test, examine the specimens for any signs of disintegration.

10. Report

10.1 Report the results as disintegration or no disintegration after flotation in the respective fluids.

10.2 Report the following information:

¹ This test method is under the jurisdiction of ASTM Committee F03 on Gaskets and is the direct responsibility of Subcommittee F03.40 on Chemical Test Methods.

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