

**1 Purpose and Scope**

This method of test is especially suitable for screening if any textile has been given a water-repellency finishes. It is not intended for use in measuring the penetration of water through the fabric.

**2. Terminology**

Water Repellency: in textiles, the characteristic of a fiber, yarn or fabric to resist wetting.

**3. Classification: Refer to Table 1.****Table 1. Water Repellency Classification**

Grade	Classification
100 (ISO 5)	Excellent
90 (ISO 4)	Very Good
80 (ISO 3)	Good
70 (ISO 2)	---
50 (ISO 1)	---
0	---

**4. Test Method****4.1 Water Repellency****4.1.1 Test Specimens**

Three test specimens 180.0×180.0 mm are needed and should be conditioned at 65±2% relative humidity and 20±2°C until equilibrium.

**4.1.2 Test Procedure**

- (1) Fasten the test specimen securely in the 150±5 mm diameter metal hoop so that the face of the test specimen will be exposed to the water spray. The surface of the specimen should be smooth and without wrinkles. Place the hoop on the stand of the tester in 45° with the specimen uppermost in such a position that the center of the spray pattern coincides with the center of the hoop. The distance should be 150±2 mm. Make sure that the warpwise direction of the test specimen should parallel to the watering direction.
- (2) Pour 250mL of distilled water into the funnel of the tester and allow it to spray onto the test specimen in 25 to 30 seconds. Take the hoop by the bottom edge and tap the opposite edge firmly once against a solid object, with the fabric facing the object, then rotate the hoop 180° and tap once more on the point previously held.
- (3) Repeat the procedure above for other 2 specimens.

**4.1.3 Evaluation and Report**

After tapping, immediately compare the wet or spotted pattern with the rating chart( see figure 1). Rate the face of the specimen. Report the worst rating.

**Revise Date: Mar/03/2005****Publish Date: Nov/15/2004**

**Specified Requirements of Water Repellency Textiles****Document No. FTTS-FA-011****Version: 2.0****4.2 Washing requirement:**

4.2.1 Select the specified washing condition and drying method based on the following table or suppliers' provided care instruction.

4.2.2 Fill washing machine with water to 18 gal (about 68L) and adjust the water temperature.

4.2.3 Add  $66\pm 1$ g of 1993 AATCC Standard Reference Detergent to the washing machine. Then, add test specimens and ballast (total weight:  $1.8\pm 0.1$ kg) into machine. Set the washer for the selected washing cycle and time.

4.2.4 Remove the specimen after final spin and dry the specimen according to the specified method based on the table 2. After drying, condition the specimens by laying each specimen separately on the screen in an atmosphere of  $20\pm 2^{\circ}\text{C}$  and  $65\pm\%$  R.H. until equilibrium.

Table 2. Alternative Washing and Drying Conditions.

Machine Cycle	Washing Temperature	Drying Procedure
(1) Normal/Cotton Sturdy	(II) $27\pm 3^{\circ}\text{C}$ ( $80\pm 5^{\circ}\text{F}$ )	(A) Tumble
(2) Delicate	(III) $41\pm 3^{\circ}\text{C}$ ( $105\pm 5^{\circ}\text{F}$ )	i. Cotton Sturdy
(3) Permanent Press	(IV) $49\pm 3^{\circ}\text{C}$ ( $120\pm 5^{\circ}\text{F}$ )	ii. Delicate
	(V) $60\pm 3^{\circ}\text{C}$ ( $140\pm 5^{\circ}\text{F}$ )	iii. Permanent Press
		(B) Line
		(C) Drip
		(D) Screen

**5.Mark: Refer to Table 3.**

Table 3. Water Repellency Mark.

	As Received	After 10 times washing	After 20 times washing	Usage Reference
I	Above 90	---	Above 80	Durable Water Repellency
II	Above 90	Above 80	---	Durable Water Repellency
III	Above 90	---	---	Normal Water repellency

**6.Reference**

CNS 10461 L3202-1983 Water Resistance Test Method for Textile Product-Spray Test

AATCC 22-2001 Water Repellency: Spray Test

AATCC 135-2003 Dimensional Changes in Automatic Home Laundering of Woven and Knit Fabric

ISO 4920-1981 Textile Fabric-Determination of Resistance to Surface Wetting (Spray Test)

**Revise Date: Mar/03/2005****Publish Date: Nov/15/2004**