

6 REFERENCES

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Accelerated dimensional stability test method designed for 100% cotton single jersey weft knit fabric in urgent situations

Scope

This in-house textile testing standard specifies quick wash and drying procedures. This method is recommended only for 100% cotton single jersey weft knit fabric spanning a weight range of 120 to 150 GSM. Its application is as an accelerated test for use in a production environment.

Normative Reference

These referenced documents are necessary for the application of this document. For dated references, only the edition cited applies.

- BS EN ISO 6330: 2012, Textiles Domestic washing and drying procedures for textile testing
- ISO 23231:2008(E): Textiles Determination of dimensional change of fabrics Accelerated machine method
- P1D, M. (2001). "Quick Wash" Stability & Spiraled Tests for Weft Knit Fabric. M&S.
- AATCC Test Method 135-2014 / Dimensional Changes of Fabrics after Home Laundering
- AATCC Test Method 187-2013/ Dimensional Changes of Fabrics: Accelerated

Terms and definitions

Dimensional change: Generic term for changes in length or width of a fabric specimen subjected to specified conditions

NOTE: The change is usually expressed as a percentage of the initial dimension of a specimen.

Growth: Dimensional change resulting in an increase of length or width of a specimen

Shrinkage: Dimensional change resulting in a decrease in the length or width of a specimen

Principle

This is an accelerated method for determining the wash shrinkage behavior of 100% cotton single jersey weft knit fabric. From one sample three test specimens were submitted into a short complete washing cycle.60°C washing cycle in a whirling hot water bath, and hydro extraction of the sample followed by 30 minutes tumble drying

in a precision tumble dryer. Dimensional changes are determined by comparing the distances between length and width direction benchmarks before and after a programmed test cycle.

Uses and limitations

This test method applies only to 100% cotton circular weft knit single jersey fabric spanning a weight range of 120 to 150 GSM.

Apparatus and materials

Automatic front loading washing machine Miele Professional PW 6055 Vario, Automatic Precision Tumble Dryer Type A1, the specification for Type A1 tumble dryer is given in Annex G BS EN ISO 6330:2012, Cotton Ballast (Type I) The nominal composition of 100% cotton ballast is given in Annex H BS EN ISO 6330:2012, Indelible ink marking pen referred in ISO 23231:2008, Steel Ruler marked in millimeters, Scale with 5kg capacity.

Sampling

A minimum of three specimens with different lengthwise wales and widthwise yarns in each specimen shall be taken from the sample.

Specimens

Basic preparation is the same as AATCC 135:2014 except sample size and benchmark distances changed as 30cmX30cm and 20cmX20cm respectively. Refer figure 1 below.

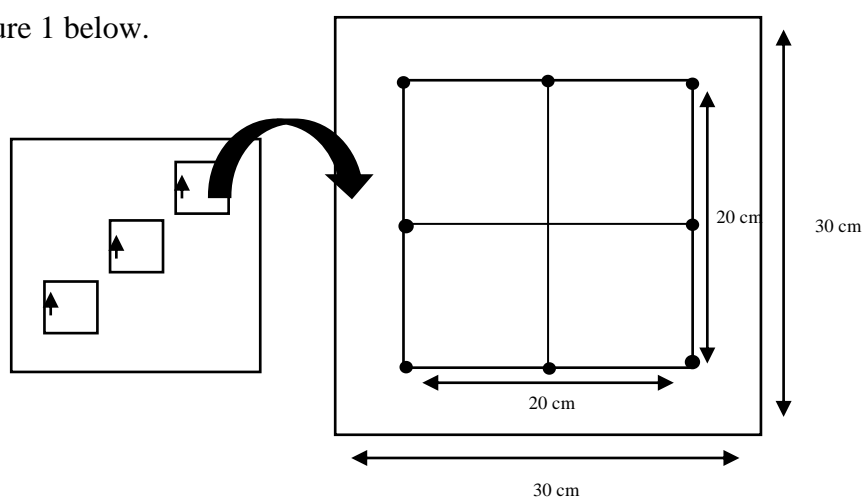


Figure 1

Reagents

Detergent having properties of heavy- duty, low- lather, powder detergent containing optical brightening agent or Persil

Conditioning and testing atmosphere

The use of standard atmospheres for textile conditioning prior to or after completion of a test not required.

Washing & Drying Procedure

Go to supervisor level of Miele Professional PW 6055 Vario automatic washing machine and arrange program settings as per the Table 1 settings for Main Wash, Rinse Cycle & Hydro Extraction. Follow other settings also included in Table 1 to arrange complete washing and drying cycle.

Table 1: Wash Program Settings

Washing Requirements	Settings
Washing Temperature	60°C
Main Wash Cycle	1392 Seconds(23 min actual time)
Rinse Cycles & Duration	1 Cycle 300 Seconds(5 min actual time)
(Hydro)Spinning Cycle & RPM	RPM 800 120 Seconds (2 min actual time)
Test Specimen Size	30 cm X 30 cm
Total Washing Cycle	30 mins (actual time)
Washing Detergent	Persil 10g
Water added to dry load (Main Wash)	Based on the dry load (Fixed 2 kg)
Tumble dryer exhaust temperature	75°C
Total Tumble Dry Cycle	30 mins
Total Time Washing & Drying	1 hour
Wash Load	2kg
Dry Load	1kg

Tumble dry cycle time setting calculation method described in BS EN ISO 6330:2012 Annex P to be referred to with following conditions.

- i. Tumble dry load should be approximately 1 kg after dry.
- ii. 100% Cotton 6 ballast washed according to Rapid Wash 60°C
- iii. Exhaust temperature setting 75 °C

Test Report

Type of machine and washing procedure used, Drying procedure and type of the machine, Type of Detergent used, Type of Ballast used. Calculate dimensional change as below for both length and width directions.

Average DC% = $100(B-A)/A$; where

DC : Average dimensional change

A : Average Original dimension (distance between the benchmarks before wash)

B : Average dimension after washing (distance between the benchmarks after wash)

Both the average original and average final dimensions are the averages of the measurements in each direction made on all test specimens. Then calculate the length and width dimensional change averages separately to the nearest 0.1%.