ETHIOPIAN STANDARD

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Specification for tolerance of knitted fabric

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Foreword

This Ethiopian Standard has been prepared under the direction of Technical Committee for Textile-Fabrics (TC 70) and published by the Ethiopian Standards Agency (ESA).

In preparing this Ethiopian Standard reference has been made to the following:

ASTM D3887 Specification for tolerance of knitted fabric

Acknowledgement is made for the use of information from the above publication.

Specification for tolerances of Knitted Fabrics

1. Scope

This Ethiopian standard specification covers test methods and tolerances applicable to the following properties of knitted fabrics, fabric weight (GSM), width, length, Number of thread, bursting strength, and fiber composition. These tolerances are applicable to knitted fabrics of all types, such as warp knits, weft knits, flat bed knits, and so forth.

2. Referenced Documents

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ES ISO 11827: Textiles — Composition testing — Identification of fibers

ES ISO 3801: Textiles -Woven Fabrics-Determination of Mass per Unit Length and Mass Per Unit Area

ES ISO 22198: Textiles — Fabrics — Determination of Width and Length

ES ISO 7211-2: Textiles-Woven Fabrics-Constructions-Methods of Analysis Part 2: Determination Number of Threads Per Unit Length

ES IS 13938-1: Textiles-Bursting Properties of Fabrics-Part 1: Hydraulic Method for Determination of Bursting Strength and Bursting Distension

ES IS 13938-2: Textiles-Bursting Properties of Fabrics-Part2: Pneumatic Method for Determination of Bursting Strength and Bursting Distension

3. Terms and Definition

For the purpose of this standard the following definition shall apply.

3.1.
Bursting strength
The force or pressure required to rupture a fabric by distending it, when applied at right angles to the plane of the fabric, under specified conditions.

3.2.
Course,
In knitted fabrics, a row of successive loops parallel to the width direction of the fabric.

3.3.
knitted fabric count
The number (counted units) of wale and courses per 25 mm (1 in.).

3.4.
lengths in fabric,
The distance from one end to the other, measured parallel to the selvage or flattened tube edge of fabric that is under zero tension and free of folds and wrinkles.

3.5.
tolerances
In mathematics, prescribed limits of variation for specified properties of a particular material based on observed values obtained by specified test methods and on samples that are representative of the material.

3.6.
wale in knitted fabrics
A column of successive loops parallel to the length direction of the fabric.

3.7.
widths in open-width knit fabric
The perpendicular distance between the selvages when the fabric is laid flat, under zero tension, and free from folds or wrinkles.

3.8.
widths in tubular knit fabric
The perpendicular distance between the edges of a flattened tube of fabric that is under zero tension and free from folds or wrinkles.

4. Tolerances

4.1. The tolerances for each knitted fabric property describes in the following table

Characteristic	Tolerance
Fabric weight (GSM)	±5.0 %
Width	0 to +25 mm
Length	±2.0 %
Number of thread	±5.0 %
Bursting strength	±10.0 %

5. Sampling

5.1. Lot Sample

As a lot sample for acceptance testing, take at random the number of rolls as directed in an applicable specification or other agreement between the purchaser and the supplier.

5.2. Laboratory Sample

From each roll or piece in the lot sample cut two laboratory samples the full width of the fabric and at least 375 mm (15 in.) along the selvage.

6. Conditioning

For tests made on conditioned material, precondition the specimens by bringing them to approximate moisture equilibrium in the standard atmosphere for preconditioning, then bring the specimens to moisture equilibrium for testing in the standard atmosphere for testing(According to ES ISO 139).

7. Testing

7.1. Fabric weight (GSM)

Determine the fabric weight (mass) as directed in Test Method ES ISO 3801

7.2. Width

Determine the fabric width according to (ES ISO 22198)

7.3. Length

Determine the fabric length according to (ES ISO 22198)

7.4. Number of thread

7.4.1. The number of wales and courses per unit distance are determined according to (ES ISO 7211-2), using magnifying and counting device (such as pick glass, rule and pointer, microfilm reader, or projection equipment).

7.4.2. Unless otherwise specified in a prior agreement between the purchaser and the seller, make no count closer to a selvage than one-tenth of the width of the fabric, or within 0.5 m of the end of the roll or piece

7.4.3. Unless otherwise specified, count the wales and courses on the face side of the fabric.

7.5. Fabrics Count

7.5.1. For fabrics containing 10 loops per linear cm (25 loops per linear in.) or more, determine the number of wale loops and course loops per 2.5 cm (1 in.) by counting the number in a space not less than 5 cm at five different places in the piece, equally spaced both across the width and throughout the length to the nearest whole number of loops.

7.5.2. For fabrics containing less than 10 loops per 1 cm (25 loops per 1 in.), make the count over a 10-cm (4-in.) width and repeat in at least five randomly designated places across the width and throughout the length to the nearest whole number of loops.

7.5.3. In fancy knits where one or more yarns do not appear at regular, short intervals, make count measurements over at least one full pattern repeat of each design component to the nearest whole number of loops.

7.6. Bursting Strength

Determine the bursting strength according to (ES IS 13938-1 &2).

7.7. Fiber Content

Determine the fiber content of the fabric as directed in the methods for the quantitative analysis of textiles described in Test Methods (ES ISO 11827)

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Ethiopian Standards Agency

Organization and Objectives

The Ethiopian Standards Agency (ESA) is the national standards body of Ethiopia established in 2010 based on regulation No. 193/2010.ESA is established due to the restructuring of Quality and Standards Authority of Ethiopia (QSAE) which was established in 1998.

ESA's objectives are:-

- ❖ Develop Ethiopian standards and establish a system that enable to check whether goods and services are in compliance with the required standards,
- ❖ Facilitat the country's technology transfer through the use of standards,
- ❖ Develop national standards for local products and services so as to make them competitive in the international market.

Ethiopian Standards

The Ethiopian Standards are developed by national technical committees which are composed of different stakeholders consisting of educational institutions, research institutes, government organizations, certification, inspection, and testing organizations, regulatory bodies, consumer association etc. The requirements and/ or recommendations contained in Ethiopian Standards are consensus based that reflects the interest of the TC representatives and also of comments received from the public and other sources. Ethiopian Standards are approved by the National Standardization Council and are kept under continuous review after publication and updated regularly to take account of latest scientific and technological changes. Orders for all Ethiopian Standards, International Standard and ASTM standards, including electronic versions, should be addressed to the Documentation and Publication Team at the Head office and Branch (Liaisons) offices. A catalogue of Ethiopian Standards is also available freely and can be accessed in from our website.

International Involvement

ESA, representing Ethiopia, is a member of the International Organization for Standardization (ISO), and Codex Alimentarius Commission (CODEX). It also maintains close working relations with the international Electro-technical Commission (IEC) and American Society for Testing and Materials (ASTM).It is a founding member of the African Regional Organization for standardization (ARSO).

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