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**General requirements for woven textile  
piece-goods and household articles**

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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:

ARS 1574: 2019 General requirements for woven textile piece-goods and household articles published by Afrian Regional Organization for Standardization (ARSO)

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

# General requirements for woven textile piece-goods and household articles

## 1. Scope

This Ethiopian Standard covers the general requirements for woven textile piece-goods and for the make-up of household articles.

## 2. Normative references

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 2741:2003 Textiles-Industrial Sewing Threads Made Wholly or Partly From Synthetic Fibres

ES ISO 4915, Textiles — Stitch types — Classification and terminology

ES ISO 4916, Textiles — Seam types — Classification and terminology

ES ISO 8498, Woven fabrics — Description of defects — Vocabulary

ARS 1569 The labeling and marking of textiles and household articles

ES ISO 13015, Woven fabrics — Distortion — Determination of skew and bow

ES ISO 13935-1, Textiles — Seam tensile properties of fabrics and made-up textile articles — Part 1: Determination of maximum force to seam rupture using the strip method

ES ISO 13935-2, Textiles — Seam tensile properties of fabrics and made-up textile articles — Part 2: Determination of maximum force to seam rupture using the grab method

ES ISO 22198, Textiles — Fabrics — Determination of width and length

ES 6579 Textiles and textile merchandise- Terms and definitions

## 3. Terms and definitions

For the purposes of this standard, the definitions given in ES 6579 and the following definitions shall apply:

### 3.1. Piece

Unit that consists of a single article, a pair, a set or a length within a lot

### 3.2. Lot

Collection of pieces of the same product type

## 4. General requirements for piece-goods

### 4.1. General

**4.1.1.** The fabric shall have been made in accordance with all normal sound manufacturing processes and shall be delivered in a clean and commercially dry condition.

**4.1.2.** The type of finish and, when relevant, the addition or exclusion of any special finish(es) shall be as agreed between the purchaser and the supplier (see annex A).

### 4.2. Selvedges

The selvedges of a fabric shall be straight and evenly formed. When relevant, the acceptance of split or fringe selvedges shall be a matter for agreement between the purchaser and the supplier (see Annex A).

### 4.3. Width

The stated width of a fabric, i.e. the width marked on the piece, shall be the width measured in accordance with ES ISO 22198, as follows:

- a) Overall;
- b) Between selvedges;
- c) Between tuck-backs or fringes of shuttle less loom fabrics; or
- d) Between conspicuous stenter pin holes;

As agreed between the purchaser and the supplier (see Annex A).

### 4.4. Piece length

#### 4.4.1. General

The stated length of a piece, measured in accordance with ES ISO 22198.

#### 4.4.2. Worsted and woollen piece-goods

Each piece shall be in one continuous length, except that not more than 10 % of the total number of pieces in a lot may contain cuts, provided that no piece consists of more than two cuts and, unless otherwise agreed between the purchaser and the supplier (see Annex A), no cut is less than 14 m in length.

#### 4.4.3. Other piece-goods for apparel

Each piece in a lot shall be in one continuous length, unless otherwise agreed between the purchaser and the supplier (see Annex A). Each continuous length shall be at least 14 m and in any lot not more than 15 % of the total length of the lot may consist of pieces of length between 14 m and 25 m.

#### 4.4.4. Other piece-goods for household articles

Each piece in a lot shall be in one continuous length, unless otherwise agreed between the purchaser and the supplier (see Annex A). Each continuous length shall be at least 10 m, except that not more than 10 % of the total number of pieces in a lot may contain cuts, provided that no piece consists of more than two cuts and no cut is less than 10 m in length. In any lot not more than 15 % of the total length of the lot may consist of pieces of length between 10 m and 25 m.

#### 4.4.5. Duck

Each piece in a lot shall be in one continuous length, unless otherwise agreed between the purchaser and the supplier (see Annex A). Each continuous length shall be of not less than 15 m and not more than 150 m, and in any lot not more than 10 % of the total length of the lot may consist of pieces of length between 15 m and 35 m.

**4.5. Bow and skewness of weft**

Neither the bow nor the skewness of the weft of a woven fabric, determined in accordance with ES ISO 13015, shall exceed the following limits:

- a) Mean: 3 %; and
- b) At any one place: 7 %.

**4.6. Defects**

The defects shall be identified and defined in accordance to ES ISO 8498 and ES 6583.

**5. General requirements for and make-up of household articles****5.1. General****5.1.1. Workmanship**

**5.1.1.1.** The articles shall be of one-piece construction (i.e. free from seams within the body), shall have been made in accordance with sound manufacturing practice, and shall be of acceptably uniform make, colour(s), and finish.

**5.1.1.2.** No raw edges shall be exposed in hems or seams and all ends of stitching not secured in seams or in other stitching shall be adequately back-tacked.

**5.1.1.3.** The ends of all stitching shall have been neatly trimmed and loose threads removed. Stitches, seams and stitching shall be in accordance with ES ISO 4915 and ES ISO 4916.

**5.1.2. Sewing threads**

**5.1.2.1.** Sewing thread of any appropriate type specified in ES 2741 shall be used, provided that the minimum breaking strength of the thread is at least 9.0 N.

**5.1.2.2.** The colour shall complement with the ground colour of the fabric.

**NOTE 1** Assessment of compliance with ES 2741 of a sewing thread used in a made-up article requires the provision of a separate sample of the thread, of length at least 50 m.

**NOTE 2** It is recommended that the staple polyester sewing thread be used on fabrics other than 100 % cotton, e.g. polyester/cotton blends.

**5.1.3. Defects**

The assessment and definition of defects shall be as given in ES ISO 8498.

**5.2. Blankets****5.2.1. Selvedges**

The selvedges of a blanket shall be straight and evenly woven, except that in the case of a blanket with a raised finish the selvedges may have been trimmed and the raw edges so over locked that no fraying of the cut edges.

**5.2.2. End edges**

The raw edges at the ends of a blanket shall have been finished in one of the following ways, as required (see Annex A):

**5.2.2.1.** By binding with a fabric, of acceptable construction and colour, that is securely attached along its full length and at its ends to the blanket; or

**5.2.2.2.** By hemming and whipping.

**5.2.2.3.** The raw edge shall be straight, shall be turned in for at least 6 mm, and shall not protrude beyond the whipping.

NOTE All seam and stitch types referred to from here on in the text are as described in ES ISO 4915 and ES ISO 4916.

### **5.3. Sheets**

#### **5.3.1. Hems**

Finished hems shall be at least 15 mm wide with a turn-in of at least 5 mm, and the ends shall be closed or shall be back-tacked for a distance at least equal to the width of the hem.

The minimum width of wider hems and the use of corded hems (made with stitching type OSb-1) shall be as required (see annex A).

#### **5.3.2. Stitches and stitching**

Hems shall be of stitching type EFb-1 and shall be uniformly sewn with stitch type 301, and with  $(48 \pm 8)$  stitches per 10 cm.

### **5.4. Pillow cases**

#### **5.4.1. Construction**

The opening shall be at one end of a pillowcase and, unless otherwise required (see annex A), pillowcases shall be of the housewife style (i.e. having an inner flap on one side of the open end and a hem on the other side), and shall have two side seams, or two side seams and one end seam.

If the open-end edge is a selvedge, it shall be hemmed but the turn-in may be omitted.

The flap of a housewife style pillowcase shall be sewn in with the side seam stitching and, unless its free edge is a selvedge, it shall be hemmed.

The depth of flap (when relevant, after hemming) shall be at least 10 cm in the case of sizes 30 cm H 40 cm and 40 cm H 60 cm, and at least 20 cm in the case of larger pillowcases.

#### **5.4.2. Hems**

The finished hem at the open end of a pillowcase shall have a width of at least 15 mm and a turn-in of at least 5 mm, and shall be turned to the inside.

A hem on flap shall have a width of at least 6 mm and a turn-in of at least 3 mm. The minimum width of wider hems shall be as required (see Annex A).

#### **5.4.3. Seams**

Seams shall be at least 6 mm wide and of the double-fold (type SSc-1), French (type LSq-2), or plain (type SSa-1) type, and, except where a stitch of one of types 515 to 519 is used, seam ends shall be back-tacked for at least 25 mm.

Except when selvedge is joined to selvedge, the edges of a plain seam shall be serged with an over lock stitch. The strength of a seam, determined in accordance with ES ISO 13935-1/-2, shall be at least 180 N.

**5.4.4. Stitches and stitching**

Hems shall be of stitching type EFb-1, except that, if the open-end edge is a selvedge, it may be of stitching type EFa-1. Hems shall be uniformly sewn with stitch type 301. Seams shall be uniformly sewn with stitch type 301 or with any of stitch types 515 to 519. Both hems and seams shall have  $(48 \pm 8)$  stitches per 10 cm.

**5.5. Bed spreads****5.5.1. Hems**

Finished hems shall have a width of at least 25 mm and a turn-in of at least 6 mm, and the ends shall be closed or back-tacked for a distance at least equal to the width of the hem.

**5.5.2. Stitches and stitching**

Hems shall be of stitching type EFb-1 and shall be uniformly sewn with stitch type 301, and with  $(32 \pm 4)$  stitches per 10 cm.

**5.6. Table cloths and table napkins****5.6.1. Hems**

Finished hems shall have a width of at least 6 mm and a turn-in of at least 3 mm.

**5.6.2. Stitches and stitching**

Hems shall be of stitching type EFb-1 and shall be uniformly sewn with stitch type 301 or 401, and with  $(48 \pm 8)$  stitches per 10 cm.

**5.7. Tea towels, glass cloths, kitchen cloths and hemmed huckaback towels****5.7.1. Hangers**

A hanger, in the form of a loop of a woven tape with fast selvedges and of finished length and width at least 3 cm and 5 mm respectively, shall be sewn in with the hem at one corner of each article.

**5.7.2. Hems**

Finished hems at each end of a towel or cloth shall have a width of at least 10 mm and a turn-in of at least 5 mm. Finished hems along the sides of articles with split or cut selvedges shall have a width of at least 6 mm and a turn-in of at least 3 mm.

**5.7.3. Stitches and stitching**

Hems shall be of stitching type EFb-1 and shall be uniformly sewn with stitch type 301 or 401, and with  $(32 \pm 4)$  stitches per 10 cm.

**5.8. Huckaback roller towels****5.8.1. Seams**

The cut ends of a roller towel shall be joined by seam type SSae-2 of width at least 10 mm. The seam shall be lapped to one side, and the lap back-tacked down over a length of 35 mm along each selvedge.

**5.8.2. Stitches and stitching**

Seams shall be uniformly sewn with stitch type 301 or 401, and with  $(32 \pm 4)$  stitches per 10 cm.

## 5.9. Dish cloths and flannelette dusters

### 5.9.1. Edges

The raw edges of dishcloths shall be over edge-stitched. Raw edges of flannelette dusters shall have been finished by

- a) hemming, such that finished hems have a width of at least 7 mm and a turn-in of at least 5 mm, or
- b) Over edge stitching.

### 5.9.2. Stitches and stitching

Hem stitching shall be of type EFb-1, and shall be uniformly sewn with stitch type 301, and with  $(48 \pm 8)$  stitches per 10 cm. Over edge stitching shall be of type EFd-1, and shall be uniformly sewn with stitch type 503 or 504, and with  $(48 \pm 8)$  stitches per 10 cm. The sewing thread used may be of any colour.

## 5.10. Terry towels and terry bath sheets

### 5.10.1. Hems

Finished hems at each end of a towel or bath sheet shall have a width of at least 13 mm and a turn in of at least 6 mm. Finished hems along the sides of a towel or bath sheet with split or cut selvages shall have a width of at least 6 mm and a turn-in of at least 3 mm.

### 5.10.2. Stitches and stitching

Hems shall be of stitching type EFb-1 and shall be uniformly sewn with stitch type 301 or, in the case of side hems, stitch type 401, and with, in all cases,  $(32 \pm 4)$  stitches per 10 cm.

## 5.11. Terry napkins

### 5.11.1. Edges

The edges of a terry napkin shall have been finished by

- a) hemming, such that finished hems have a width of at least 6 mm and a turn-in of at least 3 mm, or
- b) Over edge stitching, as required (see Annex A).

### 5.11.2. Stitches and stitching

Hems shall be of stitching type EFb-1 and shall be uniformly sewn with stitch type 301, and with  $(32 \pm 4)$  stitches per 10 cm. Over edge stitching shall be of type EFe-1, and shall be uniformly sewn with stitch type 504, and with  $(48 \pm 8)$  stitches per 10 cm.

## 5.12. Terry facecloths

### 5.12.1. Hangers

A hanger, in the form of a loop of a woven tape with fast selvages and of finished length and width at least 2 cm and 5 mm respectively, shall be sewn in with the overedge stitching of each facecloth.

### 5.12.2. Edges

All raw edges shall be over edge-stitched.



**5.12.3. Stitches and stitching**

Over edge stitching shall be of type EFd-1 and shall be uniformly sewn with stitch type 503 or 504, and with  $(48 \pm 8)$  stitches per 10 cm.

**5.13. Terry bibs****5.13.1. Edges and hems**

Hemmed raw edges shall have been over edge-stitched before hemming. A finished hem shall have a width of at least 10 mm. Raw edges that are not hemmed shall be double over edge-stitched.

**5.13.2. Stitches and stitching**

Over edge stitching of hemmed raw edges shall be as specified in 5.12.3. Hems shall be of stitching type EFa-1 and shall be uniformly sewn with stitch type 301, and with  $(32 \pm 4)$  stitches per 10 cm. Double over edge stitching of unhemmed raw edges shall be of type EFd-1 and shall be uniformly sewn with stitch type 503 or 504, and with at least 120 stitches per 10 cm.

**5.14. Terry-hooded baby towels****5.14.1. Formation of hood**

From one corner of a square towel, hemmed as specified in 5.10.1, cut away an equilateral triangle of sides 34 cm.

**5.14.2. Edge**

The cut raw edge of the towel shall be over edge-stitched.

**5.14.3. Seam**

The over edge-stitched edge shall be folded on itself and shall be joined by seam type SSz-3 of width at least 10 mm.

**5.14.4. Stitches and stitching**

Over edge stitching shall be of type EFd-1 and shall be uniformly sewn with stitch type 503 or 504, and with  $(48 \pm 8)$  stitches per 10 cm. The seam shall be uniformly sewn with stitch type 301 or 401, and with  $(32 \pm 4)$  stitches per 10 cm.

**5.15. Terry bath mats****5.15.1. Hems**

Finished hems at each end of a bath mat shall have a width of at least 14 mm and a turn-in of at least 10 mm. Finished hems along the sides of a bath mat shall have a width of at least 7 mm and a turn-in of at least 4 mm.

**5.15.2. Stitches and stitching**

Hems at each end of a bath mat shall be of stitching type EFb-1, uniformly sewn with one row of stitch type 301 and with  $(32 \pm 4)$  stitches per 10 cm. Side hems shall be of stitching type EFt-2, uniformly sewn with a double row of stitch type 401, uniformly spaced 3 mm apart, and with  $(32 \pm 4)$  stitches per 10 cm.

## **6. Packing, labeling and marking**

### **6.1. Packing**

#### **6.1.1. Piece-goods**

Unless otherwise required (see Annex A), each piece shall be packed in accordance with one of the following methods:

- a) rolled, full width and face inward, on an acceptable tube;
- b) rolled, half width (folded, face inward), on an acceptable board;
- c) plated, full width; or
- d) Plated, half width (folded, face inward).

Only pieces of the same fabric type, composition, weave, size, design, colour(s) and finish shall be packed together in a bulk container.

#### **6.1.2. Articles**

Articles shall be packed in an acceptable manner, and unless otherwise required (see Annex A), only articles of the same fabric type, composition, weave, size, design, colour(s) and finish shall be packed together in a bulk container.

### **6.2. Labeling and marking**

#### **6.2.1. Piece-goods**

Unless otherwise required (see Annex A), piece-goods and bulk containers shall be labeled and marked in accordance with the requirements of ARS 1569.

#### **6.2.2. Articles**

Unless otherwise required (see Annex A), articles and bulk containers shall be labeled and marked in accordance with the requirements of ARS 1569.

### **6.3. Additional marking**

When so required (see Annex A), pieces, articles or bulk containers, or any combination of these, shall bear information additional to that specified in 6.2.

## Annex A (Informative)

### Notes to customers

**A.1** The following requirements shall, when relevant, be specified in tender invitations and in each order or contract:

- a) The packing of piece-goods and articles, if other than as specified (see 6.1);
- b) The labeling and marking of piece-goods, articles and bulk containers, if other than as specified (see 6.2);
- c) In the case of blankets, the finish of end edges (see 5.2.2);
- d) In the case of sheets, the minimum width of hems, if other than as specified, or, when relevant, that corded hems are required (or both) (see 5.3.1);
- e) In the case of pillowcases, the style, if other than as specified (see 5.4.1);
- f) In the case of pillowcases, the minimum width of hems, if other than as specified (see 5.4.2);
- g) In the case of terry napkins, the finish of the edges (see 5.11.1);
- h) The packing of household articles, if other than as specified (see 6.1);
- i) The labeling and marking of household articles and bulk containers, if other than as specified (see 6.2); and
- j) Additional marking, if required (see 6.3).

**A.2** The following requirements shall, when and as relevant, be agreed upon between the supplier and the purchaser:

- a) The type of finish and the addition or exclusion of any special finish (see 4.1);
- b) The acceptance of split or fringe selvages (see 4.2);
- c) The points between which the stated width applies (see 4.3);
- d) In the case of worsted and woolen piece-goods, the minimum length of cuts in a piece, if other than as specified (see 4.4.2); and
- e) In the case of piece-goods for apparel (see 4.4.3), household articles (see 4.4.4) and duck (see 4.4.5) whether one continuous piece length is required or the minimum length of a cut in a piece, if other than as specified.

## **Annex B**

### **(Normative)**

#### **Quality verification of woven textile piece-goods and household articles**

When a purchaser requires ongoing verification of the quality of woven textile piece-goods and household articles, it is suggested that, instead of concentrating solely on evaluation of the final product, he also direct his attention to the manufacturer's quality system. In this connection it should be noted that ES ISO 9001 covers the provision of an integrated quality system.

## 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,
- ❖ Facilitate 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.

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### 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).

### More Information?

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