DRAFT EAST AFRICAN STANDARD

Footwear — Canvas shoes — Specification

EAST AFRICAN COMMUNITY

Copyright notice

Contents

Page

Foreword

Development of the East African Standards has been necessitated by the need for harmonizing requirements governing quality of products and services in the East African Community. It is envisaged that through harmonized standardization, trade barriers that are encountered when goods and services are exchanged within the Community will be removed.

The Community has established an East African Standards Committee (EASC) mandated to develop and issue East African Standards (EAS). The Committee is composed of representatives of the National Standards Bodies in Partner States, together with the representatives from the public and private sector organizations in the community.

East African Standards are developed through Technical Committees that are representative of key stakeholders including government, academia, consumer groups, private sector and other interested parties. Draft East African Standards are circulated to stakeholders through the National Standards Bodies in the Partner States. The comments received are discussed and incorporated before finalization of standards, in accordance with the Principles and procedures for development of East African Standards.

East African Standards are subject to review, to keep pace with technological advances. Users of the East African Standards are therefore expected to ensure that they always have the latest versions of the standards they are implementing.

The committee responsible for this document is Technical Committee EASC/TC 064, Footwear

Attention is drawn to the possibility that some of the elements of this document may be subject of patent rights. EAC shall not be held responsible for identifying any or all such patent rights.

Footwear — Canvas shoes — Specification

1 Scope

This Draft East African Standard specifies requirements, sampling and test methods for canvas shoes

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

EAS 256, *Textiles — Method for determination of scouring loss in grey and finished cotton materials*

ISO 48-2*, Rubber, vulcanized or thermoplastic — Determination of hardness — Part 2: Hardness between 10 IRHD and 100 IRHD*

ISO 105-B01, Textiles — Tests for colour fastness — Part B01: Colour fastness to light: Daylight

ISO 105-B02, *Textiles — Tests for colour fastness Part B02: Colour fastness to artificial light: Xenon arc fading lamp test*

ISO 105-C10*, Textiles — Tests for colour fastness — Part C10: Colour fastness to washing with soap or soap and soda*

1833-11, *Textiles — Quantitative chemical analysis — Part 11: Mixtures of certain cellulose fibres with certain other fibres (method using sulfuric acid)*

ISO 2589, *Leather — Physical and mechanical tests — Determination of thickness*

ISO 2781*, Rubber, vulcanized or thermoplastic — Determination of density*

ISO 3801*, Textiles — Woven fabrics — Determination of mass per unit length and mass per unit area*

ISO 3376, *Leather — Physical and mechanical tests — Determination of tensile strength and percentage extension*

ISO 7211-1, *Textiles — Woven fabrics — Construction — Methods of analysis — Part 1: Methods for the presentation of a weave diagram and plans for drafting, denting and lifting*

ISO 7211-2*, Textiles — Woven fabrics — Construction — Methods of analysis — Part 2: Determination of number of threads per unit length*

ISO 7771, *Textiles — Determination of dimensional changes of fabrics induced by cold-water immersion*

ISO 9407, Footwear sizing — Mondopoint system of sizing and marking

ISO 13934-1, *Textiles — Tensile properties of fabrics — Part 1: Determination of maximum force and elongation at maximum force using the strip method*

ISO 16177, *Footwear — Resistance to crack initiation and growth -- Belt flex method*

ISO 17072-1, *Leather — Chemical determination of metal content — Part 1: Extractable metals*

ISO 19952, *Footwear — Vocabulary*

ISO 20344, *Personal protective equipment — Test methods for footwear*

ISO 20871, *Footwear — Test methods for outsoles — Abrasion resistance*

22198, Textiles — Fabrics — Determination of width and length

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 19952, and the following definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:
— ISO Online browsing platform: available at http://www.iso.org/obp

3.2
synthetic materials
materials made of polyurethane (PU), polyvinylchloride (PVC) and other synthetic materials which are used as footwear materials and/or components

3.3
lot
a collection of canvas footwear in consignment belonging to the same pattern of batch manufacture.

3.4
sample
pairs of footwear of any particular size, fitting and pattern submitted for testing on specifications given in this standard

3.5
defect
failure or fault of a footwear to meet the requirements of this standard with regard to physical, chemical and performance requirements. Also, irregularity in material workmanship or damage due to careless and inadequate packing

3.6
defective footwear
a footwear having one or more defects as described in 3.5

3.7 Canvas

A strong, firm, single, or double end plain or twill weave cloth made with single or plied yarns and in which the warp predominates

4 Requirements

4.1 General Requirements

The method of construction shall follow the principle applicable for that type of footwear. The sizing and fitting shall be in accordance with ISO 9407

4.1.1 Material

4.1.1.1 Upper canvas

The upper canvas shall be a combination of face fabric and backing fabric that are so stuck together with a suitable adhesive. The fabrics shall comply with the requirements specified in Tables 1 and 2 respectively when tested in accordance with the test methods prescribed therein.

4.1.1.2 Face fabric

The face fabric shall be of cotton canvas bleached or dyed finish and shall comply with the requirements of Table 1 when tested in accordance with the test methods prescribed therein.

4.1.1.3 Backing fabric

The backing fabric shall be unbleached cotton drill complying with the requirements specified in Table 2 when tested in accordance with the test methods prescribed therein.

4.1.2 Binding material

4.1.2.1 Bleached or dyed cotton cloth complying with the requirements of Table 3 shall be used when tested in accordance with the test methods prescribed therein.

4.1.2.2 The number of stitches shall be 3 to 4 per cm

4.1.3 Material and dimensions

Individual components of the shoe shall comply with the requirements given in Table 4 when tested in accordance with the test methods prescribed therein.

4.1.4 Eyelets

Plastic, brass, aluminum, coated or enameled eyelets. The barrels shall be long enough to ensure proper clinching on the facings.

Eyelets shall be made of corrosion resistant materials or coated with such. The barrels shall be long enough to ensure proper clinching on the facings

4.1.5 Constructional

4.1.5.1 The top and inside edges of all sections for upper shall be bound and the binding shall extend to the end of the lasted overlay.

4.1.5.2 All seams shall be free from ridges and roughness. No loose, rugged or uneven seams shall be visible. The minimum requirements for the attachment of various upper components shall be as follows:

a) Minimum of 1 row of stitching.
b) minimum of 5 stitches per 10 min.

4.1.5.3 The eyelets (where applicable) shall be evenly spaced along the facings of the shoes and shall not be less than 2 pairs on each shoe.

4.1.5.4 Upper canvas shall be slip lasted or lasted such that it provides an overlay round the inner sole of

minimum width 12.5 mm.

4.1.6 Finish

Defects commonly observed during visual inspection of canvas shoes are categorized as in Annex A.3. Permissible number of defects shall be given in the sampling scheme.

4.1.7 Laces

(Where applicable) — Each pair of shoes shall be provided with one pair of laces of correct length. Both ends of the lace shall bear tags (aglet) of metal or plastic materials. The length of tags shall be not less than 13 mm and they shall not have rough joints.

4.2 Specific Requirements

The canvas upper shall be a combination of face fabric and backing fabric that are bond together with a suitable adhesive with a bond strength of 4 N/mm (min) when tested in accordance with Annex B.

Bottom material of the shoes and upper canvas material shall comply with the specific physical requirements given in Table 1-5 when tested in accordance with the test methods prescribed therein.

Table 1 — Requirements for face fabric

S/N	Characteristic		Requirement		Test method
i.	Weave		Plain//twill		ISO 7211-1
ii.	Number of threads per 10 mm, min		Cellulosic	Blends	ISO 7211-2
	a) Warp		27	24	
	b) Weft		14	14	
iii.	Fiber Composition, % min.		100	70 cellulose	ISO 1833-11
iv.	Mass g/m^2, min. non laminated		240	190	ISO 3801
v.	Breaking load (N) (min.)				ISO 13934-1
	a) Warp direction		800	1700	
	b) Weft direction)		800	1100	
vi.	Dimensional change (%) max.				ISO 7771
	a) Warp direction		2.5	1	
	b) Weft direction		2.5	1	
vii.	Colours to washing, min.	Colour Change	4	4	ISO 105-C10
		Staining	4	4	
viii.	Colour fastness to Light, min.		5	5	ISO 105-B01 ISO 105-B02

Table 2 — Requirements for backing fabric

S/N	Characteristic		Requirement	Test method
i.	Fibre composition		100% cellulose	ISO 1833-11
ii.	Number of threads per 10 mm, min a) Warp b) Weft		 20 15	ISO 7211-2
iii.	Mass g/m^2 , min		230	ISO 3801
iv.	Breaking load (N) on (5 x 20) cm cotton test piece (min.) a) Warp direction b) Weft direction		 700 650	ISO 13934-1
v.	Dimensional change for fabric (%) max. a) Warp b) Weft		 2.5 2.5	ISO 7771
vi.	Colour fastness to washing, min.	Colour change	4	ISO 105-C10
		Staining	4	
vii.	Light, min.		5	ISO 105-B01 ISO 105-B02

Table 3 — Requirements for cloth binding material

S/N	Characteristic	Requirement	Test method
i.	Breaking load for cotton, N, min	360	ISO 13934-1
ii.	Width, mm, min	13	ISO 22198

Table 4 — Material and dimensional requirements for individual components of canvas shoes

S/N	Rubber material			Blown PVC material			Test Method
	Component	**Material**	**Thickness (mm) min.**	**Component**	**material**	**Thickness(mm) Min.**	
i)	Foxing tape	Rubber	2.0	Foxing	-	-	ISO 2589
ii)	Toe cap, min	Rubber	1.5	Toe cap	Blown PVC	1.7	
iii)	Outer sole With/out cleats	Rubber	Men 5.0 Women /children 4.0	Outer sole With/out cleats	Blown PVC	Men 6.0 Women/children 5.0	
iv)	Heel (with/out cleats)	Rubber	6.0	Heel (with/out cleats)	Blown PVC	7.0	
v)	Inner sole /In socks	Rag or other material	2.5	Inner sole /In socks	Rag or other material	2.5	
vi)	Bottom filling	Cellulose/ wool	1.0	Bottom filling	Cellulose/wool	1.0	
vii)	Counter/Stiffener and toe puff	Fabric/PVC or other acceptable material	1.3	Counter/Stiffer and toe puff	PVC	1.3	

Table 5 — Physical requirements for bottom material

S/N	Characteristic	Requirement						Test method
		Heel, Sole				Foxing tape and toe cap		
		Rubber	**Expanded/ blown PVC**	**Expanded/blown PU**	**Other materials (including composite materials)**	**Rubber**	**Other materials**	
i.	Relative density (max.)	1.3	0.6 - 0.9	0.25- 0.55	1.7	1.4	1.7	ISO 2781
ii.	Hardness IRHD	60 ± 5	40 - 60	30 - 55	40 - 90	55±5	40-90	ISO 48-2
iii.	initial crack —	60 000	25 000	25, 000	25 000	-	-	

	Flexing resistance	min. (number of cycles)							ISO 16177
		cut growth after 120 000 cycles, max. (%)	600	800	800	800	-	-	
iv.	Elongation at break in both directions, min. (%)		300	100	80	60	-	-	ISO 3376
v.	Abrasion resistance mm^3, max		300	450	600	600	-	-	ISO 20871
vi.	Tensile strength MPa (min.)		7	3	2	1.5	-	-	ISO 3376
vii.	Compression set, %, max.		-	35	35	25			ISO 20344
viii	Lead content (ppm), max.		1	1	1	1	-	-	ISO 6101-2

Table 6 — Whole shoe assembly

The whole shoe assembly shall comply with the specific physical requirements given in Table 6 when tested in accordance with the test methods prescribed therein.

S/N	Characteristic	Requirement	Test method
i.	Outer sole bond strength, N/mm, min. at: a) Fore part b) Waist c) Heel	4	ISO 20344
ii.	Ageing of rubber and other material components.	No signs of brittleness or tackiness.	ISO 188

5 Packaging

Each pair shall be packed in a suitable manner so as to protect it from damage during normal transportation, storage and handling

6 Marking/Labeling

6 .1 Shoes

The following information shall be legibly and indelibly marked on the sock or any other suitable visible place:

a) manufacturer's name and/or registered trade mark;
b) size fitting number of footwear;
c) country of manufacture/origin;
d) batch number; and
e) type of material (upper and bottom).

6.2 Primary packaging

The primary packaging material shall be legibly and indelibly labelled with the following information:
a) size of footwear;
b) colour of footwear;
c) batch number;
d) manufacturer's name or registered trade mark; and
e) country of manufacture/origin.

6.3 Bulk Packaging

Each bale shall be legibly and indelibly labelled with the following information:
a) name of product as "Canvas shoes";
b) quantity;
c) name of manufacturer or local supplier's name and/or registered trade mark; and
d) country of manufacture/origin.

7. Sampling and criteria for compliance

For the purpose of ascertaining the compliance of shoes in a consignment to this specification, the scale of sampling and criteria for compliance shall be as prescribed in Annex A.

Annex A

(normative)

Methods of sampling and criteria for acceptance

A.1 Scale of sampling

A.1.1 Samples shall be selected and examined for each lot separately for ascertaining the conformity of the footwear to the requirements of this standard.

A.1.2 Footwear shall be considered to be of different lots if they differ in shape, colour, size and design.

A.1.3 The number of footwear pairs to be selected from any lot shall depend on the size of the lot and shall be in accordance with Columns 1 and 2 of Table A.1.

A.2 Method of selection

A.2.1 Footwear to be selected from the lot shall be chosen at random. To ensure randomness the procedure in A.2.3 shall be used.

A.2.2 When the footwear pairs in a lot are not packed in a number of cases (boxes), the sampling shall be as follows:

Starting from any footwear pair in the lot, count the pairs as 1,2, etc---up to r and so on in one order. Every r th pair thus counted shall be withdrawn to constitute a sample (r is the integral part of N/n where N is the lot size and n is the sample size). This procedure shall be stopped as soon as the required number of pairs is obtained.

For example, if a sample of 125 pairs is to be selected from a lot of 3 000 pairs, compute r as equal to integral part of 3 000/125=24. Starting from any pair, the footwear shall be counted in one order and every 24th pair shall be withdrawn.

A.2.3 When the footwear pairs in a lot are packed in different cases (boxes), a suitable number of boxes (not less than 30 % of the total boxes in the lot) shall be first chosen at random. For each of the boxes so chosen, an approximately equal number of pairs shall be picked up from its different parts so as to obtain the required number of pairs. For example, if a lot consists of 1 000 pairs of footwear packed in 50 boxes, each containing 20 pairs, choose more than 15 boxes at random. If it is decided to open 20 boxes, then 4 pairs shall be picked up from different parts of each of the 20 boxes to give a total of 80 pairs as specified in Table A.1.

Table A.1 — Scale of sampling and permissible number of defects

Number of footwear pairs in a lot	Samples for visually observed defects (Pairs)	Permissible number of defectives (Pairs)	Sample size for laboratory testing (Pairs)	Permissible number of defects (Pairs)
(1)	(2)	(3)	(4)	(5)
Up to 50	13	0	2	0
51 to100	20	1	3	0
101 to 300	32	1	3	0
301 to 500	50	2	5	1
501 to 1 000	80	3	6	1
1 001 to 3 000	125	5	7	2
3 001 and above	200	7	8	3

A.3 Defects

All randomly selected footwear pairs (Table A.1, Column 2) shall be inspected for visually observed defects, i.e:

a) difference in shape, design and colour;

b) odd pairing and incorrect size;

c) distorted shapes;

d) faulty jointing and adhesion of sole, heel, toe guard, toe cap and insole;

f) broken stitches and incorrect stitching;

g) missing or defective eyelets/speed hooks or uneven eyeleting/hooking;

h) variations in positioning of eyelets/speed hooks;

i) stiffener not centrally placed;

j) unfit lace;

k) finish not even and unpolished; and

l) missing or defective buckles/buckling assembly.

A.4 Acceptance criteria

The number of defective footwear pairs shall not exceed the permissible number given in Table A.1, Column 3. If the number of defective pairs exceeds the permissible number of defectives, the lot shall be rejected.

In case the lot has been found satisfactory for visually observed defects, sample pairs for laboratory testing (Table A.1, Column 4) shall be taken from among those drawn (Table A.1, Column 2). The pairs shall be chosen at random and tested for dimensional, physical and chemical characteristics. If the number of defective footwear is less than or equal to the corresponding permissible number of defectives given in Table A.1, Column 5, the

lot shall be declared to have met the requirements of this standard. Otherwise if the defective footwear pairs are more than the corresponding permissible numbers of defectives, the lot shall be rejected.

Annex B

(normative)

Measurement of adhesive bond between facing and backing fabric

B.1 Apparatus

Tensile testing machine with constant rate of traverse of 50 ± 5 m/min. with a graphic recorder.

B.2 Preparation of test specimens

Cut from upper light duty canvas specimen of 25 mm wide and 70 mm long. Dip one end of the specimen to a depth of 6 mm into Dimethyl Ketone (acetone) or petrol to separate the face fabric from the backing fabric for a distance of 5 mm. Condition the specimen for 24 h at room temperature.

B.3 Procedure

Clamp the free end of the face fabric in one of jaws of the machine and the free end of the backing fabric on the other. Operate the machine and record (graphically) the force required to separate the face fabric from the backing fabric over a distance of 50 mm (measured from the start of the unbroken bond on the test specimen)

B.4 Test report

The strength of the bond shall be the arithmetic mean of the forces registered during the test divided by 25 (N/mm).

Bibliography

KS 1661:2019 Footwear — Canvas shoes — Specification

