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## DRAFT EAST AFRICAN STANDARD

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Zippers (zips) — Specification

EAST AFRICAN COMMUNITY

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## 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 061, Textiles, textile products and accessories.

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.

This second edition cancels and replaces the first edition (EAS 223:2001), which has been technically revised. The main changes compared to the previous edition are as follows:

- A clause on normative references has been added;
- The requirement on the end-uses of different performance codes of zippers has been changed into an informative annex.



# Zippers (zips) — Specification

## 1 Scope

This Draft East African Standard specifies performance requirements, sampling and test methods for zippers (also known as zips) made from interlocking components mounted on textile tapes.

This standard applies to all types of zippers except those designed for aeronautical purposes, those intended to be exposed to corrosive influences and zippers of complicated structure such as three-way and double-pull as used in tents.

## 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 260, *Zippers — Glossary of terms*

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

ISO 105-D01, *Textiles — Tests for colour fastness — Part D01: Colour fastness to drycleaning using perchloroethylene solvent*

ISO 139, *Textiles — Standard atmospheres for conditioning and testing*

ISO 24153, *Random sampling and randomization procedures*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EAS 260 apply.

## 4 Requirements

### 4.1 General requirements

**4.1.1** Zippers may be made from plastic, metal or any other suitable material. For metallic components, these shall be corrosion resistant.

**4.1.2** The textile tape used in making zippers shall be free from any manufacturing and dyeing defects

**4.1.3** The fibre composition of the thread shall be the same as that of the tape.



## 4.2 Specific requirements

### 4.2.1 Zippers codes

All zippers shall be grouped into the following performance codes, with 5 being the most stringent:

- a) 1 — ultra-light
- b) 2 — light
- c) 3 — medium
- d) 4 — medium-heavy
- e) 5 — heavy

Annex H offers guidance on the application of different zippers

### 4.2.2 Code performance requirements

Each zipper shall comply with the respective code performance requirements given in Table 1 when tested in accordance with the test methods specified therein

**Table 1 — Code performance requirements of zippers**

Test description	Performance code					Test method <sup>a</sup>
	1	2	3	4	5	
Puller attachment, N (Min.)	70	80	200	250	300	Annex A
Closed end test, N (Min.)	35	60	80	100	140	Annex B
Top stop test, N (Min.)	50	70	90	110	130	Annex C
Open end fastener box test, N (Min.) 40	40	70	90	120	150	Annex D
Lateral strength test, N (Min.)	150	200	250	370	470	Annex E
Lateral strength of open end, N. (Min.)	40	70	90	120	160	Annex F
Slider locking test N (Min.)	10	15	25	40	60	Annex G
<sup>a</sup> Conditioning shall be done in accordance with ISO 139						

### 4.2.3 Colour fastness

Zippers shall comply with the colour fastness requirements of Table 2.

**Table 2 — Colour fastness requirements**

Parameter		Requirement	Test method
Colour fastness to:	Washing, min.	4	ISO 105-C10
	Dry cleaning, min.	4	ISO 105-D01

**4.2.4 Tape**

The tape shall be withstand the force applied when tested in accordance with Annex E.

**4.2.5 Thread**

The thread shall withstand the force applied to zippers when tested in accordance with Annex E.

**4.2.6 Length measurement**

The length of zippers shall be as declared, subject to a tolerance of 1.5 % or + 3 mm, whichever is greater.

**5 Packaging**

Zippers shall be properly packed in a carton (box) or any suitable container to avoid any entanglement during transit and/or unpacking.

**6 Labelling/markings****6.1 Permanent mark on the zipper**

Each zipper shall be permanently marked with the following information:

- a) manufacturer's name and/or trade mark;
- b) zipper's code number

**6.2 Batch labelling**

A batch or several batches of zippers shall have the following information which shall be indicated on the package, the swing ticket or accompanying documents:

- a) name and/or trade mark of the manufacturer
- b) country of manufacture
- c) number of zippers in a pack
- d) colour(s) of the zippers
- e) zipper code; .
- f) type of materia used such as "Plastic" or "Metallic";

- g) length of the zipper; and
- h) slider type

## 7 Sampling

Sampling shall be done in accordance with ISO 24153

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## Annex A (normative)

### Puller attachment

#### A.1 Principle

The puller is subjected to tension while the slider is rigidly supported.

#### A.2 Apparatus

The testing machine of the constant-rate-of traverse type and the opening speed of the jaws at  $100 \pm 15$  mm/min. The load range should be such that the breaking strength of the test specimen falls between 15 per cent and 90 per cent of the maximum on the scale. A marking device for the slide, such as face-plate or a blanking-off plate, is required so that tension is confined to the puller and its attachment to the slider (Figure A.1).

#### A.3 Procedure

Mount the specimen in one gripping device of the testing machine with the puller through a hole in the mask. Arrange the mark so that the slider and the chain are rigidly clamped in place only the puller being free. Secure the end of the puller to the other gripping device so that the tension is applied at  $90^\circ$  to the face of the slider. Set the testing machine in operation until the specified loading is reached, unless the specimen fails earlier.

#### A.4 Test report

Record the test results in accordance with Table 1

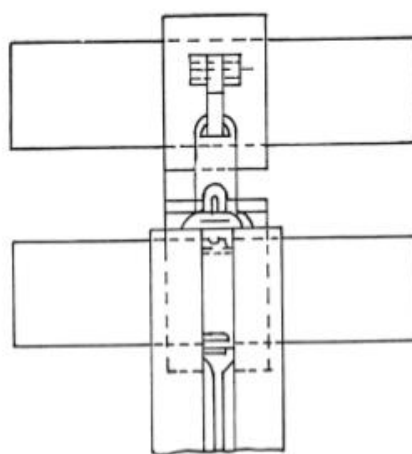


Figure A.1 — Puller attachment test

## **Annex B** (normative)

### **Closed-end test**

#### **B.1 Principle**

The bottom stop is subjected to a force via the slider by tension applied to the stringers.

#### **B.2 Apparatus**

The testing machine as described in Annex A is used. Mounting of the specimen is as shown in Figure B.1.

#### **B.3 Procedure**

The test specimen is in the open position, the slider being adjacent to bottom stop. Ensure that the locking mechanism is released. Grip the stringer in the two jaws approximately 10 cm away from the slider. (This may be achieved by cutting away the surplus stringer). Apply a longitudinal force to the stringers thus loading the slider against the bottom stop. Set the machine in operation until the specified loading is reached, unless the specimen fails earlier.

#### **B.4 Test report**

Record as in Table 1

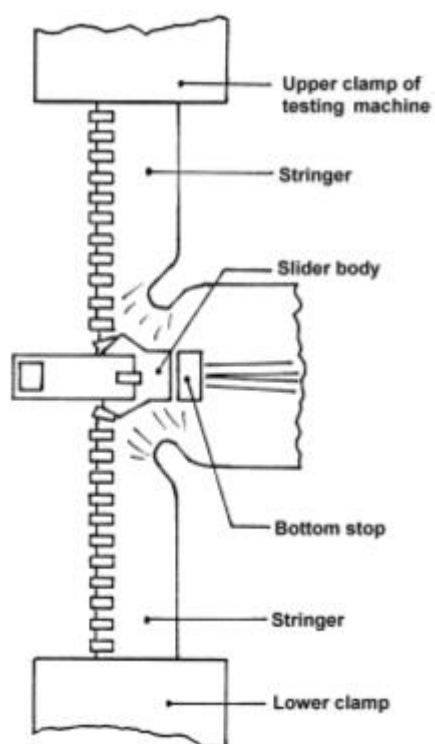


Figure B.1 — Closed-end test

## Annex C (normative)

### Top-stop test

#### C.1 Principle

The top-stop is subjected to a force via the slider applied through the puller.

#### C.2 Apparatus

The testing machine as described in Annex A is used. Mounting of the specimen is as shown in Figure C.1.

#### C.3 Procedure

The test specimen is in the closed position with the slider adjacent to the top. Secure the puller in one jaw of the machine and the other end of the specimen in the other jaw, steps being taken to avoid damaging the chain. Set the machine in operation until the specified force is reached unless the specimen fails earlier

#### C.4 Test report

Record as in Table 1

Dimensions in millimetres

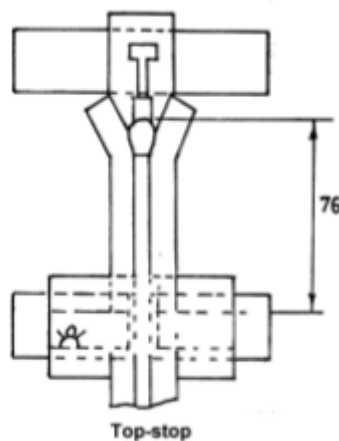


Figure C.1 — Top-stop test

## **Annex D** (normative)

### **Open-end fastener box test**

#### **D.1 Principle**

The box is subjected to a longitudinal force while the chain is in the closed position.

#### **D.2 Apparatus**

The testing machine described in Annex A is used. Mount the specimen as shown in Figure D.1.

#### **D.3 Procedure**

With the test specimen in closed position, clamp the interlocked chain into the jaw of the testing machine, steps being taken to avoid damaging the chain. Clamp a slotted plate, shaped to clear the tape, chain and pin and to bear against the whole of the top edges of the box, into the other jaw. Set the machine in operation until the specified force is reached, unless the specimen fails earlier.

#### **D.4 Test report**

Record as in Table 1

Dimensions in millimetres



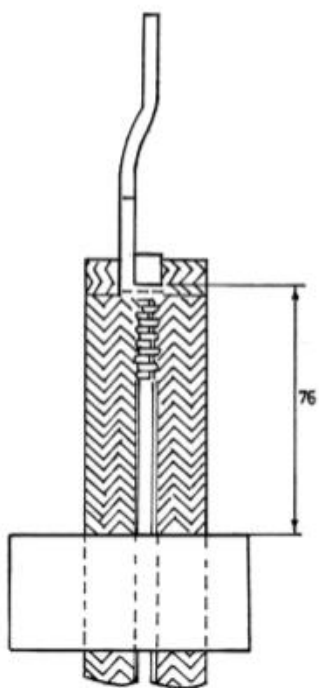


Figure D.1 — Open-end fastener box test

## Annex E (normative)

### Lateral strength test

#### E.1 Principle

The test specimen is subjected to lateral force under controlled conditions while the fastener chain is in the closed position.

#### E.2 Apparatus

The testing machine as described in Annex A is used. The gripping surface 25.4 mm wide are used. The jaws shall be so constructed and finished so as not to damage the tape, and not to allow slippage of the specimen. (See Figure E.1).

#### E.3 Procedure

Secure the test specimen in place with the gripping devices so arranged that at least the width of each tape is gripped and there is at least 25.4 mm of closed chain on each side. Set the machine in operation until the specified force is reached, unless the specimen fails earlier.

#### E.4 Test report

Record as in Table 1

Dimensions in millimetres

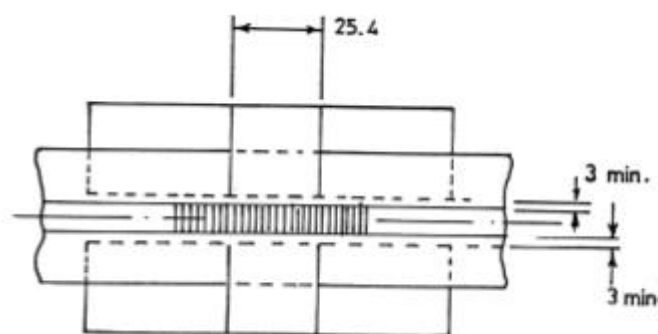


Figure E.1 — Lateral strength test

## Annex F (normative)

### Lateral strength of open-end attachment test

#### F.1 Principle

The test specimen is subjected to straight lateral loading under controlled conditions while the fastener chain is in closed position.

#### F.2 Apparatus

The testing machine as described in Annex A is used. The gripping jaws shall be 6 mm wide for testing zippers for performance codes 1 and 2, and 12 mm for codes 3, 4 and 5. The jaws shall be so constructed and finished as not to damage the tape or allow slippage during the test. (See Figure F.1).

#### F.3 Procedure

Secure the test specimen in place with the gripping jaws set approximately 3 mm from the sides of the box, and with one edge of each jaw aligned with the ends of tapes. Set the machine in operation until the specified load is reached, unless the specimen fails earlier.

#### F.4 Test report

Record as in Table 1

Dimensions in millimetres

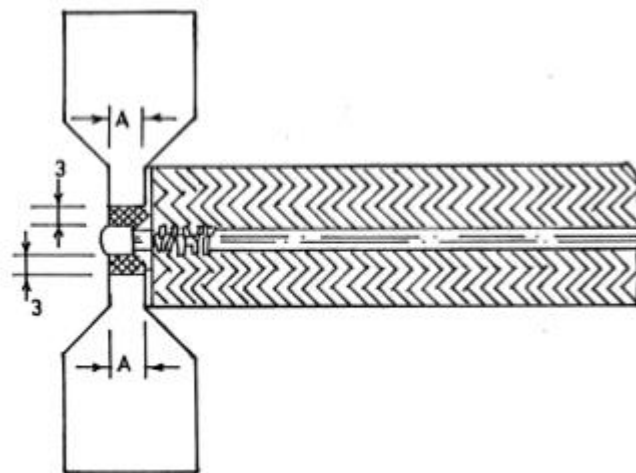


Figure F.1 — Lateral strength of open-end attachment

## **Annex G** (normative)

### **Slider locking test**

#### **G.1 Principle**

The slider is locked on the chain and the locking device subjected to tension, the load being applied at 180° to the device, via the chain stringers in such a way as to bring the locking device under pressure from the chain.

#### **G.2 Apparatus**

Mounting of the specimen is as shown in Figure G.1.

#### **G.3 Procedure**

The test specimen is in the open position with the locking device locked into the chain 25 mm from the top-stops. Set the jaws 50 mm apart and secure the top of the stringer into the jaws adjacent to the top so that the top of the slider is 25 mm from the edge of each jaw. Set the machine in motion and increase the load until the locking mechanism slips or the specimen fails.

#### **G.4 Test report**

Record as in Table 1

Dimensions in millimetres

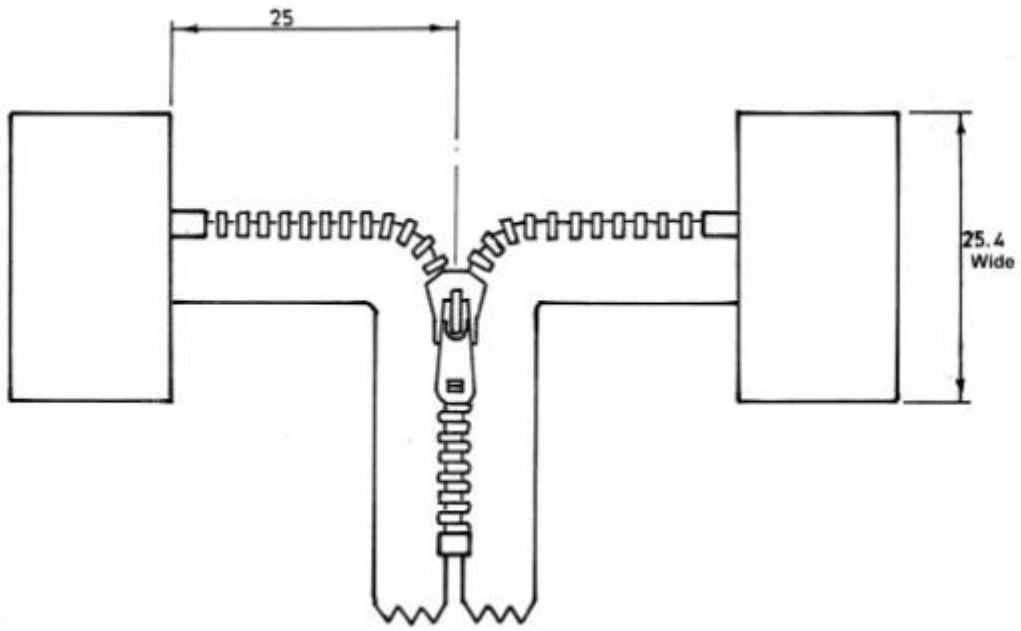


Figure G.1 — Slider locking test

## Annex H (informative)

### End uses and performance codes

Whereas zippers may be used as functional or decorative accessories. Table H.1 offers guidance on the recommended application of different zippers.

**Table H.1 — End uses and performance codes**

End use	Performance code				
	1 (Ultra-light)	2 (Light)	3 (Medium)	4 (Medium-heavy)	5 (Heavy)
Dresses	√	√	√		
Knitwear	√	√	√		
Light leather goods	√	√	√		
Skirts, jeans or trousers	√	√	√		
Upholstery		√	√	√	
Foundation garments			√	√	
Coats and jackets			√	√	
Overalls			√	√	
Luggage bags			√	√	√
Slippers			√		
Sleeping bags			√	√	√
Lightweight and inner tents			√	√	√
Footwear			√	√	√
Leather garments			√	√	√
Ski clothes			√	√	√
Wet suits			√	√	√
Awnings and frame tents			√	√	√

## Bibliography

EAS 223:2001, Zippers — Specification

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