



**DEAS 344:2021**

ICS 85.080.10

## **DRAFT EAST AFRICAN STANDARD**

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**Exercise books and related items — 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 065, Paper and paper Products.

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 344:2004), which has been technically revised. The main changes compared to the previous edition are as follows:

- The title has been changed from “Exercise books — Specification” to “Exercise books and related items — Specification”
- The text of the standard has been expanded to cater for several types and sizes of exercise books and related items

## Exercise books and related items— Specification

### 1 Scope

This Draft East African Standard specifies requirements, sampling and test methods for exercise books and related items.

### 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.

ISO 186, *Paper and board — Sampling to determine average quality*

ISO 287, *Paper and board — Determination of moisture content of a lot — Oven-drying method*

ISO 535, *Paper and board — Determination of water absorptiveness — Cobb method*

ISO 536, *Paper and board — Determination of grammage*

ISO 1924-3, *Paper and board — Determination of tensile properties — Part 3: Constant rate of elongation method (100 mm/min)*

ISO 2470-2, *Paper, board and pulps — Measurement of diffuse blue reflectance factor — Part 2: Outdoor daylight conditions (D65 brightness)*

ISO 2471, *Paper and board — Determination of opacity (paper backing) — Diffuse reflectance method*

ISO 4046 (all parts), *Paper, board, pulps and related terms — Vocabulary*

ISO 6588-1, *Paper, board and pulps — Determination of pH of aqueous extracts — Part 1: Cold extraction*

ISO 11093-4, *Paper and board — Testing of cores — Part 4: Measurement of dimensions*

### 3 Terms and definitions

For the purposes of this document, the following terms and definitions and those in ISO 4046 (all parts) shall apply.

#### 3.1

##### **spine**

the binding edge of a book.

#### 3.2

##### **thread-stitched**

process of stitching sections of a book together with thread before the book is bound.

### 3.3

#### **wire-stitched**

process of machine stitching by means of one or more wire staples through the spine of a fold

## 4 Tolerance on sizes

When determined in accordance with ISO 11093-4, a tolerance of  $\pm 3$  mm shall be allowed on all sizes specified for exercise books and related items.

## 5 Requirements

### 5.1 General requirements

Writing paper shall:

- a) be free from tears, holes, blemishes, creases and other visible defects;
- b) be uniform in texture; and
- c) have a good writing surface on each side, except books made from newsprint, when written upon with writing ink using steel pens or ball point writing instruments.

### 5.2 Specific requirements

#### 5.2.1 Types of writing paper

Paper for exercise books and related items shall be in two types:

##### 5.2.1.1 Machine finish (MF) sized paper

Machine finish (MF) sized paper shall comply with the requirements set in Table 1.

##### 5.2.1.2 Newsprint paper

When tested in accordance with ISO 536, newsprint paper shall have a minimum grammage of 42.5 g/m<sup>2</sup> if recycled and 45 g/m<sup>2</sup> if virgin

**Table 1 — Requirements for machine finish paper**

	<b>Characteristic</b>	<b>Requirement</b>	<b>Test Method</b>
i	<sup>a</sup> Grammage, g/m <sup>2</sup> , Min.	50	ISO 536
ii	Opacity, %, Min.	70	ISO 2471
iii	Tearing factor, mN, Min.	50	ISO 1924-3
iv	Breaking length, mm, Min.	2 500	ISO 1924-3
v	Moisture content, %	4 - 7	ISO 287
vi	pH of aqueous extract	4.5 – 9.5	ISO 6588-1
vii	Water absorptiveness (Cobb test), g/m <sup>2</sup>	18 - 24	ISO 535
viii	Brightness, %, Min.	65	ISO 2470-2

<sup>a</sup> Tolerance on declared value is  $\pm 5\%$  for grammages above the minimum

## 5.2.2 Stitching wire

**5.2.2.1** When measured using a micrometre screw gauge, the stitching wire shall have a minimum gauge of 0.50 mm galvanised or tin coated wires or wires otherwise treated against rust shall be used.

**5.2.2.2** The size of stitch shall be of such a length as to allow a turn over of at least 3 mm.

## 5.2.3 Binding

**5.2.3.1** Exercise books and related items should be bound in any of the following ways:

- a) wire-stitched bound;
- b) hard bound;
- c) perfect bound;
- d) spiral bound; and
- e) case bound.

**5.2.3.2** In case of wire-stitch binding, there shall be at least two stitches on the spine of each exercise book. If two stitches are used, the spaces shall be as nearly as possible in the ratio 1:2:1. If more than two stitches are used, the spaces shall be as nearly as possible equal

## 5.2.4 Ruling

### 5.2.4.1 Exercise books ruling

When ruling is required, it shall be done as follows:

- a) When tested in accordance with ISO 11093-4, the distance between horizontal lines shall be a minimum of 8 mm with a tolerance of  $\pm 0.5$  mm on any other value above the minimum.
- b) The margins, whether on the top or on the side, shall have a distance from the end of 25 mm  $\pm 3$  mm when tested in accordance with ISO 11093-4.
- c) The lines shall be in clear visible colours.
- d) Square-ruled exercise books shall have a minimum of 5 mm with a tolerance of  $\pm 0.5$  mm on any other value above the minimum when tested in accordance with ISO 11093-4. Squares shall be ruled throughout the entire area and trimmed to bleed all the three edges.
- e) For lower primary school exercise books, the distance between horizontal lines shall be a minimum of 10 mm and 8 mm for plain and square-ruled exercise books respectively. The distances shall be subject to a tolerance of  $\pm 0.5$  mm on any other value above the minimum
- f) When tested in accordance with ISO 11093-4, the distance between double lines in double-ruled exercise books shall be a minimum of 5 mm with a tolerance of  $\pm 0.5$  mm on any other value above the minimum and the distance between the other neighbouring lines shall be 10 mm  $\pm 0.5$  mm.

### 5.2.4.2 Accountancy books ruling

Accountancy books shall have a double-column ledger, treble-column cash journal, six-column analysis, eight-column creditor's journal or eight-column accounting journal type of ruling.



### 5.2.4.3 Music books

Ruling shall be done as agreed upon between the purchaser and the supplier. If required, the ruling shall be done as follows:

- writing paper shall be ruled at right angles to the binding edge, in staves, each formed by five lines spaced  $2.2 \text{ mm} \pm 0.1 \text{ mm}$  apart;
- the distance between the first line of the first staff and the upper edge of a page shall be at least 20 mm and at most 30 mm and the distance between the last line of the lowest staff and the lower edge of the page shall be at least 15 mm and at most 25 mm;
- A4 books shall contain 12 staves per page while those of A5 shall contain six staves per page. In both cases, the distance between consecutive staves shall be uniform and within 1 mm

### 5.2.5 Requirements specific to types of exercise books and related items

Exercise books and related items shall comply with the requirements in Table 2.

**Table 2 — Requirements specific to type of book or related item**

Type of book or related item	<sup>a</sup> Size (mm)	Number of pages	<sup>b</sup> Grammage of cover	Quality of writing paper
Wire-stitched exercise books	148 x 210, 155 x 200, 160 x 210, 162 x 203, 162 x 229, 175 x 250, 200 x 248, 200 x 278, 210 x 297, 204 x 255	32 - 240 excluding the covers	Minimum of 90 g/m <sup>2</sup>	As in Table 1
Bound exercise books	148 x 210, 155 x 200, 160 x 210, 162 x 203, 162 x 229, 175 x 250, 200 x 248, 200 x 278, 200 x 315, 204 x 255, 210 x 297, 210 x 330	96 – 576 excluding the covers	Pulp or board of 450 g/m <sup>2</sup> for books with ≤ 256 pages; Pulp or board of 700 g/m <sup>2</sup> for books with ≥ 256 pages. Other suitable non-paper covers may also be used.	As in Table 1
Wire-stitched drawing exercise books	176 x 250, 210 x 297, 250 x 353, 297 x 420	A minimum of 20 pages with increasing multiples of 4 pages excluding the covers	Minimum of 90 g/m <sup>2</sup>	As in Table 1 except that it shall be made of machine finished paper of minimum 80 g/m <sup>2</sup>
Wire – stitched map exercise books	210 x 297, 229 x 324	-	-	As in Table 1
Bound science practical notebook	210 x 297	96 – 192 excluding the covers	Pulp or board of 450 g/m <sup>2</sup> for books with ≤ 144 pages; Pulp or board of 700 g/m <sup>2</sup> for books with ≥ 144 pages.	As in Table 1 except that it shall be made of paper of minimum 60 g/m <sup>2</sup>
Wire-stitched Examination answer booklets	162 x 229, 210 x 297	16	-	As in Table 1 except that it shall be made of machine finished paper of minimum 80 g/m <sup>2</sup> and shall

				have punched holes in the right hand side corner
Wire-stitched register books	210 × 297, 229 × 324	96 – 144 excluding the covers	Minimum of 100 g/m <sup>2</sup>	As in Table 1 except that it shall be made of paper of minimum 60 g/m <sup>2</sup>
Bound register books	210 × 297, 229 × 324	96 - ≥ 256	Pulp or board of 675 g/m <sup>2</sup> for books with ≤ 144 pages; Pulp or board of 1100 g/m <sup>2</sup> for books with ≥ 144 pages.	As in Table 1 except that it shall be made of paper of minimum 60 g/m <sup>2</sup>
Accountancy books	210 × 297	72 - 192 pages exclusive of covers	-	-
Shorthand notebooks	127 × 195, 128 × 203, 148 × 297	Maximum of 200 pages	Minimum of 100 g/m <sup>2</sup>	As in Table 1
Ruled sheets of paper	148 × 297, 148 × 210, 210 × 297, 297 × 420, 210 × 330	-	-	As in Table 1
Graph books and sheets	210 × 297, 148 × 210	-	-	As in Table 1
Music books	148 × 210, 210 × 297	-	-	-
<sup>a</sup> Size shall be tested in accordance with ISO 11093-4				
<sup>b</sup> Grammage is tested in accordance to ISO 536 and tolerance of ± 5 % is allowed on any other value above the minimum				

## 6 Packaging

**6.1** The exercise books and related items shall be supplied in packages containing the same type, size, and having the same number of pages.

**6.2** The exercise books and related items shall be packaged in packages that prevent them from being damaged during transportation, handling and storage. The packages shall also be strong enough to prevent tear, bursting, distortion or opening up from the weight of the contents of the package.

## 7 Labelling

**7.1** Each package of exercise books and related items shall be legibly and indelibly labelled with the following particulars:

- a) manufacturer/and or distributor's name, address and/or trademark;
- b) description of the contents in the package such as "Exercise books";
- c) grammage of paper;
- d) number of contents in the package;
- e) gross weight; and
- f) country of origin.

**7.2** Each exercise book and related item shall be clearly and indelibly marked with the following particulars:

- a) manufacturer/and or distributor's name, address and/or trademark;
- b) number of pages;
- c) size in mm;
- d) grammage;
- e) space for
  - i. name,
  - ii. school/institution;
  - iii. class/form/grade ----- Year -----,
  - iv. subject.
- f) an indication that it is "Newsprint paper" if made of such and a warning, "Not for use with fountain pen"

## **8 Sampling**

Sampling shall be done in accordance to ISO 186

## Bibliography

EAS 344:2004, Exercise books — Specification

Public Review Draft



Public Review Draft