DRAFT EAST AFRICAN STANDARD

Exercise books and related items — Specification

EAST AFRICAN COMMUNITY
Copyright notice

This EAC document is copyright-protected by EAC. While the reproduction of this document by participants in the EAC standards development process is permitted without prior permission from EAC, neither this document nor any extract from it may be reproduced, stored or transmitted in any form for any other purpose without prior written permission from EAC.

Requests for permission to reproduce this document for the purpose of selling it should be addressed as shown below or to EAC’s member body in the country of the requester:

© East African Community 2021 — All rights reserved
East African Community
P.O. Box 1096,
Arusha
Tanzania
Tel: + 255 27 2162100
Fax: + 255 27 2162190
E-mail: eac@eachq.org
Web: www.eac-quality.net

Reproduction for sales purposes may be subject to royalty payments or a licensing agreement. Violators may be prosecuted.
## Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreword</td>
<td>iv</td>
</tr>
<tr>
<td>2 Normative references</td>
<td>1</td>
</tr>
<tr>
<td>3 Terms and definitions</td>
<td>1</td>
</tr>
<tr>
<td>4 Tolerance on sizes</td>
<td>2</td>
</tr>
<tr>
<td>5 Requirements</td>
<td>2</td>
</tr>
<tr>
<td>5.1 General requirements</td>
<td>2</td>
</tr>
<tr>
<td>5.2 Specific requirements</td>
<td>2</td>
</tr>
<tr>
<td>5.2.1 Types of writing paper</td>
<td>2</td>
</tr>
<tr>
<td>5.2.2 Stitching wire</td>
<td>2</td>
</tr>
<tr>
<td>5.2.3 Binding</td>
<td>3</td>
</tr>
<tr>
<td>5.2.4 Ruling</td>
<td>3</td>
</tr>
<tr>
<td>5.2.5 Requirements specific to types of exercise books and related items</td>
<td>4</td>
</tr>
<tr>
<td>6 Packaging</td>
<td>5</td>
</tr>
<tr>
<td>7 Labelling</td>
<td>5</td>
</tr>
<tr>
<td>8 Sampling</td>
<td>6</td>
</tr>
<tr>
<td>Bibliography</td>
<td>7</td>
</tr>
</tbody>
</table>
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

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

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 ± 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/m² if recycled and 45 g/m² if virgin

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Requirement</th>
<th>Test Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grammage, g/m², Min.</td>
<td>50</td>
<td>ISO 536</td>
</tr>
<tr>
<td>Opacity, %, Min.</td>
<td>70</td>
<td>ISO 2471</td>
</tr>
<tr>
<td>Tearing factor, mN, Min.</td>
<td>50</td>
<td>ISO 1924-3</td>
</tr>
<tr>
<td>Breaking length, mm, Min.</td>
<td>2.500</td>
<td>ISO 1924-3</td>
</tr>
<tr>
<td>Moisture content, %</td>
<td>4 – 7</td>
<td>ISO 287</td>
</tr>
<tr>
<td>pH of aqueous extract</td>
<td>4.5 – 9.5</td>
<td>ISO 6588-1</td>
</tr>
<tr>
<td>Water absorptiveness (Cobb test), g/m²</td>
<td>18 - 24</td>
<td>ISO 535</td>
</tr>
<tr>
<td>Brightness, %, Min.</td>
<td>65</td>
<td>ISO 2470-2</td>
</tr>
</tbody>
</table>

* Tolerance on declared value is ± 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 ± 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 ± 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 ± 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 ± 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 ± 0.5 mm on any other value above the minimum and the distance between the other neighbouring lines shall be 10 mm ± 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:
a) Writing paper shall be ruled at right angles to the binding edge, in staves, each formed by five lines spaced 2.2 mm ± 0.1 mm apart;

b) The distance between the first line of the first stave 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 stave and the lower edge of the page shall be at least 15 mm and at most 25 mm;

c) 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>
<thead>
<tr>
<th>Type of book or related item</th>
<th>Size (mm)</th>
<th>Number of pages</th>
<th>Grammage of cover</th>
<th>Quality of writing paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wire-stitched exercise books</td>
<td>148 × 210, 155 × 200, 160 × 210, 162 × 203, 162 × 229, 175 × 250, 200 × 248, 200 × 278, 210 × 297, 204 × 255</td>
<td>32 - 240 excluding the covers</td>
<td>Minimum of 90 g/m²</td>
<td>As in Table 1</td>
</tr>
<tr>
<td>Bound exercise books</td>
<td>148 × 210, 155 × 200, 160 × 210, 162 × 203, 162 × 229, 175 × 250, 200 × 248, 200 × 278, 200 × 315, 204 × 255, 210 × 297, 210 × 330</td>
<td>96 – 576 excluding the covers</td>
<td>Pulp or board of 450 g/m² for books with ≤ 256 pages; Pulp or board of 700 g/m² for books with ≥ 256 pages. Other suitable non-paper covers may also be used.</td>
<td>As in Table 1</td>
</tr>
<tr>
<td>Wire-stitched drawing exercise books</td>
<td>176 × 250, 210 × 297, 250 × 353, 297 × 420</td>
<td>A minimum of 20 pages with increasing multiples of 4 pages excluding the covers</td>
<td>Minimum of 90 g/m²</td>
<td>As in Table 1 except that it shall be made of machine finished paper of minimum 80 g/m²</td>
</tr>
<tr>
<td>Wire – stitched map exercise books</td>
<td>210 × 297, 229 × 324</td>
<td>-</td>
<td>-</td>
<td>As in Table 1</td>
</tr>
<tr>
<td>Bound science practical notebook</td>
<td>210 × 297</td>
<td>96 – 192 excluding the covers</td>
<td>Pulp or board of 450 g/m² for books with ≤ 144 pages; Pulp or board of 700 g/m² for books with ≥ 144 pages.</td>
<td>As in Table 1 except that it shall be made of paper of minimum 60 g/m²</td>
</tr>
<tr>
<td>Wire-stitched Examination answer booklets</td>
<td>162 × 229, 210 × 297</td>
<td>16</td>
<td>-</td>
<td>As in Table 1 except that it shall be made of machine finished paper of minimum 80 g/m² and shall have punched holes in the right hand side corner</td>
</tr>
<tr>
<td>Wire-stitched</td>
<td>210 × 297, 229 × 324</td>
<td>96 – 144 excluding</td>
<td>Minimum of 100 g/m²</td>
<td>As in Table 1 except that it shall</td>
</tr>
<tr>
<td>register books</td>
<td>the covers</td>
<td>be made of paper of minimum 60 g/m²</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------</td>
<td>---------------------</td>
<td>-------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bound register books</td>
<td>210 × 297, 229 × 324</td>
<td>96 - ≥ 256 Pulp or board of 675 g/m² for books with ≤ 144 pages; Pulp or board of 1100 g/m² for books with ≥ 144 pages.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accountancy books</td>
<td>210 × 297</td>
<td>72 - 192 pages exclusive of covers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shorthand notebooks</td>
<td>127 × 195, 128 × 203, 148 × 297</td>
<td>Maximum of 200 pages Minimum of 100 g/m² As in Table 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ruled sheets of paper</td>
<td>148 × 297, 148 × 210, 210 × 297, 297 × 420, 210 × 330</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graph books and sheets</td>
<td>210 × 297, 148 × 210</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Music books</td>
<td>148 × 210, 210 × 297</td>
<td>-</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a) Size shall be tested in accordance with ISO 11093-4  
b) 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