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DRAFT EAST AFRICAN STANDARD

Axes and hatchets — Specification

EAST AFRICAN COMMUNITY

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0 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 042, *Production and general engineering*.

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Axes and hatchets — Specification

1 Scope

This Draft East African Standard specifies the requirements, test methods and sampling plan for axes and hatchets.

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 6508-1, *Metallic materials — Rockwell hardness test — Part 1: Test method*

ISO 4957, *Tool steels*

ISO 24153, *Random sampling and randomization procedures*

WD/TC 042/007:2025, *Handle for hand tool — Specification*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at <http://www.electropedia.org>

— ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

tools

a tool shall be an axe or a hatchet.

3.2

hatchet

a small one-handed tool with a sharp cutting blade on one side and often a hammerhead or poll on opposite side.

3.3

axe

a heavy tool weighing more than one kilogram consisting of a sharp cutting blade on one side and often a hammerhead or poll on opposite side fixed to the handle.

3.4

head

an axe or hatchet made of steel without a handle.

4 Types

The types of tools shall be as illustrated in Figures 1 to 3.

The types of tools are as specified below:

Figure 1, Felling axe.

Figure 2, Wedge axe.

Figure 3, Hatchet.

5 Requirements

5.1 Dimensions

The dimensions of tools shall be as specified in Figures 1 to 3 and in Tables 1 to 3.

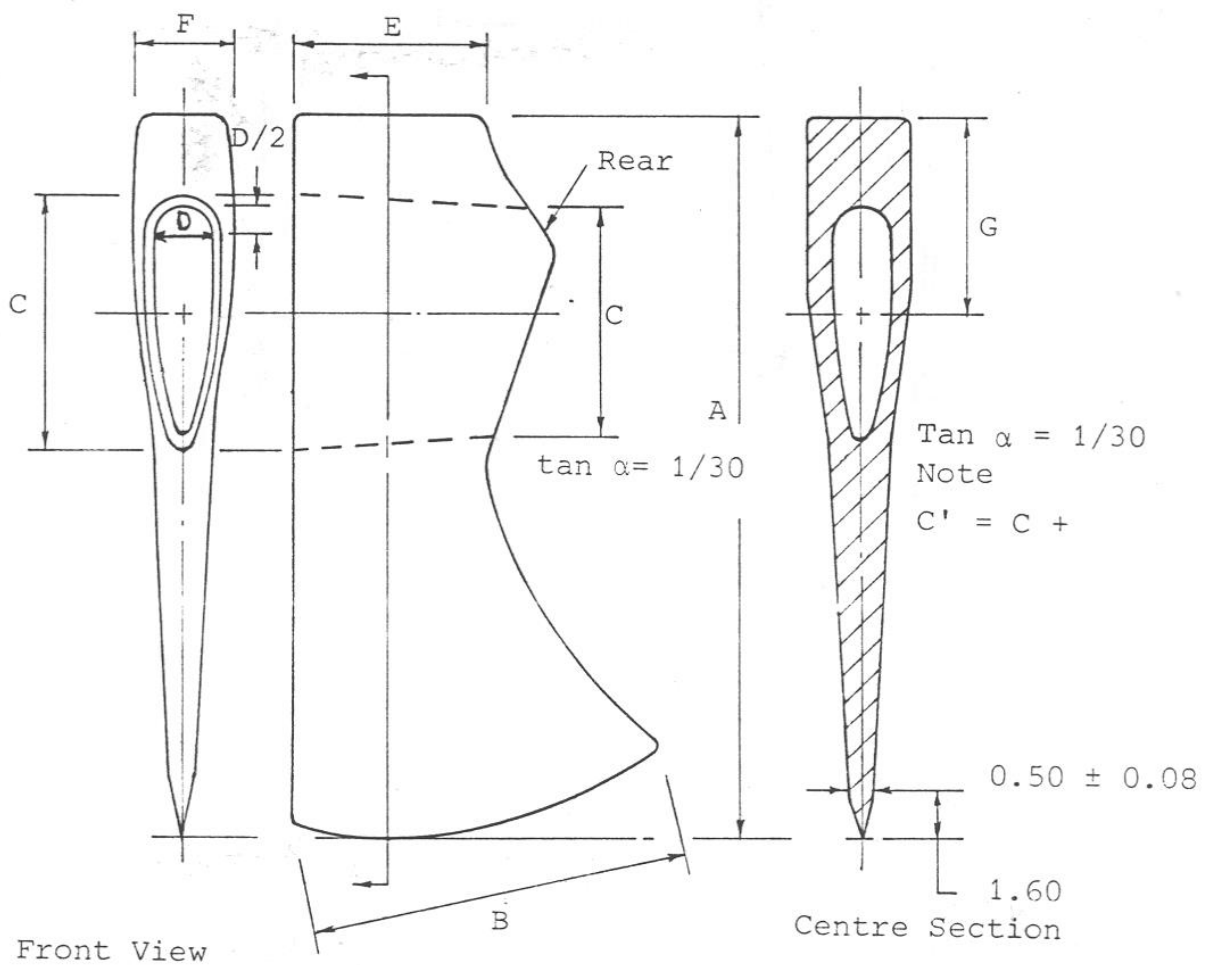


Figure 1: Felling axe

Table 1: Dimensions for felling axes

Dimensions in millimeters

Mass of head, kg $\pm 5\%$	Head dimensions							Length of handle
	A	B	C	D	E	F	G	
	± 6	± 6	± 6	± 3	± 5	± 2	± 3	
1.8	240	130	83	21	67	32	58	810 to 910
2.3	290	160	83	21	67	32	58	810 to 910
2.7	292	160	99	22	80	32	58	910
3.2	300	170	99	23	80	32	64	910

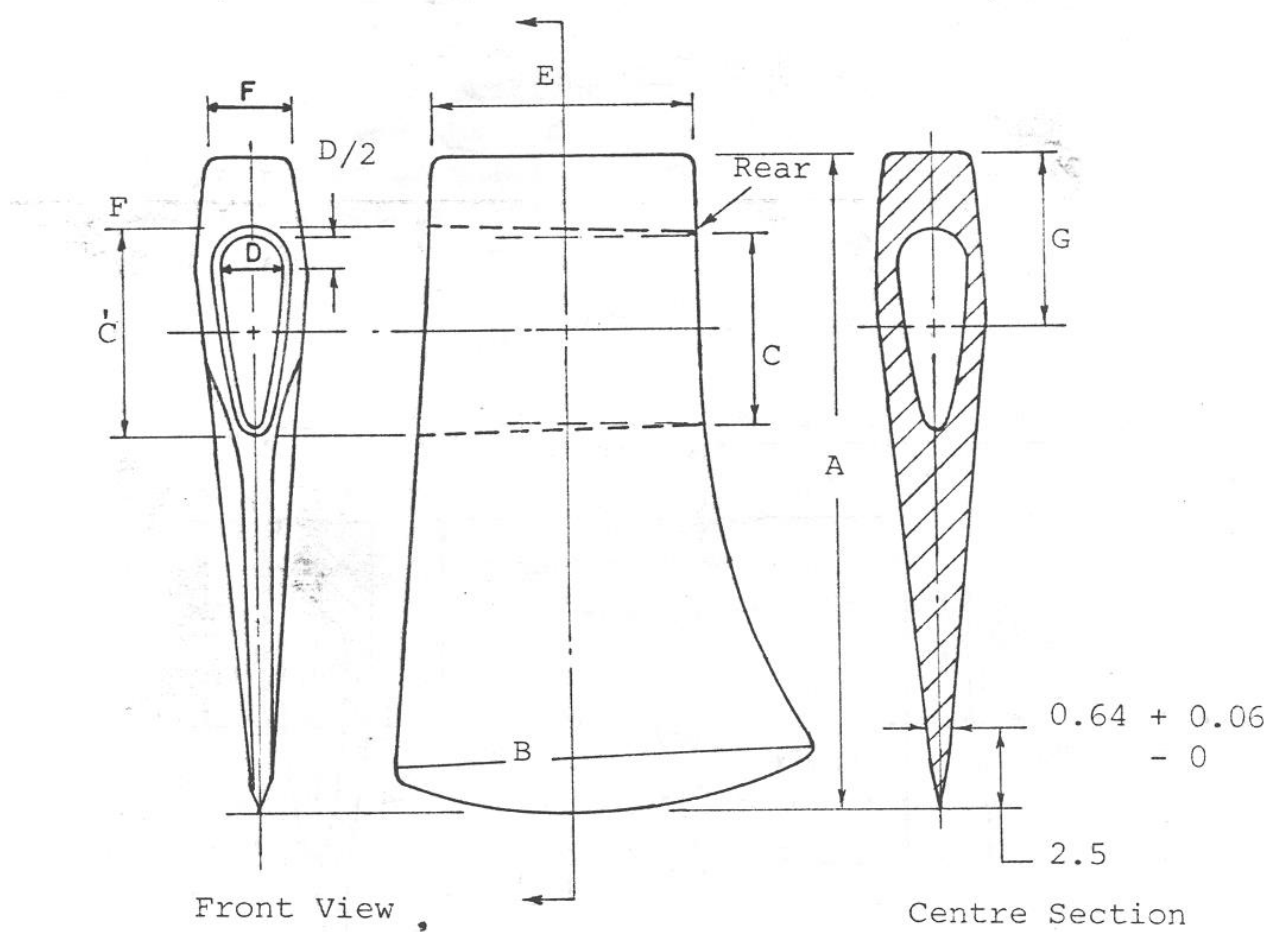


Figure 2: Wedge axe

Table 2: Dimensions for wedge axes

Dimensions in millimeters

Mass of head, kg $\pm 5\%$	Head dimensions						
	A	B	C	D	E	F	G
	± 6	± 6	± 6	± 3	± 5	± 2	± 6
1.0	160	99	56	18	64	24	19
1.1	165	102	56	18	67	24	19
1.2	172	105	56	18	67	24	19
1.4	178	105	64	21	72	26	57
1.6	188	111	64	21	80	26	57
1.8	197	118	64	21	81	26	58
2.1	203	127	64	21	86	26	58
2.3	210	130	64	21	90	26	58
2.7	222	143	64	21	92	26	58
3.2	232	156	73	23	97	33	64

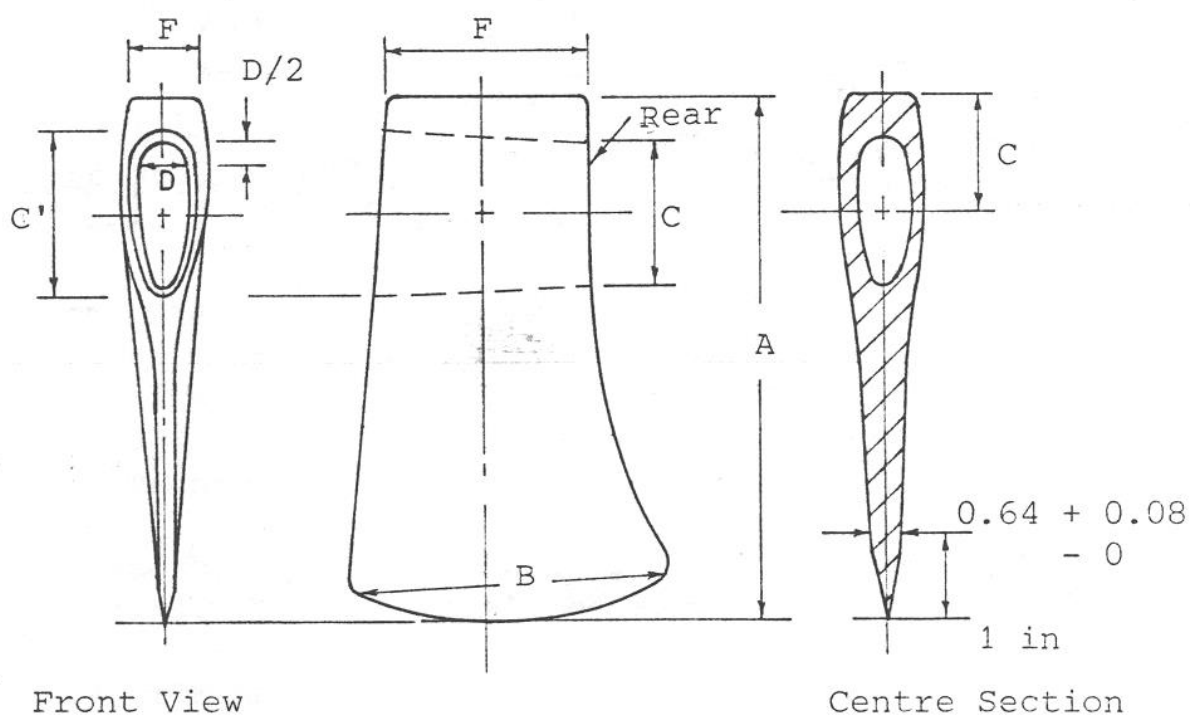


Figure 3: Hatchet

Table 3: Dimensions for hatchets

Dimensions in millimeters

Mass of head, kg $\pm 5\%$	Head dimensions							Length of handle
	A	B	C	D	E	F	G	
	± 6	± 6	± 6	± 3	± 5	± 2	± 3	
0.6	137	80	40	14	49	21	33	356
0.7	140	86	45	16	57	21	38	406
0.8	148	92	49	16	57	21	38	420
0.9	154	95	49	16	62	21	38	420 to 610

5.2 Materials properties

The material properties for axes and hatchets tools shall be according to ISO 4957. The chemical composition shall be according to Table 4.

Table 4: Chemical composition of axes and hatchets

Element	Minimum, %	Maximum %
Carbon	0.55	0.65
Manganese	-	0.80
Sulphur	-	0.06
Silicon	-	0.35
Phosphorous	-	0.06
Chromium	0.45	—

5.3 Hardness

When tested in accordance with ISO 6508-1 the tool shall be forged and suitably heat treated to produce hardness HRC 25/30 at the eye, increasing to HRC 48/54 within 50 mm of the cutting edge.

5.4 Handles

The handles shall be in accordance with WD/TC 042/007:2025. This applies only for tools sold with handles.

5.5 Manufacture

The head of the tool shall be forged in one piece from the solid. The forging shall be symmetrical and free from flaws.

All fins and flashes shall be removed. The eye shall be smooth internally, uniformly tapered, and shall lie central within 0.5 mm in the forging. The cutting edge shall be ground sharp.

5.6 Mass and dimensions

Mass and dimensions shall be as specified in Tables 1, 2 and 3.

5.7 Finish

Felling axes shall be fine ground adjacent to the cutting edge and the other parts shall be lacquered or painted. Wedge axes and hatchets shall be fine finished all over. The handles shall be lacquered.

6 Packaging and marking

6.1 The axes and hatchets shall be packaged in such a manner that they are not damaged during transportation and storage.

6.2 Every tool shall be legibly and indelibly marked with the following information:

- manufacturer's name or trademark.
- nominal mass of the head.
- batch number
- country of origin

7 Tests

The axe or hatchet shall undergo the following tests and shall have no defects at the end of each test:

7.1 Hammer test

The free falling axe or hatchet shall be dropped on an anvil as shown in Figure 4. The axe or hatchets shall not be supported. The hardened ends shall be subjected to not less than four blows by dropping the axe or hatchet from a height of one metre above the anvil. The axe or hatchet shall not show any signs of failure.

7.2 The complete tool shall be clamped as shown in Figure 5. A load of 45 kg shall be dropped from a height of 30 cm onto the end of the handle. When the load is removed the tool shall show no signs of damage to the head or loosening of the handle, nor shall there be any permanent set in excess of 25 mm measured at the handle end.

7.3 The head/handle joint shall withstand an end load of 50 kg without loosening. The load shall be applied as shown in Figure 5.

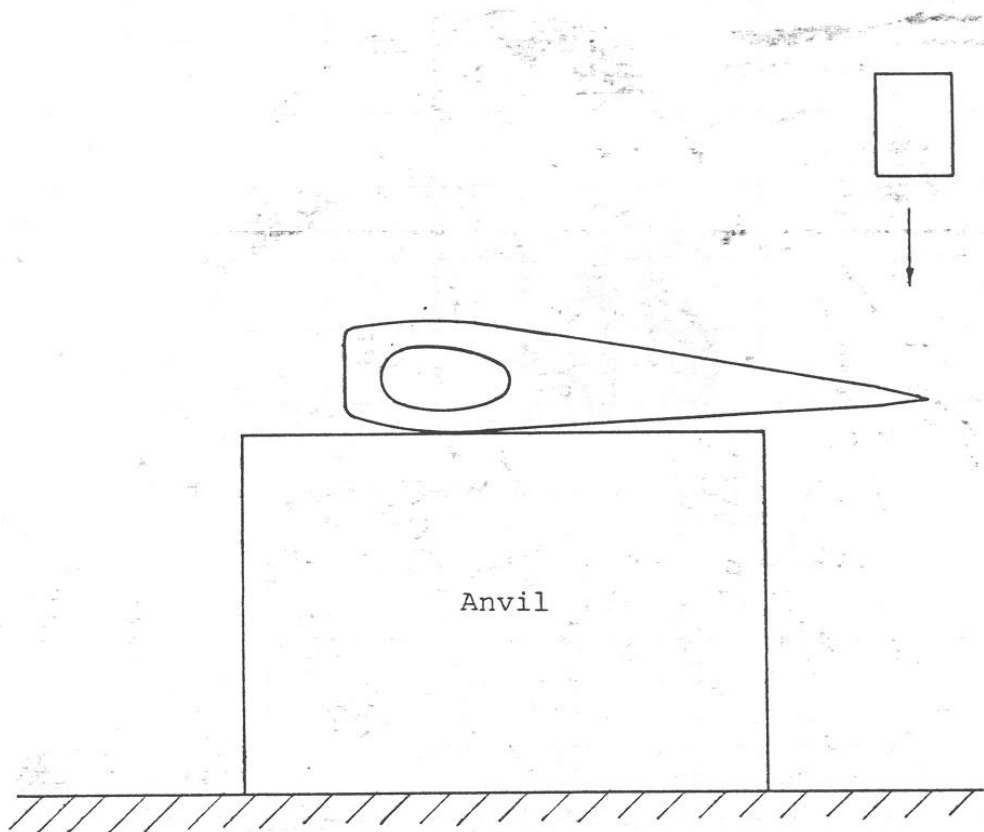


Figure 4: Hammer test

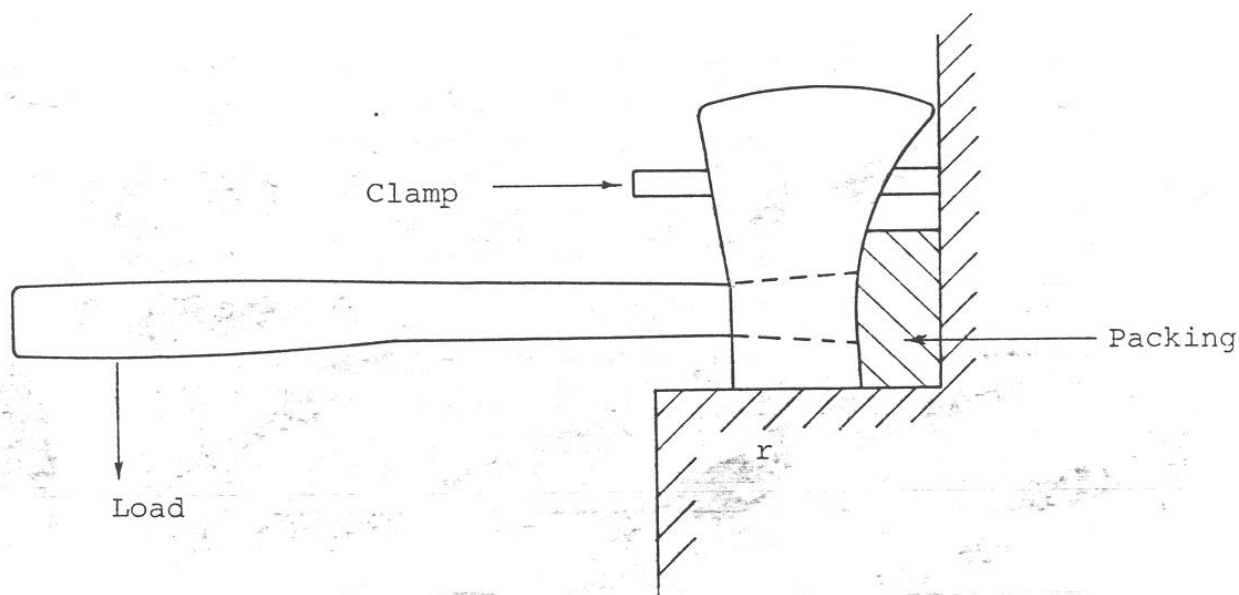


Figure 5: Strength tests for tools

8 Inspection and sampling

8.1 Visual inspection

Tools shall be examined for finish and workmanship in accordance with Clause 9.

8.2 Sampling

8.2.1 The sample shall be selected at random from the lot according to ISO 24153. The samples from each lot shall be tested for ascertaining the conformity of the lot to the requirements of the relevant product specification.

8.2.2 Axes and hatchets shall be sampled for testing in accordance to Table 5.

Table 5: Scale of sampling and permissible number of defectives

Lot size, N	For visual and dimensional tests		For other tests	
	Sample size, n	Permissible number of defectives	Sample size, n	Permissible number of defectives
Up to 10	1	0	1	0
11 to 25	2	0	2	0
26 to 50	3	0	2	0
51 to 100	5	0	2	0
101 to 300	13	1	3	0
301 to 500	32	3	5	0
501 to 1000	50	5	8	1
1001 to above	80	7	13	1

Bibliography

- [1] KS 06-295:1982, Specification for axes and hatchets
- [2] US 512:2003, Specification for axes and hatchets

