DUS 1869

DRAFT UGANDA STANDARD

First Edition
2017-mm-dd

Sickles— Specification

Reference number
WDUS 1869: 2017

Compliance with this standard does not, of itself confer immunity from legal obligations

A Uganda Standard does not purport to include all necessary provisions of a contract. Users are responsible for its correct application

The Executive Director
Uganda National Bureau of Standards
P.O. Box 6329
Kampala
Uganda
Tel: +256 414 333 250/1/2/3
Fax: +256 414 286 123
E-mail: info@unbs.go.ug
Web: www.unbs.go.ug

Contents

Page

Foreword

Uganda National Bureau of Standards (UNBS) is a parastatal under the Ministry of Trade, Industry and Cooperatives established under Cap 327, of the Laws of Uganda, as amended. UNBS is mandated to co-ordinate the elaboration of standards and is

(a) a member of International Organisation for Standardisation (ISO) and

(b) a contact point for the WHO/FAO Codex Alimentarius Commission on Food Standards, and

(c) the National Enquiry Point on TBT Agreement of the World Trade Organisation (WTO).

The work of preparing Uganda Standards is carried out through Technical Committees. A Technical Committee is established to deliberate on standards in a given field or area and consists of key stakeholders including government, academia, consumer groups, private sector and other interested parties.

Draft Uganda Standards adopted by the Technical Committee are widely circulated to stakeholders and the general public for comments. The committee reviews the comments before recommending the draft standards for approval and declaration as Uganda Standards by the National Standards Council.

The committee responsible for this document is Technical Committee UNBS/TC 4, Mechanical Engineering and Metallurgy

Sickles — Specification

1 Scope

This draft standard specifies the requirements for plain and serrated blade sickles for harvesting of fodder, grasses, cereal crops, etc.

2 Normative references

The following referenced documents 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.

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

3 Terms and definitions

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

3.1
blade
main metallic part of the sickle used for cutting action.

3.2
Cutting Edge
plain or serrated edge in the inner side of the sickle

3.3
blade reinforcing strip
strip of metal used as a reinforcement and fixing the blade

3.4
ferrule
protective metallic bush fitted at the junction of the blade and handle to keep the tang tight in the handle.

3.5
handle
part for holding in operation of the sickle.

3.6
tang
external portion of the blade or the reinforcement strip which is fixed into the handle.

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

4 Types

For the purpose of this standard, the sickles may be of the following two types:

i) Sickles with solid blade (see Figure 1), and

Figure 1 — Sickle with solid blade

ii) Sickles with serrated blade (see Fig. 2).

Figure 2 — Sickle with serrated blade

Note Different shapes other than that shown in figures 1 and 2 may be accepted provided the sickle meets all the performance requirements of this standard.

5 Material

5.1 Blade

The blade shall be made or manufactured from steel with the chemical composition as shown Table 1 below.

Table 1 — Chemical composition of the blade

Constituent	Minimum %	Maximum %
Carbon	0.50	0.65
Manganese	0.60	1.5
Silicon	0.15	0.35
Sulphur	-	0.06
Phosphorous	-	0.06

5.2 Blade Reinforcing Strip

Blade reinforcing strip, wherever used shall be made of mild steel of minimum thickness of 1.5 mm.

5.3 Handle

5.3.1 The handle shall be made of a material that facilitates complete bonding with the blade and firm grip of the user. If it is made of wood, it shall be hardwood with a specific gravity of 0.66 to 0.80 after seasoning to not more than 20 % moisture content.

5.3.2 All handles shall be shaped or profiled to match the human hand.

5.4 Ferrule

Ferrule if provided may be made from mild steel tube or mild steel sheet of minimum thickness of 1 mm

6 Dimensions

6.1 Dimensions of the sickles may be as given in figures 3 and 4 and Table 2. Serrations in case of serrated sickles shall conform to the details given in Figure 3.

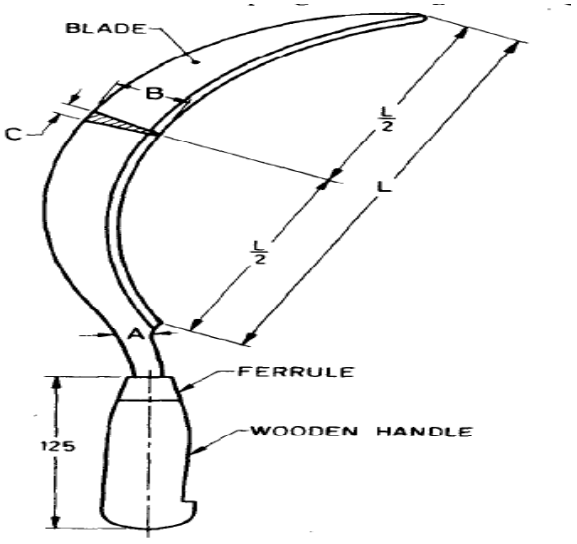

Figure 3 — Dimensions of sickles

Table 2 — Dimensions of sickles

Nominal size	L ±5	A ±2	B ±3	C ±0.5	D min.
170	170	10	22	3	1.25
225	225	12	28	4	1.25
280	280	15	35	5	1.25
Note 1 Dimension C is applicable for sickles having solid blade (see Figure 1) and D for sickles with reinforcing strip (see Figure 4). Note 2 Different dimensions may be agreed upon between the purchaser and the manufacturer provided the sickle meets all the performance requirements of this standard.					

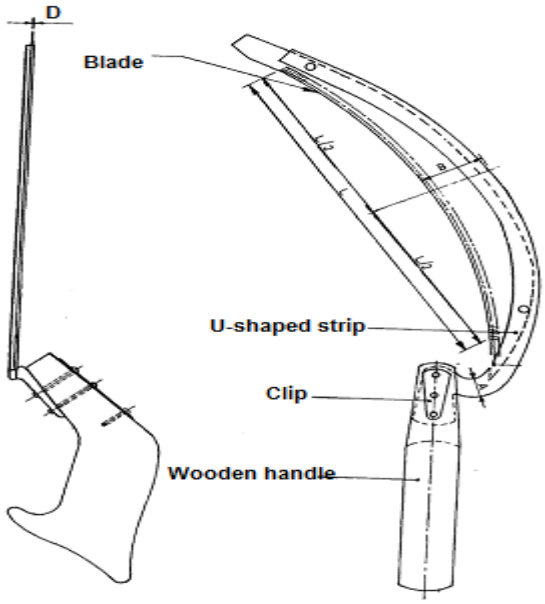

Figure 4 — Dimensions of sickles with reinforcing strip in mm

6.2 The length of ferrule may not be less than 20 mm.

6.3 The blade of the sickle shall be forged and cut to the shape as given in figures 1 and 2.

7 Hardness

The blade of the sickle shall be hardened and tempered to the hardness range of 45 HRC to 50 HRC. The hardness shall be tested at a point 10 mm away from the cutting edge, at least at three places along the blade in accordance with FDUS ISO 6508-1

8 Workmanship and finish

8.1 The blade shall be free from cracks, seams, scales, pits, burrs, nicks and other defects. The blade shall be smoothly forged or cut without tear and blister and the cutting edge shall be sharpened to give a fine finish for immediate use in case of plain type sickles. All sharp edges, except the cutting edge shall be rounded off. There shall be no sign of deformation due to heat treatment, twist, strain, rust, etc.

8.2 The teeth of the serrated sickle blade shall have a uniform pitch and shall be finished smooth and sharpened pointing towards the handle.

8.3 The handle shall be made of a material that facilitates complete bonding with the blade and firm grip of the user. If it is made of wood, it shall be hardwood with a specific gravity of 0.66 to 0.80 after seasoning to not more than 20 % moisture content.

8.4 The reinforcing strip shall be tightly fitted into the handle with or without ferrule in position. Normally the handle shall be fitted with tangs centred to the entire length of the handle and fixed at the large end rigidly.

8.5 The blade reinforcement strip shall be free from burrs and sharp edges and shall be finished smooth on the handle side. The riveting should be done properly by tightening in a press or with a riveting machine.

8.6 The ferrule shall be free from cracks, burrs and other defects and shall be finished smooth and bright all over. The brazing or welding shall be continuous and even.

8.7 The blade shall be given a coat of anti-corrosive paint except the cutting edges. The cutting edge shall be smeared with suitable mineral jelly.

9 Tests

9.1 Impact test

The cutting edge of the sickle shall be tested by striking six continuous sharp blows on hard timber such as dry eucalyptus from a height of 30 cm. Neither the cutting edge nor the fitting of the sickle shall show any sign of damage or loosening during or on completion of the test.

9.2 Hardness test

The hardness shall be tested in accordance with, FDUS ISO 6508-1 (B and C scales).

10 Sampling and acceptance criteria

10.1 Lot

A lot shall comprise a collection of sickles of the same type. These shall be identical in type, size, condition and time of production, etc. and samples shall be taken at random from each “lot” for inspection.

10.2 Sample size

A Zero-based Acceptance Sample shall be selected based on an Acceptable Quality Value of 2.5 % as given in Table 2 below.

Table 3 — Sample size based on Acceptable Quality Level (AQL) of 2.5%

Lot Size	Sample Size
Less than 90	7
91 to 150	11
151 to 280	13
281 to 500	16
501 to 1 200	19
1201 to 3 200	23
3201 to 10 000	29

10 001 to 35 000	35
35 001 & over	40

11 Marking and packing

11.1 Marking

Each sickle shall be marked with the following particulars on the blade:

a) manufacturer's name and recognized trademark, if any; and

b) batch or code number

11.2 Packing

The sickles of one type and size shall be packed in bundles of five or multiples of five, convenient for handling in transit or as specified by the purchaser.

Bibliography

[1] IS 4358:1996, Specification for sickles

[2] Agricultural hand tools in emergencies — Guidelines for technical and field officers

Certification marking

Products that conform to Uganda standards may be marked with Uganda National Bureau of Standards (UNBS) Certification Mark shown in the figure below.

The use of the UNBS Certification Mark is governed by the Standards Act, and the Regulations made thereunder. This mark can be used only by those licensed under the certification mark scheme operated by the Uganda National Bureau of Standards and in conjunction with the relevant Uganda Standard. The presence of this mark on a product or in relation to a product is an assurance that the goods comply with the requirements of that standard under a system of supervision, control and testing in accordance with the certification mark scheme of the Uganda National Bureau of Standards. UNBS marked products are continually checked by UNBS for conformity to that standard.

Further particulars of the terms and conditions of licensing may be obtained from the Director, Uganda National Bureau of Standards.

ICS 65.060.50

Price based on nn pages