
Textile- Specifications for mosquito nets

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Foreword

This Ethiopian Standard has been prepared under the direction of Technical Committee for Textile-Fabrics (TC 70) and published by the Ethiopian Standards Agency (ESA).

In preparing this Ethiopian Standard reference has been made to the following:

EAS 455: 2017 Long lasting insecticide treated mosquito nets — Specification published by East Africa Standard(EAS)

Acknowledgement is made for the use of information from the above publication.

DRAFT STANDARD

TEXTILE- SPECIFICATIONS FOR MOSQUITO NETS

1. SCOPE

This standard prescribes the requirements of two types of mosquito nets namely rectangular mosquito nets and circular or conical shaped mosquito nets. These may be bleached or dyed as specified in the contract or order.

2. NORMATIVE REFERENCES

The following referenced documents are indispensable for the application 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.

ES ISO 13938-1: Textiles-Bursting Properties Of Fabrics-Part 1: Hydraulic Method For Determination Of Bursting Strength And Bursting Distension

ES 2741 : Textiles-Industrial Sewing Threads Made Wholly Or Partly From Synthetic Fibres

ES ISO 3759 : Textiles — Preparation, Marking And Measuring Of Fabric Specimens And Garments In Tests For Determination Of Dimensional Change

ES ISO 6330 : Textiles — Domestic Washing And Drying Procedures For Textile Testing

ES ISO 5077 : Textiles- Determination Of Dimensional change In Washing And Drying

ES ISO 10556 : Fibre Ropes Of Polyester/Polyolefin Dual Fibres

ES ISO 3801 : Textiles -Woven Fabrics-Determination Of Mass Per Unit Length And Mass Per Unit Area

ES 3443 : 2009 Specification For Textile Labels Requiring To Be Washed And/or Dry Cleaned

ES ISO 2231: Rubber- Or Plastics-Coated Fabrics - Standard Atmospheres For Conditioning And Testing

ES ISO 6941 : Textile Fabrics - Burning Behavior — Measurement Of Flame Spread Properties Of Vertically Oriented Specimens

ES 3982 : 2016 Standard Test method For Flammability Of Apparel textiles

3. TERMS AND DEFINITIONS

For the purpose of this standard the definitions given by ES ISO 6938 and the following shall apply

3.1.

Top ring

Used in conical nets and made of suitable material, fixed to the roof of the net (see Figure 2)

3.2.

Heights

The dimension measured along a vertical seam from the top to the bottom edge of the net

3.3.

Circumference

The perimeter of the net at its bottom edge.

3.4.

Length and width

The dimension of a rectangular net measured from corner seam to corner seam

4. Requirements

4.1. Physical requirements

4.1.1. Material

4.1.1.1. The material shall be made from any of the polyolefin or polyester ES ISO 10556.

4.1.1.2. The fibre composition of the netting fabric shall be tested in accordance with ES ISO 1833-24, ES ISO 1833-11 and ES ISO 11827

4.1.2. Construction

4.1.2.1. The net shall be in any one of the warp knitted constructions for example raschel and tricot as specified in ES ISO 8388

4.1.3. Bursting strength

4.1.3.1. The bursting strength of the netting shall be a minimum of 220 Kpa when tested in accordance with ES ISO 13938-1 at test area of 7.3 cm².

4.1.4. Dimensions

4.1.4.1. The rectangular nets shall comply with the requirements given in Table 1.

Table – 1 Requirements for rectangular Mosquito Nets

Type	Width,cm(min)	Length,cm(min)	Height,cm(min)
Single	80	180	150
Double	120	180	150
Large size	160	180	150
Extra large size	180	180	150
Test Method	Annex A 1		

4.1.4.2. The dimensions of circular nets shall comply with the requirements given in Table 2.

Table 2 — Requirements for circular mosquito nets

Size	Top ring diameter, min	Height, min	Circumference, min
Single	47 cm	180	150
Double	47 cm	180	150
Large size	160	180	150
Extra large size	180	180	150
Test Method	Annex A 2		

4.2. Seams and stitching

When visually examined the seams shall be of even tension and the loose ends shall be securely and neatly fastened off. Seams shall be free of twists, puckers, pleats and loose threads. The net seams shall be made with lock stitch. The number of stitches per decimeter shall be 22 to 35 and shall be made from sewing thread complying with ES 6182 and ES 6187

4.3. Visual examination

When visually examined under an artificial light, the netting shall exhibit no noticeable defect arising out of knitting or making up.

4.4. Flammability

The burning behavior of nets shall be tested in accordance with ES ISO 6941 or It should be nonflammable or be expressed in terms of flame spread time in seconds ES 3982

4.5. Mass per meter square of net fabric

The mass per meter square of net fabrics shall be a minimum of 30 grams when tested in accordance with ES ISO 3801

4.6. Dimensional change of net fabric

The maximum dimensional change of net fabric shall 5 percent when tested in accordance with ES ISO 3759, 6330 & ES ISO 5077

5. Marking

The following information shall be indelibly and legibly marked on a label (complying with ES 3443) and securely stitched at the top corner of the net.

- 5.1. Manufacturer's name and or registered trade mark;
- 5.2. Size of the net, including top ring diameter, overall length (cm) x overall width (cm) x overall height (cm) or circumference;
- 5.3. Shape of net;
- 5.4. Care instructions in accordance with ES ISO 3758
- 5.5. recommended bed size;
- 5.6. Date of manufacture;
- 5.7. Country of origin (manufacture)

6. Sampling

Sampling shall be done in accordance with ES ISO 2859

7. Packing

The mosquito nets shall be packed in visible, water-resistant packaging material to protect them from soiling while permitting visual examination.

Annex A

(Normative)

Types of mosquito nets

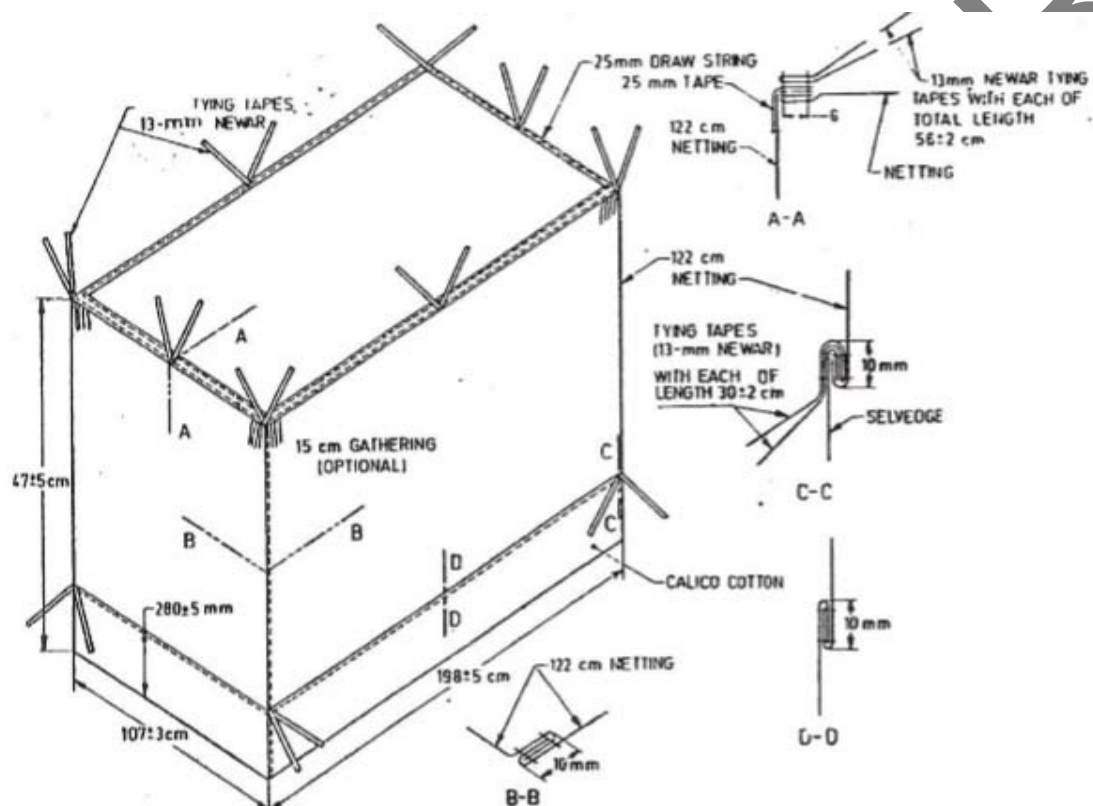


Figure1: Rectangular mosquito net.

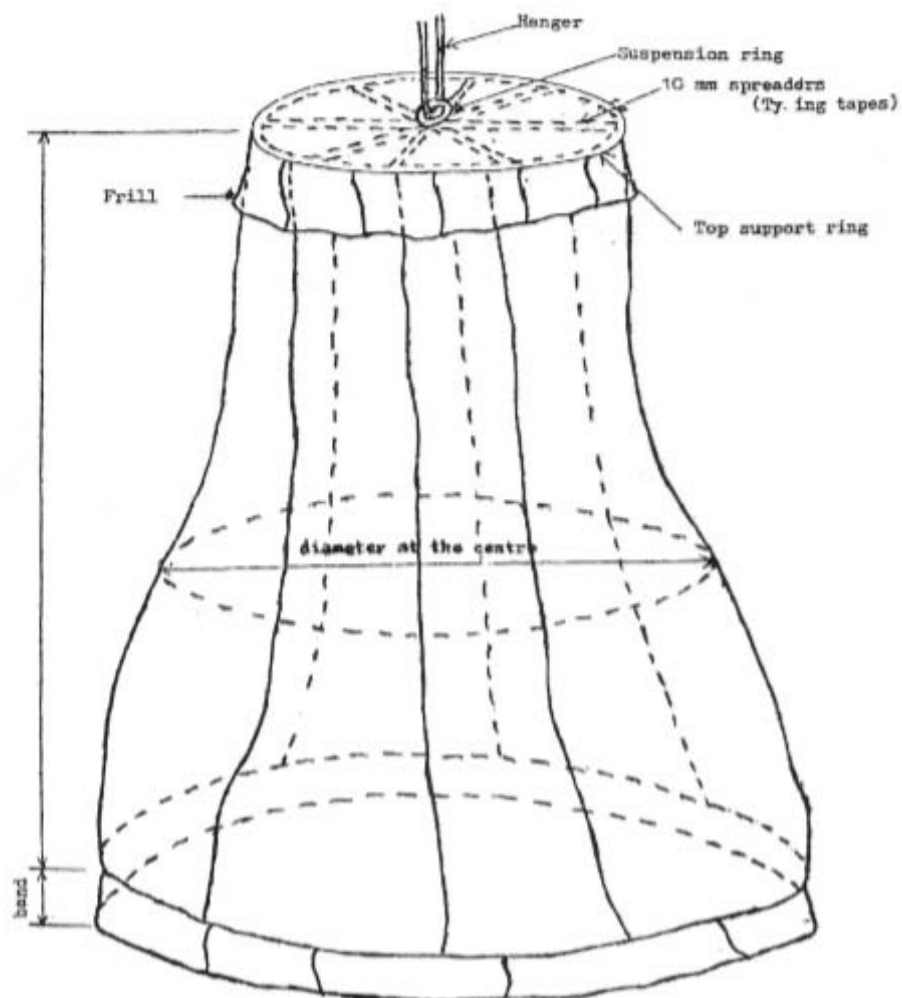


Figure 2; conical net

Annex B (Normative)

Measurement of net dimensions

A1 Measurement of net dimensions for rectangular nets

A.1.1 Length, Width and height

1.1.1 Apparatus

1.1.1.1 Flat table

1.1.1.2 Measuring tape or steel rule

1.1.2 Conditioning

Condition the net samples in accordance with ES ISO139

1.1.3 Procedure

Lay the conditioned net sample on a flat table (1.1.1.1), and take measurements of height, width and diameter

1.1.4 Calculation

If more than one net sample is tested, take the average measurement for each dimension

1.1.5 Report

Report the value of the net dimension as the average calculated in 1.1.4 in centimeters

A 2 Measurement of net dimensions for circular nets

A2.1 Measurement of top circumference and bottom circumference

A.2.1 .1 Apparatus

A.2.1.1.1 Hook supported at a vertical distance at least more than the height of the net sample to be tested

A.2.1.1.2 Measuring tape or steel rule

A.2.1.1.3 Twine of measuring at least 10 meters A.2.1.1.4 felt pen marker

A.2.1.2 Conditioning

Condition the net sample in accordance with ES ISO 139

A2.1.3 Procedure

A.2.1.3.1 Top circumference

Place the top portion of the net sample on a flat table (A.1.1.1.1) and put the twine (see A.1.1.1.3) around the circumference of the top ring of the net sample, indentifying the two ends with a marker (see A.2.1.1.4) which represents the dimension of the top ring. Using a measuring tape (see A.2.1.1.2) determine the top ring circumference (S) of the net as the distance between the two points marked on the twines. Repeat the test on each of the other net sample

A.2.1.4 Calculation

Take the average of the individual measurements as the top circumference of the conical nets

A.2.1.5 Report

Report the top ring circumference as the value(S) calculated in A.2.1.5 in centimeters

A.2.1.3.2 Bottom circumference

A.2.1.3.2.1 Procedure

Lay the bottom part of the net on a flat table, removing any curls and take the measurement (N) from one end of the flattened net to the other using a twine. Repeat the procedure for other net samples

A.2.1.3.2.2 Calculation

Take the average of the measurements taken in A.2.1.3.2.1 (N.) Calculate the bottom circumference as $N \times 2$

A.2.1.3.2.3 Report

Report the value of bottom circumference of the net as the value ($N \times 2$) calculated in A.2.1.3.2.2 in centimeters

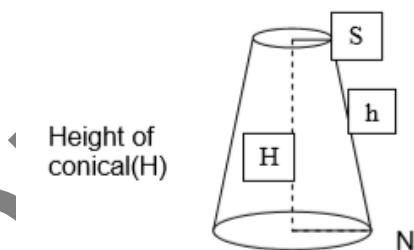
A.2.1.3.3 Conical Net Height

A.2.1.3.3.1 Hang the net with the loop from a hook.

Take measurement of the height h with tape measure.

Calculate the height H from the following expression:

$$H = [h^2 - (NX2 - S)^2]^{1/2}$$



A.2.1.3.3.2 Report the value of conical height calculated in A.2.1.3.3.1 in centimeters

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- ❖ Develop Ethiopian standards and establish a system that enable to check whether goods and services are in compliance with the required standards,
- ❖ Facilitate the country's technology transfer through the use of standards,
- ❖ Develop national standards for local products and services so as to make them competitive in the international market.

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