Textiles – Specification for Polyester fishing nets

Contents

Foreword

This Draft Tanzania Standard is being developed by the House Hold Textile Technical Committee under supervision of the Textile and Leather Division Standards Committee and it is in accordance with the procedures of the Bureau.

In the preparation of this Draft Tanzania Standard assistance was derived from:

TZS 835:2004-Textiles-Specification for fishing nets

In deciding whether a particular requirement of this Draft Tanzania Standard is complied with, the final value, observed or calculated expressing the result of a test or analysis, shall be rounded off in accordance with TZS 4:2009 (See Clause 21). The number of significant places retained in the rounded off value shall be the same as that of the specified value in this Draft Tanzania Standard.

1. Scope

This Draft Tanzania Standard specifies minimum requirements, test methods and sampling plan of fishing nets made from polyester fishing twine

2. Normative references

For the purpose of this Draft Tanzania Standard, the following references shall apply:

a) *TZS 4: 2009, Rounding off numerical values*

b) *TZS 534: 2016, Textile – Standard atmospheres for conditioning and testing*

c) *TZS 262-Textiles yarn from Packages-Determination of linear density (mass per unit length) skew method.*

d) *TZS 265-Textiles-Method for testing the strength of yarns from Packages-Part 1 Determination of breaking strength and extension*

e) *ISO 3090: Netting yarns - Determination of Change in length after immersion in water*

f) *ISO 3790: Fishing nets – Determination of elongation of netting yarns*

g) *ISO 858: Fishing nets – Designation of netting yarns in tex system*

h) *ISO 1805: Fishing nets – Determination of breaking load and knot breaking load of netting yarns*

3. Terms and Definitions

For the purpose of this Draft Tanzania Standard, the following definitions shall apply:

3.1 half mesh:

distance from the center of one knot to the center of the next knot in the square mesh.

3.2 full mesh:

distance from the center of one knot to the next knot in the stretched mesh state.

Note: see annex A for illustration

4. Manufacture

4.1 Yarn

The polyester yarn used in the manufacture of twines shall be of medium to high tenacity, bright yarn of multifilament type having a minimum tenacity of 6.5g/d and of a minimum approximate count 23 tex (210 d). The number of filaments in the yarn shall be so chosen that the twines comply with the requirements as outlined in Table 1.

4.1.1 Monofilaments yarns shall not be used to manufacture fishing net

4.2 Construction

The twine construction of the netting twines shall be as given in Table 1. The method of designation of netting yarn in the tex system shall be in accordance to ISO 858.

4.3 Twist

The twine and its components shall be evenly and uniformly twisted together. The basic yarn shall have a minimal holding twist of 10 to 30 turns per meter.

4.4 Dimensional stability of mesh: the twine used to manufacture fishing nets   shall not shrink or stretch by more than 3% after immersion in sea water for 24 hours at room temperature as per ISO 3090: Netting yarns- Determination of Change in length after immersion in water.

4.5 For Dagaa net, the mesh size shall be as given in Table 1 and this shall be determined in accordance to Annex A.

4.6 For trawler and gillnet, the mesh size shall be as given in Table 1 and this shall be determined in accordance to Annex A.

4.7 The average breaking strength of the twine shall be as specified in Table 1. This shall be determined in accordance to Annex B.

4.8 The linear density of the twine shall be as given in Table 1 subject to a tolerance of 5%.

4.8 Elongation at break: The average elongation at break of the twine shall be as specified in Table 1. This shall be determined in accordance to Annex C.

Table 1 – Physical requirements for Polyester fishing nets

SN	Twine Construction, tex/ply		23/2	23/3	23/4	23/6	23/9	23/12	23/15	23/18	23/24	23/36	23/45	23/48	23/60	23/90	23/120	Test methods
1	Breaking strength, N, wet, Min.		20	25	40	65	90	115	145	185	225	290	325	350	400	525	750	TZS 265
2	For Dagaa fishing net, Mass g/m²		-	-	40±5%	65±5%	-	-	-	-	-	-	-	-	-	-	-	TZS 21
3	Mesh size in mm, min	Dagaa nets used in fresh water body	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	Annex A
		Dagaa nets used in marine water body	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	
		Trawler nets	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	
		Gill nets	38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.1	38.1	
4	Elongation at break in %, max		15						25									TZS 265

5. Packing

Unless otherwise agreed to between the buyer and seller, the fishing nets shall be packed in waterproof paper or other suitable waterproof material to prevent soiling and damage.

6. Marking

Cheeses or hanks containing twines shall be marked with the following information:

  a) Name of the material/fibre content
  b) Nominal mesh size
  c) Length and depth of the net
  d) Manufacturing date
  e) Manufacturer's name, address and/or trade mark
  f) Batch number
  g) Type of fishing net

7. Sampling

7.1 Lot

7.2 Conformity of the lot to the requirements of this Draft Tanzania Standard shall be determined on the basis of tests carried out on the samples selected from it.

7.3 The number of fishing nets to be selected at random from a lot shall be as given below:

Table 2-Number of fishing net to be selected

Sn	Lot size	Sample size
1	Up to 100	2
2	101 to 300	3
3	301 to 500	5
4	501 to 1000	7
5	1001 and above	10

8. Criteria for conformity

The lot shall be declared as conforming to the requirements of this Draft Tanzania Standard, if the following conditions are met:

  a) From the test results of breaking strength (load), the average, x and range R are determined and the value of the expression does not fall below the minimum value specified.

  b) From the test results for elongation at break, the average x and the range R shall be determined and the value of the expression does not fall below the specified limit.

ANNEX A
(Normative)
MEASUREMENT OF MESH SIZE

A.1 PRINCIPLE

The distance from knot to knot in square mesh configuration or stretched mesh configuration is taken to give the size of half mesh or full mesh respectively.

A.2 APPARATUS

One of the following measuring devices shall be used in the measurement of mesh size.

A.2.1   Allen net rule

A.2.2   Hovey gauge

A.2.3   Selkirk gauge

A.2.4   Flexible rule

A.2.5   Straight rule

A.2.6   Measuring Tape

A.2.7   Net Mesh Gauge

### A.3 PREPARATION

Immerse the fishing net sample in "sea" water without wetting agent at 25" 2°C for at least 12 hours. Shake off surplus water.

### A.4   PROCEDURE (SEE FIGURES BELOW)

A.4.1   Measure the distance in millimeters, from the center of one knot to the next in the square mesh condition. Repeat the measurement for 11 other meshes selected at random.

A.4.2   Measure the distance in millimeters, from the center of one knot to the next in the stretched mesh condition using just sufficient force to remove kinks. Repeat the measurement for 11 other meshes selected at random.
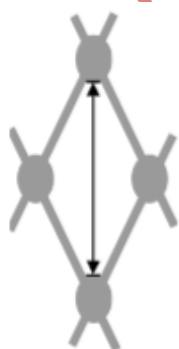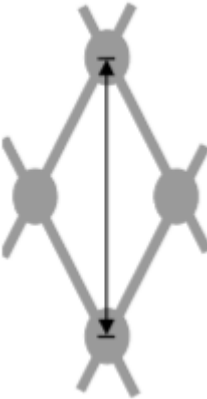
Opening of mesh: for knotted netting, the longest distance between two opposite knots in the same mesh when fully extended in the N direction,

For knotless netting, the inside distance between two opposite joints in the same mesh when fully extended along its longest possible axis.
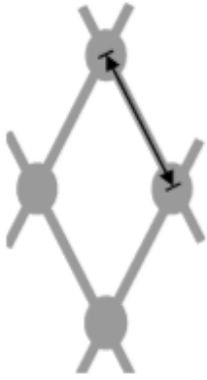
Length of mesh side: the distance between two sequential knots or joints, measured from center to centers when the yarn between those points is fully extended.

Length of mesh: for knotted netting, the distance between the centers of two opposite knots in the same mesh when fully extended in the N-direction,

For knotless netting, the distance between the centers of two opposite joints in the same mesh when fully extended along its longest possible axis.
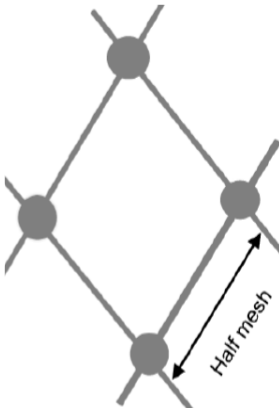
Half mesh: the distance from the center of one knot to the center of the next knot in the square mesh.

A.5 CALCULATION AND EXPRESSION OF RESULTS

A.5.1 Full mesh size is the average of the measurements taken in **A.4.2**.

A.5.2 Half mesh size is the average of the measurements taken in **A.4.1.**
Full mesh size = Half mesh size x 2.

ANNEX B
(Normative)

DETERMINATION OF LINEAR DENSITY OF TWINES

B.1 PRINCIPLE

Certain length of twine is weighed in milligrams and its length in centimeters is determined. Its linear density is calculated from the two measurements.

B.2 APPARATUS

B.2.1   A weighing balance capable of weighing in milligrams

B.2.2   Apparatus as in A.2 above

B.3 PREPARATION

Unravel 10 pieces of twine from the netting each measuring about 15 centimeters. Apply sufficient force to remove kinks in the twine pieces.

B.4. PROCEDURE

B.4.1   Measure the length of each piece in centimeters to the nearest millimeter

B.4.2   Weighs the mass of each twine piece to the nearest milligram

B.5 CALCULATION AND EXPRESSION OF RESULTS

B.5.1   Linear density of each twine piece in tex is calculated from the formula:

$$Tex = 100 \frac{m}{L}$$

Where L = Length of piece of twine in centimeter

   m = mass of piece in milligram

B.5.2 Linear density of the netting twine = the average tex of the ten pieces

ANNEX C

(Normative)

DETERMINATION OF THE BREAKING STRENGTH OF THE TWINE

C.1 PRINCIPLE

A piece of twine is subjected to tensile loading until it breaks. The load at which it breaks is noted and recorded as breaking strength.

C.2 PREPARATION

Retrieve the twine pieces used in Annex B for this test.

C.3 PROCEDURE

Determine the breaking strength in accordance with TZS 265:1985.

C.4 CALCULATION AND EXPRESSION OF RESULTS

C.4.1   Take the average breaking strength of 10 twine pieces

C.4.2   The breaking strength of the netting twine is the average in C.4.1.