SRI LANKA STANDARD 1274 : 2006
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SPECIFICATION FOR
POLYAMIDE (NYLON) FISHING NETS

SRI LANKA STANDARDS INSTITUTION

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SLS 1274 : 2006

Gr. 6

SRI LANKA STANDARDS INSTITUTION
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SRI LANKA.

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This standard does not purport to include all the necessary provisions of a contract.

SRI LANKA STANDARD
SPECIFICATION FOR POLYAMIDE (NYLON) FISHING NETS

FOREWORD

This standard was approved by the Sectoral Committee on Textiles, Clothing and Leather and was authorized for adoption and publication as a Sri Lanka Standard by the Council of the Sri Lanka Standards Institution on 2006-02-21.

In this standard, requirements have been specified for polyamide (nylon) multifilament fishing nets based on the present practice followed by the local industry. Requirements specified in this standard include characteristics of both the twine and the net. Twine designation of netting yarn and procedures for the measurement of mesh size and the dimensional stability of the mesh are included in the appendices.

This specification is subject to the restrictions imposed under the Fisheries and Aquatic Resources Act No. 2 of 1996 and the regulations framed thereunder.

Guidelines for the determination of compliance of a lot with the requirements of this standard based on statistical sampling and inspection are given in Appendix **A.**

For the purpose of deciding whether a particular requirement of this specification is complied with the final value observed or calculated, expressing the result of a test or an analysis, shall be rounded off in accordance with **SLS 102**. The number of significant places retained in the rounded off value shall be the same as that of the specified value in this specification.

In the preparation of this standard, the assistance derived from the following publications is gratefully acknowledged:

MS 629 Specification for fishing nets
TIS 253 : 2521 Standards for fishing net : nylon and polyethylene

1. SCOPE

This specification prescribes the requirements and methods of test for fishing nets made from multifilament polyamide (nylon) twine.

2. REFERENCES

SLS 16 Standard atmospheres for conditioning and testing of textiles

SLS 17	Determination of commercial mass of consignments of textiles
SLS 20	Determination of linear density of yarn from packages by skein method
SLS 22	Determination of single-end breaking force and elongation at break of yarn from packages
SLS 23	Determination of twist in yarn-direct counting method
SLS 62	Determination of colour fastness of textile materials Part 2 Colour fastness to light
SLS 64	Determination of colour fastness of textile materials to sea water
SLS 102	Presentation of numerical values
SLS 150	Method for quantitative chemical analysis of binary mixtures of nylon 6 or nylon 6.6 and certain other fibres
SLS 156	Glossary of basic terms for fishing nets
SLS 270	Determination of mesh breaking force of netting for fishing
SLS 271	Determination of breaking load, and knot breaking load of netting yarn for fishing nets
SLS 428	Random sampling methods

3. TERMINOLOGY

For the purpose of this standard the definitions given in **SLS 156** shall apply.

4. REQUIREMENTS

4.1 Manufacture

4.1.1 Netting twine shall be manufactured from yarn of 100% polyamide(nylon) when determined as in **SLS 150**. The linear density of the yarn shall be approximately 23 tex (210 denier) and the number of filaments in the yarn shall be 24 (24 F).

4.1.2 A fishing net shall comprise of meshes of uniform size and tight knots and be evenly dyed.

4.1.3 Linear density

The average linear density of twine when determined as in **SLS 20** shall not vary by more than 5 % from the (resultant) linear density specified in Table **1.**

4.1.4 Breaking force of the twine

When tested as in **SLS 271,** the average breaking force of twine shall not be less than the value specified in Table **1**.

4.1.5 Elongation at break

The average elongation of twine at break, when tested as in **SLS 22** shall not be more than the maximum elongation at break given in Table **1**.

TABLE 1 - Resultant linear density, breaking force and elongation at break of twine and the mesh breaking force of the net.

Sl No.	Twine Construction	Linear Density (Resultant) Tex	Breaking force, N (Min) (Wet)	Elongation at break % (Max) (Wet)	Mesh breaking force , N (Min.)
(1)	(2)	(3)	(4)	(5)	(6)
i	210 d/2	50	22		25
ii	210 d/3	75	27	30	30
iii	210 d/4	100	40		45
iv	210 d/6	150	60		70
v	210 d/9	230	85	35	110
vi	210 d/12	295	150		200
vii	210 d/15	380	175		225
viii	210 d/18	425	200		240
ix	210 d/21	580	240	40	290
x	210 d/24	675	270		310
xi	210 d/27	700	300		330
xii	210 d/30	775	330		300
	Method of test	**SLS 20**	**SLS 271**	**SLS 22**	**SLS 270**

NOTES :

1 *Being wet means the test specimen has been immersed in tap water without wetting agent at room temperature for a period of not less than 12 hours. Surplus water shall be shaken off.*

2 *It is advisable to manufacture fishing nets from the recommended mesh sizes given in Appendix **D**. (See the Note under Appendix **D** for restrictions of mesh sizes applied in fishing in water bodies of Sri Lanka)*

4.1.6 Final direction of twist and twist per metre (TPM)

The direction of twist and twist per metre (TPM) of twine may be as agreed between the purchaser and the supplier. TPM when determined as in **SLS 23** shall not vary by more than 10% from the agreed value.

4.2 Mesh size (Mesh length)

The mesh size (mesh length) of the nets shall not vary by more than 2 % from what is designated on the label when measured as described in Appendix **B**.

4.3 Mesh breaking force

The average mesh breaking force when determined as in **SLS 270** shall not be less than the minimum mesh breaking force specified in Table **1**.

4.4 Dimensional stability of mesh

After immersing in seawater for 24 hours, the mesh shall not shrink or stretch by more than 2% from the initial dimensions. Sampling procedure is given in Appendix **B**.

4.5 Moisture content

The moisture content of the net shall be as agreed upon between the purchaser and the supplier. Moisture content shall be determined as per the method given in **SLS 17**.

4.6 Colour fastness

Except for white colour, the minimum colour fastness ratings for fishing nets when determined as per column 4 of Table **2** shall be as specified therein.

TABLE 2 – Colour fastness requirements of nets

Sl No. (1)	Colour fastness (2)	Minimum rate (3)	Method of test (4)
i	Light	4	SLS 62 Part 2
ii	Sea water	3	SLS 64

4.7 Length and depth of net

The length and the depth of net shall be as agreed between the purchaser and the supplier. The length of net which is the horizontal distance across the breadth of a net or the depth of net which is the vertical distance between the top mesh and lower mesh positions of a net shall be measured after laying the net flat avoiding any tautness or slackness of net. The average of three such measurements shall be taken to determine the length or the depth of net.

5. PACKAGING

Packaging arrangements shall be as agreed between the purchaser and the supplier.

6. MARKING AND LABELLING

The following information shall be marked clearly and indelibly on a label attached to each fishing net.

a) Name of the product;
b) Type of material used;
c) Twine designation (as detailed in Appendix E, any other designation, if used, shall be given in parenthesis) ;
d) Nominal mesh size in mm (non – SI units if any, in parenthesis);
e) No. of meshes of net lengthwise and depthwise
f) Length and depth of the net in m (non-SI units if any, in parenthesis);
g) Colour;
h) Manufacturing date/batch No. ;
j) Name of the manufacturer/Trade name/Address; and
k) Any other information.

NOTE : *Attention is drawn to the certification marking facilities offered by the Sri Lanka Standards Institution. See the inside back cover of the standard.*

APPENDIX A
COMPLIANCE OF A LOT

The sampling scheme given in this Appendix should be applied where compliance of a lot to the requirements of this standard is to be assessed based on statistical sampling and inspection.

A.1 LOT

A number of fishing nets having the same twine designation, size of mesh, length, depth and colour and belonging to one batch of manufacture or supply shall constitute a lot.

A.2 SCALE OF SAMPLING

A.2.1 Samples shall be tested from each lot for ascertaining the conformity of the fishing net to the requirements of this specification.

A.2.2 The number of nets to be selected from a lot shall be in accordance with Column **3** of Table **3.**

TABLE 3 – Scale of sampling

SI No. **(1)**	**No. of nets in the lot** **(2)**	**Number of nets to be selected** **(3)**	**Sub sample size** **(4)**
i)	Up to 280	3	1
ii)	281 to 500	4	1
iii)	501 to 1200	5	2
iv)	1201 and above	7	3

A.2.3 A sub sample of size as given in Column **4** of Table **3** shall be selected from the nets selected as in **A.2.2** for distinctive tests.

A.2.4 The nets shall be selected at random. To ensure the randomness of selection, tables of random numbers given in **SLS 428** shall be used.

A.3 NUMBER OF TESTS

A.3.1 Each net selected as in **A.2.2** shall be inspected for the requirements given in **5** and **6**.

A.3.2 Each net inspected as in **A.3.1** shall be tested for the requirements given in **4.7**.

A.3.3 The nets selected as in **A.2.3** shall be tested for the requirements given in **4.2, 4.3** and **4.4.**

A.3.4 One net from the nets selected as in **A.2.3** shall be tested for the requirements given in **4.1, 4.5** and **4.6.**

A.4 CRITERIA FOR CONFORMITY

The lot shall be declared as conforming to the requirements of this specification if the following conditions are satisfied.

A.4.1 Each net inspected as in **A.3.1** satisfies the relevant requirements.

A.4.2 Each net inspected as in **A.3.2** satisfies the relevant requirements.

A.4.3 Each average value calculated using the results of the tests carried out as in **A.3.3** satisfies the relevant specification limit.

A.4.4 The net tested as in **A.3.4** shall satisfy the relevant requirements.

APPENDIX B
MEASURING OF MESH SIZE (MESH LENGTH)

B.1 The measuring shall be carried out along the linear direction i.e. lengthwise or crosswise. When measuring, the meshes shall be properly extended (stretched) to avoid unnecessary tautness or slackness in the twine.

B.2 The number of meshes to be measured at each time is given in Table **4.**

TABLE 4 - Number of meshes under measurement

Sl No. (1)	Size of mesh (mm) (2)	Number of meshes to be measured (3)
i	< 20	20
ii	20 – 50	10
iii	51 – 100	5
iv	101 – 200	2
v	> 200	1

B.3 Selecting of meshes shall be done as described in Appendix **C**. At least three measurements shall be made. Then the mesh size shall be determined by dividing the averages by the number of meshes measured.

B.4 PROCEDURE

The net shall be wet measured. The mesh size (mesh length) is found by measuring the distance between two knots (knot A and knot B as in Figure **1**) in millimetres.

The measurement can be made either from outside of one knot to the inner side of the other knot (m_1) or inner side of one knot to the outside of the other knot (m_2) as shown in the figure.

NOTE : *Being wet means the test specimen has been immersed in tap water without wetting agent at room temperature for a period of not less than 12 hours. Surplus water shall be shaken off.*

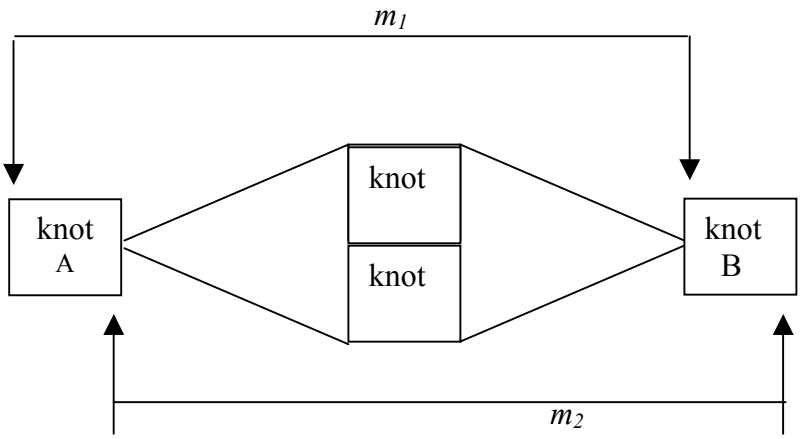

FIGURE 1 – Method of measurement of mesh size (mesh length)
(Clause B.4)

APPENDIX C
SAMPLING FOR MEASUREMENT OF DIMENSIONAL STABILITY OF MESH

C.1 Three meshes shall be selected from each lengthwise quarter of a net.

C.2 Of these three meshes, one shall be randomly selected from the top third of the net, one shall be randomly selected from the middle, and the other shall be randomly selected from the bottom third of the net.

NOTE : *The two selvedges (top and bottom) shall be avoided when selecting the meshes.*

APPENDIX D

The maximum mesh size that can be recommended for a given twine construction is indicated below as a manufacturing guide.

Twine construction	Mesh size in cm (inches), Max.
210 d/2	15 (6)
210 d/3	15 (6)
210 d/4	20 (8)
210 d/6	20 (8)
210 d/9	25 (10)
210 d/12	25 (10)
210 d/15	25 (10)
210 d/18	25 (10)
210 d/21	25 (10)
210 d/24	25 (10)
210 d/27	45 (18)
210 d/30	45 (18)

APPENDIX E
TWINE DESIGNATION

E.1 STRUCTURE OF THE TWINE

Structure of the twine used to manufacture the net shall be shown by a system of figures consisting of

a) Single yarn size;
b) Number of single yarns plied together;
c) Number of plies twisted together;

followed by the final direction of twist.

E.1.1 Single yarn size

Either of the following yarn numbering systems shall be adopted to express the single yarn size.

a) Tex system - The tex number shall be followed by letters “tex” to indicate tex. eg. 23 tex

NOTE : *If this system is used, two characteristics shall be joined to each other by the multiplication sign (X)*

b) Denier system - The denier number shall be followed by the letter “d” to indicate denier.
eg. 210 d

NOTE : *If this system is used, two characteristics shall be separated by an oblique stroke (/)*

E.1.2 Number of single yarns plied together

In the designation, the second group of figures indicates the number of single yarns that have been plied together.

eg. 23 tex x 3
210 d /3

E.1.3 Number of plies twisted together

The third group of figures in the system indicates the two number of plies that have been twisted together to form a cabled twine.

eg. 23 tex x 3 x 3
210 d /3/3

E.1.4 Final direction of twist

The final direction of twist shall be indicated using “S” (Right twist) or “Z” ” (Left twist) at the end of the twine structure.

eg. 23 tex x 3 x 3 S
210 d / 3/ 3 Z

SRI LANKA STANDARDS INSTITUTION

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