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STANDARD METHOD FOR **DETERMINATION OF TWIST IN NYLON FISH NET TWINE**

BUREAU OF CEYLON STANDARDS

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SLS 343 : 1975

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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

METHOD FOR DETERMINATION OF TWIST IN NYLON FISH NET TWINE

FOREWORD

This Sri Lanka Standard has been prepared by the Drafting Committee on Fishing Nets. It was approved by the Textiles Divisional Committee of the Bureau of Ceylon Standards and was authorised for adoption and publication by the Council of the Bureau on 1975-03-05.

This standard is one of a series of Sri Lanka Standards on Fishing Nets. Other standards in the series are as follows:

CS 155 Designation of netting yarn for fishing nets.
CS 156 Glossary of basic terms for fishing nets.
CS 270 Method for the determination of mesh breaking load of netting for fishing.
CS 271 Method for the determination of breaking load and knot breaking load of netting yarn for fishing.

In reporting the result of a test or analysis made in accordance with this standard, if the final value, observed or calculated, is to be rounded off, it shall be done in accordance with CS 102*. The number of figures to be retained in the rounded off value shall be the same as that of the specified value in the standard.

*CS 102 *Presentation of numerical values.*

1 SCOPE

1.1 This standard prescribes the method for determination of twist in terms of turns per unit length and the direction of single, ply and cable twist in fish net yarns.

2 DEFINITIONS

For the purpose of this standard, the following definitions shall apply:

2.1 cabled yarn (or cord): The product formed by twisting together two or more plied yarns.

2.2 plied yarn: The product formed by twisting together two or more single yarns or strands in one operation.

2.3 ply: The number of single yarns twisted together to form a plied yarn.

2.4 single yarn: Yarn in which the fibres are twisted in only one direction and form the simplest strand of fibres suitable for weaving, knitting, etc., or which consists of a group of filaments with or without twist running throughout the continuous length of netting material forming the simplest strand.

2.5 twist: The spiral disposition of the components of a yarn which is usually the result of relative rotation of the two ends or the number of turns per unit length of yarn.

2.5.1 *'S' twist:* A single or plied yarn is said to have *'S'* twist when the spirals of a single yarn or plied yarn held in a vertical position are in line with the central portion of the letter *'S'* (see Fig. 1).

2.5.2 *'Z' twist :* A single or plied yarn is said to have 'Z' twist when the spiral of a single yarn or plied yarn held in a vertical position are in line with the central portion of the letter 'Z' (see Fig. 2).

Fig. 1
S Twist

Fig. 2
Z Twist

NOTE - *Twist may be inserted in single, plied or cabled yarns in one of the two directions at any stage of twisting. The direction of twist shall be indicated by the capital letters* 'S' *or* 'Z'. *If the folding turns in a plied yarn are in the same direction as those in the single yarn, from which it is made, the twists in the plied yarn shall be designated as S/S or Z/Z as the case may be. If they are in opposite directions, they shall be designated as* S/Z *or* Z/S, *the first letter indicating the direction of twist in the single yarn and the second, the direction of twist in the plied yarn. Similarly, in a cabled yarn, the directions shall be designated in the order of directions of twist inserted in single yarn, the first fold and the second fold, as for example* S/Z/S.

2.6 twisting or doubling or folding: The process of twisting together two or more threads to make a stronger or fancy thread.

2.7 twist take-up: The change in length by twisting, expressed as a percentage of the original untwisted length.

3 PRINCIPLE

3.1 The twist in a known length of yarn is removed by rotating one end of the specimen in respect to the other until the elements being tested are parallel. The exact number of turns required to remove the twist is reported in terms of turns per unit length.

4 ATMOSPHERIC CONDITIONS FOR TESTING

4.1 The tests shall be carried out in a standard atmosphere (see 4.2).

4.2 Conditioning of test specimen

The test specimen shall be conditioned to a state of moisture equilibrium from dry side in standard atmosphere at 65 ± 2 per cent relative humidity and 27 ± 2 °C temperature as given in CS 16*.

5 APPARATUS

5.1 The twist tester shall consist of a pair of clamps, one of them shall be such that it is capable of being rotated in either direction, and shall be positively connected to a revolution counter capable of recording with an accuracy of one-tenth of a turn and the other shall be such that it is not capable of rotation but it is possible to slide it so that the distance between the clamps becomes adjustable. The tester shall be such that the prescribed tension may be applied to the specimen under test.

6 PROCEDURE

6.1 Determination of twist in cabled yarn

Set the sliding clamp 250 mm away from the rotating clamp. Set the revolution counter to zero. Mount one test specimen in the clamps (taking care not to allow any twist

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*CS 16 *Standard atmospheres for conditioning and testing textiles.*

to run out), straightening out by applying a tension equal to tex/2.

Revolve the rotating clamp to untwist the specimen until it is possible to pass a needle from one clamp to the other, between strands of the component plied yarn. Note and record the reading on the revolution counter. Cut off all but one component strand of plied yarn near the jaws of the clamps and remove them. Test the component strand of plied yarn (still in the clamps) for twist as detailed in 6.2.

6.1.1 Test similarly the remaining test specimens of cabled yarn for twist and record the test values.

6.2 Determination of twist in plied yarn

Set the sliding clamp 250 mm away from the rotating clamp. Set the revolution counter to zero. Mount one test specimen in the clamp (taking care not to allow any twist to run out), straightening it out by applying a tension equal to tex/2.

Revolve the rotation clamp to untwist the specimen until it is possible to pass a needle from one clamp to the other, between the strands of the component single yarn. Note and record the reading on the revolution counter. Cut off all but one component strand of single yarn near the jaws of the clamps and remove them. Test the component strand (still in the clamps) for twist as detailed in 6.3.

6.2.1 Test similarly the remaining test specimens of plied yarn and record the test values.

6.3 Determination of twist in single yarn

Set the sliding clamp 250 mm away from the rotating clamp. Set the revolution counter to zero. Mount one test specimen in the clamps (taking care not to allow any

twist to run out), straightening it out by applying a tension equal to tex/2.

Revolve a rotating clamp to untwist the specimen until it is possible to pass a needle, from one clamp to the other, between the untwisted fibres of the specimen. Note and record the reading on the revolution counter.

6.3.1 Test the remaining test specimens similarly and record the test results.

6.4 Note the reading on the revolution counter correct to two places of decimal and record it.

6.5 Direction of twist

If required, the direction of twist in single, plied and cabled yarns and the components of the latter two shall also be visually determined (see 2.6 and 2.7) and report along with the result.

6.6 Test specimens

For single, plied and cabled yarns the minimum number of test specimens to be chosen shall be 10.

7 RESULTS

7.1 The mean of the values obtained on testing all the test specimens of cabled yarn, plied yarn and single yarn shall form the basis of the report of the results. The mean value shall be reported as turns per metre rounded off to the nearest integer.

7.2 When required, report also the change in length on untwisting, calculated as a percentage of the length before twisting as twist take-up.

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