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SRI LANKA STANDARD 356 : Part-1 : 1975

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SPECIFICATION FOR TWINE

PART 1 -SUNN HEMP TWINE

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BUREAU OF CEYLON STANDARDS

**SPECIFICATION FOR TWINE
PART 1 - SUNN HEMP TWINE**

SLS 356 : Part 1 : 1975

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53, Dharmapala Mawatha,
Colombo 3.

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Sri Lanka Standards are subject to periodical revision in order to accommodate the progress made by industry. Suggestions for improvement will be recorded and brought to the notice of the committees to which the revisions are entrusted -

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

BUREAU OF CEYLON STANDARDS

**53, Dharmapala Mawatha,
Colombo 3.**

Telephone: 26055
26054
26051

Telegrams: 'PRAMIKA'

**SRI LANKA STANDARD SPECIFICATION FOR
TWINE**

PART 1-SUNN HEMP TWINE

FOREWORD

This Sri Lanka Standard specification has been prepared by the Drafting Committee of the Bureau on Twines. 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 09-03.

In the preparation of this standard, the Drafting Committee gave due consideration to the conditions prevailing in the twine industry in Sri Lanka. The types of twine covered by this standard are listed according to their uses. This does not, however, exclude the use of a certain type of twine for a different purpose, if found suitable.

Since twines manufactured in Sri Lanka are hand-made, this standard gives requirements for hand-made twines only. It is hoped to review these standards from time to time in order to keep abreast with the progress of the industry.

All standard values given in this standard are in SI (Metric) units

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or observation shall be rounded off in accordance with CS 102*:1971. The number of figures to be retained in the rounded off value shall be the same as that of the specified value in this standard.

In the preparation of this standard, assistance derived from related publications of the British Standards Institution and the Indian Standards Institution is gratefully acknowledged.

1. SCOPE

This standard prescribes requirements for 10 types of twines, made from Sunn Hemp (*Crotalaria juncea* L).

*CS 102 Presentation of numerical values.

2. DEFINITIONS

For the purpose of this Sri Lanka Standard, the following definitions shall apply.

2.1 Breaking Load—The maximum force which the twine is able to support during the tensile breaking test.

2.2 Linear density—The mass per unit length of twine.

NOTE: For ropes, the linear density is generally expressed in kilotex (mass in kilogrammes per 1000 m, or mass in grammes per metre); it is measured under a tension defined for each type of rope.

2.3 Splicing—The joining of two rope ends by interlacing the strands.

2.4 Twine—Product consisting of one or more yarns twisted or wound to form a structure of continuous length.

A twine composed of a single yarn is known as a "simple yarn",

A twisted twine is composed of two or more yarns twisted together.

A cabled twine is composed of two or more yarns cabled together.

2.5 Twist—The twist of a yarn is characterized by the direction of twist of the finished yarn and by the number of turns per metre.

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).

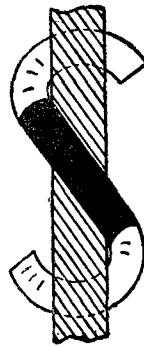


Fig 1.
S Twist

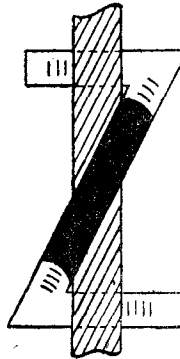


Fig 2.
Z Twist

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.

3. REQUIREMENTS

- 3.1 Quality of Material**—The fibre used for the manufacture of twine shall be of such a quality and fineness as is necessary to produce twine having the characteristics specified in Table 1.
- 3.2 Construction**—The fibre shall be well prepared by combing and the yarn shall be evenly and well spun. Strands shall be well formed and free from splices, grooves and sunken yarn or threads.

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Twine shall be well twisted and free from any defect. They shall conform to the requirements given in Table 1.

- 3.3 Knots**—Twine shall be free from large joints or knots. Not more than one joint or knot shall occur in a package.
- 3.4 Twist**—The twist imparted to the twine should be such that it should not snarl.
- 3.5 Direction of Twist**—Unless otherwise specified by the purchaser, twine shall have a left hand or 'S' twist.
- 3.6 Treatment**—Unless otherwise stated in the contract or order, twines shall be supplied in the natural condition.

TABLE 1- REQUIREMENTS OF SUNN HEMP TWINES

Ref. No.	Description	Linear Density kilotex (g/m) (Tolerance $\pm 5\%$)	Minimum Ply (No. of threads)	Minimum breaking load (newtons)
HT 1	Fine	0.57	1	80
HT 2	Fine	0.66	1	100
HT 3	Page cord	0.91	2	175
HT 4	Seaming (Fine)	1.2	2	200
HT 5	Seaming (coarse)	1.7	2	235
HT 6	Sealing (wax & lead seal)	1.05	2	275
HT 7	Parcelling	3.03	3	335
HT 8	Parcelling	4.35	4	395
HT 9	Packing	5.25	4	470
HT 10	Hammock & Netting	6.25	6	590
Method of test	—	Appendix B	—	Appendix A

4. SAMPLING

Lot—A quantity of Hemp twine in the form of packages purporting to be of one definite quality, delivered to one buyer against one despatch note.

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- 4.1 Sample to determine conformity of a lot to this standard shall be selected so as to be representative of the lot.
- 4.2 Sample drawn in compliance with an agreement between the buyer and the seller, to evaluate the various characteristics of twine, shall be held to be representative of the lot.
- 4.3 In case of a dispute as to whether the material in the lot conforms to this standard or not and there being no agreed method of drawing its representative sample, one package for every ten or part of ten packages shall be selected at random from the lot.
- 4.4 For evaluating the various characteristics of the twine, the sample drawn in compliance with either Clause 4.2 or 4.3 shall constitute the test sample.

5. SEALED SAMPLE

- 5.1 If in order to illustrate the workmanship, finish, etc. of twine a sample has been agreed upon and sealed, the supply in addition to complying with the stipulations of this standard shall be in conformity with the sample in respect of such requirements.

6. PACKAGING

Package—A continuous length of twine in the form of a coil, ball, skein or spool.

- 6.1 The twine shall be packed in the form of a coil, ball, skein or spool, each having a mass approximately 0.5 kg. Twenty such packages shall be packed into a bundle of mass approximately 10 kg.

7. MARKING

- 7.1 Each bundle shall be marked with the following:
 - (a) Name of material, with reference number
 - (b) Net mass of bundle
 - (c) Manufacturer's name and/or trade mark.
 - (d) Date of manufacture, and
 - (e) The words 'Product of Sri Lanka'.

APPENDIX A

METHOD FOR THE DETERMINATION OF BREAKING LOAD

- A-1 Conditioning of test specimens**—Prior to test, specimens shall be conditioned to moisture equilibrium in a standard atmosphere for testing as specified in CS 16:1968*.
- A-2 Apparatus**—Constant rate-of-traverse type single strand strength testing machine (preferably power driven) of appropriate capacity, the speed of the moving clamp of which is 300 ± 15 mm per minute.
- A-3 Procedure**—Mount one test specimen without loss of twist on the strength testing machine keeping the distance between the clamps equal to 600 mm. Start the machine and carry the test to rupture. Note the breaking load of the specimen correct to the nearest 0.5 kg.
- A-4 Repeat the test with the remaining test specimens.**

Note: The test shall take into account only the actual breaks which occur clear of the grip of the machine. Should fracture occur within 10 mm of either grip at less than the specified breaking load, the specimen shall be discarded and another specimen tested.

- A-5 Calculate the average of the values obtained as in A-3 and A-4.**
- A-6 Report**—Report the lot to be in conformity with the requirements of the standard in respect of breaking load, if the average of the observed values is not less than the applicable value specified in Table 1.

APPENDIX B

METHOD FOR DETERMINATION OF LINEAR DENSITY

- B-1 Conditioning of test specimens**—Prior to test, specimens shall be conditioned to moisture equilibrium in a standard atmosphere for testing as specified in CS 16:1968*.
- B-2 Apparatus**—Measuring stick, balance.

* CS 16:1968—Standard atmospheres for conditioning and testing textiles.

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B-3 Procedure—Take one package from the test sample and measure accurately 10 m length of twine by means of the measuring strick, keeping the twine taut without stretching it. Cut out the length so measured, Similarly, cut out a 10 m length from each of the remaining packages in the test sample. Determine the mass of all the test specimens so cut correct to the nearest gramme.

Calculate the linear density of twine, using the formula

$$X = \frac{M}{L}$$

where,

X=linear density, in kilotex:

M=mass, in g, of all test specimens,

L=total length, in m, of all the test specimens.

B-4 Report—Report the lot to be in conformity with the requirements of the standard in respect of linear density, if the value for linear density obtained as in B-3 does not vary from the applicable value specified in Table 1 by more than ± 5 per cent.

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The Sri Lanka Standards Institution is the owner of the registered certification mark shown below. Beneath the mark, the number of the Sri Lanka Standard relevant to the product is indicated. This mark may be used only by those who have obtained permits under the SLS certification marks scheme. The presence of this mark on or in relation to a product conveys the assurance that they have been produced to comply with the requirements of the relevant Sri Lanka Standard under a well designed system of quality control inspection and testing operated by the manufacturer and supervised by the SLSI which includes surveillance inspection of the factory, testing of both factory and market samples.

Further particulars of the terms and conditions of the permit may be obtained from the Sri Lanka Standards Institution, 17, Victoria Place, Elvitigala Mawatha, Colombo 08.



SRI LANKA STANDARDS INSTITUTION

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The principal objects of the Institution as set out in the Act are to prepare standards and promote their adoption, to provide facilities for examination and testing of products, to operate a Certification Marks Scheme, to certify the quality of products meant for local consumption or exports and to promote standardization and quality control by educational, consultancy and research activity.

The Institution is financed by Government grants, and by the income from the sale of its publications and other services offered for Industry and Business Sector. Financial and administrative control is vested in a Council appointed in accordance with the provisions of the Act.

The development and formulation of National Standards is carried out by Technical Experts and representatives of other interest groups, assisted by the permanent officers of the Institution. These Technical Committees are appointed under the purview of the Sectoral Committees which in turn are appointed by the Council. The Sectoral Committees give the final Technical approval for the Draft National Standards prior to the approval by the Council of the SLSI.

All members of the Technical and Sectoral Committees render their services in an honorary capacity. In this process the Institution endeavours to ensure adequate representation of all view points.

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