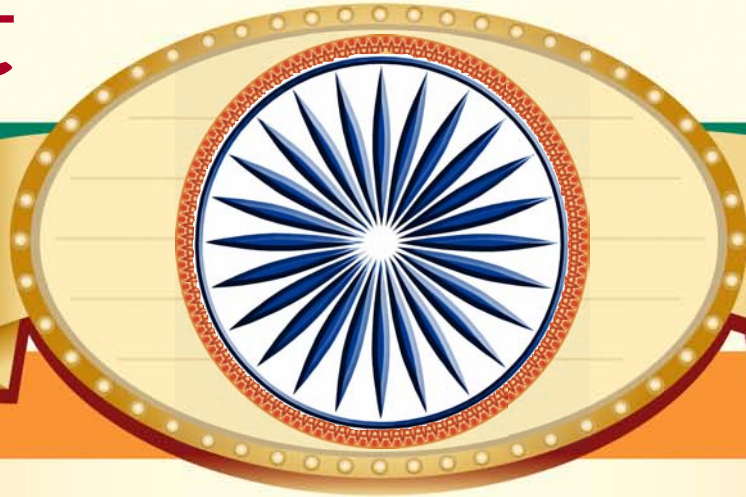


इंटरनेट

मानक



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“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

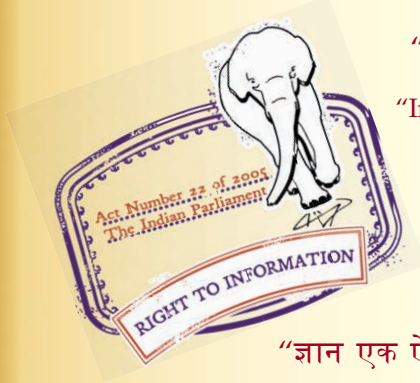
“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 9308-1 to 3 (1987): Mechanically Extracted Coir Fibres
[TXD 25: Coir and Coir Products]



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Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”



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IS : 9308 (Parts 1 to 3) - 1987

Indian Standard

SPECIFICATION FOR
MECHANICALLY EXTRACTED COIR FIBRES

(First Revision)

UDC 677.181.021.15

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Indian Standard

SPECIFICATION FOR MECHANICALLY EXTRACTED COIR FIBRES

(First Revision)

Coir and Coir Products Sectional Committee, TDC 50

Chairman

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(Continued on page 2)

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Indian Standard
SPECIFICATION FOR
MECHANICALLY EXTRACTED COIR FIBRES
(*First Revision*)

0. F O R E W O R D

0.1 This Indian Standard (Parts 1 to 3) (First Revision) was adopted by the Indian Standards Institution on 6 March 1987, after the draft finalized by the Coir and Coir Products Sectional Committee had been approved by the Textile Division Council.

0.2 In the present revision, the following major changes have been made:

- a) The requirements and methods of test of chloride content and sulphate content have been incorporated in all the three parts, and
- b) All the three parts, covering different varieties of mechanically extracted coir fibres have been covered in one specification. The test methods, which are common for all the three parts, have been included in Part 1 only.

Opportunity has also been availed to modify certain other clauses of the standard keeping in view the manufacturing practices followed in the industry.

0.3 Part 1 covers mechanically extracted bristle coir fibre, Part 2 covers mechanically extracted mattress coir fibre, and Part 3 covers mechanically extracted decorticated coir fibre.

0.4 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 analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

*Rules for rounding off numerical values (*revised*).

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Indian Standard
 SPECIFICATION FOR
 MECHANICALLY EXTRACTED COIR FIBRES
 PART 1 BRISTLE COIR FIBRE
 (*First Revision*)

1. SCOPE

1.1 This standard (Part 1) prescribes the requirements for two grades of mechanically extracted bristle coir fibre designated as Grade 1 and Grade 2.

2. TERMINOLOGY

2.0 For the purpose of this standard, the following definition shall apply.

2.1 **Bristle Fibre** — The comparatively long and stiff fibre mechanically extracted from the husks of matured and ripe coconut after soaking these husks in water.

3. LENGTH OF FIBRE

3.1 Based on their lengths, the fibre shall be grouped as follows:

<i>Group</i>	<i>Length</i> mm
Long fibres	Above 200
Medium fibres	Above 150 and up to 200
Short fibres	Above 50 and up to 150

4. REQUIREMENTS

4.1 **Colour** — The colour of the bristle coir fibres shall be cinnamon brown.

4.2 **Texture** — The texture of bristle coir fibres shall be firm and stiff, and shall not be brittle.

4.3 **Mass** — The percent by mass of 'long', 'medium' and 'short' fibres in two grades of bristle coir fibres shall be in accordance with the requirements of Table 1. The percent by mass of the fibres shall be determined by the method prescribed in Appendix A.

4.4 Impurities — The maximum permissible impurities, mainly pith, dust, bits of exocarp and fibre bits below 50 mm in bristle coir fibres of two grades shall be in accordance with Table 1. The percentage impurities in a consignment shall be determined by the method prescribed in Appendix B.

TABLE 1 PERCENT BY MASS OF 'LONG', 'MEDIUM' AND 'SHORT' FIBRES AND IMPURITIES

(Clauses 4.3 and 4.4)

GRADE	LONG FIBRES	MEDIUM FIBRES	SHORT FIBRES	IMPURITIES
	<i>Min</i>	<i>Max</i>	<i>Max</i>	<i>Max</i>
(1)	(2)	(3)	(4)	(5)
Grade 1	50	30	20	4
Grade 2	40	25	35	5

4.5 Moisture Content — The moisture content of bristle coir fibres of the various grades shall not exceed 15 percent, when determined by the method prescribed in Appendix C.

4.6 Chloride Content — The chloride content of the bristle coir fibres calculated as Cl when determined by the method prescribed in Appendix D shall not exceed 0.6 percent by mass.

4.7 Sulphate Content — The sulphate content of the bristle coir fibres, when determined by the method prescribed in IS : 4203-1967*, shall not exceed 0.25 percent by mass.

5. CORRECT INVOICE MASS

5.1 The correct mass of the lot shall be taken to be equal to the mass determined by adding 18 percent to its oven-dry mass.

5.2 The oven-dry mass of each lot shall be calculated from its net mass, and the moisture content of the lot; the later being determined by the method prescribed in Appendix C.

6. PACKING AND MARKING

6.1 Bristle coir fibre shall be suitably packed in bales or as agreed to between the purchaser and the supplier.

*Method for determination of sulphate content in textile materials.

6.2 The following particulars, shall be marked on each bale or package:

- a) Manufacturer's name, initials or trade-mark;
- b) Name of the material;
- c) Net mass of bale;
- d) Grade number;
- e) Month and year of manufacture; and
- f) Any other information required by the buyer or by the law in force.

6.2.1 The bales may also be marked with the Standard Mark.

NOTE — The use of the Standard Mark is governed by the provisions of the Bureau of Indian Standards Act 1986 and the Rules and Regulations made thereunder. The Standard Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by BIS and operated by the producer. Standard marked products are also continuously checked by BIS for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

7. SAMPLING AND CRITERIA FOR CONFORMITY

7.1 Sampling

7.1.1 Lot — The bales of coir fibre of the same type and grade delivered to one buyer against one despatch note shall constitute a lot.

7.1.2 The conformity of a lot to the requirements of this standard shall be determined on the basis of the tests carried out on the bales selected from it.

7.1.3 Unless otherwise agreed to between the buyer and the seller, the number of bales to be selected from the lot shall be in accordance with col 2 of Table 2.

7.1.3.1 The bales shall be selected at random. In order to ensure randomness of selection, all the bales in the lot may be serially numbered as 1, 2, 3...and so on and every r th bale may be selected until the requisite number is obtained, r being the integral part of N/n where N is the lot size and n is the sample size.

7.1.4 For evaluating : (a) percent by mass of long, medium and short fibres; (b) percentage of impurities; (c) colour; (d) texture; (e) chloride content; and (f) sulphate content requirements, about 1 kg of the coir

fibres shall be selected from twenty different randomly distributed places in the bale by taking about 50 g of the fibre from each place. The quantity drawn from each bale shall be kept separately.

TABLE 2 NUMBER OF BALES TO BE SELECTED

(Clause 7.1.3)

LOT SIZE	SAMPLE SIZE
<i>N</i>	<i>n</i>
(1)	(2)
Up to 50	3
51 to 100	5
101 to 200	6
201 to 300	7
301 to 500	8
501 to 800	9
801 and above	10

7.1.4.1 For evaluating moisture content, about 500 g of the coir fibre shall be collected from 10 different randomly distributed places in the bale by taking 50 g of the fibre from each place. The quantity so drawn from each place shall be immediately transferred to a suitable air-tight container and the container sealed to avoid moisture.

7.1.5 Criteria for Conformity — The lot shall be considered as in conformity with the requirements of the standard if the following conditions are satisfied:

- a) The colour, texture, percent by mass of 'long', 'medium' and 'short' fibres, and impurities shall satisfy the requirements as specified in 4.1, 4.2, 4.3 and 4.4.
- b) From the observed values of moisture content, chloride content and sulphate content, the average (\bar{x}) and the range (R) are calculated and the expression $\bar{x} - 0.4R$ is less than or equal to the values specified in 4.5, 4.6, and 4.7.

NOTE 1 — \bar{x} is the value obtained by dividing the sum of the observed values by the number of tests.

NOTE 2 — The range ' R ' is the difference between the maximum and the minimum in a set of observed values.

APPENDIX A*(Clause 4.3)***METHOD FOR DETERMINATION OF THE PERCENT BY MASS OF LONG, MEDIUM AND SHORT FIBRES****A-1. TEST SPECIMENS**

A-1.1 Draw 3 test specimens weighing approximately 2 g each from the test sample (*see 7.1.4*).

A-2. EQUIPMENT

A-2.1 For the purpose of this test, a flat table marked with a scale with 10 mm graduations shall be used.

A-3. PROCEDURE

A-3.1 Take one of the test specimens and measure the length of its individual fibres on the scale marked on the table by holding one end of each fibre with the forefinger of the one hand and stretching the other end with the fingers of the other hand. Arrange the fibres so measured into three groups according to their length as given below:

<i>Length of the Fibre</i> mm	<i>Group</i>
Above 200	Long fibres
Above 150 and up to 200	Medium fibres
Above 50 and up to 150	Short fibres

A-3.2 Weigh the fibres in each group and calculate the percentage of the mass of fibres in each group to the total mass of fibres in all the three groups.

A-3.3 Repeat the test with the remaining two test specimens.

A-3.4 Average of the percentage by mass, of fibres in respective groups shall be deemed to be the percent by mass of long, medium and short in the consignment.

A P P E N D I X B

(Clause 4.4)

METHOD FOR DETERMINATION OF THE PERCENTAGE OF IMPURITIES IN BRISTLE FIBRE

B-1. TEST SPECIMENS

B-1.1 Draw 5 test specimens weighing approximately 60 g each from the test sample (see 7.1.4).

B-2. PROCEDURE

B-2.1 Dry one of the test specimens in a conditioning oven (C-1.1). Determine its oven-dry mass correct to the nearest 0.05 g.

B-2.2 Immediately after drying, remove all pith, dust and other impurities adhering to the fibre and determine the oven-dry mass of the cleaned test specimen correct to the nearest 0.05 g.

B-2.3 Calculate the percentage of impurities in the test specimen by the following formula:

$$\text{Impurities, percent by mass} = \frac{(m_1 - m_2) 100}{m_1}$$

where

m_1 = oven-dry mass of the test specimen before cleaning, and

m_2 = oven-dry mass of the test specimen after cleaning.

B-2.4 Repeat the test with the remaining test specimens. The average of all the values thus obtained shall be deemed to be the percentage of impurities in the bristle fibre consignment.

A P P E N D I X C

(Clauses 4.5 and 5.2)

METHOD FOR DETERMINATION OF MOISTURE CONTENT IN BRISTLE FIBRE

C-1. APPARATUS

C-1.1 Conditioning Oven — With forced ventilation, provided with positive valve control and capable of maintaining a temperature of 100 to 110°C, equipped with a weighing balance arranged to weigh bristle fibre with an accuracy of 0.5 g while suspended within the drying chamber, the holder of the fibre to be of such a type as to ensure free access of the dry air to all portions of the fibre.

C-2. PROCEDURE

C-2.1 Remove about 500 g of coir fibre from the test sample (*see* 7.1.4.1) and weigh it correct to the nearest 0.5 g. Place the test specimen in the conditioning oven and dry for one hour and weigh to the nearest 0.5 g. Dry for another 15 minutes and weigh to the nearest 0.5 g. Provided the loss in mass in drying of the test specimen, as disclosed by the first and second weighings, does not exceed 0.25 percent of the first mass, take the second mass to be the dry mass of the test specimen. If the loss exceeds 0.25 percent, weigh the test specimen at 15-minute intervals till the loss between two successive weighings is 0.25 percent or less.

C-2.2 Calculate the percentage of moisture content by the following formula:

$$\text{Moisture content, percent by mass} = \frac{(m_1 - m_2) 100}{m_1}$$

where

m_1 = mass of the original test specimen, and

m_2 = mass of the oven-dried test specimen.

A P P E N D I X D

(*Clause* 4.6)

METHOD FOR DETERMINATION OF CHLORIDE CONTENT OF COIR FIBRE

D-1. PRINCIPLE

D-1.1 The aqueous extract of the coir fibre is prepared and then the chloride content is determined volumetrically by titration with standard silver nitrate solution using potassium chromate solution as indicator and expressed as percentage by mass of the material taken.

D-2. TEST SPECIMEN

D-2.1 Draw at least two test specimens each weighing about 10 g from the test sample (*see* 7.1.4). Cut the test specimens into small pieces.

D-3. CONDITIONING OF TEST SPECIMEN

D-3.1 Prior to test, the test specimens shall be conditioned for 24 hours to attain moisture equilibrium in a standard atmosphere at 65 ± 2 percent relative humidity and $27 \pm 2^\circ\text{C}$ temperature (*see* IS : 6359-1971*).

*Method for conditioning of textiles.

D-4. PREPARATION OF AQUEOUS EXTRACT

D-4.1 Procedure — Weigh the test specimen and transfer to a clean, chemically resistant glass flask, fitted with ground glass joint for reflux condenser. Add distilled water (*see* IS : 1070-1977†) weighing 20 times the mass of the coir fibre taken for the test to the flask. Fit the flask to the reflux condenser and heat the contents of the flask to boil. Continue boiling for 1 hour. Remove the flask and close while the liquid is still boiling gently using a clean ground glass stopper. Cool to room temperature.

D-5. DETERMINATION OF CHLORIDE CONTENT

D-5.1 Reagents

D-5.1.1 Calcium Carbonate (Chloride Free)

D-5.1.2 Standard Silver Nitrate Solution — 0·1 N.

D-5.1.3 Potassium Chromate Solution — prepared by dissolving 50 g of potassium chromate in about 250 ml distilled water. Add silver nitrate solution till a distinct red precipitate is formed. Allow to stand overnight and filter. Dilute the filtrate to 1 litre with distilled water.

D-5.2 Procedure — Take a suitable measured portion of the aqueous extract as prepared in D-4.1. Neutralize with calcium carbonate till a pale yellow colour is obtained (usually 0·5 g is sufficient). Add 1 ml of potassium chromate indicator solution and titrate with standard silver nitrate solution, till a red colour is obtained.

D-5.3 Calculation

$$\text{Chloride (as Cl), percent by mass} = \frac{3 \cdot 546 (V_1 - V_2) N}{M}$$

where

V_1 = volume in ml of standard silver nitrate solution used in the titration with the material,

V_2 = volume in ml of the standard silver nitrate solution used in the blank determination,

N = normality of standard silver nitrate solution, and

M = mass in g of the material taken for the test.

D-5.3.1 Repeat the test with the remaining test specimen and calculate the percent by mass.

†Specification for water for general laboratory use (*second revision*).

*Indian Standard*SPECIFICATION FOR
MECHANICALLY EXTRACTED COIR FIBRES

PART 2 MATTRESS COIR FIBRE

*(First Revision)***1. SCOPE**

1.1 This standard (Part 2) prescribes the requirements for mechanically extracted mattress coir fibres.

2. TERMINOLOGY

2.0 For the purpose of this standard, the following definition shall apply.

2.1 **Mattress Fibre** — Mattress fibre is comparatively short and resilient fibre mechanically extracted from the husks of matured and ripe coconut after soaking these husks in water.

3. LENGTH OF FIBRE

3.1 Based on their length the fibres shall be grouped as follows:

<i>Group</i>	<i>Length</i> mm
Long fibres	Above 200
Medium fibres	Above 150 and up to 200
Short fibres	Above 50 and up to 150

4. REQUIREMENTS

4.1 **Mass** — The percent by mass of long, medium and short fibres in mattress coir fibres shall be in accordance with the requirements of Table 1. The same shall be determined by the method prescribed in Appendix A of Part 1 of this standard.

4.2 **Impurities** — The maximum permissible impurities, chiefly pith, dust, bits of exocarp and fibre bits below 50 mm in mattress coir fibre shall be in accordance with Table 1. The percentage impurities in a consignment shall be determined by the method prescribed in Appendix B of Part 1 of this standard.

TABLE 1 PERCENT BY MASS OF LONG, MEDIUM AND SHORT FIBRES AND IMPURITIES

(Clauses 4.1 and 4.2)

	LONG/MEDIUM FIBRES	SHORT FIBRES	IMPURITIES
	<i>Min</i>	<i>Max</i>	<i>Max</i>
	(1)	(2)	(3)
Mattress fibre	10	90	20

4.3 Moisture Content — The moisture content for mattress coir fibre shall not exceed 15 percent when determined by the method prescribed in Appendix C of Part 1 of this standard.

4.4 Chloride Content — The chloride content of the mattress coir fibres, calculated as Cl, when determined by the method prescribed in Appendix D of Part 1 of this standard, shall not exceed 0.6 percent by mass.

4.5 Sulphate Content — The sulphate content of the mattress coir fibres, when determined by the method prescribed in IS : 4203-1967* shall not exceed 0.25 percent by mass.

5. CORRECT INVOICE MASS

5.1 The correct mass of the lot shall be taken to be equal to the mass determined by adding 18 percent to its oven-dry mass.

5.2 The oven-dry mass of each lot shall be calculated from its net mass, and the moisture content of the lot; the latter being determined by the method prescribed in Appendix C of Part 1 of this standard.

6. PACKING AND MARKING

6.1 Mattress coir fibre shall be suitably packed in bales or as otherwise agreed to between the purchaser and the supplier.

6.2 The following particulars shall be marked on each bale or package:

- a) Name of the material;
- b) Manufacturer's name, initials or trade-mark;
- c) Month and year of manufacture; and
- d) Any other information required by the buyer or by the law in force.

*Method for determination of sulphate content in textile materials.

6.2.1 The bales may also be marked with the Standard Mark.

NOTE — The use of the Standard Mark is governed by the provisions of the Bureau of Indian Standards Act 1986 and the Rules and Regulations made thereunder. The Standard Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by BIS and operated by the producer. Standard marked products are also continuously checked by BIS for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

7. SAMPLING AND CRITERIA FOR CONFORMITY

7.1 Sampling

7.1.1 *Lot* — The bales of coir fibre of the same type delivered to one buyer against one despatch note shall constitute a lot.

7.1.2 The conformity of a lot to the requirements of this standard shall be determined on the basis of tests carried out on the bales selected from it.

7.1.3 Unless otherwise agreed to between the buyer and the seller, the number of bales to be selected from the lot shall be in accordance with col 2 of Table 2.

TABLE 2 NUMBER OF BALES TO BE SELECTED

LOT SIZE <i>N</i>	SAMPLE SIZE <i>n</i>
(1)	(2)
Up to 50	3
51 to 100	5
101 to 200	6
201 to 300	7
301 to 500	8
501 to 800	9
801 and above	10

7.1.3.1 The bales shall be selected at random. In order to ensure randomness of selection, all the bales in the lot may be serially numbered as 1, 2, 3 and so on and every *r*th bale may be selected until the

requisite number is obtained, r being the integral part of N/n where N is the lot size and n is the sample size.

7.1.4 For evaluating: (a) percentage of impurities; (b) percent by mass of 'long', 'medium' and 'short' fibres; (c) chloride content; and (d) sulphate content, about 1 kg of the coir fibre shall be collected from 20 different randomly distributed places in the bale by taking about 50 g of the fibre from each place. The quantity drawn from each bale shall be kept separately.

7.1.4.1 For evaluating moisture content, about 500 g of the coir fibre shall be collected from 10 different randomly distributed places in the bale by taking 50 g of the fibre from each place. The quantity so drawn from each place shall be immediately transferred to a suitable air-tight container and the container sealed to avoid any moisture difference.

7.1.5 Criteria for Conformity — The lot shall be considered as in conformity with the requirements of the standard if the following conditions are satisfied:

- a) The average percent by mass of long, medium and short fibres, and impurities shall satisfy the requirements as specified in 4.1 and 4.2.
- b) From the observed values of moisture content, chloride content and sulphate content, the average (\bar{x}) and the range (R) are calculated and the expression $\bar{x} + 0.4 R$ is less than or equal to the values specified in 4.3, 4.4 and 4.5.

NOTE 1 — The average \bar{X} is the value obtained by dividing the sum of the observed values by the number of tests.

NOTE 2 — The range R is the difference between the maximum and the minimum in a set of observed values.

*Indian Standard*SPECIFICATION FOR
MECHANICALLY EXTRACTED COIR FIBRES

PART 3 DECORTICATED COIR FIBRE

*(First Revision)***1. SCOPE**

1.1 This standard (Part 3) prescribes the requirements and methods of tests for two grades of mechanically extracted decorticated coir fibre designated as Grade 1 and Grade 2.

2. TERMINOLOGY

2.0 For the purpose of this standard, the following definition shall apply.

2.1 Decorticated Fibre — The mixed fibre mechanically extracted from the husks of matured and ripe coconut.

3. LENGTH OF FIBRE

3.1 Based on the lengths the fibre shall be grouped as follows:

<i>Group</i>	<i>Length</i> mm
Long fibres	Above 200
Medium fibres	Above 150 and up to 200
Short fibres	Above 50 and up to 150

4. REQUIREMENTS

4.1 Texture — The Grade 1 decorticated fibres shall be strong and springy. The Grade 2 fibres shall be softer than Grade 1, but harder and more springy than mattress fibres and both shall not be brittle.

4.2 Mass — The percent by mass of long, medium and short fibres in two grades of decorticated coir fibres shall be in accordance with the requirements of Table 1. The percent by mass of these fibres shall be determined by the method prescribed in Appendix A of Part 1 of this standard.

4.3 Impurities — The maximum permissible impurities, chiefly pith, cluster and dust in decorticated coir fibres shall be in accordance with Table 1. The percentage of impurities in a consignment shall be determined by the method described in Appendix B of Part 1 of this standard.

TABLE 1 PERCENT BY MASS OF LONG, MEDIUM AND SHORT FIBRES AND IMPURITIES

(Clauses 4.2 and 4.3)

GRADE	LONG FIBRES	MEDIUM FIBRES	SHORT FIBRES	IMPURITIES
	<i>Min</i>	<i>Max</i>	<i>Max</i>	<i>Max</i>
(1)	(2)	(3)	(4)	(5)
Grade 1	20	30	50	7
Grade 2	20	25	55	12

4.4 Moisture Content — The moisture content of decorticated coir fibres shall not exceed 15 percent, when determined by the method prescribed in Appendix C of Part 1 of this standard.

4.5 Chloride Content — The chloride content of the decorticated coir fibres calculated as Cl, when determined by the method prescribed in Appendix D of Part 1 of this standard, shall not exceed 0.6 percent by mass.

4.6 Sulphate Content — The sulphate content of the decorticated coir fibres, when determined by the method prescribed in IS : 4203-1967* shall not exceed 0.25 percent by mass.

5. CORRECT INVOICE MASS

5.1 The correct mass of the lot shall be taken to be equal to the mass determined by adding 18 percent to its oven-dry mass.

5.2 The oven-dry mass of each lot shall be calculated from its net mass and the moisture content of the lot; the latter being determined by the method prescribed in Appendix C of Part 1 of this standard.

6. PACKING AND MARKING

6.1 Decorticated fibre shall be suitably packed in bales or as agreed to between the purchaser and the supplier.

*Method for determination of sulphate content in textile materials.

6.2 A label giving the following particulars shall be marked on each bale or package:

- a) Manufacturer's name, initials or trade-mark;
- b) Name of the material;
- c) Net mass of bale;
- d) Grade number;
- e) Month and year of manufacture; and
- f) Any other information required by the buyer or by the law in force.

6.2.1 The bales may also be marked with the Standard Mark.

NOTE — The use of the Standard Mark is governed by the provisions of the Bureau of Indian Standards Act 1986 and the Rules and Regulations made thereunder. The Standard Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by BIS and operated by the producer. Standard marked products are also continuously checked by BIS for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

7. SAMPLING AND CRITERIA FOR CONFORMITY

7.1 Sampling

7.1.1 Lot — The bales of coir fibre of the same type and grade, delivered to one buyer against one despatch note shall constitute a lot.

7.1.2 The conformity of a lot to the requirements of this standard shall be determined on the basis of the tests carried out on the bales selected from it.

7.1.3 Unless otherwise agreed to between the buyer and the seller, the number of bales to be selected from the lot shall be in accordance with col 2 of Table 2.

7.1.3.1 The bales shall be selected at random. In order to ensure randomness of selection, all the bales in the lot may be serially numbered as 1, 2, 3, ... and so on and every r th bale may be selected until the requisite number obtained, r being the integral part of N/n , where N is the lot size and n is the sample size.

7.1.4 For evaluating : (a) percent by mass of long, medium and short fibre; (b) impurities; (c) texture; (d) chloride content; and (e) sulphate

content requirements, about 1 kg of the coir fibre shall be selected from 20 different randomly distributed places in the bale by taking about 50 g of the fibre from each place. The quantity drawn from each bale shall be kept separately.

TABLE 2 NUMBER OF BALES TO BE SELECTED

(Clause 7.1.3)

LOT SIZE <i>N</i>	SAMPLE SIZE <i>n</i>
(1)	(2)
Up to 50	3
51 to 100	5
101 to 200	6
201 to 300	7
301 to 500	8
501 to 800	9
801 and above	10

7.1.4.1 For evaluating moisture content, about 500 g of the coir fibre shall be collected from 10 different randomly distributed places in the bale by taking 50 g of the fibre from each place. The quantity so drawn from each place shall be immediately transferred to a suitable air-tight container and the container sealed to avoid any loss of moisture.

7.1.5 Criteria for Conformity — The lot shall be considered in conformity with the requirements of the standard, if the following conditions are satisfied:

- a) The percent by mass of long, medium and short fibres, impurities and texture shall satisfy the requirements as specified in 4.1, 4.2 and 4.3 respectively.
- b) From the observed values of moisture-content, chloride content and sulphate content, the average (\bar{x}) and the range (R) are calculated and the expression $\bar{x} + 0.4 R$ is less than or equal to the values specified in 4.4, 4.5 and 4.6.

NOTE 1 — The average \bar{x} is the value obtained by dividing the sum of the observed values by the number of tests.

NOTE 2 — The range R is the difference between the maximum and the minimum in a set of observed values.