CONSTRUCTIONAL DETAILS OF COIR AND COIR PRODUCTS

COIR BOARD
KOCHI – 682 016

F O R E W O R D

Standards are the key to quality, Prescribing standards for coir and coir products and its periodic revision is a combined effort of the Bureau of Indian Standards and the Coir Board.

The Coir Board has published the first compendium of quality standards of the coir and coir products in 1972.It was subsequently updated incorporating the latest amendments and additions of the new varieties and products of coir. Information in this will be of immense value to the various stake holders engaged in Coir Industry and it will help to create a quality awareness among the customers of coir and coir products. "Constructional details of coir and coir products" is an important reference document for quality upgradation of coir and coir products and its maintenance.

Kochi – 682 016
Date -

A. C .JOSE
CHAIRMAN, COIR BOARD

INTRODUCTION

Coir Board, set up by the Govt. of India for promoting the Coir Industry, started functioning from 7th July 1954. Fixing grade standards and arranging, when necessary, for inspection of Coir Fiber, Coir Yarn and Coir Products is one among the several functions enumerated under Section 10 of the Coir Industry Act-1953.

Standards specifications for Coir Products are evolved by the Bureau of Indian Standards (till recently Indian Standards Institution) with the active involvement of the Coir Board. The following committees are constituted by the Bureau of Indian Standards for formulation and revision of standard specifications:

(i) Coir and Coir Products Sectional Committee (TDC-50)

(ii) Coir Fiber and Coir Yarn Sub-Committee (TDC-50:5) and

(iii) Coir Products Sub-Committee (TDC-50:6).

Indian Standards finalized and published by the BIS for Coir and Coir Products are listed elsewhere in this book. In addition, Coir Board approved grade standards for certain items, particularly the Brown Fiber Coir and Products. Besides, the Panel of Experts constituted under the Export (Quality Control and Inspection) Act 1963, for the purpose of the examining and approving such standards approve the standard specifications for new coir products for export.

Grade standards included in this edition comprehensively cover the Standards approved by the BIS, the Coir Board and the Panel of Experts.

This seventh Edition is composed of the following four parts:-

Part I

(i) The grade specifications for Retted Coir Fiber compiled from IS: 898 – 1985 (Second revision)

(ii) Compilation of grade specifications for Coir Yarn in baled and non-baled form based on the Notification under Experts (Quality Control and Inspection) Rule, 1964.

(iii) The grade specifications included are a compilement from the Indian Standard Specification for Coir Mats (IS: 11420 part 1 to 9 -1985) and the standards approved by the Panel of Experts.

(iv) The Grade specifications are a summing up of the Indian Standards for Coir Mattings, Mourzouks and Carpets, IS: 12503 (parts 1-6) 1988, and the standards approved by the Panel of Experts and the Coir Board.

(v) Contains grade specifications notified by the Exports Inspection Council and also those approved by the Panel of Experts.

Part –II

(i) The grade specifications for Mechanically Extracted Coir Fiber compiled from IS: 9308 [Part 1 to 3] – 1987 [First revision]

(ii)Grade specifications for Brown Fiber Coir Yarn approved by the Coir Board

(iii)Constructional Details of Brown Fiber Coir Products approved by the Coir Board.

Part -III

(i)Grade specifications for Coir Fenders approved by the Coir Board.

(ii)Grade specifications for Coir Ropes compiled from IS:1410 – 1983. (Second revision)

(iii)Summarised version of IS: 8391 – 1987 (First revision) Indian Standard Specification for Rubberized Coir Sheets for Cushioning.

(iv) Gist of IS: 11060-1984-Indian Standard Specification for Moulded Rubberised Coir Cushioning.

Part – IV

(i) List of Indian Standards on Coir.

(ii) Govt. of India Notifications / Orders.

Quality Control and Pre-shipment Inspection introduced and undertaken by the Coir Board on certain verities of Coir Mats in 1963 was on a voluntary basis. Later, in 1965,Compulsory Quality Control and Pre-shipment Inspection was introduced on those verities of mats. In the following years other verities of Coir Mats, Coir Yarn (baled and non baled), Coir Mattings, Mourzouks, Coir Carpets, Non-woven Coir Matting Mats, and Carpets, Hand Knotted Coir Netting and Coir Braids were brought under the scheme. The Export Inspection Agencies set up under Section 7 of the Export [Quality Control and Inspection] Act, 1963, came into 1st April 1968 and the Scheme was transferred to the Export Inspection Agency.

Inspection and certification of quality of Coir and Coir Products to the domestic markets is done by the Coir Board through the Coir Mark Scheme, introduced in April 1975. This Scheme was originally concentrating on items sold through the Coir Board Showrooms and Sales Depots and depots of the Accredited Dealers. This Scheme has further been extended to the Sales of the Co-operative Institutions and other organizations approved, consequent to the introduction of 20% Rebate Sale by Govt. of India during the 7th Five Year Plan.

Coir Board has taken various schemes under Research and Development, like, modernisation and standardisation of ratts, looms and equipments, distribution of standard ratts, looms and equipments, ratt sheds extension service in spinning, bleaching, dyeing, etc., imparting intensive training to people from the industry, etc. These schemes contribute in improving the quality of Coir and Coir Products to a larger extent.

	n	"	- Coir Mourzouks	
	o	"	- Coir Carpets (Alleppy Carpets)	
	p	"	- Four Shaft Carpet	
	q	" Pitches	- Coir Mattings for Cricket	
v.		Non-Woven Coir Products		
	a	Constructional details of Non	- Woven Mattings Mats	
	b	"	- Non - Woven Carpets	
	c	"	- Hand Knotted Coir Netting	
	d	"	- Specifications for Coir Braid	
		PART- II		
i		Mechanically Extracted Coir Fibre		
	a	General Requirements		
	b	Length of Fibre		
	c	Impurities		
ii.		Brown Fibre Coir Yarn		
	a	General characteristics		
	b	Definitions of Brown Fibre Coir Yarn		
iii.		Brown Fibre Coir Products		
	a	Constructional details of Fibre Mats		
	b	"	Corridor Mats	
	c	"	Matting – Two Treadle Plain Weave	
	d	"	Matting – Two Treadle Basket Weave	
	e	"	Matting – Four Treadle Weave	
		PART -III		
i		Specifications for Coir Fenders		
ii		Specification for Coir Ropes		
iii		Specifications for Rubberised Coir Sheets for Cushioning		
iv		Specifications for Moulded Rubberised Coir Cushioning		
		PART- IV		
		Notifications		
i		Indian Standards on Coir		
ii.		Govt. of India Gazette Notification on Coir Yarn – baled		
iii		"	Coir Yarn – non – baled	
iv.		"	Coir Mats	
v		"	Ministry of Commerce – Order	
vi		Quality of Coir Mats, Mattings, Carpets etc in the Export List.		

PART – I
WHITE FIBRE, YARN, MATS, MATTINGS, CARPETS,MOURZOUKS Etc.

i . RETTED COIR FIBRE

a) General Requirements

Retted Coir Fibre, also called as White Fibre, is extracted form green natural coconut husks after retting in flowing, circulating or changed water for a period of minimum three months. However, if the fibre is made out of precrushed husks the retting period could be reduced suitably. The fibre shall be reasonably free from moisture and impurities.

b) Grades and other specific requirements.

Coir Fibre shall be graded in accordance with colour and maximum permissible impurities. Characteristics of Coir Fibre of various grades are the following

Grade	Colour	Maximum Impurities Percent by weight
1	Natural bright	2.0
2	Natural light brown and/or light grey	3.0
3	Natural brown and /or grey	5.0
4	Natural dark brown and/or dark grey	7.0

Length of Fibre

The length of fibres shall be designated as follows;

Designation	Length cm.
'Long'	Over 15
'Medium'	Over 10 and up to 15
'Short'	Over 5 and up to 10
'Bit'	Up to and including 5

The percent by mass of 'long','medium', 'short', and 'bit' finres shall be as agreed to between the purchaser and the supplier. Where no such agreement exists, the proportion by mass of 'long', 'medium', 'short' and 'bit' fibres in any supply shall be not less than 50 percent 'long', not more than 5 percent 'bit' and the remainder being 'medium' and 'short'

Salt Content

The Salt Content expressed as sodium chloride in fibre of various grades shall not exceed 4 percent.

Moisture Content

The Moisture Content in fibre of various grades shall not exceed 15 percent.

Packing and Marking

Coir Fibre shall be suitably packed in bales or as otherwise agreed to between the purchaser and the supplier.

A label giving the following particulars shall be attached to each bale or package.

i) Grade number

ii) Designation

iii) Net mass of the bale, and

iv) Any other information required by the buyer.

ii. COIR YARN

a) General Requirements

The general characteristics of a particular variety of yarn, as declared by the seller, shall conform to the description normally understood by the trade and as described in the definitions. The declaration by the seller shall contain detailed descriptions or shall have reference to the trade varieties of yarn accompanied by representative samples or to the trade varieties of yarn without the samples. The yarn shall be either natural, bleached and / or dyed.

The yarn shall be reasonably free from extraneous matters, moisture, impurities like salt, sand etc. and any visible sign of deterioration. The yarn shall be of reasonably uniform construction.

b) Definition of coir yarn

Definitions of different varieties of Coir Yarn in tabular form are given below. Detailed definitions given elsewhere.

Sl No	Variety	Type of Fibre	Colour (Natural)	Twisting& Spinning	Approx. Scorage	General Characteristics
1.	Anjengo A	Long and medium stapled well cleaned Fibre from well retted husks.	Bright golden, reddish brown to bluish grey.	Wheel-spun hard twisted and hard spun.	12/20	Less hairy and smooth texture.
2.	Anjengo M	Long and Medium stapled well cleaned fibre from retted husks.	Bright golden, reddish brown to bluish grey.	Wheel-spun, very hard twisted and very hard spun.	10/15	Fairly hairy, rough Texture and cont-ains varying perc-entage of sand.
3.	Aratory	Long and medium stapled, less comb-ed fibre from retted husks.	Reddish brown to bluish grey.	Wheel-spun, soft twisted and hard spun.	11/18	Hairy, less regular in spinning and slightly pithy.
4.	Imitation Alapat /Ashtamudy Caruva.	Medium and short stapled less combed fibre from less rett-ed husks - lumpy with pith	Brownish to grayish.	Wheel-spun, medium twisted and medium spun.	8/13	Slightly hairy, reg-ular in spinning.
5.	Real Alapat	Long and medium stapled combed fib-re from retted or under retted husks.	Bright golden to bright brown or grey.	Hand or wheel spun soft twisted, soft or medium spun.	11/15	Less hairy, smooth texture and regu-lar in spinning.
6.	Vycome (W)	Medium and short stapled less combed fibre lumpy with	Bright cream, reddish brown to dark grey.	Hand or wheel-spun, soft twisted and soft spun.	11/17	Hairy, less regular in spinning and rough texture.

		pith from retted husks.				
7.	Beach	Medium and short stapled un combed fibre from under retted husks.	Reddish brown	Hand spun, very soft twisted and soft spun	9/14	Less hairy, smooth texture, regular in spinning and very pithy.
8.	Hard Unsoaked	Medium and short stapled fibre from unretted husks.	Reddish to dark brown.	Hand spun, medium twisted and medium spun.	9/12	Less hairy, medium texture, regular in spinning and very pithy.
9.	Roping	Medium and short stapled uncombed fibre from under retted husks.	Brown to grey	Hand spun, soft twisted and soft spun	4/6	Extra ordinarily thick unclean in appearance, very less hairy and pithy.
10.a)	Beypore	Medium and short stapled less combed fibre from under retted husks.	Bluish brown	Hand spun, soft twisted and soft spun.	6/9	Very thick, less hairy containing a little pith.
b)	Beypore Z	do	do	do	5/9	do
11 a)	Quilandy	Medium stapled, less combed fibre from well retted husks.	Bright golden to greyish.	Hand spun, medium twisted and medium spun	8/12	Slightly hairy regular in spinning and with a little pith.
b)	Quilandy Z	do	Brownish to greyish	do	6/12	do
12 a)	Fine Unsoaked Grade I	Medium and short stapled uncombed fibre from unretted husks.	Green buff to dark reddish brown.	Hand spun, very soft twisted and soft spun.	9/12	Less hairy, smooth texture, regular in spinning and very pithy.
b)	Fine Unsoaked Grade II	do	Reddish brown to dark brown	do	9/12	do
13.	3 Ply	Medium and short stapled less combed fibre from under retted husks	Brown to grey	Wheel-spun in 3 ply, hard twisted and hard spun	4/8	Extra-ordinarily thick, hairy with varying amount of pith, hard and rough texture
14.	Single Ply	Long stapled well combed fibre from well retted husks	Brown to grey	Wheel twisted in single ply medium twist	16/20	Thin, very hairy fluffy in appearance with a little pith.

15	Superfine Unsoaked	Medium stapled combed fibre from unretted green husks	Golden yellow	Hand spun, medium twisted and medium spun	9/12	Less hairy regular in spinning with smooth texture and negligible amount of pith.
16.	Edavannan	Medium and short stapled less combed fibre from under retted husks	Brown to grey	Hand spun, soft twisted and soft spun.	6/9	Less hairy, unclean in appearance and pithy
17.	Mannu-Mangadan	Long and medium stapled well combed fibre from retted husks	Reddish brown to bluish grey	Wheel spun, hard twisted and hard spun	8/10	Fairly hairy, rough texture, slightly pithy and contains varying amount of sand.
18.	Parur	Long and medium stapled clean fibre from well retted husks.	Golden, reddish brown to bluish grey.	Wheel spun, very hard twisted and very hard spun.	6/12	Fairly hairy and rough texture with a little pith.
19.	Alleppey Vycome (Thurumpu Vycome)	Fibre obtained from bits of various varieties of coir yarn.	Bright cream, reddish brown to bluish grey.	Hand spun, soft twisted and soft spun.	8/12	Very hairy, low breaking strength and soft texture.
20.	Ordinary Bongo Yarn	Medium and short stapled fibre from under retted tender husks.	Reddish brown	Hand spun, hard twisted and hard spun, spinning and twisting uniform.	12/18	Less hairy smooth texture with a little or no pith.
21.	Mangadan K	Long and medium stapled combed fibre from retted as well as partly retted husks.	Slight reddish brown to bluish grey	Wheel spun, medium twisted and hard spun	10/15	Hairy, un- evenly thick with a little amount of pith.
22.	Adminidivi	Long and medium stapled less combed fibre from well retted husks.	Bright golden	Hand spun, medium twisted and medium spun.	6/9	Very less hairy and regular in spinning, contains very little pith
23.	Laccadive.	Long and medium stapled fibre from retted husks.	Golden reddish brown to bluish grey.	Hand spun, medium twisted and medium spun	6/8	Less hairy in appearance and regular in spinn-, ing contains a little pith, sand or husks.

DEFINITIONS OF DIFFERENT VARIETIES OF COIR YARN (DETAILED)

1. Anjengo A

a) Wheel spun yarn, spun from long or medium stapled, natural bright golden coloured, well cleaned coir fibres extracted from properly retted husks containing little or no pith, husk, sand, etc. appreciably very less hairy, hard twisted both the single strand and the two plies of yarn; mostly evenly spun and uniformly twisted; smooth textured in appearance; usually spun in the scorages ranging from 12 to 20.

b) Wheel spun yarn, spun from long or medium stapled natural, reddish brown to bluish grey, cleaned coir fibres extracted from retted husks; containing a little pith, husk, sand etc; appreciably less hairy; hard twisted-both the single strand and the two plies of yarn; spun less evenly and twist less uniform in comparison to (a) above; slightly rough textured in appearance; usually spun in the scorages ranging from 12 to 20.

2. Anjengo M

a) Wheel spun yarn; from long or medium stapled, natural bright golden coloured, well-cleaned coir fibres extracted from retted husks; containing little or no pith or husk and varying percentages of sand; some what hairy; hard twisted-both the single ply and the two plies of yarn are more hard twisted than Anjengo A yarn thus Anjengo M being the hard twisted of all the varieties falling under hard twisted yarns; less even in thickness and twist than Anjengo A; hard and rough to feel; spun usually thicker than Anjengo A yarn in the scorages ranging from 10 to 15.

b) Wheel spun yarn, spun from long or medium stapled, natural reddish brown to bluish grey; cleaned coir fibres extracted from retted husks; containing a little pith or husk and varying percentages of sand; somewhat hairy; hard twisted-both the single ply and the two plies of yarn are more hard twisted than Anjengo A yarn thus Anjengo M being the most hard twisted of all the verities falling under hard twisted yarns; less even in thickness and twist than Anjengo A; hard and rough to feel; spun usually thicker than Anjengo A yarn in the scorages ranging from 10 to15 [Comparatively rougher than Anjengo M (a)]

3. Aratory

a) Wheel spun yarn; spun from long or medium stapled coir fibres extracted from retted husks and of colour ranging from slight reddish brown to bluish grey; containing very small amounts of pith, husk and also sand, appreciably hairy, fibers not teased properly; slightly dirtier in appearance than Anjengo A and Anjengo M; hard twisted-single strand is soft twisted but the two plies of the yarn are hard twisted but a little less hard than either Anjengo A or Anjengo M yarns; thus Aratory being the least hard twisted of all the varieties falling under "hard twisted" yarns; more irregular in twist than either Anjengo A or Anjengo M yarns; usually spun in the scorages ranging from 11 to 18.

b) Wheel spun yarn; spun from long or medium stapled coir fibres extracted from retted husks and of colour ranging from reddish brown to bluish grey; containing varying amounts of pith, husk and also sand; appreciably hairy, fibres not teased properly; slightly dirtier in appearance than Anjengo A and Anjengo M, hard than twisted-single strand is soft twisted but the two plies of the yarn are hard twisted but a little less hard than either Anjengo A or Anjengo M yarns; thus Aratory being the least hard twisted of all the varieties falling under 'hard twisted ' yarns; more irregular in twist than either Anjengo A or Anjengo M yarns; usually spun in the scorages ranging from 11 to 18.

4. Imitation Alapat / Ashtamudi/Caruva

a) Wheel spun yarn; spun usually thicker than Anjengo A, Anjengo M, Aratory or Real Alapat; from less cleaned coir fibres extracted from retted husks; brownish to grayish in colour, containing a small amount of sand husk and short fibers; hairy and less clean in appearance compared to Anjengo A or Anjengo M; with a some what harsh feel to touch; fibres often lie in entangled lumps and in cris-cross manner; medium to soft twisted-usually spun in the scorages ranging from 8 to 13.

b) Wheel spun yarn; spun usually thicker than, Anjengo A, Anjengo M, Aratory or Real Alapat; from less cleaned coir fibres extracted from retted husks, dark brown to dark grey in colour; containing a good amount of sand and varying amounts of husks and short fibres: hairy and unclean in appearance with a harsh feel to touch, fibres lie in entangled lumps and in cris-cross manner; medium to soft twisted-usually spun in the scorages ranging from 8 to 13.

5. Real Alapat

a) Falling under the class of soft twisted yarn, Real Alapat is spun both by wheel and hand from coir fibres, extracted from retted husk; and of shades ranging from bright golden colour to bright brown or grey. The hand spun yarn is softer to touch and more uniform in twist; containing little or no pith; smooth textured and not hairy; soft twisted-both the single strand and the two plies are soft twisted; the thickness of the yarn is remarkably uniform and the yarn is evenly twisted; usually spun in the scorages ranging from 11 to 15.

b) Both wheel spun and hand spun, soft twisted yarn from coir fibres extracted from under socked or inadequately retted husks and of colour ranging from reddish brown to bluish grey. Containing a little pith, not very hairy in appearance; fibres are not teased well and so lie in lumps in the yarn, soft to medium twisted; the thickness of he yarn is generally uniform and the yarn is evenly twisted; usually spun in the scorages ranging from 11 to 15.

6. Vycome (Weaving)

a) Yarn spun both by hand and wheel, mostly the latter, from bright coloured, fairly well cleaned coir fibres extracted from retted husks characterised by the very soft textured appearance; containing small amounts of pith, husk and sand but no dirt; somewhat hairy soft and light in appearance; fairly even in thickness and twist fibres are not teased so well as in Anjengo A and so lumps of entangled fibres are found frequently in strands of yarn; soft twisted-both the single strand and the two plies are soft twisted; usually spun in the scorages ranging from 11 to 17.

b) Yarn spun both by hand and wheel, mostly the latter, from reddish brown to darkish grey: not well cleaned coir fibres extracted from retted husks; characterised by the very soft textured appearance containing varying amounts of pith, husk short fibres and sand; rather hairy uneven in thickness and twist, fibres are not teased well and

so lumps of entangled fibres are found very frequently in the strands of yarn; soft twisted-both the single strand and the two plies are soft twisted; usually spun in the scorages ranging from 11 to 17.

7. Beach

Hand spun yarn; spun from inferior types of coir fibres extracted from under soaked or inadequately retted husks; the fibres are insufficiently cleaned and of very reddish brown in colour; containing a very large amount of pith but not sand; the fibres being in an unopened state lie adhering to each other in the yarn with a lot of pith: little or no hairiness; very soft twisted with the single strand practically lying untwisted; usually spun in the scorages ranging from 9 to 14.

8.Hard Unsoaked

Hand spun yarn from practically unsocked coir fibres; containing a very large amount of pith larger than that found in fine Unsoaked, more reddish in colour than Fine Unsoaked yarn, very less hairy, heavier hard twisted among 'unsoaked' types of yarns usually spun in the scorages ranging from 9 to 12.

9. Roping

Hand spun yarn; spun from coir fibres which are less cleaned and extracted from inadequately retted husks; containing varying amounts of pith; characterised by its extraordinary thickness; unclean in appearance; very less hairy; usually spun in the scorages ranging 4 to 6.

10. a) Beypore

Hand spun yarn; spun from coir fibres extracted from insufficiently retted husks; of bluish brown colour comparable in thickness to thinner types of Roping; containing small amounts of pith and husk; less dirty than the other types of inferior varieties of yarns; usually spun in the scorages ranging from 6 to 9.

b) Beypore Z

Hand spun yarn; spun from coir fibres extracted from insufficiently retted husks; of bluish brown colour comparable in thickness to thinner types of Roping; containing small amounts of pith and husks, less dirty than the other types of inferior varieties of yarn; usually spun in the scorages ranging from 5 to 9.

11. a) Quailandy

Hand spun yarn; spun from fairly well cleaned coir fibres extracted from retted husks, natural bright golden to greyish in colour; similar in appearance and texture to Ashtamudy; fibres being insufficiently opened lie adhering to each other in the yarn; often with pith; uniform in thickness usually spun in the scorages ranging from 8 to 12.

b) Quilandy- Z

Hand spun yarn; spun from slightly unclean coir fibres extracted from retted husks; brownish to greyish in colour; similar in appearance and texture to Ashtamudy; fibres being insufficiently opened lie adhering to each other in the yarn; generally irregular in twist; containing some nose fibre and pith, usually spun in the scorages ranging from 6 to 12.

12. a) Fine Unsoaked Grade – I

Bearing a very close resemblance to Beach Yarn and often substituted for it; Fine Unsoaked Grade I yarn is hand spun from practically unsocked coir fibres; colour ranging from cream buff to dark reddish brown, characterized by a very large amount of pith-larger than that found in Beach yarn, very less hairy, soft twisted-the single strand lying practically untwisted but slightly hard twisted than the Beach; usually spun in the scorages ranging from 9 to 12.

b)Fine Unsoaked Grade – II

Bearing some resemblance to Beach Yarn, but much darker, hand spun from practically unsoaked fibres less clean not uniform in colour, colour ranging from reddish brown to dark brown, characterized by a large amount of pith similar in twist and hairiness to 'Fine Unsoaked Grade I' as referred to in sub-paragraph (a) usually spun in the scorages ranging from 9 to 12.

13. 3 – Ply

Wheel spun yarn consisting of three; plies; from coir fibres which are less cleaned and extracted from inadequately retted husks; containing varying amounts of pith characterized by its thickness comparable to thin Roping yarn, hairy and hard twisted; hard and rough to feel; usually spun in the scorages ranging from 4 to 8.

14. Single Ply

Wheel spun yarn consisting of one ply only; spun from coir fibres which are well cleaned and extracted from adequately retted husks; containing only a small amount of pith characterised by its thinness and fluffy appearance medium twisted and very hairy; usually spun in the scorages ranging from 16 to 20

15. Super Fine Unsoaked

Hand spun yarn; spun from clean coir fibre extracted from practically unsoaked green husks; golden yellow in colour slightly more hairy than Fine Unsoaked; containing negligible quantity or no quantity of pith; medium twisted; ie. Slightly hard twisted than Fine Unsoaked but softer than Hard Unsoaked; usually spun in the scorages ranging from 9 to 12.

16. Edavannan

Hand spun yarn; spun from coir fibres less cleaned and extracted from insufficiently retted husks, containing varying amounts of pith; comparable to thinner type of Roping; unclean in appearance; less hairy; usually spun in the scorages ranging from 6 to 9.

17. Mannumangadan

Wheel spun yarn; spun from long or medium stapled fibres extracted from retted husks; colour ranging from reddish brown to bluish grey; containing a little pith or husks and more percentages of sand; hairy in appearance; both the single ply and the two plies of yarn hard twisted; less even in thickness and twist, hard rough to feel, usually spun in the ranging from 8 to 10.

18. Parur

Wheel spun yarn, spun from long or medium stapled well cleaned light golden coloured fibre extracted from retted husks containing little or no pith or husks; hard twisted both the single ply and the two plies of yarn thus being more hard twisted than even Anjengo M, containing varying percentages of sand, hairy and less even in thickness; hard and rough to feel, usually spun in the scorages ranging from 6 to 12.

19. Alleppey Vycome (Thurumpu Vycome)

Hand spun yarn, spun from fibre extracted from bits of various varieties of coir yarn, soft twisted both the single ply and the two plies of yarn soft twisted, more hairy, containing varying percentages of sand (having lower breaking strength compared with other varieties of yarn) usually spun in the scorages ranging from 8 to 12.

20. Ordinary Bongo Yarn

Hand spun yarn, spun from cleaned short or medium stapled coir fiber extracted from not properly retted tender coconut husks, reddish brown in colour, containing little or no pith, less hairy, somewhat similar in twist to Anjengo A but slightly dirty in appearance; hard-twisted both the single strand and the two plies of yarn, mostly evenly spun and uniformly twisted, usually spun in the scorages ranging from 12 to 18.

21. Managadan k

Wheel spun yarn, spun from long or medium stapled coir fibre extracted from retted as well as partly retted husks and of colours ranging from natural bright to slight reddish brown and bluish grey, containing varying amounts of pith and sand, fibres not teased properly, appearance not good as Anjengo-M, hard twisted but a little less hard than Anjengo M, hairy, not as regular in twist as Anjengo-M, the scorages ranging from 10 to 15.

22. Aminidivi

Long and medium stapled less combed fibre from well retted husks containing very little pith Colour bright golden, hand spun, medium twisted and medium spun. Very less hairy and regular in spinning. Scorages 6 to 9.

23. Laccadive

Long and medium stapled fibre from retted husks containing a little pith sand or husk. Golden reddish brown to bluish grey. Hand spun, medium twisted and medium spun, less hairy in appearance and regular in spinning. Scorages 6 to 8.

c) Tolerances Permitted

The tolerances in the number of spinning and splicing defects and percentages of moisture, salt and sand content shall not exceed the limits prescribed below:

1) Baled Coir Yarn

Variety of yarn	Spinning defects per export hank maximum	Splicing defects per export hank maximum	Moisture content (%)				Salt content %		Sand content %
			Fresh water		Salt Water				
			Dry Season	Rainy* Season	Dry Season	Rainy* Season	Fresh Water	Salt Water	
1	2	3	4	5	6	7	8	9	10
1. Anjengo A	3 @	1	15	17	16	20	4	5	0.5
2. Anjengo M	3	1	17	19	18	22	5	6	0.5
3. Aratory	4	2	14	16	15	19	3	4	1.0
4.Imitation Alapat/ Ashtamudy/ Caruva	3	2	14	16	16	23	5	7	0.5
5.Real Alapat	3	3	13	15	14	18	3	4	0.5
6.Vycome	4	3	13	15	15	20	3	4	0.5
7. Beach	3	3	13	15	----	----	1	2	0.5
8. Hard unsoaked	3	3	13	15	----	----	1	2	0.5
9. Roping	3	3	13	15	15	22	5	7	0.5
10.a)Beypore	2	2	15	17	16	23	5	6	0.5
b) Beypore Z	2	2	15	17	16	23	5	6	0.5
11.a) Quilandy	2	2	15	17	16	23	5	6	0.5
b) Quilandy Z	2	2	15	17	16	23	5	6	0.5
12. a)Fine unsoaked Grade I	3	3	13	15	----	----	1	2	0.5
b) Fine unsoaked Grade II	3	3	13	15	----	----	1	2	0.5

13. 3ply	3	3	13	15	15	19	5	7	0.5
14. Single Ply	3	-xx	13	15	14	18	3	4	1.0
15. SuperFine Un soaked	3	3	13	14			1	2	0.5
16. Mangadan K	3	1	14	16	15	19	3	4	0.5
2) Non Baled Coir Yarn									
1. Anjengo A	2	1	15	17	16	20	4	5	0.5
2. Anjengo M	2	1	17	19	18	22	5	6	0.5
3. Aratory	3	2	14	16	15	19	3	4	1.0
4. Imitation Ala-pat/ Ashtam-udy/ Caruva.	3	2	14	16	16	23	5	7	0.5
5. Real Alapat	3	3	13	15	14	18	3	4	0.5
6. Vycome (weaving)	3	3	13	15	15	20	3	5	0.5
7. Beach	3	3	13	15			1	2	0.5
8.Hard Unsoaked	3	3	13	15			1	2	0.5
9. Roping	3	3	13	15	15	22	5	7	0.5
10.a)Beypore	2	2	15	17	16	23	5	6	0.5
b) Beypore Z	2	2	15	17	16	23	5	6	0.5
11.a) Quilandy	2	2	15	17	16	23	5	6	0.5
b)Quilandy Z	2	2	15	17	16	23	5	6	0.5
12.a)Fine Unso-ked Grade I	3	3	13	15	----	----	1	2	0.5
b) Fine unsoa-ked Grade II	3	3	13	15	----	----	1	2	0.5
13. 3 ply	3	3	13	15	15	19	5	7	0.5
14.Single Ply	3	xx	13	15	14	18	3	4	1.0
15. Super Fine Unsoaked	3	3	13	15	----	----	1	2	0.5
16. Edavannan	2	2	15	17	16	23	5	6	0.5
17. Mannu-mangadan	2	1	17	19	18	22	5	6	0.5

18.Parur	2	1	17	19	18	22	5	6	0.5
19.Alleppey Vy-come (Thuru-mpu Vycome)	3	3	13	15	15	20	3	5	0.5
20. Ordinary Bo-ngo Yarn	2	1	13	15			1	2	0.5
21.Mangadan K	3	2	13	15	14	18	3	4	0.5
22. Aminidivi	3	2	14	16	16	23	5	7	0.5
23. Laccadive	3	2	14	16	16	23	5	7	0.5

*** The rainy season for this purpose shall normally mean the period from 1st June to 15th August. This period may be extended up to the 30th November depending on prevailing weather conditions in different localities on instructions issued by the Export Inspection Council.**

@ This is applicable only to Anjengo A yarn having less than 16 Score- Maximum number of spinning defects that shall be allowed for Anjengo A yarn of 16/17 score is 5 and 18 score and above is 6.

xx This yarn is not spliced but only knotted.

d) Grade Specifications of Coir Yarn

Sl No	Basic Quantity	Grade No.	Runnage	
			Baled mtr/kg	Non baled mtr/kg
1	2	3	4	5
1.	Anjengo A	1	360 & above	360 & above
		2	330	330
		3	300	300
		4	275	275
		5	240	240
		6	220	220
		7	200	200
		8	----	190
		9	----	180
2.	Anjengo M	1	90	190

		2	180	180
		3	170	170
		4	160	160
		5	150	150
		6	140	140
		7	----	130
		8	----	120
		9	----	110
3.	Aratory	1	260 & above	260 & above
		2	240	240
		3	220	220
		4	200	200
4.	Imitation Alapat/Caruva/ Ashtamudy	1	140 up	140 up
		2	130	130
		3	120	120
		4	110	110
		5	100	100
		6	90	90
5.	Real Alapat	1	230 up	230 up
		2	190	190
		3	180	180
		4	170	170
6.	Vycome (Weaving)	1	300 & above	300 & above
		2	280	280
		3	260	260
		4	240	240
		5	220	220
		6	200	200
7.	Beach	1	260	260
		2	250	250
		3	240	240
8.	Hard Unsoaked	1	200	200
		2	175	175
		3	150	150
9.	Roping	1	60 & above	60 & above
		2	55	55
		3	50	50
10.	Beypore	1	90	90

		2	80	80
		3	70	70
11.	Quilandy	1	130	130
		2	120	120
		3	110	110
12.	Fine Unsoaked	1	255	255
		2	240	240
13.	3 ply	1	55	40 & above
14.	Single Ply	1	460	460
15.	Super Fine Unsoaked	1	275 up	275 up
16.	Edavannan	1	----	85
		2	----	80
17.	Parur	1	----	115
		2	----	105
		3	----	95
		4	85	85
		5	----	75
		6	----	65
		7	----	55
18.	Alleppey Vycome (Thurumpu Vycome)	1	----	140 & above
		2	----	130
19.	Mangadan K	1	200	200
		2	190	190
		3	180 Agri-yarn	180
		4	170	170
20.	Aminidivi	1	----	50
21.	Laccadive	1	----	45

Tolerance in Runnage:

A tolerance of +- 5% is permitted on the values for the different grades, fixed by the Coir Board, except in the form of twisted yarn for which it is +_ 10. In the case of overlapping of different grades, the exporter may be permitted to declare any one of the two grades which overlap. No retest is permissible in expect of runnage.

III COIR MATS

a) GENERAL REQUIREMENTS

The mats shall be firmly and evenly woven. Pile tufts shall be well secured and the shearing of the pile shall be uniform and level, Mats may also be supplied without shearing of the pile if so required by the buyer.

The mats may be of plain natural, chemically bleached, dyed, designs and/ or lettering stenciled or inlaid with coir fibre or coir yarn as may be specified by the buyer. When inlaid with coir fibre or coir yarn, the designs and/or lettering may be beveled to give clarity of outline. Inlaid mats may also be supplied without beveling, if so required by the buyer.

The mats shall be squared by removing one or more weft threads and protruding warp threads shall be treated as follows:

a) In Creel mats and loop mats threads shall be doubled back and interlaced in the mats but in the case of mats sealed with rubber latex or other edge sealing compound at ends or braided ends, the threads need not be doubled back and interlaced in the mat.

b) In Fibre mats, the threads shall be doubled back and interlaced with the body of the mats.

c) In Rod, Bit and Gymnasia mats, threads shall be tied with jute twine and merged with the body of the mats.

Rod and Bit mats shall be bound with braid made of five or more strands of hard twisted coir yarn around the edges in the case of mats having a pile thickness of less than 45mm and of 7 strands for those having pile thickness of 45mm and above. There shall be at least 3 stitches per dm, in the braid.

Gymnasia mats shall be bound with braid of 11 strands of hard twisted coir yarn and having a width of 30mm, around the edges. The cords of the braid shall be securely fastened.

There shall be at least 3 stitches per dm in the braid. The cordage used in Gymnasia mats shall be coir rope made out of hard twisted yarn having a circumference of 38mm.For defense requirements each mat shall be securely, fitted with 4 cordage handles woven inside the mat up to a distance of 23cm,8cm. of which shall be turned backwards.

d) In Rope mats, the starting and finishing ends of rope shall be merged in to the adjacent layers of rope suitably, so that the ends cannot be identified. All the side slabs in the mat shall be stitched properly so as to prevent slippage of layers of rope.

The mats shall be reasonably free from extraneous matter.

The mats may also be supplied in half oval or in any other shape if required by the buyer. However, the dimensions of such mats shall be subject to an agreement between the buyer and the seller.

Each mat shall be legibly or indelibly marked on the back side or label shall be attached with giving the following particulars or in accordance with the agreement between the buyer and the seller.

a. Designations
b. Size or dimensions and
c. Manufacturer's name, initials, trade mark or any other identification mark.

The mats shall be suitable packed as agreed to between the buyer and the seller care being taken to see that the pile of mats is not crushed while packing. Each package shall be marked with the following or in accordance with the agreement between the buyer and seller.

a. Name of the material
b. Gross mass
c. No. of mats packed in the package
d. Size No. or dimensions and
e. Name, initials, trade mark or any other identification mark of the manufacturer

b) DIMENSION

The dimension of mats shall be as specified in the agreement between the buyer and seller. Preference would, however, be given to the sizes of mats given below:

Size No	Dimension Mm
0	550 x 330
1	600 x 350
2	700 x 400
3	750 x 450
4	850 x 500
5	900 x 550
6	1000 x 600
7	1050 x 650
8	1150 x 700
9	1200 x 750

The following dimensions shall be permitted for another size No. 10 mainly for defence use.

Size No.	Dimension
10	910 x 550 mm

The dimension of Gymnasia mats for defence purpose shall be 183 x 183 cms.

MASS

The mass of mats shall be as stipulated in the constructional details of the respective varieties.

An increase of 1200 gms. Per sq. mtr shall be allowed for every increase of 6mm pile height over the specified values for mats having mass 6000 gms/m^2 and above

An increase of 600 gms/m^2. shall be allowed for every increase of 3 mm pile height over the specified values for mats having mass below 6000 gms/m^2. When the mass reaches 6000 gms/m^2 the lift in pile height and the corresponding mass in gms/m2 as given in (a) above shall be made applicable.

<u>Gymnasia Mats</u>

An increase of 900 gm/m^2 will be allowed for every increase of 6mm pile height over the specified nominal value.

For defence requirement the total mass of mat of size 183 cm. x 183 cm. including four cordage handles shall be 38 kg.

c) IMPORTANT DECISIONS OF THE PANEL OF EXPERTS

<u>Date of meeting Limitations for pile height / weight</u>		
8-9-1967	**Approved mats of the Rod and creel varieties with the maximum pile thickness as specified below:**	
	Rod mats	**: Beach up to 2”**
	Creel mats	**: Beach and Vycome – up to $1^1/_2$ ”**
30-10-1967	**Allowed Vycome Gymnasia mats up to 4” pile**	
18-9-1968	**Allowed V C 8 mats with a pile height of 1”** **<u>Formula for Creel mats of higher pile height</u>**	
18-9-1969	**An increase in weight by 2 oz per sq ft. for the1st two lifts of 3 mm 1/8” and 1 oz per sq ft for subsequent lifts**	
8-1-1970	**Approved Vycome Rod mats with 21/4” pile height.**	
8-4-1971	**Approved T R – 1 26 oz. with 13/8” pile height.**	
24-6-1971	**Decided that upper lifts should be allowed for special varieties also as in the case of other mats included in the Indian Standards.**	
3-11-1971	**Special sanction (letter No. 6 (16) 71 dated 3-11-1971 from the Export Inspection Agency, Cochin) Accorded approval of V C -3 mats of 40 mm. pile thickness satisfying the requirements of weight in accordance with the formula for mats of higher pile height**	
7-12-1971	**Decided that T Vycome mats of higher pile than the ones already approved should not be allowed**	
11-4-1973	**Fixed the extra weight of the rubberised coir fibre underlay of 2 mm. thickness as 2 oz. per sq. ft. Mats with adhesives of different thickness would be taken up appropriately**	

6-1-1979	Decided to extended the maximum pile thickness as 4" in Beach Gymnasia mats also.
12-4-1982	Extra weight for latex backing for creel mats 1) A thin foam of rubber sheet with cotton gauze underlay is pasted to the back of the mat using latex based glue 340 gms/m^2. 2) A thin foam of rubber sheet with a 7 oz. hessian cloth underlay is pasted to the back of the mat using latex based glue 590 gms/ m^2. The rubber sheet should be firmly pasted to the back of the mats and the edges neatly and securely finished. A tolerance of -10 % and +7.5 % is permitted on this extra weight on an ad – hoc basis. This is subject to revision after further studies on the subject.
8-10-1983	Extra weight for latex backing and edge finishing for Creel mats Latex backing - 200 gms/m^2 All round boarder of creel mats are Finished with rubber edging of 15 mm thickness to give the appearance that the mat is in a frame - 90gms/R.metre
4-8-1987	Extra weight allowed for glueing the ends of coir mats are as follows: 'A' process(2"width) – 125 gms. Per running metre of glued ends. 'B' process (1"width) - 65 gms. Per running metre of glued ends.
18-8-1989	'C' process (1/2" width) - 40 gms per running metre of guled ends
<u>General decisions</u>	
20-7-1967	Decided that for mats of 13/4" pile height and above a 9 ply braid should be used
9-10-1967	Decided that specifications of the higher grade in the Indian Standards could be applied to those varieties which weighed over the mean weight between the adjacent grades of the Indian Standards. Those varieties which weighed below the mean weight were to be designated as the lower grade
6-8-1969	Allowed export of Creel and Fibre mats bound with braid alround.
"	Decided that in doubtful cases random tests should be conducted for determining the runnage of yarn used for Corridor and Sinnet mats.
10-7-1970	Allowed use of sisal strands at the selvedges of Vycome Rod mats in rolls provided the exporter could declare

	the details of such embellishments in the application for registration by the Coir Board.
7-12-1970	Allowed use of Aloe Yarn as weft in VC 5 in place of Vycome yarn.
24-6-1971	Allowed VC-1 mats in rolls with 10 cms. length of brush less portion on either ends provided the weight of the rolls agreed with the weight permitted to VC-1 mats.
3-11-1971	(Special sanction – letter No 6 (16) 71 dated 3-11-1971 from the Export Inspection Agency-Cochin). Accorded approval for export of stenciled Corridor mats conformi-ng to the specifications laid down for the variety.
27-6-1972	Decided that only Creel mats might be allowed to be woven breadth wise for vertical stripe patterns to a maximum size of 36 inch x 22 inch all other varieties, 12 inch wide and 21 inch long.
30-3-1977	Decided to allow use of polythene strands in the warp of coir mats on condition that broken ends, if any, should be fused together and not knotted as is done in the case of coir yarn.
6-1-1979	Agreed to the use of un retted fibre in Fibre mats.
9-11-1979	Creel mats and Loop mats with intermittent gaps of tuft less portion are allowed for export. The weight per unit area of a particular quality with gap formation shall be proportionately lower than the value specified for that quality depending upon the total area of tuft less portion in the mat.
9-11-1979	Decided to allow the special tolerance for coir mattings made out of Hydrogen peroxide bleached coir yarn for coir mats also.
7-4-1981	Approved the export of all varieties of Rod and Creel mats with uncut or partially cut pile, provided the mats with partially uncut pile maintain uniform level in the cut and uncut portion. Also decided that the values specified for the various factors of the respective varieties are maintained in such cases.
6-11-1981	Approved the use of single ply sisal as an additional embellishment for Coir mats.
12-11-1982	Approved exports of braids in different number of piles and using any variety of yarn other than Beach as required by the buyer may be allowed with a stipulation that the coir yarn, if any, used may be of inferior variety than what is used for plating. The factors for assessment of the quality of the braid shall be type of yarn used and its weight.
2-12-1987	Decided that yarn spun out of decorticated brown fibre

	may also be allowed to be used for pile of mats along with Beach yarn. All other specifications remaining unchanged. Also decided that there should not be a mixture of both Beach yarn and decorticated yarn for the pile in the same mat.
2-12-1987	Decided to allow end sealing with synthetic glue to prevent fraying off of the cut ends of Mats & Mattings.
24-11-1983	Decided to allow the use of single ply Sisal and Aloe for the manufacture of coir mat and mattings on condition that requirements of other specifications of quality and weight should be maintained unaltered. Decided to allow export of coir mats and mattings with flocked designs subject to fixation of price and registration of contracts by the Coir
6-11-1989	The panel decided that the following varieties will continue to be inspected/exported even though they do not figure in the BIS list 1. Creel Mats - BC-5, VC-3 and VC-9 2. Rod Mats - BR-9, BR-10, BR-11, BR-12, VR-4, VR-5, and VR-6 3. Inlaid Rod Mats – BR-2, BR-4, BR-5, VR-2, and BRIY-2 4. Fibre Mat - FM-1 5. Inlaid Bit Mat - AB -1 6. Corridor Mats - TC-1 7. Loop Mats - RL-3 and RL-4 The Panel agreed that country hanks of all notified varieties of coir yarn (Baled) and also Parur variety can be allowed for export in the baled form.
6-11-1989	The Panel decided that Parur variety in the baled form as grade No. 4 with runnage85metre/kg. would be allowed for export.
26-12-1989	The Panel decided that polythene packing also will be allowed for packing baled coir yarn.
11-5-1990	Breadth wise weaving of coir mats can be allowed provided the compactness and fitness of the mats are properly secured by end finishing such as glueing and rubber edging.
3-8-1990	Unretted green husk fibre will be used for manufacturing coir products for export and domestic markets.
”	Decided that requests received from the Exports for qualities which could be accommodated in the already approved qualities with minor changes could be allowed

	by the Member Secretary with the approval of the Chairman. Such cases will be subsequently brought to the notice of the Panel of Experts.
12-8-1991	Approved use of polypropylene to the extend of 15% by weight in the pile of SPC 12 quality mats.

d) Tolerances 1. Dimension	
a. Length b. Width	Plus or minus 1% or 13 mm whichever is higher. Corridor, Mesh and Rope mats: Plus 19 mm and minus 13 mm Plus or minus 1% or13 mm whichever is higher.
2. Mass Mats of width 300 mm and below Mats of width above 300 mm and Below 760 mm Mats of width 760 mm and above Gymnasia mats for defence requirements of size 183 x 183 cm. with mass 38 kg. Special tolerance for beveled mats Corridor Mats and Rope mats	 Plus 12.5% and minus 5% Plus 7.5% and minus 5% Plus 5% and minus 10% Plus 4 kg. and minus 2 kg. Creel Mats 1% Rod and Bit mats 1.5% Fibre mats 2%. Plus 7.5% and minus 5%

In respect of qualities where the formula for in crease in mass for increased pile height is applied the maximum and minimum limits of tolerance would stand raised by the applicable standard lift from the stipulated levels of the basic quality.

3. Ends and Picks Ends Picks For mats of width Less than760 mm For mats of width 760 mm and above For Gymnasia mats	 Plus 1 per dm and minus 0 Plus 0 and minus 5% Plus 0 and minus 10% Plus or minus 1 per dm
4. Diameter of Rope Lovers' Knot mats	 Plus or minus 3mm
5. Pile Height Creel Mats Gymnasia mats	 Plus or minus 1.5 mm Plus or minus 3 mm

e) Constructional details of Creel mats

a) General Characteristics :

A mat made of two or more chains, one tight and other slack working as pile or binding, the pile being formed by cutting slack chain bent over a grooved iron rod suitably inserted between slack and tight chains.

b) Constructional Details

Designation	Type of yarn				Construc-tion	Ends per dm	Picks per dm	Pile Height mm	Mass gms/m^2
	Slack Chain	Tight Chain	Weft	Pile					
1	2	3	4	5	6	7	8	9	10
Hand loom mats									
BC1	----	Beach /Vycome/ Alapat	Beach	Beach	Warp cut pile	9	24	22	4800
BC2	----	do	do	do	do	9	24	25	5400
BC3	----	do	do	do	do	9	25	28	6000
BC4	2 or 3 ply Jute	do	do	do	do	9	24	25	6000
BC5	Vycome	Vycome	Vycome	Chavara/ Alapat	Warp cut pile	9	22	28	6600
VC1	----	Vycome/Al apat	do	Vycome	do	9	25	22	5400
VC2	----	do	do	do	do	9	25	25	6000
VC3	----	Vycome	do	do	do	9	25	28	6600
VC4	2 or 3 play Jute	do	do	do	do	9	25	22	5400
VC5	do	do	do	do	do	9	25	25	6000
VC6	do	4 or 5 ply Jute	4 or 5 ply Jute	do	do	14	40	19	5100
VC8	do	do	3 ply Jute	do	do	17	52	13	4350
VC9	do	do	Vycome	do	do	16	43	16	4800
VC10 (Spl.C-1)	2 ply Jute	Vycome	Vycome	Vycome	Warp cut pile	14	40	19	4200
VC11 (Spl.C-10)	3 ply Jute	do	do	Vycome and Fibre	do	17	24	25	6300
VC12 (Spl. C-14)	do	do	do	Vycome (centre WoolBorder)	do	9	28	19	5100
VC 13* (Spl. C-16)	Anjengo A	do	do	Anjengo A	do	10	24	15	3965

*** Unsheared and large size mats having a minimum width of 100 cm.**

POWERLOOM CREEL MATS

Power loom creel mats are woven in rolls and then cut into required size.

Constructional Details

Quality No.	Type of Yarn				Chains/Ends	Picks	Pile Height	Weight gms./ m^2
	Slack chain	Tight chain	Weft	Pile	Per dm.	Per dm.	mm.	
1	2	3	4	5	6	7	8	9
SPC1	3 ply jute	2 ply sisal	5 ply jute	Vycome	9	28	18	5700
SPC2	do	5 ply jute	do	do	9	28	18	5700
SPC3	do	2 ply sisal	do	do	9	26	20	5700
SPC4	do	5 ply jute	do	do	9	26	20	5700
SPC5	do	5 ply jute	do	do	9	26	20	6000
SPC6	do	Anjengo-M	do	do	9	26	20	6000
SPC7	do	Anjengo-M	do	do	9	26	24	6000
SPC8	do	Anjengo-M	5 ply jute	Brown Fibre Yarn (Medium)	9	22	24	5600
SPC9	do	do	do	Vycome	9	26	28	7200
SPC10	do	do	do	Brown Fibre Yarn (Medium)	9	22	28	6000
SPC11	do	do	do	Brown Fibre Yarn (Medium)	9	22	20	5200
SPC12	Anjengo A	do	Anjengo A	Vycome	9	22	32	8000
SPC13	Poly 700M/kg	Anjengo –M 180 M/kg	Poly 700 M/kg	Quilandy 130 M/kg & Poly 180 M/kg	9.5 (Tight) 4.75 (Slack)	21	40	11600

NOTE: Brown Fibre Yarn shall be of medium quality free from impurities and pith.
TOLERANCES PERMITTED: Tolerances as applicable to handloom mats of CREEL VARIETY.

f) Constructional Details of Rod and Rod inlaid mats

a) General Characteristics

A mat with pile formed by cutting two or more strands of yarn folded together and wound around a grooved iron rod along with the alternate ends of warp.

b) Constructional Details:

Designa-tion	Types of Warp Yarn	Type of Weft Yarn	Type of pile Yarn	Construc - tion	Ends(chain) Per dm.	Picks per dm	Pile Height mm	Mass gms/m^2
1	2	3	4	5	6	7	8	9
BR1	Beach or Vycome	Beach	Beach	2 x 2	9	9	25	4200
BR2	do	----	do	2 x 2	9	11	28	4800
BR3	do	do	do	2 x1	10	11	25	4800
BR4	do	do	do	2 x 1	10	13	28	5400
BR5	do	do	do	3 x2	10	9	28	5400
BR6	do	do	do	3 x 2	10	9	32	6000
BR7	do	do	do	3 x 1	10	11	28	5400
BR8	do	do	do	3 x 1	10	12	32	6000
BR9	do	do	do	3 x 1	10	13	35	6600
BR10	do	do	do	3 x 1	10	13	38	7200
BR11	do	Beach/ Kallai	Chavara/ Alapat	2 x 1	9	9	32	6000
BR12	do	Chavara/ Alapat	do	3 * 1	9	10	32	6600
BR13 (SplR15)	do	Beach	Beach	4 x 1	10	11	38	7200
BR14 (Spl R-16)	Beach	do	2 strands Beach 2 strands Vycome	4 x 1	10	10	35	6600
BR15 (Spl R-1)	Beach or Vycome	Beach	Beach	3 x 3	10	8	32	5100
VR1	Vycome	Vycome	Vycome	3 x 1	10	12	32	7200
VR1D *	do	do	do	4 x 1	10	12	40	8400
VR2	do	do	do	4 x 2	10	9	32	7200
VR4	do	do	do	4 x1	10	11	35	7800
VR5	do	do	do	4 x 1	10	11	38	8400
VR6	do	do	do	4 x1	10	12	41	9000
VR7 (Spl R-7)	do	do	do	6 x 1	12	13	35	7800
VR8@ (SplR19)	Tight- Vycome Slack - Vycome	do	do	----	12	20	----	5490

TR1	Vycome	T.Vycome/ Vycome	T. Vycome	3 x 1	10	9	32	7200
TR2 (Spl R-4)	Vycome/ Beach	do	do	3x 2	10	8	32	6600
RR1 (Spl R-12)	Vycome/ Alapat	Vycome	Aratory	4 x 1	10	12	32	7200
LR1 (Spl R-8)	Vycome	do	Alapat	4 x 1	10	10	32	7200
FIBRE INLAID								
BR1	Beach/ Vycome	Beach	Beach	2 x2	10	10	28	5400
BR2	do	do	do	2 x 2	11	11	32	6000
BR3	do	do	do	3 x 1	11	11	28	6000
BR4	do	do	do	3 x 1	11	11	32	6600
BR5	do	do	do	3 x 2	11	11	35	7200
BR6 (Spl-Rl-1)	do	do	do	3 x 2	11	11	28	6000
BR7 (Spl-l-10)	do	do	Beach/ Alapat/ T. Vycome	3 x 1	10	11	35	7200
VR1	Vycome	Vycome	Vycome	4 x 1	11	12	32	7800
VR2	do	do	do	4 x 1	11	12	38	9000
TR1 (Spl Rl-12)	do	do	T. Vycome	3 x1	10	10	35	7800
RR1 (Spl-Rl-8)	do	do	Aratory	4 x 1	10	12	38	8400
LR1 (Spl-Rl-11)	Vycome/ Alapat	Vycome	Alapat	4 x1	10	11	38	8400
SPl Rl 9	Vycome	do	Vycome	4 x 1	11	12	28	7200
YARN INLAID								
BRY1 (BRIY-1)	Beach/ Vycome	Beach	Beach	3 x 1	11	12	32	6000
BRIY- 2	do	do	do	3 x 1	10	12	28	5400

*** Mainly for defence use**

@ A mat having the Rod construction basically but has features of fibre mat since. It has slack and tight chains. The pile is uncut and hence it has the appearance of Loop Mat also.

Note: The Construction 2 x 2, for example , implies that the pile is formed by two strands of coir yarn working as one and the weft comprising of 2 strands of coir yarn is inserted between two rows of pile.

g) Constructional Details of Fibre Mats

a) General Characteristics:

A mat made up of two chains, one tight and the other binding, the pile being formed by insertion of tufts of coir fibre on alternate strands of tight chain.

b) Constructional Details:

Designa-tion	Slack Chain	Tight Chain	Weft	Pile	Construc-tion	Ends/ Dm.	Picks/ dm	Pile Height mm.	Mass Gms/m^2
1	2	3	4	5	6	7	8	9	10
FM 1	----	Vycome/ Alapat	Vycome	Fibre Grade 1 or 2	Inserted Fibre	12	12	31	7800
FM 2	Vycome/ Alapat/ Anjengo	Vycome/ Alapat/ Anjengo	do	Retted – Fibre Gr. 1 or 2	do	12	12	28	7800
FM3	do	do	do	do	do	14	14	32	8400
FW 1	Vycome	do	do	Wool border + retted fibre at centre	do	14	15	19 (border) 28 (inside)	6600
FW 2	Vycome	Alapat/ Vycome	do	Retted Fibre & Wool	do	12	12	35	10200

h) Constructional Details of Bit Mats

a) General Characteristics

A mat with the pile formed by insertion of bits of yarn on every alternate strands of chain.

b) Constructional Details

Designa-tion	Warp	Weft	Pile	Construc-tion	Ends/ dm	Picks/ dm	Pile Height Mm.	Mass Gm/m^2
1	2	3	4	5	6	7	8	9
BB1	Beach/ Vycome	Beach	Beach bits	Inserted Yarn bits	9	9	32	6600
VB 1	Vycome	Vycome	Vycome bits	do	9	9	35	7800
AB 1	do	do	Hard twisted yarn bits	do	9	9	35	8400

FIBRE INLAID								
AB 1	Vycome	Vycome	Hard twisted yarn bits	Inserted bits	11	12	35	9000

i) Constructional Details of Corridor Mats

a) General Characteristics:

A mat in which both warp and weft strands are continuous without tucking in or binding.

b) Constructional Details:

Designation	Type of warp Yarn	Ends per dm. Min.	Type of weft Yarn	Runnage m/kg	Mass Gm/m^2
1	2	3	4	5	6
AC 1	Rope Yarn	6	Anjengo	240	4550
AC 2	do	5	do	240	4250
AC 3	do	5	do	220	3650

AC 4 (Spl. CD-1)	**Anjengo double strands 12 score**	**6**	**do**	**275**	**3650**
AC 5@(Spl. CD-9)	**Aratory 3 ply twisted 6.4 mm. dia**	**5**	**Anjengo 3 ply twisted 6.4 mm dia**	**----**	**5400**
RC 1	**Rope Yarn**	**6**	**Aratory**	**240**	**4250**
RC 2	**Rope Yarn**	**5**	**Aratory**	**240**	**4000**
RC 3	**do**	**5**	**do**	**220**	**3350**
RC 4 (Spl. CD – 2)	**Aratory double strands 12 score**	**6**	**do**	**280**	**3350**
RC 5 (Spl. CD – 5)	**Rope Yarn**	**6**	**do**	**280**	**3650**
LC1	**do**	**5**	**Alapat**	**190**	**4250**
WC 1	**do**	**5**	**Vycome**	**260**	**4250**
WC 2	**do**	**5**	**do**	**240**	**3650**
WC 3	**Rope Yarn**	**5**	**Vycome**	**220**	**3050**
WC4 (Spl. CD – 4)	**do**	**3**	**Vycome/ Aratory**	**220/220**	**5800**
QC 1 (Spl. CD -3)	**do**	**5**	**Quilandy**	**110**	**4000**
QC 2 (FSQ 1)	**Wooden reapers fully covered with Quilandy Yarn**	**3**	**do**	**120**	**10750**
YC 1(Spl.CD – 6)	**Beypore**	**5**	**Beypore**	**70**	**3200**
YC 2 (Spl. CD – 8)	**do**	**5**	**do**	**80**	**4250**
CC 1 (Spl. CD – 7)	**** Laccadive Rope No.2**	**5**	**Laccadiv Rope No.2**	**40**	**5450**
DC 1 (Spl.CD – 10)	**2 ply yarn spun, from unretted fibre**	**5**	**2 ply yarn spun from unretted fibre**	**----**	**4050**
TC 1	**Rope yarn**	**5**	**T.Vycome**	**----**	**3650**
SCD - 12	**Hawser laid Rope (3 ply) of 10 diameter made of Anjengo A yarn:**	**3**	**Hawser laid Rope (3 ply) of 15 mm diameter made of Anjengo A yarn**	**Picks dm 7**	**6100**

* Binding weft Aratory 12 scorage minimum.

** Definition of Laccadive Rope Yarn: Hand spun yarn, spun from coir fibre extracted from retted husks; containing little or no pith less hairy; evenly spun; ranging from natural golden colour to natural reddish brown; grades as per scorages given Below :

Laccadive No. 1 : 6 to 8 and Laccadive No. 2 : 4 to 6

@ The number of layers of rope on the four side of the mat shall be two or more to make the border prominent. The four sides are knitted with Anjengo yarn prevent slipping of the warp and weft.

j) Constructional Details of Sinnet Mats

a) General Characteristics

A mat made of plaited (braided) coir yarn of 3 or more strands stitched together in a frame.

b) Constructional Details

Designation	Type of yarn	Runnage m/kg	No of Strands of Ply	Thickness Minimum mm	Mass gm / m^2
1	2	3	4	5	6
SA1	Anjengo	220	9	19	3650
SA 2	do	220	9	19	4250
SA 3	do	220	11	25	4850
SA 4	do	220	11	25	5450
SA 5	do	220	11	25	6100
SA 6 (Spl. S-2)	do	220	11	28	7300
SA 7(Spl. S-8)	do	275	9	19	5490
SA 8 (Spl. S- 7)	Anjengo	275	3	10	3000
SB 1	Beach	250	9	19	3350
SB 2	do	250	9	19	3950
SB 3	do	250	11	25	4600

SR 1	Aratory	220	9	19	3350
SR 2	do	220	9	19	3950
SR 3	do	220	11	25	4600
SR 4	do	220	11	25	5200
SR 5	do	220	11	25	5800
SR 6 (Spl. S – 5)	Anjengo/ Aratory	220/220	19	28	7300
SL 1 (Spl. S – 3)	Alapat	180	11	25	7900
SL 2 (Spl. S – 6)	do	190	12	31	6700
SD1 (Spl. S – 1)	Ashtamudy	110	9	25	6100
SV 1	Vycome	220	9	19	3650
SV 2	do	220	9	19	4250
SV 3	do	220	11	25	4850
SV 4	do	220	11	25	5450
SV 5 (Spl. S – 4)	do	240	19	28	6700

Note:- Coir yarn for inner strands of the braid may be of a suitable quality.

k) Constructional Details of Gymnasia Mats:

a) General Characteristics :

A mat with pile formed by cutting three or more yarns folded together and wound around a grooved iron rod long with alternate ends of warp. The piles is made thicker to meet the specific requirements.

b) Constructional Details :

Designation	Type of Warp Yarn	Type of Weft Yarn	Ends (Chains) per dm.	Picks Per dm	Type of Pile Yarn	Pile Height mm	Mass gm/m2

1	2	3	4	5	6	7	8
VG 1 (BVG-1)	Vycome	Vycome yarn single, sufficient to guarantee tight weave	10	10	Vycome yarn free from impurities min. 4 fold yarn drawn together	63	12200
BG 1 (BBG-1)	do	Beach yarn single, sufficient to guarantee tight weave	10	10	Beach yarn min. 3 fold yarn drawn together	63	11000

I) Constructional Details of Loop Mats:

a) General Characteristics

A mat made up by three chains, one tight and other slack working as pile or binding. The pile is formed by loops formed out of slack chain in the weaving process.

Constructional Details :

Design-ation	Type of yarn for tight chain	Runnage m/kg.	Type of yarn for binding chain	Runnage m/kg	Type of yarn for loop chain	Runnage m/kg.	Type of yarn for weft	Ends per dm Min	Picks per dm Min.	Mass gm/m2
1	2	3	4	5	6	7	8	9	10	11
RL 1	Vycome	220	Vycome	240	Aratory	220	Vycome	10	22	4250
RL 2	do	220	do	240	do	240	do	10	22	3650
RL 3	do	220	do	240	do	240	Beach	10	22	3650
RL 4	do	220	do	240	do	260	Vycome	9	22	3050
VL 1	do	220	do	240	Vycome	260	do	10	28	3650
AL 1 (Spl. L – 2)	Vycome	220	----	----	Anjengo	220	Vycome	10	24	4880
AL 2 (Spl. L – 4)	do	220	Anjengo	275	do	275	do	10	20	3650
AL 3 (Spl. L-5)	do	220	Vycome	240	do	240	Quilandy	10	20	5490

Constructional Details of Loop Fabrics (Geo Textiles)

a) General Characteristics :

A product made with loop construction usually manufactured in rolls for use as Geo fabrics for soil erosion control and soil stabilization.

b) Constructional Details :

Quality number	Tight chain	Binding chain	Loop chain	Weft	Tight	Binding	Loop	Picks Per dm	Weight Gms/ m^2
1	2	3	4	5	6	7	8	9	10
SPL L 7	Vycome	Vycome	Vycome	Vycome	5	10	5	8	1300
SPL L 8	do	do	Quilandy	do	4	8	4	8	1600
SPL L 9	Beach	Beach	Beach	Beach	5	5	5	9	1200

m) Constructional Details of Rope Mats (Lover's Knot Mats)

a) General Characteristics

A mat made with a coir rope guided through a number of upright nails fixed on a flat surface. This mat may be made either in oval or oblong shapes.

b) Constructional Details :

Designation	Type of Rope	Type of Yarn	Diameter of Rope mm.	Mass gm / m^2
1	2	3	4	5
LKA	Shroud laid	Anjengo	14	6100
LKR	do	Aratory	14	5490
LKV	Shroud laid	Vycome	25	11450

Note: For oval shaped mats the nominal mass in gm / m2 shall be 10 % less than specified.

n) Constructional Details of Mesh Mats

a) General Characteristics

A mat made by laying coir yarn in criss-cross manner between a number of nails fixed on a frame and knotting the intersecting with coir yarn.

b) Constructional Details :

Designation	Type of yarn used in the base	No. of Strands per dm.min.	Binding Yarn	Mass Gm/m^2
1	2	3	4	5
MBA	Beypore	10 x 10	Anjengo / Aratory	3660
MRA	Aratory	20 x 20	Anjengo	3660
MVV	Vycome	20 x 20	Vycome	3050
MQA	Quilandy	20 x 20	Anjengo	5490

Note: The number of strands used at the edges of MBA may be suitably increased and all the four edges may be knotted properly. All the four edges of MRA. MVV may be finished either by stitched with 7 ply braid on both sides or by plaiting with coir yarn to give the appearance of braid and the edges of MQA may be finished by plaiting with coir yarn give the appearance of braid.

IV. COIR MATTINGS, MOURZOUKS AND CARPETS

a) General Requirements:-

The Coir Mattings, Mourzouks and Carpets shall be manufactured from natural, bleached or dyed yarn as agreed to between the buyer and the seller. The yarn shall be of 2 ply.

The Coir Mattings, Mourzouks and Carpets shall be firmly and evenly woven.

The Coir Mattings, Mourzouks and Carpets shall be plain, dyed or stenciled or may have designs woven in to them

The Coir Mattings, Mourzouks and Carpets shall be free from moisture and other extraneous matters.

The Coir Mattings, are woven on power loom and handloom. It is customary to use aloe, sisal or jute strands in both warp and weft to pick out the pattern.

Coir Mattings may be made in to matting rolls, matting rugs or matting mats. Unless otherwise agreed to between the buyer and the seller, the cut ends of the matting mats or rugs shall be either stitched with suitable cotton thread or bound with jute, rexin or leather webbing (plain, coloured or fancy) or ends doubled back and interlaced in the body of the matting mats or rugs or sealed with suitable edge sealing compound, like rubber based adhesive or glue.

Coir Mourzouks are usually manufactured in a variety of sizes and patterns and heavy and durable. Mourzouk weaving differs from matting weaving in so-far-as it is woven on special looms and the surface and the pattern of the mourzouks are formed by the weft and not by the warp. On completion of weaving, the ends of the warp are drawn back in to fabric give a strong straight edged finish. This type of weaving enables the production of intricate, geometrical and floral designs.

Coir Carpets, commonly known as 'Alleppey Carpets' are manufactured in the same way as mourzouks, but with double warp threads instead of single, to produce a very much thicker and heavier material. Because of this doubling of the warp, a ribbed effect is produced in the finished material.

The Coir Matting for Cricket Pitches is a special type of matting which is usually fabricated out of only certain types of coir yarn in accordance with well accepted practices. The matting is usually be in twill weave 3 treadle or 4 treadle. The coir matting for cricket pitches may be provided with canvas or leather binding at the 2 ends. The width of the binding usually be 6 to 7.5cm and double stitched at 2 places with waxed cotton cord. On the width side at every 45 cm from the ends and at the length side at every 1.6 to 1.8 meter, circular or square patches of leather or canvas are stitched with waxed cotton cord. In the centre of these patches, eyelets having holes not exceeding 20 mm diameter and with top and bottom catches of 25 mm diameter are firmly fitted. the leather or canvas having 25mm sides or if round of 75 mm diameter. The matting shall be firmly and evenly woven from selected yarn of uniform scorage with least number of splicing whenever splicing is done, if shall be so even as to avoid non-uniformity in diameter.

Coir matting/mourzouks/carpets shall be legibly and indelibly marked on the back or a label shall be attached with it giving following particulars or in accordance with the agreement between the buyer and seller.

a) Designation

b) Size or Dimensions

c) Manufacturer's name, initials or trade mark or any other identification mark.

The mattings/mourzouks /carpets shall be suitably packed as agreed to between the buyer and the seller. Each packages shall be marked with the following or in accordance with the agreement between the buyer and seller.

a) Name of the products

b) Gross mass

c) Number of pieces packed in the package

d) Size number or dimensions

e) Designation and

f) Name, initials, trade mar or any other identification mark of the manufacturer.

b) Dimensions:-

The dimensions of coir mattings/mourzouks/carpets shall be as specified in the agreement between the buyer and the seller. The coir mattings are generally supplied in rolls of length not less than 11 metres and width ranging from 300 to 5000 mm. Coir mourzouks and carpets generally supplied are manufactured in specific sizes to suit the buyers requirements.

The preferred dimensions for coir mattings for cricket pitches shall be as follows:-

Length	Width
1) 20.12 or 10.06 Mtrs	2.74 Metres
2) do	2.44 "
3) do	1.83 "

c) Important Decisions of the Panel of Experts:-

Date of meeting	Decisions
20-7-1972	Allowed export of coir-cum sisal mattings without any restriction on the sisal content of the product.
10-2-1977	Allowed a special tolerance of +19 mm -13 mm, for length in the case of coir rugs with tucked in finishing made of Quliandy yarn.Special sanction (letter No. 7 (4) MT/76-77/73 dated 25-2-1977 from Export Inspection Agency, Cochin) In the case of the variety M2BQ1 (S2BM7) made as rugs with ends tucked in, an extra weight at he rate of 5 gm/dm, worked out for total length of the tucked in portion of the rugs has to be added to the permissible limits of the weight stipulated for the coir matting.
15-10-1977	Decided to allow the use of chemically bleached coir yarn in PM4A4 (P4A4) and PM4A5 (P4A5) provided they maintained the weight requirements of those varieties.

6-1-1979	Decided that for the export of coir mattings made out of coir yarn spun from unretted fibre, the exporter should get it endorsed by the Coir Board in the registered application.
20-9-1979	Decided to allow the use of sisal or aloe in coir mattings either in the warp or in the weft provided the number of sisal or aloe strands used in such cases is mentioned for each pattern
9-11-1979	Decided to allow use of Aratory yarn for the weft of four-treadle weave mattings wherever the type of yarn is specified as Vycome subject to the condition that the change would specifically be mentioned while registering the contract.
9-11-1979	Decided that for Hydrogen peroxide bleached mattings the permissible limits in weight might be re fixed as plus 5% minus 10% thus making the range in weight as 15%. In the case of coir mattings made partially with Hydrogen peroxide bleached yarn the special tolerance shall be in proportion to the quantity of hydrogen peroxide bleached yarn used, in relation to the total weight of the matting
3-9-1980	Decided to allow the export of two treadle basket weave mattings made either 2 x 2, 3 x 2 or 3 x3 construction.
15-12-1981	Increase in weight for the rubber latex backing
	M2BA2 - 640 gms/m^2 with plus or minus 10% KA7 (SK 1) - 820 gms/m^2 with plus or minus 10%
10-5-1982	EXTRA WEIGHT FOR TWO TYPES OF BACKING FOR MATTING MATS AMD MATTING RUGS
	Type I A thin foam rubber sheet with cotton gauze is pasted to matting mats /matting Rugs on one side using latex-based Glue. Extra weight - 325gms
	Type II A thin foam rubber sheet with a 7 oz. Hessian cloth is pasted to matting mats/ matting Rugs on one side using latex based glue. Extra weight-600 gms.
Note:	The rubber sheet should be firmly pasted to the back of Matting Mats/Matting Rugs and the edges neatly and securely finished. Tolerance : A tolerance of – 10%) is permitted. + $7^1/_2$%)
	The extra weight is on an adhoc basis and the tolerance is subject to revision based on the finding from the field study
18-6-1982	Allowed PKA 9 (PKM 12) to be manufactured in the ratios of 1: 1 and 2 : 2 for tight and slack chains
18-10-1983	Decided to withdraw the minus tolerance of 1% in the length of coir matting rolls.
17-2-1986	Decided that mesh matting pieces without any end finishing may be allowed for export if so required by the buyer. The exporter should submit to EIA satisfactory proof from the buyer that the mesh matting pieces are required without end finishing and that there will not be complaints of shedding of the weft strands.
17-2-1986	Decided subject to maintenance of the specified weight for the different qualities of coir mttings, coir matting rugs and coir matting mats, the tolerance in warp and weft may be revised to a maximum of 2 per dm for warp ends and 2 per dm for weft. This would be subject to review after a period of six months.
4-8-1987	For every gap of 1 cm width running through out the length of the matting, an extra minus tolerance of 0.75% on the total weight of the matting shall be allowed.
2-12-1987	Decided to allow export of coir matting rugs with unfinished or unstitched ends, on specific mention of the requirements in the order sheet and the foreign buyer under takes not to prefer any claim due to shortage in length or loosing of strands at the cut ends.

2-12-1987	Decided that packing material for coir products shall be HDPE woven material/ jute hessian
24-11-1988	Approved that Vycome yarn also be used as weft for M2V3 subject to the condition that such use of Vycome yarn as weft should be mentioned in the notice of intimation for inspection
"	Decided to allow the use of single ply sisal and aloe for the manufacturer of coir mats and mattings on condition that requirements of other specification of quality and weight should be maintained unaltered.
"	Decided to allow the export of coir mats and mattings with flocked design subject to fixation of price and registration of contracts by the coir board.

d) Tolerance for Coir Mattings, Mourzouks and Carpets

The following tolerance are allowed for Coir Mattings, Matting Mats and rugs, Mourzouks, Coir Carpets etc.

1) Scorage of yarn : $^{+}_{-}$ 1

2) Dimension

a) Coir Mattings } **Length ..+ 1% minus –Nil**

Width .. Up to 180 cms $^{+}_{-}$ 1 3mm

Above 180 cms $^{+}_{-}$ 25 mm

b) Coir Matting rugs, coir carpets in roll from or in rug size and Coir Mourzouks.

Length .. $^{+}_{-}$ 13 mm

} width .. Up to 180 Cms $^{+}_{-}$ 13 mm

Above 180 Cms $^{+}_{-}$ 25 mm

c) Coir Mattings, Mourzouks Coir Carpets in mat sizes, Non woven matting mats And Carpets.

Length & Width .. $^{+}_{-}$ 13 mm

d) Coir matting for cricket pitches } **Length & Width .. $^{+}_{-}$ 1%**

3) Ends

Coir Mattins, Matting Rugs and Matting mats.

+ 2 strands per dm

} - 2 strands per dm

4) Picks

a) Coir Mattings, Mattings rugs Matting mats, Mourzouks and Coir Carpets. } **Width up to 275 cms – 5 % / Width over 275 cms - 2 per dm.**

b) Special tolerance for Power loom Coir Matting } **– 5%**

5) Mass

a) Coir Mattings, Matting rugs, Matting mats Mourzouks, Coir Carpets } **+ 7.5%**
Non-woven Carpets and Hand knotted Coir Nettings **-5%**

b) Non-woven Matting mats } **+_10%**

c) Permissible limits in weight for chemically (Hydrogen peroxide) bleached matting. } **+ 5% / _ 10%**

Thus making the range in weight as 15%

(The special tolerance is not allowed to M2BQ1 (S2BM7), as the weight specified is for chemically bleached yarn)

c) M2BQ1 (S2BM7) Extra weight for rugs with tucked in ends. } **5 gm/dm for the length of the tucked in portion.**

d) Extra minus tolerance when mattings are woven with gaps throughout the length } **0.75 % on the total weight for every gap of 1 cm. width**

RBMA Diameter of Rope : + 2 mm
No. of Rope per dm : +_1

e) Constructional Details of Coir Mattings-
Two – Treadle Plain Weave

1) Definition :

In this weave, each warp thread gets interlaced alternatively over and under by successive weft thread that is, when the odd ends are up even ends are down and vice-versa. Both sides of the matting present the same appearance and the matting is, therefore, reversible.

Designation	Type of warp yarn	Approximate Scorage of Warp yarn	Ends per dm	Type of weft yarn	Picks Per dm	Mass Kg/m^2
1	2	3	4	5	6	7
Handloom mattings;						
M2A1	Anjengo	15	33	Vycome/Beach	11	1.50
M2A2	Anjengo	14	31	Vycome/Beach	11	1.55
M2A3	Anjengo	13	29	Vycome/Beach	10	1.62
M2A4	Anjengo	12	27	Vycome/Beach	9	1.70
M2R1	Aratory	15	33	Vycome/Beach	11	1.42
M2R2	Aratory	14	31	Vycome/Beach	11	1.47
M2R3	Aratory	13	29	Vycome/Beach	10	1.55
M2R4	Aratory	12	27	Vycome/Beach	9	1.62
M2V1	Vycome	15	33	Beach/Vycome	9	1.35
M2V2	Vycome	14/13	30	Beach/Vycome	9	1.42
M2V3	Vycome	12	27	Beach/Vycome	9	1.52
M2V4 (S2M3)	Vycome	11	22	Vycome/Beach	9	1.25
M2V5(S2M10)	Vycome Thin	----	36	Vycome/Thin	12	1.10
M2B1	Beach	11/10	22	Beach	9	1.30
M2B2	Beach	9	20	Beach	9	1.40
M2Q1(S2M11)	Quilandy	----	17	Aratory	6	1.85
S2M4	Anjengo	13	19	Vycome	10	1.40
S2M12	Anjengo M	----	21	Vycome	8	2.30
Power loom Mattings						
PM2A1 (P2A1)	Anjengo	13	28	Vycome	13	1.70
PM2A2	Anjengo	12	26	Aratory/Vycome	13	1.80
PM2A3(P2A6)	Anjengo	15/16	42	Anjengo	11	1.70

PM2Q1(P2A2)	Quilandy /Ashtamudy	10	22	Vycome	10	2.00
PM2Q2(P2A3)	Quilandy /Ashtamudy	9	16	Vycome	7	1.80
PM2Q3(P2A4)	Quilandy	9	21	Vycome	17	2.40
P2A7	Mangadan K	11	23	Vycome	10	2.10
P2A8(2 x 1)	Anjengo A	15	36	Anjengo A	12	1.60

f) Constructional Details of Coir Matting-
Two- Treadle Basket Weave

Definition :

This weave is the same as that of two-treadle plain weave, both warp-wise and weft-wise (vertically and horizontally), but two or more strands of coir work together in the same order. This enables the production of attractive patterns in both stripe and check (tile). Both sides of the matting have the same appearance and the matting is, therefore; reversible.

Designation	Type of Warp Yarn	Approximate Scorage of Warp Yarn	Ends per dm	Type of Weft Yarn	Picks per dm	Mass Kg/m^2
1	2	3	4	5	6	7
Handloom Mattings						
M2BA1	Anjengo	15	30	Anjengo/Aratory	17	1.72
M2BA2	Anjengo	14	28	Anjengo/Aratory	17	1.80
M2BA3	Anjengo	13	26	Anjengo/Aratory	16	1.82
M2BA4	Anjengo	15	30	Vycome	17	1.62
M2BA5	Anjengo	14	28	Vycome	17	1.68
M2BA6	Anjengo	13	26	Vycome	16	1.72
M2BA7 (S2BM1)	Anjengo	16	34	Anjengo	17	1.62
M2BA8 (S2BM3)	Anjengo-M	12	25	Anjengo-M	12	2.62
M2BR1	Aratory	15	30	Aratory	17	1.68

M2BR2	Aratory	14	28	Aratory	17	1.72
M2BR3	Aratory	13	26	Aratory	16	1.80
M2BR4	Aratory	15	30	Vycome	17	1.58
M2BR5	Aratory	14	28	Vycome	17	1.62
M2BR6	Aratory	13	26	Vycome	16	1.68
M2BV1	Vycome	14	28	Vycome	16	1.47
M2BV2	Vycome	13	26	Vycome	16	1.52
M2BV3	Vycome	12	24	Vycome	15	1.58
M2BB1	Beach	10	20	Beach	15	1.38
M2BQ1 (S2BM7)	Quilandy	10	20	Quilandy	15	2.80

Note: Special minus tolerance of 5% is not allowed for M2BQ1 (S2BM7) as mass fixed is for Bleached Yarn matting.

1	2	3	4	5	6	7
<u>Power loom Matting</u>						
PM2BA1	Anjengo	12	30	Vycome	16	2.00
PM2BA2 (P2BA2)	Anjengo	14	32	Anjengo/Aratory	18	2.20
PM2BA3 (P2BA3)	Anjengo	14	28	Anjengo/Aratory	16	2.00
PM2BA4 (P2BA4)	Anjengo	13	28	Anjengo, Loose Twist	14	1.80
PM2BA5	Anjengo	16	32	Anjengo	22	2.00
PM2BA6	Anjengo	15	32	Anjengo	21	1.80
PM2BA7 (P2BA8)	Anjengo	15	36	Anjengo (16 score)	18	1.80

PM2BQ1	Quilandy	9	10	Anjengo	16	2.10

g) Constructional Details of Coir Mattings-
Three – Treadle Weave.

Definition

This weave is employed to obtain a thick and better looking matting than the two-treadle one. This type of weave produces a diagonal or herringbone effect. As the twill lines are formed on one side only of the fabric, this

Designation	Type of Warp yarn	Approximate Scorage of Warp Yarn	Ends per dm	Type of weft Yarn	Picks per dm.	Mass kg/m^2
1	2	3	4	5	6	7
Hand loom Mattings						
M3A1	Anjengo	16	35	Vycome /Beach	11	1.58
M3A2	Anjengo	15	33	Vycome /Beach	11	1.62
M3A3	Anjengo	14	31	Vycome /Beach	11	1.68
M3A4	Anjengo	13	29	Vycome /Beach	10	1.75
M3A5	Anjengo	12	27	Vycome /Beach	10	1.82
M3A6 (S3M2)	Anjengo	16	40	Vycome /Alapat	11	2.00
M3A7 (S3M4)	Anjengo	15	31	Vycome /Beach	11	1.52
M3A8 (S3M9)	Anjengo	13 (50%) 17 (50%)	36	Anjengo	19	1.90
M3R1	Aratory	16	35	Vycome /Beach	11	1.50
M3R2	Aratory	15	33	Vycome /Beach	11	1.55
M3R3	Aratory	14	31	Vycome /Beach	11	1.60
M3R4	Aratory	13	29	Vycome /Beach	10	1.68
M3R5	Aratory	12	27	Vycome /Beach	10	1.75
M3C1	Ashtamudy	11	24	Vycome /Beach	9	2.08
M3V1	Vycome	14	31	Vycome /Beach	10	1.40

M3V2	Vycome	13	29	Vycome /Beach	9	1.45
M3V3	Vycome	12	27	Vycome /Beach	9	1.52
M3B1	Beach	10	22	Beach	9	1.40
Power loom Mattings						
PM3A1 (P3A1)	Anjengo	13	28	Anjengo	14	1.80
PM3A2 (P3A2)	Anjengo (50%) & 2- ply Aloe thin (50%)	18 (Anjengo)	42	Anjengo (18 Score)	24	1.85

matting is non reversible. The use of this weave is principally for the manufacture of plain and solid coloured matting.

h) Constructional Details of Coir Mattings-
Four – Treadle Weave.

Definition:

In this type of weave the twill lines are formed on both sides of the fabric and the matting is, therefore, more ornate in appearance and reversible. It is used for the production of superior quality mattings in a variety of patterns such as reversible twill, reversible herringbone, reversible diamond, etc.

Designation	Type of warp Yarn	Approximate Scorage of Warp Yarn.	Ends per dm.	Type of Weft Yarn.	Picks per dm	Mass Kg/m^2
1	2	3	4	5	6	7
Handloom Mattings						
M4A1	Anjengo	15	33	Vycome	13	1.70
M4A2	Anjengo	14	31	Vycome	13	1.75
M4A3	Anjengo	13	29	Vycome	13	1.82
M4A4	Anjengo	12	27	Vycome	13	1.90
M4A5 (S4M4)	Anjengo	13	32	Vycome	15	2.13
M4A6 (S4M11)	Anjengo	14	31	Anjengo /Aratory	14	1.82
M4R1	Aratory	15	33	Vycome	13	1.62
M4R2	Aratory	14	31	Vycome	13	1.68
M4R3	Aratory	13	29	Vycome	13	1.75
M4R4	Aratory	12	27	Vycome	13	1.82
M4V1	Vycome	14	31	Vycome	12	1.47
M4V2	Vycome	13	29	Vycome	12	1.55

M4V3	Vycome	12	27	Vycome	12	1.62
M4V4(S4M22)	Vycome Thin	20	40	Vycome	17	1.35
M4Q1 (S4M17)	Quilandy	9	20	Quilandy	9	2.62
M4Y1 (S4M13)	Beypore	6	14	Beypore	7	2.80
Power loom Mattings						
PM4A1 (P4A1)	Anjengo	13	30	Vycome	16	1.95
PM4A2 (P4A2)	Anjengo	14	32	Vycome /Aratory	17	2.20
PM4A3 (P4A3)	Anjengo	14	28	Vycome /Aratory	16	2.00
PM4A4 (P4A4)	Anjengo M/ Mangadan- K(2/3) & Sisal (1/3)	13	26	Vycome	17	1.96
PM4A5 (P4A5)	Anjengo M/ Mangadan- K(2/3) & Sisal (1/3)	13	25	Vycome	16	1.80
PM4A6 (P4A6)	Anjengo- M	13	29	Vycome	12	2.20
PM4A7 (P4A7)	Anjengo	12	28	Vycome	14	1.80
PM4A8 (P4A8)	Anjengo	16	32	Anjengo	22	2.00
PM4A9 (P4A9)	Anjengo	15	32	Anjengo	21	1.80
PM4A10 (P4A10)	Anjengo	12	27	Vycome	14	2.20
PM4A11 (P4A12)	Anjengo	11	28	Aratory /Vycome	15	2.10
PM4A12 (P4A13)	Anjengo or Quilandy	13 or 9	11	Aratory	13	2.10
PM4Q1 (P4A11)	Quilandy	9	10	Anjengo	16	2.10

i) Constructional Details of Coir Mattings- Mesh Mattings (Geo Textiles)

Definition

A matting of two-treadle weave in construction with the difference that the warp and weft strands are positioned at a

distance to get mesh effect.

Designation	Type of Warp Yarn	Approximate Scorage of Warp Yarn	Ends per dm.	Type of weft Yarn	Picks per dm.	Mass kg/m2
1	2	3	4	5	6	7
Hand loom Mattings						
MMA1 (H2M1)	Anjengo	14	9	Vycome	8	0.650
MMA2 (H2M4)	Anjengo	12	19	Aratory	11	1.400
MMA3 (H2M8)	Anjengo	12	11	Aratory	7	0.700
MMA4 (H2M9)	Anjengo	11	13	Aratory	7	0.900
MMA5 (H2M10)	Anjengo	11	18	Anjengo	9	1.300
MMR1 (H2M3)	Aratory	15	14	Aratory	14	0.875
MMV1 (H2M5)	Vycome	13	9	Vycome	8	0.740
MMV2 (H2M6)	Vycome	12	4.6	Vycome	4	0.400
MMB1 (H2M2)	Beach	9	8	Beach	7	0.700
MMY1 (H2M7)	Beypore	----	4	Beypore	6	1.250

Note :

MMA2 (H2M4)	In this matting, the warp threads are arranged in groups of three strands.
MMR1 (H2M3)	In this matting, the warp and weft threads are arranged in pairs, each warp strand is woven alternately with the adjacent strands.
MMA5 (H2M10)	In this matting the warp strands are arranged in groups of 6 strands leaving a gap of 1 cm between each group. After 6 such groups 4 jute strands are provided to protect the warp after cutting. A gap of 1.5 cm is provided after the jute strands to facilitate cutting of matting in strips of 20 cm width.
MMB1 (H2M2)	In this matting extra warp strands are allowed to reinforce over a width of 2" at both sides, when the width of matting is 36" and less. Above 36" width a reinforcement of 4" width at the centre and sides of the matting is allowed.

j) Constructional Details of Coir Mattings-
Multi shaft Mattings

Definition:

A matting generally woven on looms mounted with Dobby or Jacquard shedding mechanisms. This matting incorporates more elaborate patterns and designs which require more than four – shaft.

Designation	Type of Warp yarn	Approximate Scorage of Warp Yarn	Ends per dm	Type of weft Yarn	Picks per dm	Mass kg/m^2
1	2	3	4	5	6	7
Hand loom Mattings						
MSA1 (SOM1)	Anjengo	12	30	Vycome	14	2.00
MSA2 (SOM2)	Anjengo	14	26	Anjengo	18	2.00
MSA3	Anjengo	16	35	Anjengo /Aloe/Sisal	12	1.70
MSA4	Anjengo	15	21	Vycome	26	1.32
MSQ1	Quilandy	8	20	Quilandy	15	3.20
MSQ2	Quilandy	9	20	Quilandy	8	2.62
MSQ3	Quilandy	9	20	Quilandy	18	4.00
Power loom Mattings						
PMSA1 (POA1)	Anjengo	15	32	Vycome	18	2.20
PMSA2 (POA2)	Anjengo	15	32	Vycome	13	2.10

k) Constructional Details of Coir Mattings- Rubber Backing Matting

Definition :

Matting specially intended for the purpose of providing rubber backing and to cut to sizes. At the centre of the matting a gap is provided by omitting warp strands.

Designation	Type of Warp Yarn	ApproximatesSco-rage of Warp Yarn	Ends per dm	Type of Weft Yarn	Picks per dm	Mass kg/m2
1	2	3	4	5	6	7
Hand loom mattings						
RB 2R1 (S2RB1)	Aratory	5/16	24/25	Vycome	12	1.290
(In this matting, two warp strands are omitted at the centre)						

l) Constructional Details of Coir Mattings - Special Reed Mattings

Definition :

A matting which exhibits warp strands in pairs working together, woven on closer reeds to ensure distribution of warp uniformly and without overlapping.

Designation	Type of Warp yarn	Approximate Scorage Warp Yarn	Ends per dm	Type of Weft Yarn	Picks per dm	Mass kg / m^2
1	2	3	4	5	6	7
SR4A1 (SR4M2)	Anjengo	14	29	Aratory	16	1.75
SR4R1 (SR4M1)	Aratory	15	26	Vycome	18	1.40
SR4R2 (SR4M3)	Aratory	13	26	Vycome	16	1.68
(The designations indicated within brackets are popularly known 'Export designations')						

m) Constructional Details of Coir Mattings - Ribbed Mattings

Definition :

A matting of two – treadle weave in construction, which exhibits ribbed effects on the surface. They are comparatively denser than the ordinary plain weave matting.

Designation	Warp						Weft		Mass kg / m^2
	Slack		Tight		Ends per dm		Type of yarn	Picks per dm	
	Type of Yarn	Approx scorage	Type of Yarn	Approx scorage	Slack	Tight			
1	2	3	4	5	6	7	8	9	10
Hand loom Mattings									
KA1	Anjengo	13	Vycome	14	8	16	Vycome	16	2.15
KA2	Anjengo	14	Vycome	13	9	18	Vycome	20	2.75
KA3	Anjengo	15	Vycome	14	9	9	Vycome	16	2.15
KA4	Anjengo	14	Vycome	13	12	12	Vycome	24	2.75
KA5	Anjengo	14	Vycome	13	18	9	Vycome	20	3.35

KA6	Anjengo	14	Vycome	13	18	9	Vycome	24	3.65
KA7 (SK1)	Anjengo	15	Anjengo	17	20	10	Aratory	20	2.35
KA8 (SK19)	Anjengo	15	Anjengo	16	9	18	Anjengo	22	2.20
KA9 (SK26)	Anjengo	13	Anjengo	13	18	9	Quilandy	16	3.20
KC1	Ashtamudy	8	Vycome	12	8	16	Vycome	20	3.05
KR1	Aratory	15	Vycome	14	8	16	Vycome	16	1.85
KR2	Aratory	12	Vycome	13	9	18	Vycome	20	2.45
KR3	Aratory	15	Vycome	14	9	9	Vycome	16	1.85
KR4	Aratory	14	Vycome	13	12	12	Vycome	24	2.45
KR5	Aratory	16	Vycome	14	18	9	Vycome	17	2.75
KR6	Aratory	15	Vycome	14	18	9	Vycome	20	3.35
KR7	Aratory	13	Vycome	13	16	8	Fine Unsoaked	10	3.62
KR8 (SK8)	Aratory	12	Vycome	14	16	8	Vycome	16	2.14
KV1 (SK7)	Vycome	11	Vycome	13	8	16	Vycome	16	1.83
KV2 (SK3)	Vycome	11	Vycome	13	9	18	Vycome	20	2.44
KV3	Vycome	14	Vycome	14	9	9	Vycome	13	1.83
KV4	Vycome	12	Vycome	12	11	11	Vycome/ Beach	24	2.30
KV5	Vycome	13	Vycome	13	18	9	Vycome	17	3.05
KV6	Vycome	13	Vycome	12	18	9	Vycome	20	3.62
KV7	Vycome	12	Sisal	----	20	10	Vycome	16	2.40
KV8 (SK 18)	Vycome	12	Anjengo	14	20	10	Anjengo	18	3.00
*KV9 (SK28)	Thin Vycome	----	Thin Aratory	----	22	11	Thin Vycome	22	1.80
KQ1 (SK25)	Quilandy	9	Anjengo	14	14	7	Beypore	10	4.10
SK29	Anjengo	13	Anjengo	14	18	9	Vycome	17	20.50
Power loom Mattings									

PKA1	Anjengo-M	13	Anjengo-M	14	13	13	Vycome	13	2.10
PKA2 (PKM3)	Anjengo	14	Anjengo	15	18	9	Anjengo/ Aratory	16	2.10
PKA3 (PKM5)	Anjengo	13	Anjengo	14	15	15	Beach	16	2.20
PKA4	Anjengo	14	Sisal	600M/kg (See Note2)	18	9	Sisal	18	2.30
PKA5 (PKM8)	Anjengo	16	Sisal	----	22	11	Sisal	18	2.00
PKA6 (PKM9)	Anjengo	13	Anjengo	12	18	9	Aratory	18	2.90
PKA7	Anjengo	15	Anjengo	17	22	11	Aratory	18	2.10
PKA8	Anjengo	15	Aloe, Thin	----	22	11	Aloe, Thin	18	2.00
**PKA9 (PKM12)	Anjengo	18	2 ply Aloe, Thin	-----	22	22	2 ply Aloe, Thin	36	1.85
PKA10 (PKM13)	Anjengo-M	12	2 ply Sisal	330M/kg	20	10	Sisal (330m/kg) (See Note 2)	20	3.20
PKA14(PKM13)	Anjengo-M	18	5 Ply Jute	----	22	22	3 Ply Jute	36	1.85
PKK1 (PKM1)	Mangadan-K	12	Mangadan-K	13	10	10	Vycome	14	2.00
PKK2 (PKM4)	Mangadan-K	12	Mangadan-K	13	12	12	Aratory	13	1.80
PKV1	Vycome	12	Sisal	690m/kg (See Note 2)	18	9	Vycome	18	2.40

NOTES:-

1. The designations indicated within brackets are popularly known export designations,
2. For sisal yarn, instead of scorage value, the runnage value (m/kg) has been indicated.

* 3. KV-9 (SK-28) shall not be manufactured in widths above 1.75m.

**4. PKA-9 (PKM-12) This matting is allowed to be manufactured in the ratios of 1:1 and 2:2 for tight and slack warps.

n) Constructional Details of Coir Mattings-
Three Shaft Ribbed Mattings

Definition :

This is a matting of three Treadle weave with warp rib exhibited on the surface. This fabric offers sturdy and heavier construction.

Quality No	Warp						Weft			Mass kg / m^2
	Slack		Tight		Ends per dm		Types of yarn	Approx scorage	Picks per dm	
	Type of yarn	Approx Scorage	Types of Yarn	Approx Scorage	Slack	Tight				
1	2	3	4	5	6	7	8	9	10	11
S3K1	Anjengo	14	Alapat	11	20	10	Anjengo Vycome	14 13	10 20	4.285

o) Constructional Details of Coir Mourzouks
Definition :
In coir Mourzouks, the surface and pattern are formed by the weft on both sides concealing the warp threads completely. The number of warp threads in the fabric are comparatively lesser than weft.

Designation	Type of Warp Yarn	Approximate Scorage of Warp Yarn	Ends per Dm Min.	Type of weft yarn	Approx Scorage of Weft yarn	Picks per dm. Min.	Mass kg / m^2
1	2	3	4	5	6	7	8
BMEL	Aloe Thin	15/16	10	Alapat	----	45	2.15
BMER	Aloe Thin	15/16	10	Aratory	13/14	45	2.05
BMEA	Aloe Thin	15/16	10	Anjengo	15	47	1.90
BMVA (BMVN)	Vycome	13/14	10	Anjengo	13	38	2.05
BMVL	Vycome	13/14	10	Alapat	----	38	2.05
BMVR	Vycome	13/14	10	Aratory	12/13	42	1.90
BMJL	5 Ply Jute	----	10	Alapat	----	40	2.35
BMEV	Aloe Thin	15/16	10	Vycome	13/14	52	2.35
BMAQ (SMNQ)	Anjengo	14	5	Quilandy	9	28	2.70
BMVP	Vycome	13/14	5	Roping	5/6	15/16	3.95

p) Constructional Details of Coir Carpets (Alleppey Carpets)

Definition :

Coir Carpets are manufactured in the same way as Mourzouks, but with double warp threads. Because of this doubling of the warp, a ribbed effect is produced on both sides of the material.

Designation	Type of Warp Yarn	Approx. Scorage of Warp yarn	Ends per dm Min.	Type of Weft Yarn	Approx. Scorage of Weft Yarn	Picks per dm Min.	Mass kg / m^2
1	2	3	4	5	6	7	8
BCBC (BCSD)	Beach	7 / 8	6	Ashtamudy	8 / 9	29	3.05
BCQQ BCSQ1)	Quilandy	----	4	Quilandy	----	48	5.20
BCVR	Vycome	13 / 14	12	Aratory	15 / 16	57	2.35
BCVR1(BCSR1)	Vycome	13 / 14	12	Aratory	13 / 14	52	2.45
BCVV	Vycome	13 / 14	12	Vycome	12 / 13	50	2.15

NOTE:- The designations indicated within brackets are popularly known export designations. BCBC (BCSD): All the six Warp strands have to be securely tucked in at least to within six strands of the weft on one side. BCQQ (BCSQ1): Each warp is made up of 8 / 10 strands of Quilandy yarn to make up the overall thickness of 25mm. This specification is applicable to mats with fringed ends and also with tucked in ends.

q) Constructional Details of 4 Shaft Carpet

Definition :

The carpet is woven in 4 shaft weave structure having pattern effect accentuated by weft, same way as Mourzouks.

Designation	Type of Warp Yarn	Approximate Scorage of Warp Yarn	Ends per dm Min.	Type of weft yarn	Approximate Scorage of weft yarn	Picks per dm Min.	Mass kg / m^2
1	2	3	4	5	6	7	8
BM 4 NN	Anjengo A	14	12	Anjengo A	14	64	2.30

r) Constructional Details of Coir Matting for Cricket Pitches

Definition :

A matting specially made for use in Cricket Pitches, generally twill or herringbone pattern, three treadle or four treadle weave and in single shade.

Designation	Warp			Weft		Mass kg / m^2
	Type of yarn	Scorage of yarn (Approximate)	Ends per dm Min.	Type of Yarn	Picks per dm Min.	
1	2	3	4	5	6	7
Three-Treadle Weave						
C3A1	Anjengo	14	31	Vycome	11	1.75
C3A2	Anjengo	13	29	Vycome	11	1.80
C3R1	Aratory	15	33	Vycome	11	1.65
C3R2	Aratory	14	31	Vycome	11	1.70
C3V1	Vycome	13	29	Vycome	9	1.50
C3V2	Vycome	12	27	Vycome	9	1.55
C3C1	Ashtamudy	11	25	Vycome	9	2.15
Four-Treadle Weave						
C4A1	Anjengo	15	33	Vycome	13	1.75
C4A2	Anjengo	14	31	Vycome	13	1.80
C4R1	Aratory	15	33	Vycome	13	1.70
C4R2	Aratory	14	31	Vycome	13	1.75
C4V1	Vycome	13	29	Vycome	12	1.60

V) NON – WOVEN COIR PRODUCTS

a) Constructional Details of Non-Woven Matting Mats.

1) General Characteristics

The fabric is not woven. It is formed by bonding to the compounded rubber sheet base, with hessian or cotton gauze underlay, by vulcanizing process.

2) Constructional Details

Quality	Base Material	Formation of Fabric	Bonding and processing	Weight kg/m^2
1	2	3	4	5
RMQB 1	Hessian 10 oz. quality latex backed	Quilandy 10 score yarn made in to 5 ply braid laid parallely and closely	The parallely laid braid is bonded with the base material using rubber latex containing vulcanizing ingredients and non-staining anti-oxidents. Hot pressed.	3.50
RMPB	A sheet formed out of compounded rubber containing natural rubber, fillers, colouring ingredients, reclaimed rubber and suitable chemicals, in a mould with Hessian cloth/cotton gauze underlay.	Anjengo M yarn 3 x 3 ply flat uniform braids laid parallely and closely.	The parallely laid braid is bonded with compounded rubber sheet by vuclanising process in the mould. The four edges of the mat are sealed with rubber edging-mat thickness 8mm.	4.52
RBMR	A sheet formed out of compounded rubber, containing natural rubber, fillers, colouring ingredients, reclaimed rubber and suitable chemicals, in a mould with Hessian cloth/cotton gauze underlay.	Anjengo/Aratory coir yarn made in to rope of 12/15mm diameter, laid parallely and closely. No. of ropes per dm 6/7	The parallely laid rope is bonded with the base rubber sheet in a mould by vulcancising process. The cut ends of the rope at the short sides are sealed with rubber edging.	6.50
RBMR (without rubber backing)	----	do	----	4.20
RBMY	A sheet formed out of compounded rubber containing natural rubber, fillers, colouring ingredients, reclaimed rubber and suitable chemicals in a mould with Hessian cloth/cotton gauze underlay.	Beypore yarn twisted in to 4 ply rope of 12/15 mm diameter, wound elliptically in layers. No. of ropes per dm 6/7	The elliptically wound rope is bonded with the base rubber sheet by vuclanising process. The cut ends of the rope is merged with the adjacent layer.	10.00

RBTM	A sheet formed out of compounded rubber containing natural rubber, fillers, colouring ingredients, reclaimed rubber and suitable chemicals in a mould with Hessian cloth/cotton gauze underlay.	Vycome yarn for the pile. The pile is tufted in rows close to each other on the base.	The pile is bonded with the base rubber sheet by vulcanising process. The pile should be compact and evenly sheared mat thickness 23 mm.	6.90
RBMA	A rubber sheet formed out of natural rubber. Reclaimed rubber and other filling materials embedded on a light hessian cloth	Quality of yarn for Rope : Anjengo Type of Rope: Shroud laid (4 ply) Dia. Of Rope: 9mm No.of Rope per dm : 10 Weight/m2 : 6300g	Anjengo-Yarn twisted in to 4 ply rope and wound close together in to required shapes. The cut end of the Rope is merged with the adjacent layer. The wound rope is bonded to the base rubber sheet embedded on a light Hessian and is vulcanized.	

b) Constructional Details of Non – Woven Carpets

1) General Characteristics

The fabric is not woven. These are made by interlocking the adjacent layers with coir yarn to form the required shape.

2) Constructional Details

Quality Number	Quality of Yarn	Process of manufacture	Weight kg/m^2
FBRA 1	Anjengo	3 ply Coir braid, each ply is formed by laying 3 strands of 2 ply coir yarn. The braid is placed flat and the adjacent layers are interlocked with coir yarn.	1.90
FBQ 1	Quilandy	Made in to coir braid of 3 ply or more. Each ply is formed by laying 2 strands of coir yarn. The braid is placed flat and the adjacent layers are interlocked with coir yarn.	2.80
ROPE DISC	Beypore	Twisted in to 4 ply shroud-laid rope of 15mm diameter. The rope is very closely wound in to circular/oval shape in layers. Each layer is interlocked with coir yarn having a minimum or 3 stitches for every 2 dm. the cut end of the rope is merged with the adjacent layer. The minimum number of layers pr dm – 6.	4.20

Constructional Details of Knotted Coir Netting

1) General Characteristics

Hand knotted coir netting made from coir yarn by knotting Process.

3) Constructional Details

Quality Number	Quality of yarn	Construction	Weight gms/m^2
NA 1	Anjengo	Hand knotted. The distance between two consecutive knots along the length of the yarn shall be between 4.5 cms and5.5 cms. There shall be14/16 Knots per running metre lengthwise and breadth wise, at normal stretch.	205
NA 2	Anjengo	Hand knotted, The distance between two consecutive knots along the length of the yarn shall be between 2.5 cms and 3.5 cms. The number of knots per running metre lengthwise and breadth wise at normal stretch shall be 20 to 22.	350

d) Specifications for Coir Braid

a) General Requirements

Coir braids in different number of plies and using any variety of yarn, other than Beach, as required by the buyer may b allowed with the stipulation that the coir yarn, if any used, may be of inferior variety than what is used for plaiting.

b) Factors

i) Whether the yarn used for braid conform to the declared variety. Beach yarn shall not be used for Braids.

ii) Whether the number of plies of the Braid is as per contract.

iii) Whether the actual weight of the consignment is in agreement with the weight declared.

PART – II

BROWN FIBRE, YARN, MATS & MATTINGS

i. MECHANICALLY EXTRACTED COIR FIBRE

a) General Requirements.

Mechanically Extracted Coir Fibre, also known as 'Brown Fibre', is mechanically extracted from the dry husks of matured and ripe coconut after soaking these husks in water. The fibre shall be reasonably free from moisture and impurities.

The requirements of three commercial grades of fibre are as follows:-

(1) Bristle Coir Fibre	:	The two grades of Bristle Coir Fibre shall be comparatively long and stiff. The texture shall be firm and stiff and shall not be brittle. The colour shall be cinnamon brown.
(2) Mattress Coir Fibre	:	The Mattress Coir Fibre is comparatively short and resilient.
(3) Decorticated Coir Fibre	:	The Decorticated Coir Fibre is mixed fibre. The Grade I fibre shall be strong and springy and the Grade II fibre shall be softer than Grade I but harder and more springy than mattress fibre and both shall not be brittle.

b) Length of fibre

Based on the lengths, the mechanically extracted coir fibre shall be grouped as follows:

Group	**Length (mm)**
Long fibres	**Above 200**
Medium fibres	**Above 150 and up to 200**
Short fibres	**Above 50 and up to 150**

c) Impurities

The maximum permissible impurities, mainly pith, dust bits of exocarpt and fibre bits below 50 mm in two grades of Bristle Coir Fibre, in Mattress Coir Fibre and in two grades of Decorticated Coir Fibre shall be in accordance with the requirements of Table I, II and III below.

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

FIBRE AND IMPURITIES IN BRISTLE CIOR FIBRE

Grade	Long Fibres Min.	Medium Fibres Max.	Short Fibres Max.	Impurities Max.
Bristle fibre Grade I	50	30	20	4
Grade II	40	25	35	5

TABLE – II PERCENT BY MASS OF 'LONG', 'MEDIUM' AND 'SHORT' FIBRES AND IMPURITIES IN MATTRESS COIR FIBRE.

Grade	Long / medium Fibres Min	Short fibres Max.	Impurities Max.
Mattress Fibre	10	90	20

TABLE – III. PERCENT BY MASS OF 'LONG', 'MEDIUM' AND 'SHORT' FIBRES AND IMPURITIES IN DECORTICATED COIR FIBRE.

Grade	Long Fibres Min.	Medium Fibres Max.	Short Fibre Max.	Impurities Max.
Grade I	20	30	50	7
Grade II	20	25	55	12

Mass

The percentage of mass of 'long', 'medium' and 'short' fibres in the different grades of Bristle Coir Fibre, Mattress Coir Fibre and Decorticated Coir Fibre shall be in accordance with the requirements of Table I, II and III above.

Moisture Content

The moisture content of the different grades of Bristle Coir Fibre, Mattress Coir Fibre and Decorticated Coir Fibre shall not exceed 15 percent.

Chloride Content

The Chloride content of the different grades of Bristle Coir Fibre, Mattress Coir Fibre and Decorticated Coir Fibre shall not exceed 0.6 Percent by mass.

Sulphate Content

The sulphate content of different grades of Bristle Coir Fibre, Mattress Coir Fibre and Decorticated Coir Fibre shall not exceed 0.25 percent by mass.

Packing and Marking

The Bristle Coir Fibre, Mattress Coir Fibre and Decorticated Coir Fibre shall be suitably packed in bales or as agreed to between the purchaser and the supplier. 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 the bale.

(d) Grade number.

(e) Month and year of manufacture and

(f) Any other information required by buyer or by the law in force.

ii. BROWN FIBRE COIR YARN

a) **General Characteristics**

Brown Fibre Coir Yarn is spun from Brown Coir Fibre. The qualities of Coir Yarn approved are (i) Fine (ii) Medium and (iii) Coarse. The yarn shall also be supplied in bleached or dyed state.

The yarn shall be reasonably free from moisture, pith and other remnants of husk and impurities.

b) Definitions of Brown Fibre Coir Yarn

(i) Fine

Wheel spun 2 ply yarn, spun from natural brown coloured, long medium stapled, and well cleaned fibre extracted from dry husk of matured coconut. The yarn is finer in texture, uniform in thickness and twist free from pith and other remnants of husk and foreign materials like sand etc. It is hard twisted and scorage ranges from 15 to 18.

(ii) Medium

Wheel spun 2 ply yarn, spun from natural brown coloured medium stapled and moderately cleaned fibre extracted from dry coconut husk of matured coconut moderately uniform in thickness. It may be hard, medium or soft twisted and may contain a little of pith, exocarp, sand etc. The scorage range of this yarn is 10 to 14.

(iii) Coarse

Wheel spun 2 ply yarn, spun from natural brown coloured, medium or short stapled fibre extracted from dry coconut husk, moderately uniform in thickness. The yarn may be hard, medium or soft twisted and may contain particles of pith, exocarp, sand, etc. The scorage ranges from 5 to 9.

iii BROWN FIBRE COIR PRODUCTS

These coir products are made from Brown Coir Fibre/Yarn on the same type of hand looms/frames as of other coir products. The products shall be firmly and evenly woven.

Hand loom Brown Fibre Coir Mats

a) Constructional Details of Fibre Mat

1) General Characteristics

This is a mat made by inserting Brown fibre tufts around the alternate ends of tight warp.

2) Constructional Details.

Quality Number	Type of yarn		Weft	Pile	Construction	Chains or ends per dm Min.	Picks per dm Min.	Rows per dm	Pile height in mm	Weight kg/m^2
	Slack chain	Tight Chain								
1	2	3	4	5	6	7	8	9	10	11
BFM1	Brown fibre coir yarn Fine	Brown fibre coir yarn Medium	Brown fibre coir yarn Medium	Brown fibre	Inserted Brown fibre	12	12	6	32	8.4

Note:- For every change in pile height from those specified and increment or decrement of 600gms. In weight per sq. metre is to be made for every increment or decrement respectively of 3mm in pile height.

b) Constructional Details of Corridor mat

1) General Characteristics

A mat in which both warp and weft strands are continuous. The characteristics feature of this mat is that there is no tucking in or binding the warp ends.

3) Constructional Details.

Quality Number	Warp		Weft		Weight Kg / m^2
	Quality of yarn	Ends per dm Min:	Quality of yarn	Scorage Min.	
1	2	3	4	5	6
BYC1	Brown fibre coir yarn coarse	5	Brown fibre coir yarn medium	12	3.65

Hand loom Brown Fibre Coir Matting

c) Constructional Details of Two Treadle Plain Weave

1) General Characteristics

This is woven by interlacement of warp and weft in the order of one over and one under alternately for successive picks, that is, when odd ends are up even ends are down and vice-versa. Both sides of the matting present the same appearance.

3) Constructional Details

Quality Number	Warp		Ends Min. per dm	Weft		Weight Kg / m^2
	Quality of yarn	Approx. scorage of yarn.		Quality of yarn	Picks per dm	
1	2	3	4	5	6	7
M2BY	Brown fibre coir yarn medium	13	27	Brown fibre coir yarn medium	10	1.6

d) Constructional Details of Two Treadle Basket Weave

1) General Characteristics.

This weave is the same as that of two treadle plain weave, but two or more threads of coir yarn work together both warp wise and weft-wise. This enables the production of attractive stripe and check (tile) patterns. Both sides of the matting present the same appearance.

2) Constructional Details

Quality Number	Warp			Weft		Weight Kg/m^2
	Quality of yarn	Approx. scorage of yarn	Ends Min per dm	Quality of yarn	Picks Min per dm	
M2BBY 1	Brown fibre coir yarn medium	14	30	Brown fibre coir yarn medium	16	2.1

e) Constructional Details of Four treadle Weave

1) General Characteristics:

Four treadle weaves are more ornate in appearance and design can be formed either on one side or both sides. They are used for the production of superior quality mattings in a variety of patterns, such as, twill diamond etc.

4) Constructional Details

Quality Number	Warp			Weft		Weight kg/m^2
	Quality of yarn	Approx. scorage of yarn	Ends Min. per dm.	Quality of yarn	Picks Min. per dm	
M4BY 1	Brown fibre coir yarn medium	14	30	Brown fibre coir yarn medium	13	2.00

PART – III
COIR FENDERS, ROPE AND RUBBERISED COIR PRODUCTS

i. SPECIFICATION OR COIR FENDERS

1. **General Characteristics**

Coir Fender is commonly made in spherical or cylindrical shape. The inner material for the Fender is made in the required shape from coir yarn, rope or fibre together tightly. Coir rope is then knotted to from the outer shell by applying suitable knotting technique.

2. Constructional Details

Quality Number	Variety of yarn	Diameter of rope Min.	Rope/ yarn for inner material	Number of lines of knots for outer shell Min. per dm.	Weight per cubic meter/ kg.
FR	Aratory	17 mm	Coir yarn of suitable variety or made thereof to suit the weight requirement	2	260
FV	Vycome	17 mm	do	2	250

Note:- Rope for outer shell should be tightly twisted and evenly made. Knots must be tight and closer leaving minimum space in between the knots. The Fender should be provided with handle of 20 cms. (min) height made of coir rope of 2 cms (min) diameter.

Tolerance permitted:

Weight: +5% Dimensions: Circumference +_ 5cms

-7.5% Length + 2.5cms

ii. SPCECIFICATIONS FOR COIR ROPES

General Requirements

The general requirements of three types of coir ropes for which standards have been specified are as follows.

a) Two grade of Hawser-laid (3 strand) coir ropes of diameter 8 to 176 mm and with a liner density from 47 to 15720 ktex (g/m) for dry coir rope and from 60 to 21112 ktex (g/m) for oiled coir rope;

b) Two grades of shroud-laid (4 strand) coir ropes of diameter 24 to 176 mm and with liner density from 321 to 27170 ktex (g/m) for dry coir rope and from 437 to 23257 ktex (g/m) for oiled coir rope; and

c) Two grades of Cable-laid (9 strand) coir ropes of diameter 48 to 176 mm and with liner density from 1010 to 13335 ktex (g/m) for dry coir rope and from 1371 to 17184 ktex (g/m) for oiled coir rope.

This standard does not cover ropes intended for use for lifting purposes.

For the purpose of this standard, the definitions given in IS: 3871-1966 shall apply.

Coir ropes shall be graded as Grade I or Grade II on the basis of the breaking load values.

The tolerance permitted for liner density in respect of the three types of coir ropes shall be plus or minus 5% of the specified nominal value.

Manufacture

The fibre used in the manufacture of ropes shall be coir, true to its type and shall be unadulterated and free from siliceous matter and shorts. The fibre shall be of good quality, fineness and colour necessary to produce ropes having the characteristics required and specified in tables 1 to 3.

The yarn shall be well and evenly spun. All coir yarns are to fold being formed by twisting together two single loosely twisted thread. They are all hand-made.

Strand of rope shall be well formed, free from grooves, kinks and sunken yarns and each strand shall contain an equal number of yarns. The number of yarns in each strand shall be as specified in tables 1 to 3. The strand shall have S-lay.

The ropes shall be well laid and free from defects and each coir shall be continuous throughout its length and shall not contain loose ends, splices or joints in the strands or in the rope. The number of strands in the rope and the lay of rope, unless otherwise specified, shall be as under.

Construction	Number of strand	Lay of Rope
Hawser – laid	3	Z - lay
Shroud – laid	4	Z – lay
Cable – laid	9 (with 3 primary Ropes twisted Together)	Z – lay for primary rope and S – lay

For the purpose of dressing the fibre or for preservation of the rope, a lubricant may be added. The quantity of dressing material applied to the fibre when determined by extraction with petroleum ether or other suitable solvent, shall be not less than 10 or more than 15 percent calculated on the mass of the finished rope.

Unless specifically required by the buyer, no colouring agent shall be used. Weighing or loading material shall not be used. All ends shall be securely whipped or marled.

Ropes shall be marked for the purpose of identification as agreed to between the buyer and the seller. Unless otherwise specified, ropes shall be packed conforming to the requirements laid down in IS: 3256-1965.

Each coil shall have at both ends labels securely attached on which the following shall be marked.

a. **Manufacturer's name or trade mark**
b. **Length of rope in the coil,**
c. **Diameter of the rope, and**
d. **Any other marking required by the buyer.**

Requirements

1. **Mass – The net mass of the coil of ropes in a lot shall differ by more than +_5% from the mass of the coils as calculated from the linear density as given in tables 1 to 3 and length of the coils.**

2. **Pitch – The pitch of rope when determined by the method given in IS: 7071 (Part III)- 1974 shall confirm to the following requirements :**

3.

Construction	Pitch X Diameter of rope
Hawser – laid	Between 2.5 and 3.3
Shroud – laid	Between 2.7 and 3.5
Cable – laid	Between 2.2 and 3.2

4. **Length of coils – The length of each coil shall be 220 m or as agreed between the buyer and seller.**

5. **Other requirements - The Hawser - laid coir ropes shall confirm to the requirements of table 1, shroud - laid coir ropes to the requirements of table 2 and Cable – laid ropes to the requirements of table 3.**

TABLE – 1 REQUIREMENTS FOR HAWSER – LAID ROPE

Diameter	No. of Yarns/ Strands, Min.	Linear Density		Breaking Load, Min.	
		Dry	Oiled	Grade 1 (Dry or Oiled)	Grade 2 (Dry or Oiled)
1	2	3	4	5	6
mm		Ktex(g/m)	Ktex(g/m)	kN	kN
8	2	47	60	0.784	0.637
10	3	55	75	1.225	1.157
12	2	67	95	1.911	1.764
16	2	130	178	3.431	3.088
20	4	200	273	5.343	4.657

24	5	295	405	7.451	6.618
28	7	390	528	9.951	8.873
32	9	520	705	12.941	12.255
36	10	645	875	16.912	13.333
40	11	815	1 098	20.931	19.310
48	12	1 180	1 600	29.657	26.569
56	16	1 550	2 110	45.735	35.441
64	21	2 070	2 811	51.716	49.706
72	27	2 570	3 488	66.225	65.196
80	33	3 790	4 169	80.735	76.982
88	40	3 930	5 276	97.324	86.569
96	48	4 715	6 396	111.078	106.330
104	56	5 465	7 417	130.490	110.784
112	65	6 215	8 934	150.882	141.814
120	75	7 255	9 845	173.333	160.294
128	85	8 290	11 244	205.196	198.334
136	96	9 290	12 601	231.078	205.392
144	108	9 830	13 353	259.314	241.176
152	120	11 280	15 317	288.824	256.912
160	133	12 230	16 675	320.196	313.824
168	147	14 010	18 955	353.039	313.824
176	161	15 720	21 112	388.745	346.176

Note :- 1 kN=102 kgf approximately.

TABLE – 2 REQUIREMENTS FOR SHROUD-LAID COIR ROPE

Diameter	No.of, Yarns/Strands Min.	Liner Density		Breaking Load, Min	
		Dry	Oiled	Grade I (Dry or Oiled)	Grade II (Dry or Oiled)
1	2	3	4	5	6
mm		Ktex (g/m)	Ktex (g/m)	kN	kN
24	----	321	437	6.517	5.782
28	----	428	583	8.679	7.747
32	----	564	765	11.719	10.444
36	----	697	948	14.710	13.092

40	----	877	1 189	19.123	17.014
48	9	1 285	1 745	25.988	23.144
56	12	1 695	2 296	33.784	30.106
64	16	2 265	3 066	46.483	41.384
72	20	2 810	3 004	59.183	52.662
80	25	3 350	4 542	70.215	62.468
88	30	4 290	5 809	84.680	75.364
96	35	5 120	6 998	101.449	90.270
104	42	5 965	8 082	117.875	104.931
112	48	6 790	9 198	135.674	120.719
120	55	7 915	10 724	156.906	141.460
128	63	9 050	12 260	178.578	158.965
136	71	10 145	13 740	201.085	178.971
144	80	10 735	14 560	225.846	200.987
152	89	12 320	16 697	251.393	224.719
160	99	13 405	18 178	278.704	248.058
168	108	15 290	20 660	307.339	273.506
176	119	17 170	23 257	338.769	301.504

Note – 1 kN= 102 kgf, approximately

TABLE – 3 REQUIREMENTS FOR CABLE – LAID COIR ROPE

Diameter	No. of Yarns/ Strand, Min.	Liner Density		Breaking Load, Min.	
		Dry	Oiled	Grade I (Dry or Oiled)	Grade II (Dry or Oiled)
1	2	3	4	5	6
mm		Ktex (g/m)	Ktex (g/m)	kN	kN
48	-----	1 010	1 371	17.456	15.053

56	----	1 360	1 840	22.947	26.380
64	----	1 770	2 401	20.447	26.380
72	7	2 240	3 034	37.363	33.882
80	8	2 760	3 745	45.846	41.384
88	10	3 340	4 533	55.800	50.308
96	12	3 945	5 348	66.783	60.311
104	14	4 630	6 282	77.711	69.725
112	16	5 410	7 344	90.662	81.689
120	19	6 190	8 396	103.607	93.163
128	21	7 070	9 134	117.581	105.617
136	24	7 990	10 866	133.517	120.082
144	27	8 945	12 137	149.943	134.986
152	30	10 445	13 248	167.399	140.438
160	33	11 060	15 002	184.855	166.418
168	37	12 200	16 551	202.261	181.864
176	40	13 355	17 184	221.188	199.270

Note – 1 kN = 102 kgf, approximately

iii. SPECIFICATION FOR RUBBERIZED COIR SHEETS FOR CUSHIONING

The following are the requirements prescribed for rubberized Coir Sheets for cushioning. It does not cover articles made from shredded rubberized coir or fabricated articles consisting of a cover of rubberized coir sheets enclosing springs or other cushioning material or industrial or packing material.

Rubberized Coir:-

A resilient product of porous structure containing curled coir fibre suitably coated and bonded with natural rubber, synthetic rubber or a combination of both containing suitable ingredients, and vulcanized for the final set to the desired size and shape.

Indentation hardness index:-

The indentation hardness index is the load in kilograms required to produce an indentation in the sample equivalent in depth to 40 percent of the original thickness of the sample.

Original Thickness:-

The thickness determined by the needle gauge method for the whole sample will be termed as original thickness.

Note – For samples having thickness less than 38 mm, the original thickness shall be determined by superimposing minimum number of pieces to give a total thickness of about 38 mm and the average taken as the original thickness of the sample.

GRADES

The rubberized coir sheets or cushioning shall be graded on the basis of the indentation hardness index and density as given below:

Grade	Indentation Hardness Index	Density g/dm^3
Soft	3.0 – 5.9	40 – 59
Medium	6.0 – 8.9	60 -69
Firm	9.0 – 11.9	70 – 79
Extra firm	12.0 – 14.9	80 - 99

However, density requirements is optional and has been given for guidance only. The indentation hardness index of the central portion (one – third, lengthwise) of rubberized coir sheets for cushioning may exceed up to +15% from the maximum value specified for any grade due to an additional re-inforcement piece at the centre. However, the indentation hardness index of the remaining segment shall be within the range for the particular grade.

MANUFACTURE, WORKMANSHIP AND FINISH

Rubberized coir sheets shall be manufactured using unretted coir fibre mechanically extracted and curled to effectively utilize the resiliency of the fibre material, the fibres being bonded to each other by vulcanized rubber to keep them in position, utilizing rubber latex containing compounding ingredients of such nature and quality that the finished products with the requirements of this specification.

Rubberized coir sheets shall be of a resilient nature and porous structure, in the form of sheetings or in fabricated sheets. Any special characteristics other than those prescribed in this specification which may be desired for specific application shall be as agreed to between the purchaser and supplier.

The rubberized coir sheets shall present a uniform appearance throughout the structure and shall not contain loose fibres or voids.

Due to manufacturing conditions, the material may have to be altered or repaired. The repaired or altered material shall be acceptable provided the material used in such repairs or alterations is of the same composition and quality as the original product and provided such alterations do not affect the requirements give in this specification. The odour of rubberized coir shall be as mild as possible and shall not be objectionable.

SHAPE AND DIMENSIONS

Rubberized Coir sheets may be supplied in fabricated shapes or in sheet from as specified by the purchaser. The dimensions of rubberized coir sheets shall be as specified by the purchaser subject to the tolerance given below:-

Length or Width	Permissible Tolerance (mm)
Up to 1 m	+_ 6
1 m to 1.5 m	+_9
Over 1.5 m	+_12
Thickness	Permissible Tolerance (mm)
Up to 12 mm	+3 -0
Over 12 mm up to 38 mm	+6 -3
Over 38 mm up to 100 mm	+12 - 6
Over 100 mm	+15 -6

REQUIREMENTS

Indentation Hardness – When tested different grades of rubberized coir products shall have the indentation hardness as prescribed.

Resistance to Ageing – When tested the indentation hardness of the sample after ageing shall not vary by more +_20% of the value obtained within aged sample.

Resistance to Flexing- When tested the indentation hardness of the test specimen shall not very by more than +_20%. This shall be calculated on the resultant thickness.

Compression Set- The compression set of the sample shall not exceed 25%. When tested under atmospheric conditions, the compression set shall not exceed 15% after 3 hour's recovery.

PH Value-The PH value of the aqueous extract of the material shall be within 5 to 8.5.

Chloride Content- The chloride content of the material shall not exceed 0.3% by weight.

Sulphate Content- Sulphate Content of the aqueous extract of the material prepared shall not exceed 0.2% by weight.

MARKING OR LABELLING

Each rubberized coir sheet for cushioning shall be attached with a label bearing the following information.

a) Name of the material

b) Manufacturer's name, initials, trade-mark, or any other identification mark

c) Grade; and

d) **Dimensions.**

PACKING

The rubberized coir sheets shall be packed as agreed to between the purchaser and supplier.

INSTRUCTIONS FOR STORAGE

Rubberized coir sheets shall be kept in well ventilated store in an atmosphere free from the products of combustion from any heating appliance and free solvent vapours, out of contact with damp surfaces. Under no circumstances shall the products be stored in direct sunlight or exposed to ultraviolet light. When products are stacked in stores, care shall be taken to avoid undue compression, or distortion. Special care shall be taken when stacking fabricated products of irregular shape.

iv. SPCEIFICATION FOR MOULDED RUBBERIZED COIR CUSHIONING

GENERAL REQUIREMENTS

The prescribed requirements for resilient moulded rubberized coir cushioning for use as seats, back rests and other cushioning are the following. It does not cover rubberized coir sheets for cushioning or other article

made from rubberized coir, such as, fabricated articles, rubberized coir sheets enclosing springs, industrial and packing material etc.

Moulded Rubberized Coir- A resilient product of porous structure containing curled coir fibre coated and bonded with natural rubber, synthetic rubber or a combination of both containing suitable ingredients and formed to the desired size and shape in moulds and vulcanized for the final set.

MATRERIAL-Moulded rubberized coir products shall be manufactured using coir fibre curled to effectively utilize the resiliency of the fibre material, the fibre being bonded to each other by vulcanized rubber utilizing rubber latex containing vulcanizing ingredients and suitable antioxidants of such nature and quality that the finished products complies with the requirements of this specification.

Reinforcement of Edges- The moulded rubberized coir cushions shall be reinforced at the edges with strips of latex coated curled coir fleeces up to 25 mm width at the edges and the apparent density at the edges as determined by the method described shall not exceed 120 g/dm3 for seats and 100 gm/dm3 for backrests

MANUFACTURE, WORKMANSHIP AND FINISH

Moulded rubberized coir products shall be of resilient nature and porous structure and shall have reinforced edges up to 25 mm width at the edges alround. The surface of the cushions shall be provided with calendered surface with higher rubber latex content, at least about 2 mm deep on all sides other than bottom and shall present uniform appearance through and shall not contain loose fibres and voids. Any special characteristic other than those prescribed in the specification, which may be desired for specific application, shall be as agreed to between the purchaser and the supplier.

The moulded rubberized coir products shall present uniform appearance and shall not contain loose fibres or voids.

Due to manufacturing conditions the material may have to be altered or repaired. The altered material shall be acceptable provided the material used in such repairs or alteration of the same composition and quality as the original product and provided such alterations do not affect the requirements given in the specification.

Odour – The odour of moulded rubberized coir shall be as mild as possible and shall not be objectionable. Moulded rubberized coir products may be supplied in any size and shape.

The dimensions of moulded rubberized coir products when tested according to the method prescribed shall be as specified by the purchaser subject to tolerance given below:-

Length of Width	Permissible

	Tolerance (mm)
Up to 1 m	+_5
Up to 1.5 m	+_7
Over 1.5 m	+_9
Thickness	
Thickness up to 12 mm	+3 -0
Thickness over 12 mm up to 38 mm	+6 -3
Over 38 mm	+12 -5

PERFORMANCE REQUIREMENTS

Standard Conditions – The sample selected and prepared for test be conditioned for a minimum period of 24 hours at 27^0 C +_ 2^0 C and 65 ^{0} C +_5% relative humidity (See IS: 196-1966) prior to testing and testing shall be in the same atmosphere. When the testing cannot be carried out in the same atmosphere, then the testing shall be commenced within 2 minutes of withdrawal of specimen from the conditioning atmosphere.

Indentation Hardness- When tested, moulded rubberized coir products shall have the indentation hardness as given below unless otherwise agreed to between the supplier and the purchaser.

Indentation Hardness Index

Seat cushions of 50 mm thickness and above 10}
} +_20%
Backrests of 50 mm thickness and above 8}

Apparent Density- The apparent density of the moulded rubberized coir seat cushions and backrests below 50 mm thickness shall be as follows when tested.

	Apparent Density, g/dm^3
Seat Cushions	100}
	} +_15 percentage
Backrests	90}

The apparent density of the moulded rubberized coir seat cushions and backrests of 50 mm thickness and above shall be as follows when tested.

	Apparent Density, g/dm^3 Max.

Seat Cushions	**100**
Backrests	**80**

Resistance to Ageing – When tested according to the method prescribed, the indentation hardness of sample after ageing shall not vary by more than +_ 20% of the value obtained with unaged sample.

Resistance to Flexing- When tested, the indentation hardness of the test specimen shall not vary by more than +_20% . this shall be calculated on the resultant thickness.

Compression Set – The compression set of the sample determined, shall not exceed 25%. When tested under normal atmospheric conditions the compression set shall not exceed 15% after 3 hours of recovery.

PH Value – PH value of aqueous extract of the material when determined by the method prescribed, shall be within 5 to 8.5.

Chloride Content – The Chloride content of the material calculated as chlorine when determined by the method prescribed shall not exceed 0.3% by mass.

Sulphate Content- the sulphate of the aqueous extract of the material prepared and tested by the method prescribed in IS: 2317-1975 shall not exceed 0.2 percent by mass.

MARKING

Moulded rubberized coir products shall be legibly and indelibly marked or a label giving the following particulars shall be attached to it.

a) Grade

b) Dimensions

c) Manufacturer's name, initials, trade mark or any other identification mark.

PACKING

The moulded rubberized coir products shall be packed as agreed to between the purchaser and the supplier.

INSTRUCTIONS FOR STORAGE

Moulded rubberized coir products shall be kept in well ventilated store in an atmosphere free from the products of combustion from any heating appliance and free from solvent vapours out of contact with damp surface. Under no circumstances shall be product be stored in direct sunlight or exposed to ultraviolet light. When products are stacked in stores, care shall be taken to avoid undue compression or distortion.

PART – IV
NOTIFICATIONS

i. Indian Standards On Coir

IS; 898-1985	**: Specification for Retted Coir Fibre (Second revision)**
2295-1965	**: Specification for Superior Anjengo Type Yarn**
11420-(parts 1 to 9-1985)	**: Specification for Coir Mats**
Part 1	**- General Requirements**
2	- Corridor Mats (First revision)
3	- **Door Mats – Creel, Bit & Fibre (Third revision**
4	- **Door Mars – Rod (Third revision**
5	- **Gymnasia Mats (First revision**
6	- **Loop Mats**
7	- **Mesh Mats**
8	- **Rope Mats (Lovers' Knot Mats)**
9	- **Sinnet Mats**
IS: 12503 (Parts 1 to 6-1988)	**: Indian Standard – Coir Mattings, Mourzouks and Carpets**
part 1	**- General Requirements**
2	**- Coir Mattings (Hand loom & Power loom)**
3	**- Ribbed Coir Mattings (Hand loom & Power loom)**
4	**- Coir Mourzouks**
5	**- Coir Carpets**
6	**-Coir Mattings for Cricket Pitches**
9308 (Parts 1 to 3- 1987)	**: Specifications for Mechanically Extracted Coir Fibres (First revision)**
Part 1	**: Bristle Coir Fibre**
2	**: Mattress Coir Fibre**
3	**: Decorticated Coir Fibre**
1410-19 83	**: - Specification for Coir Ropes (Second revision)**
11060-1984	**: - Specification for Moulded Rubberized Coir Cushioning**
8391-1987	**: - Specification for Rubberized Coir Sheets for Cushioning (First revision)**

ii. Compendium of Govt. of India Gazette Notification on Coir Yarn (Baled) As on 31-12-71 Government of India, Ministry of Commerce

New Delhi, the 23rd September, 1966.

S.O.2842 In exercise of the powers conferred by section 6 of the export (Quality Control and Inspection) Act, 1963 (22 of 1963) and after previous publication as required by Sub-rule (6) of rule 11 of the Export (Quality Control and Inspection) Rules 1964 and after consulting the Export Inspection Council, the Central Government being of opinion that it is necessary and expedient so to do for the development of the export trade of India hereby-

i) Notifies that coir yarn shall be subject to quality control and inspection prior to export;

ii) Specifies the inspection in accordance with the Export of Coir Yarn (Inspection) Rules, 966 as the type of Inspection which will be applied to coir yarn prior to their export.

iii) Recognize the specifications for coir yarn as set out in Annexure I as the standard specifications for coir yarn.

Amended vide* S. O.3133 Dt. 4-9-1968 **Prohibits the export in the course of international trade of coir yarn unless the same is accompanied by a certificate issued by any one of the Export Inspection Agencies recognized under section 7 of the Export (Quality Control and Inspection) Act 1963 (22 of 1963) to the effect that the coir yarn conforms to the specifications recognized under sub paragraph (3) and is export-worthy.**

2) Nothing in this notification shall apply to the export by sea, land or air of samples of coir yarn to prospective. Buyers

3) This notification shall apply to coir yarn packed in pressed bales only.

4) In this notification "Coir Yarn" shall mean all yarns spun out of coir fibres and shall include the following trade varieties namely:-

	**(1.1 Anjengo-A
	*(1.2 Anjengo-M
** Amended vide S.O.3390 dt. 4-11-66	1.3 Aratory * 1.4 Mangadan-K 1.5 Imitation Alapat/Ashtamudi/Caruva
*Amended vide S. O. 4430 Dt.29-10-69	1.6 Real Alapat 1.7 Vycome (Weaving)
	1.8 Beach
	1.9 Hard Unsoaked
	1.10 Roping
	(1.11 Beypore

	*(1.11A Beypore-Z
	(1.12 Quilandy
*Amended vide	*(1.12A Quilandy-Z
S. O. 2852 Dt.15.7.69	*(1.13 Fine unsoaked Grade – I
	*(1.13A Fine unsoaked Grade –II
**Added vide S.O.	(1.14 3-ply
3766 dt. 19. 10. 67	1.15 Single Ply
	* * 1.16 Super fine Unsoaked

5) This notification shall come into force on the 1st October, 1966.

iii. Govt. of India Gazette Notifications of Coir Yarn (Non-Baled)
Govt. of India, Ministry of Foreign Trade

New Delhi, 13th May.1972

S. O. 1130 Whereas for the development of export trade of India certain proposals for subjecting non-baled coir yarn to quality control and inspection prior to export, were published as required by sub-rule 2 rule 11 of the Export (Quality Control and Inspection) Rules, 1964 at pages 1385 to 1392 of the Gazette of India –Part-II Section 3-sub-section (ii), Extra ordinary, dated the 27th October 1969, under the notification of the Govt. of India in the late Ministry of Foreign Trade and Supply, No.S.O. 4423, dated the 27th October 1969;

And whereas objections and suggestions wee invited 26th November, 1969 from all persons likely to be affected thereby;

And whereas the said Gazette notification was made available to the public on the 28th October, 1969.

And whereas the objections and suggestions received from the public on the said draft have been considered by the Central Government.

Now, therefore, in exercise of the powers conferred by section 6 of the Export (Quality Control and Inspection) Act, 1963,(22 of 1963), the Central Government, after consulting the Export Inspection Council, being of opinion that it is necessary and expedient so do for the development of the export trade of India, hereby-

1) Notifies that non-baled coir yarn shall be subject to inspection prior to export:

2) Specifies the type of inspection in accordance with the Export of Non-baled Coir Yarn (Inspection) Rules. 1972 as the type of inspection which shall be applied to non-baled coir yarn:

3) Recognize the specifications for non-baled coir yarn as set out in Annexure to this notification as the standard specifications for non-baled coir yarn:

4) Prohibits the export in the course of international trade of non-baled coir yarn unless the same is accompanied by a certificate issued by any one of the Export Inspection Agencies established under section 7 of the Export (Quality Control and Inspection) act 1963 (22 of 1963) to the effect that the non-baled coir yarn is export-worthy.

ii) Nothing in this notification shall apply to the export by sea, land, or air of samples of non-baled coir yarn to prospective buyers.

iii) This notification shall come in to force on the 3rd June, 1972.

iv. Compendium of Govt. of India Gazette Notifications on Coir Mats as on 31-12-1971 Ministry of Commerce

New Delhi, the 16th December, 1965.

S.O. 3918- In exercise of the powers conferred by section 6 of the Export (Quality Control and Inspection) Act, 1963 (22 of 1963) after previous publication as required by sub-rule (6) of rule 11 of the Export (Quality Control and Inspection) Rules 1964 and after consulting the Export Inspection Council, the Central Government being of opinion that it is necessary and expedient so to do for the development of the export trade of India hereby-

1) notifies that coir products shall be subject to quality control and inspection prior to export:

2) specifies the inspection in accordance with the export of Coir products (Inspection) Rule, 1965 as the type of inspection which will be applied to coir products prior to their export:

3) recognize-

a) the specifications for coir products as set out in Annexure I and II to this notification.

Amended vide S.O.1951 dtd. 31-5-1968

b) specifications as declared by the exporter to be the agreed specifications of For that contract provided they fall in between the range of the minimum of the specifications for that quality and the next higher recognized under clause (a), and

Amended vide S.O. 3130 dtd. 4-9-1968

c) the specifications which do not fall under clause (a) or (b) but formulated by A panel of experts, appointed by the export Inspection Council for the purpose of examining and approving samples submitted by the exporter.

Amended vide S.O.3130 dtd

4) Prohibits the export in the course of international trade of coir products unless the same is accompanied by a certificate issued by any one of the Exporter Inspection

4-9-1968 Agencies recognized under section 7 of the Export (Quality Control and Inspection) Act, 1963 (22 of 1963), to the effect that the coir products confirm to the specifications recognized under sub-paragraph

(3), and is export worthy

i. Nothing in this notification shall apply to the export by sea, land or air of samples of door mats to prospective buyers

ii. In this notification 'Coir Products' shall mean coir door mats of the following types; namely:-

a) Creel

b) Fibre

c) Bit

d) Rod

e) Loop (Added vide S.O.2594 dt. 29th July, 1970. This shall come in to force on the 20th August, 1970.

f) Gymnasia Included vide Annexure I of S.O.2779 dt. 11th August 1967.

g) Sinnet This shall come in to force on the 18th September, 1967.

h) Corridor

iv . This notification shall come in to force on the 20th December 1965

v. Govt. India, Ministry of Commerce
ORDER

NEW DELHI
Dated the 28-12-1985

S.O. Whereas for the development of the Export Trade of India certain proposals for subjecting coir Mattings to Quality Control and Inspection prior to export were published as required by sub-rule (2) of rule 11 of the Export (Quality Control and Inspection) Rules 1964, in the Gazette of India. Part II, section – 3, sub-section (ii) dated the 29th June, 1985, under the order of the Government of India in the Ministry of Commerce No.S.O. 2984 dated the 29th June, 1985;

And whereas the objections and suggestions were invited till 12th August, 1985, from all persons likely to be affected thereby;

And whereas the copies of the said Gazette were made available to the public on the 31st July, 1985.

And whereas the objections and suggestions received from the public on the said draft have been considered by the Central Government;

Now, therefore , in exercise of the powers confirmed by section 6 of the Export (Quality Control and Inspection) Act,1963 (22 of 1963), the Central Government after consulting the Export Inspection Council being of opinion, that, in pursuance of the said sub-rule and in supersession of the Order of the Government of India in the Ministry of Foreign Trade No. S. O. 1386 dated the 3rd June, 1972 and order of Government of India in the Ministry of Commerce No. S. O.1425, dated, the 10th April 1982 except as respect things done or omitted to have been done before such supersession, it is necessary and so to do for the development of the export trade of India, hereby:

(1)	Notifies that Coir Mattings shall be subject to Quality Control and Inspection prior to export;
(2)	Specifies the type of Quality Control and Inspection in accordance with the export of Coir Mattings (Quality Control and Inspection) Rules, 1985, as set in annexure to this order, as the type of quality Control and Inspection which shall be applied to such Coir Mattings prior to their export;
(3) Recognizes:-	
(a)	national and international standards of other bodies recognized by the Export Inspection Council of India;
(b)	contractual specifications subject to the products complying with the minimum of the characteristics specified in the Schedule to the Order: and
(c)	the specifications which do not fall under clause (a) and (b) above but are approved by a Panel of Experts appointed by the Export Inspection Council for the purpose of examining and Approving such standards declared by the exporter as Contractual specifications for Coir Mattings.
(4)	Prohibits export in the course of international trade of Coir Mattings unless the same are accompanied by a certificate issued by any one of the Export Inspection Agencies established under section 7 of Export (Quality Control and Inspection) Act, 1963 (22 of 1963) to the effect that Coir Mattings confirm to the specifications recognized under Sub-paragraph 3 and are export worthy

ii. Nothing in this order shall apply to the export of bonafide samples of Coir Mattings by sea land or air prospective buyers.

iii. Definition:

In this order, Coir Mattings means Coir Mattings manufactured on power loom as well as on handloom and includes:-

(i) Coir Matting Mats;

(ii) Coir Matting Rugs;

(iii) Coir Mourzouks;

(iv) Coir Carpets (Alleppey Carpets);

(v) Any other type of coir matting not included in items (i) to (iv)

(vi) This order shall come in to force on the date of its publication in the Official Gazette.

Qualities of Coir Mats, Mattings, Carpets etc. in the Export List

I Mats

Handloom				
i.Creel	ii.Rod	iv. Fibre	ix. Corridor	xi. Rope
BC 1	BR 1	FM1	AC 1	LKA
BC 2	BR 2	FM2	AC 2	LKR
BC 3	BR 3	FM3	AC 3	
BC 4	BR 4		RC 1	xii. Mesh
BC 5	BR 5	v. Bit	RC 2	MBA
VC 1	BR 6	BB1	RC 3	MRA
VC 2	BR 7	VB1	LC 1	MQA
VC 3	BR 8	AB1	WC 1	MVV
VC 4	BR 9		WC 2	
VC 5	BR 10	vi. Fibre Inlaid	WC 3	
VC 6	BR 11	AB 1	TC 1	
VC 8	BR 12		SCD 12	
VC 9	BR 15 (Spl. R-1)	vii. Gymnasia		
VC 10 (Spl. C-1)	VR 1	VG 1 (BVG 1)	x. Sinnet	

VC 11(Spl. C-10)	VR 2	BG 1 (BBG 1)	SA 1	
VC 12(Spl. C-14)	VR 3		SA 2	
	VR 4	viii. Loop	SA 3	
	VR 5	RL 1	SA 4	
Powerloom	VR 6	RL 2	SA 5	
i.Creel	TR 1	RL 3	SA 6 (Spl.S-2)	
SPC 1	TR 2(Spl.R-4)	RL 4	SR 1	
SPC 2	LR 1(Spl.R-8)	AL 1 (Spl. L-2)	SR 2	
SPC 3		AL 3 (Spl. L-5)	SR 3	
SPC 4	iii.Rod Inlaid		SR 4	
SPC 5	BR 1		SR 5	
SPC 6	BR 2		SR 6	
SPC 7	BR 3		SV 1	
SPC 8	BR 4		SV 2	
SPC 9	BR 5		SV 3	
	VR 1		SV 4	
	VR 2		SB 1	
	SPl.RI-9		SB 2	
	BRY-1 (BRIY-1)		SB 3	
	BRIY-2			

II Mattings

i. Two treadle plain weave	
Handloom mattings	Power loom mattings
M2A2	PM2A1 (P2A1)
M2A4	PM2A3 (P2A6)
M2R3	PM2Q1 (P2A2)
M2V3	PM2Q2 (P2A3)
M2V4 (S2M3)	PM2Q3 (P2A4)
M2B2	P2A7
S2M4	
S2M10	
S2M11	
S2M12	

ii. Two treadle basket weave	
Hand loom mattings	Power loom mattings
M2BA1	PM2BA2 (P2BA2)
M2BA3	PM2BA3(P2BA3)
M2BA7 (S2BM1)	PM2BA4 (P2BA4)
M2BA8 (S2BM3)	PM2BA7 (P2BA8)
M2BR3	
M2BV3	
M2BO1 (S2BM7)	

iii. Three treadle plain weave

iv. Four treadle weave

Hand loom mattings	Power loom mattings
M3A3	PM3A1(P3A1)
M3A5	PM3A2(P3A2)
M3A6 (S3M2)	
M3A8 (S3M9)	
M3R3	
M3V3	
M3B1	
S3M4	

Hand loom matings	Power loom mattings
M4A2	PM4A2 (P4A2)
M4A4	PM4A3(P4A3)
M4A5(S4M4)	PM4A4 (P4A4)
M4A6 (S4M11)	PM4A5(P4A5)
M4R2	PM4A7(P4A7)
M4R4	PM4A10(P4A10)
M4V4(S4M22)	PM4A12(P4A13)
M4Y1 (S4M13)	PM4Q1(P4A11)
M4Q1 (S4M17)	

v. Mesh Matings

MMA2 (H2M4)
MMA3 (H2M8)
MMA4 (H2M9)
MMA5 (H2M10)
MMR1 (H2M3)
MMV1 (H2M5)
MMV2 (H2M6)
MMY1 (H2M7)
MMB1 (H2M2)

vii. Multishaft mattings

Hand loom mattings	Power loom mattings
MSA1 (SOM1)	PMSA1 (POA1)
MSA2 (SOM2)	PMSA2 (POA2)

viii. Rubber backing matting

RB2R1 (S2RB1)

x. Ribbed mattings

Handloom Mattings	Power loom mattings
KA 7 (SK 1)	PKA2 (PKM3)
KA 8 (SK 19)	PKA3 (PKM5)
KA 9 (SK 26)	PKA5 (PKM8)
KR 8 (SK8)	PKA6 (PKM9)
KV1 (SK7)	PKA9 (PKM12)
KV2 (SK3)	PKA10 (PKM13)
KV8 (SK18)	PKA11 (PKM14)
KV9 (SK28)	PKK1 (PKM1)
KQ1 (SK25)	PKK2 (PKM4)
SK29	

vi. Loop Fabrics (Geo Textiles)

SPL – L 7
SPL – L 8
SPL – L 9

ix. Special Reed matting

SR4R1 (SR4M1)

xi. Ribbed matting (3 shaft)

S3K1

III. Carpet and others

i. Coir Mourzouks

ii. Coir Carpets (Alleppy Carpets)

iii. Four shaft carpet

iv. Non woven Matting Mats

RMQB 1	RBTM
RBMR	RBMY

BCSR1
BCSQ1
BCSD

BMVA (BMVN)
BMVR
BMAQ (SMNQ)
BMVP

BM4NN

RMPB	RBMA
RBMR (without rubber backing)	

v. <u>Non Woven Carpet</u>

FBQ 1
Rope Disc
FBRA 1

vi. Hand knotted <u>Coir Nettings</u>

NA 1
NA 2

vii. <u>Coir Braids</u>

Anjengo 5 ply	Aratory 5ply
Anjengo 7 ply	Aratory 7ply
Anjengo 9 ply	Vycome 5 ply
Anjengo 11ply	Vycome 7ply
Anjengo 13 ply	Vycome 9ply