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योग के लिए सूती चटाई — विशिष्टि

Cotton Yoga Mat — Specification

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## FOREWORD

This Indian Standard was adopted by Bureau of Indian Standards, after the draft finalized by Ayush Sectional Committee had been approved by the Food and Agriculture Division Council.

The term 'Yoga' is derived from the Sanskrit root 'Yuj' which means 'to join' or 'to yoke' or 'to unite'. According to Yogic scriptures, the practice of Yoga leads to the union of an individual consciousness with the universal consciousness. Yoga is an art and science for healthy living that brings harmony within individual's internal milieu and with its external environment. It comprises various practices like *Ṣaṭkarma*, *Yogāsana*, *Prāṇāyāma* and *Dhyāna* (meditation).

Yoga works on psycho-physiological phenomenon of human beings and is thus known to provide for disease prevention, health promotion and management of many lifestyle related disorders. Yoga practices facilitate mind and body co-ordination, emotional equanimity and intellectual clarity to the practitioners.

Yoga mat is used as an accessory for performing *Yogāsana*, *Prāṇāyāma* and *Dhyāna*. Such mats made up of different materials are available in the market in various shapes and dimensions.

Formulation of this standard for the yoga mats would help the practitioners and students of yoga and other yoga enthusiasts to get access to a standardized yoga accessory which is ecofriendly and safe to use.

The composition of the committee responsible for the formulation of this standard is given in Annex B.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated expressing the result of a test or analysis shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

## *Indian Standard*

# COTTON YOGA MAT — SPECIFICATION

### 1 SCOPE

This standard covers the requirements of yoga mats made of cotton.

### 2 REFERENCES

The standards listed below contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of these standards

<i>IS/ISO No.</i>	<i>Title</i>
IS/ISO 105-B01 : 2014	Textiles — Tests for colour fastness: Part B01 Colour fastness to light: Daylight
IS/ISO 105-B02 : 2014	Textiles — Tests for colour fastness: Part B02 Colour fastness to artificial light — Xenon arc fading lamp test
IS/ISO 105-C10 : 2006	Textiles — Tests for colour fastness: Part C10 Colour fastness to washing with soap or soap and soda
IS/ISO 105-X12 : 2016	Textiles — Tests for colour fastness: Part X12 Colour fastness to rubbing ( <i>first revision</i> )
1390 : 2019/ ISO 3071 : 2005	Textiles — Determination of <i>pH</i> of aqueous extract ( <i>second revision</i> )
1954 : 1990	Determination of length and width of woven fabrics — Methods
1963 : 2004	Methods for determination of threads per unit length in woven fabrics
1964 : 2001	Methods for determination of mass per unit length and mass per unit area of fabrics

### *IS/ISO No.*

### *Title*

IS 1969 (Part 1) : 2018/ ISO 13934-1 : 2013	Textiles — Tensile properties of fabrics: Part 1 Determination of maximum force and elongation at maximum force using the strip method
IS 4905 : 2015/ ISO 24153 : 2009	Random sampling and randomization procedures ( <i>first revision</i> )
IS 6359 : 1971	Method for conditioning of textiles
IS 7702 : 2012/ ISO 5084 : 1996	Textiles — Determination of thickness of textiles and textile products ( <i>first revision</i> )
IS 15370 : 2020/ ISO 6330 : 2012	Textiles — Domestic washing and drying procedures for textiles testing ( <i>first revision</i> )
IS/ISO 20743 : 2013	Textiles — Determination of antibacterial activity of textile products
IS 1450 : 1991	Handloom cotton specification ( <i>second revision</i> )

### 3 MATERIAL WORKMANSHIP AND FINISH

**3.1** The yoga mat made of cotton yarn shall be woven in plain weave. The number of ends included in each selvedge shall be between 6 and 18.

**3.2** The warp threads at each end of yoga mat shall be knotted together to form a fringe measuring 5 cm and to prevent fraying of weft threads. Alternatively, the transverse ends of yoga mat shall be spliced.

**3.3** The yoga mat shall not be slippery and give adherence to the surface and help to do the practice of yoga in proper alignment from dynamic to static yoga postures.

**3.4** The yoga mat when visually inspected shall be free from the major flaws listed in Annex A.

**3.4.1** The number of permissible flaws per mat shall be as agreed to between the buyer and the seller.

**3.5** The cloth on yoga mat and its cover shall not be printed with any objectionable picture and/or quote.

#### 4 TYPES

Based on mass (in g/m<sup>2</sup>) and other constructional particulars, types of cotton yoga mats shall be classified into following four varieties with details listed in Table 1:

- a) Variety No 1;
- b) Variety No 2;
- c) Variety No 3; and
- d) Variety No 4.

#### 5 SIZES

The yoga mats shall be rectangular in shape and of the following four sizes when determined in accordance with IS 1954:

- a) *Extra Large*  
length = 198 cm, width = 76 cm
- b) *Large*  
length = 183 cm, width = 76 cm
- c) *Standard*  
length = 183 cm, width = 61 cm
- d) *Small*  
length = 152 cm, width = 61 cm

NOTE — A tolerance of  $\pm 3$  cm shall be applicable to length and width.

#### 6 REQUIREMENTS

**6.1** The yoga mats (excluding underlay, if any) shall conform to the constructional/physical requirements specified in Table 1.

**6.2** The yoga mats shall also conform to the chemical requirements specified in Table 2.

**6.3** In order to illustrate or specify the indeterminable characteristics, such as general appearance, feel and shade of the yoga mat, a sample be agreed upon and sealed.

**6.3.1** The custody of the sealed sample shall be a matter of prior agreement between the buyer and the seller.

#### 7 ATMOSPHERIC CONDITIONS FOR TESTING

**7.1** The tests shall be carried out in the standard atmosphere (*see 7.2*).

#### 7.2 Conditioning of Test Specimen

The test samples shall be conditioned to a state of moisture equilibrium from dry state in standard atmosphere at  $65 \pm 5$  percent relative humidity and  $27 \pm 2^\circ\text{C}$  temperature (*see also* IS 6359).

**Table 1 Constructional/Physical Requirements of Yoga Mats**  
(Clauses 4 and 6.1)

Sl No.	Characteristic	Requirement				Method of Test
		Variety No. 1	Variety No. 2	Variety No. 3	Variety No. 4	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
i)	Approx. count of yarn <sup>1)</sup>					
	a) Warp	30 tex $\times$ 2 (20s/2)	30 tex $\times$ 2 (20s/2)	98 tex $\times$ 2 (6s/2)	60 tex $\times$ 3 (10s/3)	
	b) Weft	148 tex (4s)	295 tex (2s)	148 tex $\times$ 2 (4s/2)	295 tex (2s)	
ii)	Thickness, mm, <i>Min</i> (Excluding underlay)	4	4	4	4	IS 7702
iii)	Mass, g/m <sup>2</sup> , <i>Min</i>	380	500	695	850	IS 1964
iv)	Ends per dm	64 $\pm$ 5	50 $\pm$ 5	40 $\pm$ 5	40 $\pm$ 5	IS 1963
v)	Picks per dm	208 $\pm$ 5	144 $\pm$ 5	200 $\pm$ 5	110 (double) $\pm$ 5	IS 1963
vi)	Breaking strength (Warp and Weft) on 10 cm $\times$ 20 cm strip, N, <i>Min</i>					IS 1969 (Part 1)
	a) Warp	450	350	500	600	
	b) Weft	1 000	1 100	1 600	1 800	
	(Tolerance: 15 percent on individual value and $-5$ percent on average value)					

<sup>1)</sup> The approximate count of the yarn is given in Table 1 for guidance only.

**Table 2 Chemical Requirements of Yoga Mats**  
(Clause 6.2)

SI No. (1)	Characteristic (2)	Requirement (3)	Method of Test, Ref to (4)
i)	Fiber identification ( <i>see</i> Note 1)	100 percent cotton	IS 667
ii)	pH of aqueous extract (excluding underlay, if any)	6.0 to 8.5	IS 1390
iii)	Colour fastness (Dyed and printed mats only)		
	a) Fastness to light	4 or better	IS/ISO 105-B01 or IS/ISO 105-B02
	b) Fastness to washing (A1)		IS/ISO 105-C10 [Test Number A (1)]
	1) Change in colour	3 or better	
	2) Staining on adjacent fabric	3 or better	
	c) Fastness to rubbing		IS/ISO 105-X12
	1) Dry	4 or better	
	2) Wet	4 or better	
iv)	Anti-bacterial activity value <sup>1)</sup> , <i>Min</i> (Initially and after 10 washes) ( <i>see</i> Note 2)	1	IS/ISO 20743

<sup>1)</sup> Optional requirement, if agreed to between the buyer and the seller.

#### NOTES

**1** Impurities of less than 0.2 percent shall be permitted.

**2** Subject the specimens to washing as per procedure 5A and reference detergent specified in **6** of IS 15370 and followed by drying as per **10** of IS 15370 (*revised*).

## 8 MARKING

**8.1** The yoga mat shall be suitably marked with the following information:

- Manufacturer's name, initials or trade-mark, if any;
- Name of the product;
- Name of the material and Variety number;
- Length and width; and
- Mass in g/m<sup>2</sup>.

### 8.2 BIS Certification Marking

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act, 2016* and the Rules and Regulations framed thereunder, and the product(s) may be marked with the Standard Mark.

## 9 PACKING

Unless otherwise specified in the contract or order, each yoga mat shall be packed in its cover so as to protect it from dust and moisture. The packing shall be designed in such manner that there is no rattling when yoga

mat is kept inside the cover. Two straps of appropriate dimensions should be provided on the cover for easy handling, transportation and storage purpose.

## 10 SAMPLING

**10.1** The lot shall consist of all the yoga mats manufactured from the same materials in a shift.

**10.2** Unless otherwise sampling plan is specified in the contract or order, the sampling plan as given in Table 3 may be used for inspecting and testing of mats against this standard. The number of mats to be selected from the lot for assessing manufacture and workmanship (*see 3.1 to 3.4*) and testing length, width, thickness, ends, picks and weight shall be as per column 2 of Table 3. The number of test specimens to be selected for other tests shall be in accordance with *col 4* of Table 3. To ensure the randomness of selection, IS 4905 may be followed.

### 10.3 Criteria for Conformity

The lot shall be declared conforming to the requirements of this standard if the total number of defective samples does not exceed the permissible numbers given in *col 3* or *col 5* of Table 3 as applicable.

**Table 3 Sampling Plan for Yoga Mats**  
(Clauses 10.2 and 10.3)

Sl No.	Lot Size	Sample Size	Permissible Number of Defective Samples	Sub-sample Size (to be drawn from sample)	Permissible No. of Defective Sub-samples
(1)	(2)	(3)	(4)	(5)	(6)
i)	Up to 25	3	0	3	0
ii)	26 to 90	13	1	3	0
iii)	91 to 150	20	2	13	1
iv)	151 to 280	32	3	13	1
v)	281 to 500	50	5	20	1
vi)	501 to 1 200	80	7	32	2
vii)	1 201 and above	125	10	50	3

NOTE — If sample size equals or exceeds lot size, carry out 100 percent inspection.

**ANNEX A***(Clause 3.4)***MAJOR FLAWS**

- A-1** One or more ends missing in the body of the material throughout its length, more than three ends missing at a place and running over 60 cm, or prominently noticeable double end running throughout the piece.
- A-2** Undressed snarls noticeable over a length exceeding 5 percent of the length of the piece.
- A-3** Smash definitely rupturing the texture of the fabric.
- A-4** Hole, cut or tear.
- A-5** Reed marks prominently noticeable over a length exceeding 5 percent of the piece.
- A-6** Defective or damaged selvedge noticeable over a length exceeding 5 percent of the length of the piece.
- A-7** Weft crack or two or more missing picks across the width of the fabric.
- A-8** Warp or weft bar due to the difference in raw material, count, twist, lustre, colour, shade or spacing of adjacent groups of yarns (starting mark).
- A-9** More than two adjacent ends running parallel, broken or massing and extending beyond 10 cm.
- A-10** Noticeable warp or weft float in the body of the fabric.
- A-11** Noticeable oil or other stain in the fabric.
- A-12** Oily weft in the fabric.
- A-13** Prominently noticeable slub.
- A-14** Conspicuous broken pattern.
- A-15** Gout due to foreign matter, usually lint or waste woven into the fabric.
- A-16** Prominent selvedge defect.
- A-17** Significant shading or listing fabrics having a gradual change in tone or depth of shade of fabric (excluding selvedge or border running parallel to the selvedge).
- A-18** Coloured flecks.
- A-19** Blurred or dark patch.
- A-20** Patchy, steaky or uneven dyeing.
- A-21** Dye bar.
- A-22** Fuzzy appearance.

**ANNEX B***(Foreword)***COMMITTEE COMPOSITION**

Ayush Sectional Committee, FAD 26

<i>Organization</i>	<i>Representative(s)</i>
Ministry of Ayush, New Delhi	DR D. C. KATOCH ( <b>Chairman</b> )
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*Member Secretary*DR PRADEEP KUMAR DUA  
SCIENTIST 'C' (FAD), BIS





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