

चिकित्सीय वस्त्रादि — अवशोषक सूती  
जालीदार कपड़ा — विशिष्टि  
( पाँचवा पुनरीक्षण )

Medical Textiles — Absorbent Cotton  
Gauze — Specification  
( Fifth Revision )

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भारतीय मानक ब्यूरो  
BUREAU OF INDIAN STANDARDS  
मानक भवन, 9 बहादुर शाह ज़फर मार्ग, नई दिल्ली - 110002  
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG  
NEW DELHI - 110002  
[www.bis.gov.in](http://www.bis.gov.in) [www.standardsbis.in](http://www.standardsbis.in)

## FOREWORD

This Indian Standard (Fifth Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Technical Textiles for Medtech Applications Sectional Committee had been approved by the Textiles Division Council.

This standard was first published in 1955 and subsequently revised in 1969, 1975, 1982 and 1988. This revision has been made in the light of experience gained since its publication and to incorporate the following major changes:

- a) Title and scope of the standard has been updated;
- b) Amendments 1 and 2 have been incorporated;
- c) Definition of cotton absorbent gauze and fabric defects has been updated;
- d) Fibre identification test has been specified;
- e) Sterility test (optional) has been specified;
- f) References to Indian Standards have been updated;
- g) BIS certification marking clause has been updated;
- h) Marking and packing clauses have been updated; and
- j) Sampling and criteria of conformity has been modified.

The composition of the Committee responsible for the formulation of this standard is given in Annex D.

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*

# MEDICAL TEXTILES — ABSORBENT COTTON GAUZE — SPECIFICATION

( *Fifth Revision* )

**1 SCOPE**

This standard prescribes the constructional particulars and other requirements of bleached and unmedicated absorbent cotton gauze.

**2 REFERENCES**

The standards listed in Annex A 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.

**3 MANUFACTURE****3.1 Yarn**

The cotton yarn used in the manufacture of gauze shall conform to the requirements specified in IS 171.

**3.2 Cloth**

Absorbent gauze is cotton fabric of plain weave, supplied in various widths and lengths. It shall be free from weaving defects, sizing, dressing and filling materials, and substances liable to cause subsequent tendering. The fabric shall be reasonably free from holes, slubs, snarls and naps as well as the following when examined visually:

- a) *Odour* — Misty odour, or any objectionable smell like that of chemicals or materials used in sizing and bleaching;
- b) *Defective Selvedge* — The selvedge tearing and allowing yarn to unravel and loop formation at selvedge;
- c) *Cracks* — Prominent steaks of space or gaps between warp or weft yarns;
- d) *Double ends* — More warp threads woven as one, due to wrong draw; and
- e) *Sloughing* — Entanglement in the fabric of a bulk of yarn that has slipped off the weft yarn due to loose winding.

**4 REQUIREMENTS****4.1 Fibre Identification**

The material of gauze cloth that is cotton fibre shall be identified by the method prescribed in IS 14944.

**4.2** The gauze cloth shall also conform to the requirements given in Table 1.

**5 MARKING**

**5.1** Each packet shall have a label marked with the following information:

- a) Name of the material;
- b) Manufacturer's name, initials or trademark;
- c) Lot No./Batch No.;
- d) Month and year of manufacture;
- e) Width in centimetres and length in metres;
- f) The words sterilized or non-sterilized; and
- g) Any other statutory requirement as required by the law in force or as agreed between buyer and seller.

**5.1.1 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 may be marked with the Standard Mark.

**6 PACKING**

**6.1** Gauze cloth shall be folded and packed with such material and in a manner so as to protect its absorbency and allow normal handling and transport without tearing and exposing the content. Details of the packing shall be a matter of prior agreement between the buyer and the seller.

**6.1.1** A suitable packing procedure is given in Annex C for information and guidance.

**Table 1 Requirements of Absorbent Cotton Gauze**

(Clause 4.2)

SI No.	Characteristics	Requirements	Method of Test, Ref to (see Note 1)
(1)	(2)	(3)	(4)
i)	Count of yarn (for guidance only)		
	a) Warp	17 to 25 tex (24 s to 34 s)	
	b) Weft	17 to 25 tex (24 s to 34 s)	
ii)	Threads/dm		Annex B
	a) Ends, <i>Min</i>	75	
	b) Picks, <i>Min</i>	55	
iii)	Mass, g/m <sup>2</sup>	30 ± 5	IS 1964 (see Note 2)
iv)	Length, m	Not less than 98 percent of agreed or declared value	IS 1954
v)	Width, cm	Not less than 98 percent of agreed or declared value	Annex B
vi)	Absorbency, s, Max	10	IS 2369
vii)	pH value of aqueous extract	6.5 to 8.5	IS 1390
viii)	Scouring loss, percent, <i>Max</i>	1	IS 1383 (mild method)
ix)	Freedom from optical whitener	No fluorescence (Not more than occasional point of fluorescence visible)	Viewing under ultra-violet light
x)	Sterility (optional)	Complies with test	IS 10150

## NOTES

1 The test specimens may be tested in the prevailing atmospheric conditions. However, in case of disputes, the specimens shall be conditioned and tested in the standard atmospheric conditions as specified in the Indian Standards referred on test methods.

2 In case mass is to be determined by oven-dry weight method (Method B) or moisture regain value method (Method C), the value of the commercial moisture regain (R) shall be taken as 7.0 percent.

**7 SAMPLING AND CRITERIA OF CONFORMITY****7.1 Lot**

The quantity of absorbent cotton gauze cloth delivered to one buyer against one dispatch note shall constitute a lot.

**7.2** The conformity of a lot to the requirements of

the standard shall be determined on the basis of the tests carried out on the sample selected from the lot.

**7.3** Unless otherwise agreed to between the buyer and the seller, the number of pieces to be selected at random shall be in accordance with col (2) and col (3) of Table 2 to ensure the randomness of IS 4905 may be used.

**Table 2 Sample Size and Criteria for Conformity***(Clause 7.3)*

<b>SI No.</b>	<b>Lot Size</b>	<b>Sample Size</b>	<b>Permissible Number of Non-Conforming Pieces</b>	<b>Sub-Sample Size</b>
(1)	(2)	(3)	(4)	(5)
i)	Upto 50	5	0	2
ii)	51 to 150	8	0	3
iii)	151 to 300	13	1	3
iv)	301 to 500	20	1	5
v)	501 and above	32	2	5

**7.4 Number of Tests and Criteria for Conformity**

<i>SI No.</i>	<i>Characteristics</i>	<i>Number of Tests</i>	<i>Criteria for Conformity</i>
(1)	(2)	(3)	(4)
i)	Count, ends, picks, mass, length, width and visual defects	According to col (3) of Table 2	Permissible number of non-conforming pieces not to exceed the corresponding number given in col (4) of Table 2
ii)	Absorbency, scouring loss, fibre identification, pH value, sterility and freedom from optical whitener	According to col (5) of Table 2	All the test pieces shall meet the requirements

## ANNEX A

(Clause 2)

## LIST OF REFERRED STANDARDS

<i>IS No.</i>	<i>Title</i>	<i>IS No.</i>	<i>Title</i>
IS 171 : 1993	Textiles — Ring spun grey cotton yarn for weaving — Specification ( <i>fourth revision</i> )	IS 1964 : 2001	Textiles — Methods for determination of mass per unit length and mass per unit area of fabrics ( <i>second revision</i> )
IS 1383 : 1977	Methods for determination of scouring loss in grey and finished cotton textile materials ( <i>first revision</i> )	IS 2369 : 2022	Method for determination of absorbency of absorbent textile materials ( <i>second revision</i> )
IS 1390 : 2022	Textiles — Determination of pH of aqueous extract ( <i>third revision</i> )	IS 2508 : 2016	Polyethylene films and sheets — Specification ( <i>third revision</i> )
IS 1398 : 1982	Specification for packing paper, waterproof, bitumen laminated ( <i>second revision</i> )	IS 2818 : 2015	Textiles — Hessian — Specification ( <i>third revision</i> )
IS 1954 : 1990	Determination of length and width of woven fabrics — Methods ( <i>second revision</i> )	IS 4905 : 2015	Random sampling and randomization procedures ( <i>first revision</i> )
IS 1963 : 1981	Methods for determination of threads per unit length in woven fabrics ( <i>second revision</i> )	IS 10150 : 1981	Guide for sterilization of medical products
		IS 14944 : 2020	Surgical dressings — Methods of test ( <i>first revision</i> )

## ANNEX B

(Clause 4.2 and Table 1)

## METHOD FOR DETERMINATION OF THREADS AND WIDTH OF FABRIC

**B-1** For determining the threads per decimetre and width of the fabric, the cloth shall be laid as given below.

**B-2** Stick one of the selvages of the gauze cloth measuring 25 cm (in length)  $\times$  full width to the canvas cloth, slightly bigger in size, by means of an adhesive tape. Attach a metal plate measuring approximately 25 cm  $\times$  2 cm and weighing approximately 75 g to the other selvedge of the gauze cloth by means of an adhesive tape. Suspend the whole assembly in the vertical position for

30 seconds. Thereafter, stick the hanging selvedge of the gauze cloth to the canvas by means of adhesive tape. Spread the gauze cloth in this state on a glass plate taking care that the sample remains in stretch conditions on the canvas cloth.

**B-2.1** Determine the threads per decimetre according to the method given in IS 1963.

**B-2.2** Determine the width of the fabric as per method given in IS 1954.

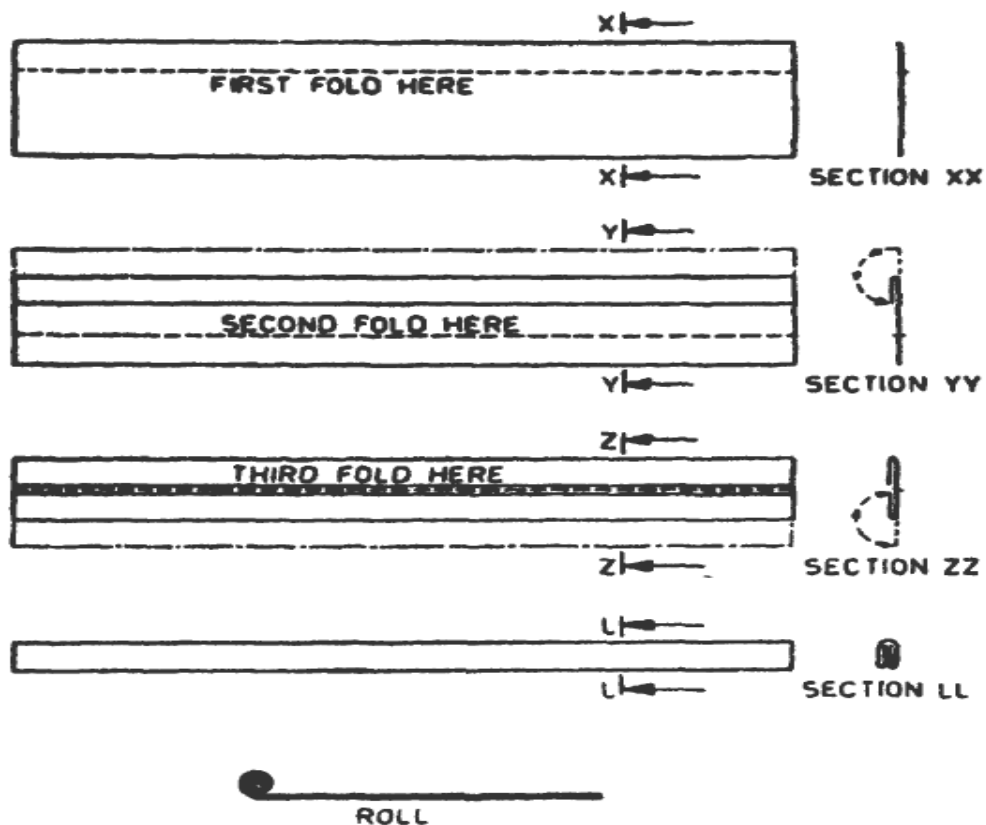


FIG. 2 METHOD OF FOLDING COTTON GAUZE IN ROLLS

**ANNEX C**

(Clause 6.1.1)

**PACKING PROCEDURE OF GAUZE**

**C-1** The number of dressings per packet and the number of packets per bale shall be as agreed to between the buyer and the seller.

**C-2** The packets shall be wrapped with the following materials:

a) One layer of waterproof paper (*see* IS 1398)

or

One layer of polyethylene film of 40 microns thickness (*see* IS 2508).

Waterproof paper of polyethylene film shall have an overlap of at least 15 cm; and

b) One layer of hessian conforming to IS 2818.

**C-3** The outer layer of bale, that is, the hessian shall be securely sewn with at least 12 stitches per decimetre. The slats of timber approximately 80 mm wide and 12 mm thick shall be placed lengthwise along the edges of the bale and three steel balling hoops shall be used to tighten the bale and hold the slats in position. The hoops shall preferably be machine-sealed and made firm by rivets.

**C-4** Unless otherwise specified, the packets of one size of gauze shall be packed in a bale of the gross weight not exceeding 37 kg.

**C-5** Press packing of bales shall be carried out, wherever possible.



**ANNEX D***(Foreword)***COMMITTEE COMPOSITION**

Technical Textiles for Medtech Applications, TXD 36

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The Pad Project (NGO) India, New Delhi	SHRIMATI TANYA MAHAJAN
The South India Textile Research Association, Coimbatore	SHRI S. SIVAKUMAR DR E. SANTHINI ( <i>Alternate</i> )

<i>Organization</i>	<i>Representative(s)</i>
The Synthetics & Art Silk Mills Research Association, Mumbai	DR MANISHA MATHUR SHRIMATI S. S. DONGRE ( <i>Alternate</i> )
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## BUREAU OF INDIAN STANDARDS

### Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002

Telephones: 2323 0131, 2323 3375, 2323 9402

Website: [www.bis.gov.in](http://www.bis.gov.in)

### Regional Offices:

	Telephones
Central : 601/A, Konnectus Tower -1, 6 <sup>th</sup> Floor, DMRC Building, Bhavbhuti Marg, New Delhi 110002	{ 2323 7617
Eastern : 8 <sup>th</sup> Floor, Plot No 7/7 & 7/8, CP Block, Sector V, Salt Lake, Kolkata, West Bengal 700091	{ 2367 0012 2320 9474
Northern : Plot No. 4-A, Sector 27-B, Madhya Marg, Chandigarh 160019	{ 265 9930
Southern : C.I.T. Campus, IV Cross Road, Taramani, Chennai 600113	{ 2254 1442 2254 1216
Western : Plot No. E-9, Road No.-8, MIDC, Andheri (East), Mumbai 400093	{ 2821 8093

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