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IS 4046-2 (1996): Textiles- Gents' cotton briefs, Part 2:
Plain knitted [TXD 10: Hosiery]



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भारतीय मानक

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भाग 2 सादी बुनी

Indian Standard

TEXTILES — GENTS' COTTON BRIEFS —
SPECIFICATION

PART 2 PLAIN KNITTED

ICS 61.020

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

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Hosiery Sectional Committee had been approved by the Textile Division Council.

This standard covers briefs made from plain knitted fabric. Part 1 of the standard was published in 1981 and covers briefs made from 1×1 , thin 2-ply rib-knitted fabric.

Briefs are tight fitting underwear without leg portion.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. 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

TEXTILES — GENTS' COTTON BRIEFS — SPECIFICATION

PART 2 PLAIN KNITTED

1 SCOPE

1.1 This standard (Part 2) prescribes the constructional details and other particulars of bleached or dyed plain knitted gent's cotton briefs.

1.2 This standard does not prescribe the general appearance, lustre, feel and shade of briefs (*see also 5.3*).

2 REFERENCES

The Indian Standards listed in Annex A are necessary adjuncts to this standard.

3 TERMINOLOGY

For the purpose of this standard the definition as given in IS 3596 : 1967 shall apply.

4 MANUFACTURE

4.1 General Design

The design and shape of the briefs shall be as shown in Fig. 1 for Type I and Fig. 2 for Type II. The briefs shall be tailored out of well and evenly plain knitted fabric. The fabric shall be bleached or dyed and shall conform to construction particulars given in Table 1.

4.1.1 Wales and courses shall be determined by the method given in B-4.

4.2 Elastic Strap

4.2.1 The briefs shall have woven elastic strap conforming to IS 9686 : 1980 stitched at the waist band or the waist shall be formed by folding the edges of the fabric to a depth of minimum 25 mm and stitching it with flat stitches. In case of latter a

cotton tape preferably conforming to IS 1895 : 1982 or a suitable tape made out of same fabric as that is used for fabricating the briefs shall be provided in waist fold used for tying purposes. It shall be at least 30 cm longer than the corresponding waist girth. Braided elastic strap at the thigh openings may also be provided, if required by the buyer.

4.3 Seams and Stitches

4.3.1 The type of stitches and count of sewing thread used for stitching various portions of briefs shall be as given in Table 2. The sewing thread shall conform preferably to IS 1720 : 1978.

4.3.2 All cotton sewing threads used for stitching shall be bleached or dyed according to the shade of briefs. Sewing thread of cross shades may also be used if agreed to between the buyer and the seller.

4.4 Freedom from Defects

4.4.1 The briefs shall be free from fabrication defects such as loose threads, missing stitches, oil stains, defective stitching, uneven dyeing, stains or any other defect which may significantly mar the appearance or serviceability.

5 REQUIREMENTS

5.1 Dimensions

The dimensions of briefs of different sizes for Types I and II, when measured by method given in B-2 shall conform to requirements of Tables 3 and 4 respectively.

NOTE — The size of the brief is designated by the hip measurement of the wearers, for example, 85 size briefs are meant for wearers having hip girth of 85 cm.

Table 1 Construction Particulars of Plain Knitted Fabric
(Clause 4.1)

Gauge of Machine ¹⁾	Approximate Count of Yarn Cotton Count (tex)	Wales per dm, Min	Courses per dm, Min
24	38 ^s (15.5), 39 ^s (15.0), 40 ^s (14.5)	142	196
26	40 ^s (14.5), 42 ^s (14.0), 44 ^s (13.5), 45 ^s (13.0), 50 ^s (12.0)	154	212

¹⁾ As determined by number of needles per 2.5 cm.

Table 2 Seams and Stitches
(Clause 4.3.1)

Portion to be Stitched	Type of Stitch	No. of Stitches per cm, <i>Min</i>	Count of Sewing Thread	
			In Needle(s)	In Looper(s)
(1)	(2)	(3)	(4)	(5)
Joining at the seat and side seams	Flat Lock	4	Three strands of 60 ^s /3 cotton count (100 dtex × 3)	Two strands of 40 ^s /2 cotton count (145 dtex × 2) or 60 ^s /3 cotton count (100 dtex × 3)
Hemming at the front opening	Flat Lock	4	do	do
Joining of elastic straps to waist ban	Flat Lock	4	One strand of 40 ^s /2 cotton count (145 dtex × 2)	One strand of 40 ^s /2 count 145 dtex × 2)

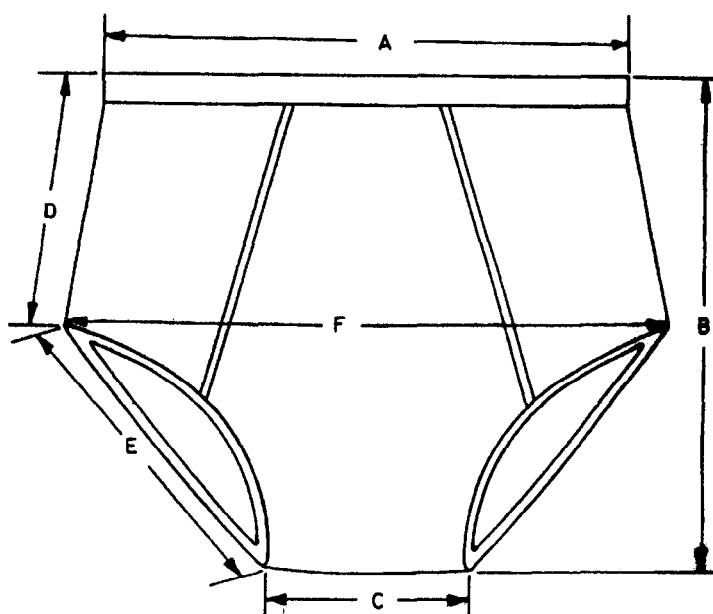


FIG. 1 TYPICAL SHAPE OF TYPE 1 BRIEFS

5.2 Other requirements of briefs shall be as given in Table 5.

5.3 Sealed Sample

In case a sample has been agreed upon and sealed to illustrate or specify the indeterminable characteristics, such as general appearance, lustre, shade and feel of briefs, the supply shall be in conformity with the sample in such respects.

5.3.1 Custody of the sealed sample shall be a matter of prior agreement between the buyer and the seller.

6 MARKING

6.1 A suitable cloth label shall be securely attached to each brief at the inside near the waist band on which following shall be indicated:

- Size of brief;
- Indication of source of manufacture;
- Washing instructions, if any; and
- Any other information as required by the buyer.

6.1.1 BIS Certification Marking

The briefs may also be marked with the Standard Mark.

Table 3 Dimensions of Type I Briefs
(Clause 5.1 and Fig. 1)

All dimensions in centimetres.

Size	Width Across Waist	Front Length	Width at Bottom	Side Length	Thigh Opening	Width Across Seat
(1)	(2)	(3)	(4)	(5)	(6)	(7)
	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>
75	28.5	26	10.0	13	19.5	33
80	30.5	28	11.0	14	20.5	34
85	31.5	30	12.0	15	22.5	35
90	33.5	31	12.5	16	23.5	37
95	35.5	33	13.0	17	24.5	38
100	36.5	34	14.0	18	26.5	40
Tolerance	±2.0	±1.5	±1.5	±1.5	±1.5	±1.5

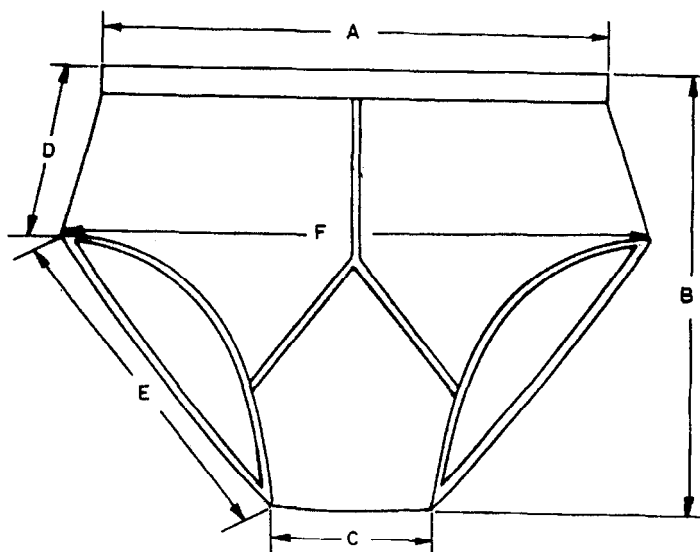


FIG. 2 TYPICAL SHAPE OF TYPE II BRIEF

Table 4 Dimensions of Type II Briefs
(Clause 5.1 and Fig. 2)

All dimensions in centimetres.

Size	Width Across Waist	Front Length	Width at Bottom	Side Length	Thigh Opening	Width Across Seat
(1)	(2)	(3)	(4)	(5)	(6)	(7)
	<i>A</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>E</i>	<i>F</i>
75	26.0	23.5	8.5	9.0	19.5	32.0
80	27.0	25.0	9.0	10.0	21.0	34.0
85	30.0	26.5	9.5	11.0	22.0	36.0
90	32.0	28.5	10.0	11.0	23.0	39.0
95	35.0	30.0	10.5	12.0	24.0	41.0
100	37.0	31.5	11.5	12.5	25.0	43.0
Tolerance	±2.0	±1.5	±1.5	±1.5	±1.5	±1.5

Table 5 Other Requirements of Briefs
(Clause 5.2)

Sl No.	Characteristics	Requirement	Method of Test
(1)	(2)	(3)	(4)
i)	Dimensional change due to relaxation (both direction), percent, <i>Max</i>	5	B-3
ii)	Scouring loss percent, <i>Max</i>	2	IS 1383 : 1977. (Mild Method)
iii)	pH value of aqueous extract	6 to 8	IS 1390 : 1983 (Cold Method)
iv)	Colour fastness of dyed briefs to:		
	a) Light (<i>see Note</i>)	4 or better	IS 2454 : 1985 or IS 686 : 1985
	b) Washing test: 3		IS 764 : 1979
	1) Change in colour	3 or better	
	2) Staining on adjacent fabric	3 or better	
	c) Perspiration		IS 971 : 1983
	1) Change in colour	4 or better	
	2) Staining on adjacent fabric	4 or better	
	d) Rubbing (wet and dry)	4 or better	IS 766 : 1988

NOTE — In case of dispute colour fastness to light shall be determined by the method prescribed in IS 686 : 1985.

6.1.2 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act, 1986* and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

7 PACKING

Briefs shall be packed preferably in bales or cases in accordance with IS 3325 : 1965 or IS 3086 : 1965 as the case may be.

8 SAMPLING AND CRITERIA FOR CONFORMITY

8.1 Lot

In any consignment, all the briefs of same size and manufactured from plain knitted fabric of same

count of yarn, knitted on machine of same gauge and delivered to a buyer against one despatch note shall constitute a lot.

8.1.1 The conformity of a lot to the requirements of this specification shall be determined on the basis of the tests carried out on the samples selected from the lot.

8.2 Unless otherwise agreed to between the buyer and the seller, a number of briefs depending upon the size of the lot shall be selected at random from the lot to constitute the gross sample. The number of briefs so selected shall be in accordance with col 2 of Table 6.

Table 6 Sample Size and Permissible Number of Non-Conforming Briefs
(Clauses 8.2 and 8.3)

Number of Briefs in the Lot	Physical Characteristics		Number of Briefs to be Inspected
	Number of Briefs to be Inspected	Permissible Number of Non-Conforming Briefs	
(1)	(2)	(3)	(4)
Up to 300	10	0	3
301 to 500	20	1	5
501 to 1 000	32	3	5
1 001 and above	50	5	8

8.3 The number of briefs to be tested and criterion for conformity for each of the characteristics shall be as follows:

<i>Characteristic</i>	<i>Number of Drawers to be Tested</i>	<i>Criterion for Conformity</i>
Freedom from defects, wales and courses and dimensions	See col 2 of Table 6	Non-conforming briefs not to exceed the corresponding number given in col 3 of Table 6.
Dimensional change, scouring loss, pH value of aqueous extract	See col 4 of Table 6	All the briefs to satisfy the relevant requirements
Colours fastness	1 each of the same colour shade and for lot size up to 500 and 2 above 500.	All the test specimens to satisfy the relevant requirements

ANNEX A

(Clause 2)

LIST OF REFERRED INDIAN STANDARDS

<i>IS No.</i>	<i>Title</i>	<i>IS No.</i>	<i>Title</i>
686 : 1985	Method for determination of colour fastness of textile materials to day light (<i>first revision</i>)	1390 : 1983	Methods for determination of pH value of aqueous extracts of textile materials (<i>first revision</i>)
764 : 1979	Methods for determination of colour fastness of textile materials to washing Test 3 (<i>second revision</i>)	1720 : 1978	Cotton sewing threads (<i>second revision</i>)
766 : 1988	Methods for determination of colour fastness of textile materials to rubbing (<i>first revision</i>)	1895 : 1982	Cotton NEWAR (<i>second revision</i>)
971 : 1983	Methods for determination of colour fastness of textile materials to perspiration (<i>first revision</i>)	2454 : 1985	Methods for determination of colour fastness of textile materials to artificial daylight (Xenon lamp) (<i>first revision</i>)
1383 : 1977	Methods for determination of scouring loss in gery and finished cotton textile materials (<i>first revision</i>)	3086 : 1965	Code for seaworthy packaging of cotton hosiery yarn and goods
		3325 : 1965	Code for inland packaging of cotton hosiery yarn and goods
		6359 : 1971	Method for conditioning of textiles
		9686 : 1980	Elastic tape

ANNEX B

(Clauses 4.1.1, 5.1 and Table 5)

METHODS OF TEST

B-1 CONDITIONING OF TEST SPECIMENS AND ATMOSPHERIC CONDITIONS FOR TESTING

The test specimens shall be tested in prevailing atmospheric conditions. In case of dispute, the samples shall be conditioned and tested in the standard atmosphere as given in IS 6359 : 1971.

B-2 DIMENSIONS

B-2.1 Procedure

Take each garment constituting the test sample. Lay it flat on a table. Remove by hand all creases and wrinkles without distorting it. Measure to the nearest 0.5 cm the dimensions given.

B-3 DIMENSIONAL CHANGES DUE TO RELAXATION

B-3.1 Marking of Test Specimens

B-3.1.1 Take a brief from the test sample. Cut from it a test specimen measuring approximately 20 cm × 20 cm in such a way that the two of its sides are parallel in the direction of wales and the other two parallel in the direction of courses. Mark the direction of wales and courses in the test specimen.

B-3.1.2 Mark centrally on the test specimen by means of indelible ink or a fast dyed cotton sewing thread an area 10 cm × 10 cm with two of its sides in the direction of wales and the other two in the direction of courses. Spread this test specimen on a flat smooth surface. Carefully remove by hand all creases and wrinkles. Within this area, mark six pairs of marks, three pairs each in the wales direction and the courses direction in such way that the distance between each pair of marks is the same.

B-3.2 Procedure

B-3.2.1 Place test specimen on a glass plate and carefully remove by hand all creases and wrinkles without distorting it and place the other glass plate on the test specimen. Measure, correct to the nearest millimetre, the distance between each pair of marks separately.

B-3.2.2 Lay the test specimen flat in a tray of suitable size and of depth minimum 10 cm. Soak it under a head of 25 mm of water containing 0.5 percent suitable wetting agent at room temperature for 2 hours. Drain out the water and remove the test specimen carefully so that it is not stretched and lay it flat on a smooth surface. Remove the excess of water by an absorbent material and dry it at room temperature.

B-3.2.3 After drying condition the test specimen to moisture equilibrium at room temperature. Place it on the glass plate. Carefully remove all wrinkles and creases and place the other glass plate on the test specimen. Measure, correct to the nearest millimetre, the distance between each pair of marks separately.

B-3.3 Calculation

B-3.3.1 Calculate separately the percentage of dimensional change both in the direction of wales and in the direction of courses by the following formula:

$$S = \frac{100 \times (a - b)}{a}$$

where

S = dimensional change, percent;

a = the distance between a pair of marks (along the wales or courses as the case may be) before soaking; and

b = the distance between the same pair of marks after soaking.

B-3.3.2 Calculate separately the dimensional change between all the three pairs of marks in the direction of wales and in the direction of courses and calculate the average dimensional change in each direction.

B-4 WALES AND COURSES

Take a brief and lay it flat on a table. Remove all wrinkles and creases without distorting it. On one side of the test specimen, count with the help of a pick glass or magnifying glass, the number of wales and courses in 10 cm at three different places in the test specimen and calculate the average number of wales and courses per dm.

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Amendments Issued Since Publication

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