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**उत्पाद मानुयल
Cotton Duck
IS 1422:1983 के अनुसार**

**PRODUCT MANUAL For
Cotton Duck
ACCORDING TO IS 1422:1983**

भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम की स्कीम-I के तहत यह उत्पाद मानुयल प्रमाणीकरण के प्रचलन में रीति और पारदर्शिता के सुसंगत सुनिश्चित करने के लिए सभी क्षेत्रीय/शाखा कार्यालयों एवं लाइसेन्स धारियों द्वारा संदर्भ सामग्री के रूप में उपयोग किया जाएगा। बीआईएस लाइसेन्स/प्रमाण पत्र प्राप्त करने के इच्छुक भावी आवेदकों द्वारा भी इस दस्तावेज़ का उपयोग किया जा सकता है।

This Product Manual shall be used as reference material by all Regional/Branch Offices & licensees to ensure coherence of practice and transparency in operation of certification under Scheme-I of Bureau of Indian Standards (Conformity Assessment) Regulations, 2008 for various products. The document may also be used by prospective applicants desirous of obtaining BIS certification licence/certificate.

1.	उत्पाद Product	:	IS 1422:1983
	शीर्षक Title	:	Specification for Cotton Duck
	संशोधन संख्या No. of amendments	:	04
2.	नमूनाकरण दिशा निर्देश Sampling Guidelines		
a)	कच्चा माल Raw material	:	1. The yarn used for the manufacture of the cloth shall be satisfactory in evenness and reasonably free from neps and spinning and doubling defects. 2. The cloth should be free from sizing, filling and dressing materials and substance liable to cause subsequent tendering. The dyed cloth should be free from stains, streaks, patches and specks.
b)	समूहिकरण दिशा निर्देश Grouping Guidelines	:	Each variety to be tested to cover all varieties mentioned in IS.
c)	नमूने का परिमाण Sample Size	:	05 Pieces (Full width x 3 metres)

3.	परीक्षण उपकरणों की सूची List of Test Equipment	:	Please refer Annex –A
4.	निरीक्षण व परीक्षण स्कीम Scheme of Inspection and Testing	:	Please refer Annex - B
5.	एक दिन में संभावित परीक्षण Possible tests in a day	:	(i) Count of Ply and Yarn (ii) Ends and Picks (iii) Mass (iv) Length and Width (v) Weave
6.	लाइसेन्स का कार्यक्षेत्र/Scope of the Licence:		
	IS 1422:1983 के अनुसार मानक मुहर का उपयोग करने के लिए लाइसेन्स निम्नलिखित कार्यक्षेत्र के लिए प्रदान किया जाता है Licence is granted to use Standard Mark as per IS 1422:1983 with the following scope:		
	Name of the product	Cotton Duck	

ANNEX-A
LIST OF TEST EQUIPMENTS

Major test equipment required to test the requirements of the Indian Standard.

S. No.	Tests used in with Clause Reference	Test Equipment
1.	General	1. Conditioning chamber of suitable range.
2.	Ends & Picks, Cl. 4.1 (Table 1)	1. Thread counter with suitable magnification arrangement
3.	Mass, Cl. 4.1 (Table 1)	1. METHOD A — CONDITIONED MASS METHOD 1.1. Horizontal, Flat Smooth Table 1.2. Graduated Steel Scale 1.3. Balance, Capable of weighing to an accuracy 0.005 g. 2. METHOD B — OVEN-DRY METHOD 2.1. Horizontal, Smooth Flat Table 2.2. Graduated Steel Scale 2.3. Drying Oven-Suitable for drying sample to constant mass at 105 to 110°C 2.4. Balance- Capable of weighing to an accuracy 0.005 g. 2.5. T- Square
4.	Breaking load, Cl. 4.1 (Table 1)	1. Tensile testing Machine with holding attachment
5.	Length & Width Cl. 4.1 (Table 1)	1. Calibrated Steel Rule of length at least 2 m (preferably 3 m), and graduated in centimeters and millimeters. 2. Table having a smooth flat surface, of width greater than that of the fabric when prepared for measuring, and of length at least 4 m.
6.	Scouring Loss Cl. 4.2 (Table 2)	1. APPARATUS 1.1. Soxhlet Apparatus 1.2. Drying Oven -capable of maintaining a temperature of 105±3°C. 1.3. Weighing Balance - capable of weighing to an accuracy of 0.001 g. 2. REAGENTS 2.1. Unless specified otherwise analytical reagent grade chemicals shall be employed in test and distilled water (see IS: 1070-1960*) shall be used where the use of water is intended. 2.2. Desizing Enzyme - Diastase or other suitable enzyme 2.3. Sodium Chloride - Solid. 2.4. Caustic Soda Solution - 2 percent (m/v), containing, 1 percent turkey red oil Grade 2 (total fatty matter, percent by weight, Min 50 percent) conforming to IS 1044:1970. 2.5. Acetic Acid Solution -1 percent (Y/P). 2.6. Chloroform

7.	pH Value, Cl. 4.2 (Table 2)	1. Stoppered glass or polypropylene flasks, chemically resistant, for preparation of the aqueous extract. 2. Mechanical shaker, providing rotational or reciprocating movement sufficient to obtain a ready exchange of liquid between the interior of the textile material and the solution used in preparing the extract. A to-and-fro movement at a rate of 60 per min or a rotational frequency of 30 per min has been found satisfactory. 3. Beakers, chemically resistant, with a capacity of 150 ml. 4. Rods, chemically resistant. 5. pH-meter, with a glass electrode, capable of measuring to at least 0.1 pH-units. 6. Balance, accurate to 0.01 g. 7. 1 litre volumetric flasks, of grade A quality.
8.	Shrinkage or Elongation Cl. 4.2 (Table 2)	1. APPARATUS 1.1. Watertight Tray or Container Approximately 100 mm deep and of sufficient area to contain the specimen horizontally without folding. It shall be provided with a glass plate for covering and with suitable draining arrangement. 1.2. Steel Rule, graduated in millimetres. 1.3. Two Pieces of Plate Glass, each measuring at least 600 × 600 mm. 2. REAGENTS 2.1. Sodium Hexametaphosphate, commercially available as 'Calgon'. 2.2. An Efficient Wetting Agent, for example, sodium di-octyl sulphosuccinate or dodecyl benzene sodium sulphonate.
9.	Colour Fastness to Light Cl. 4.2 (Table 2)	A. For DAYLIGHT 1. Exposure rack 2. Opaque cardboard, or other thin opaque material. 3. Grey scale for assessing change in colour. 4. When requested, instruments for determining climatological data B. For Artificial Light (Xenon Lamp) 1. Reference Material 2. Laboratory Exposure device (The light source shall consist of a xenon arc lamp of correlated colour temperature 5500 K to 6500 K, the size of which will depend on the type of apparatus used)
10.	Colour Fastness to Washing Cl. 4.2 (Table 2)	1. APPARATUS 1.1. Suitable mechanical laundering device, consisting of water bath containing a rotatable

		shaft which supports radially, stainless steel containers [(75 mm $\pm$ 5 mm diameter) x (125 mm $\pm$ 10 mm high)] of capacity (550 $\pm$ 50) ml. the bottom of the containers being (45 $\pm$ 10) mm from the centre of the shaft. The shaft/container assembly is rotated at a frequency of (40 $\pm$ 2) r/min. The temperature of the water bath is thermostatically controlled to maintain the test solution at the prescribed temperature $\pm$ 2°C. 1.2. Balance, accurate to $\pm$ 0.01 g. 1.3. Mechanical stirrer, minimum 16.667 S-1 (1 000 r/min) to ensure thorough dispersion and prevent settling. 1.4. Non-corrodible (stainless) steel balls. approximately 6 mm in diameter. 1.5. Means of heating the soap solutions such as a hot plate. 2. REAGENTS AND MATERIAL 2.1. Soap, containing not more than 5 % moisture 2.2. Sodium carbonate. 2.3. Soap solution 2.4. Grade 3 water 2.5. Adjacent fabrics 2.6. Non-dyeable fabric. if required (e.g. polypropylene). 2.7. Grey scales
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The above list is indicative only and may not be treated as exhaustive.

ANNEX – C

SCHEME OF INSPECTION AND TESTING

1. **LABORATORY** - A laboratory shall be maintained which shall be suitably equipped (as per the requirement given in column 2 of Table 1) and staffed, where different tests given in the specification shall be carried out in accordance with the methods given in the specification.
 - 1.1 The manufacturer shall prepare a calibration plan for the test equipment.
2. **TEST RECORDS** – The manufacturer shall maintain test records for the tests carried out to establish conformity.
3. **PACKING AND MARKING** – The Standard Mark as given in the Schedule of the license shall be printed on the cuts/bales of Cotton Duck provided always that the said fabric to which the mark is thus applied conforms to every requirement of the specification
 - 3.1 Marking and packing shall be done as per the provisions of the Indian Standard. In addition, the following information shall be given on each cut/bale or the label applied to it:
 - a) Control Unit (or Batch) Number.
 - b) BIS website details i.e.–“For details of BIS certification please visit www.bis.gov.in”
4. **CONTROL UNIT** – For the purpose of this scheme a control unit is defined as the cotton duck woven from one continuous tape length on one loom beam.
5. **LEVELS OF CONTROL** - The tests as indicated in column 1 of Table 1 and the levels of control in column 3 of Table 1, shall be carried out on the whole production of the factory which is covered by this plan and appropriate records maintained in accordance with paragraph 2 above.
 - 5.1 All the production which conforms to the Indian Standard and covered by the licence should be marked with Standard Mark.
6. **REJECTIONS**—Disposal of non-conforming product shall be done in such a way so as to ensure that there is no violation of provisions of BIS Act,2016.

TABLE 1
LEVELS OF CONTROL

(1)				(2)	(3)		
Test Details				Test equipment requirement R: required (or) S: Sub-contracting permitted	Levels of Control		
Cl.	Requirement	Test Method			No. of Sample	Frequency	Remarks
		Clause	Reference				
Cl. 4.1 Table 1-Col.2 & 3	Ply of Yarn	4.1	IS 1422	R	One piece	Every 4 hours	In the event of failure of the sample in one or more requirement, the entire material in the control unit may be either reprocessed for rectifying the defect or rejected. Such reprocessed material when tested again shall conform to all the requirements of the specification
Cl. 4.1 Table 1-Col.4 & 5	Ends and Picks	5 or 6	IS 1963	R	One piece	-do-	-do-
Cl. 4.1 Table 1-Col.6	Mass	6 or 7	IS 1964	R	One piece	Each Control unit	-do-
Cl. 4.1 Table 1-Col.7 & 8	Breaking Load	9	IS 1969(Pt 1)	R	One piece	Each Control Unit	-do-
Cl. 4.1 Table 1-Col.9 & 10	Length and Width	7	IS 1954	R	One piece	Every 4 hours	-do-
Cl. 4.1 Table 1-Col.11	Weave	4.1	IS 1422	R	One piece	-do-	-do-
Cl. 4.2 Table 2-S.No. (i)	Scouring Loss	8.2	IS 1383	R	One Piece	Each Control unit	-do-
Cl. 4.2, Table	pH Value	8.2	IS 1390	R	One	Each Control Unit	-do-

2-S.No.(ii)					piece		
Cl. 4.2, Table 2-S.No.(iii)	Shrinkage or Elongation	10	IS 2977	R	One piece	-do-	-do-
Cl. 4.2, Table 2-S.No.(iv)	Colour Fastness to light	7 or 8	IS/ISO 105-B01:2014 or IS/ISO 105-B02:2014	S	One Piece	Once in three months	Applicable only for Dyed Cotton Duck
Cl. 4.2, Table 2-S.No.(iv)	Colour Fastness to Washing	7	IS/ISO 105-C10:2006	R	One Piece	Each Control Unit	-do-

Note-1: Whether test equipment is required or sub-contracting is permitted in column 2 shall be decided by the Bureau and shall be mandatory. Sub-contracting is permitted to a laboratory recognized by the Bureau or Government laboratories empaneled by the Bureau

Note-2: Levels of control given in column 3 are only recommendatory in nature. The manufacturer may define the control unit/batch/lot and submit his own levels of control in column 3 with proper justification for approval by BO Head.