

Provisional

Specification No. IND/ADP/0069(c)

(NIV) TAPE COTTON SPECIAL - VARIOUS - DYED
UNDYED

1 THIS SPECIFICATION IS INTENDED TO GUIDE PURCHASE, INSPECTION AND MANUFACTURE OF TAPE COTTON SPECIAL VARIOUS FOR PARACHUTES AGAINST DEFENCE REQUIREMENTS.

2 IN CASE OF DISCREPANCY BETWEEN THIS SPECIFICATION AND ANY SAMPLE OR PATTERN THIS SPECIFICATION WILL BE TAKEN AS CORRECT.

3 WHEREVER A REFERENCE TO ANY OTHER SPECIFICATION/DRAWING OCCURS IN THIS SPECIFICATION IT SHALL BE TAKEN AS A REFERENCE TO THE LATEST VERSION OF THAT SPECIFICATION/DRAWING.

SCOPE

1 This specification covers the requirements of Woven tape cotton special of various sizes used in the manufacture of parachutes and other miscellaneous Aerial Delivery Equipment.

GENERAL

2 The tapes governed by this specification being for use in personnel parachutes and other equipments connected with air-craft are required to be of a uniformly high standard and in strict conformity with the particulars laid down in this specification.

MATERIAL

3 Unsized Cotton Yarn of approx. 49 Tex/3 count shall be used in the Warp and 29.5 Tex/3 count in the Weft, for the manufacture of the tapes.

MANUFACTURE/WORKMANSHIP AND FINISH

4 The finished tape shall be clean, evenly woven, free from weaving/spinning defects and stains. The selvages of the tape shall be firm, regular and even. The dyed tape shall be of uniform shade and to the approved colour standard Vat dye shall be used. The sulphur dye shall not be used.

Recd. vide CITOC. Kanpur

Letter No. 8/0003/C2/TC-3A. D/- 7/9/73. ml
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DIMENSIONS AND OTHER DETAILS

5 The tape Cotton Special of various sizes shall conform to the following essential particulars:

Width m.m.	: Nominal : Counts of yarn	: No of: ends	: No of: picks	: Maximum weight gm/m	: Min. B.S. 18 cm: between grips: kg	Weave	
1	2	3	4	5	6	7	8
12.7+1.6mm	49Tex/3	12+1	7.9	55	Weave of the tape		
19.0+1.6mm	"	"	56"	"	11.9	86	"2/2 V Drill"
25.4+1.6mm	"	"	74"	"	15.8	114	
28.5+1.6mm	"	"	84"	"	17.6	127	
31.7+1.6mm	"	"	94"	"	19.8	141	
38.1+1.6mm	"	"	112"	"	23.8	170	
44.4+1.6mm	"	"	130"	"	27.7	200	
50.8+1.6mm	"	"	148"	"	31.7	227	
57.1+1.6mm	"	"	166"	"	35.6	255	
63.5+1.6mm	"	"	186"	"	39.6	284	
76.2+3.2mm	"	"	222"	"	47.5	341	
89 +3.2mm	"	"	258"	"	55.4	398	
101+3.2mm	"	"	294"	"	63.4	455	

TESTS

6 The Tape Cotton Special of various sizes shall satisfy the following tests:

7 Breaking Strength test - When tested in accordance with the method laid down in the Appendix 'A' the breaking strength of any (test specimen) of a sample shall not be less than the minimum shown in the table under para 5.

8 Weight - When tested in accordance with the method laid down in the Appendix 'B', the weight per metre should not be more than that shown in the table under para 5.

APPENDIX 'A'

Method for the determination of Breaking Strength.

The specimen from the selected test sample shall be conditioned for not less than 24 hrs in an atmosphere having a R.H. of 65 ± 2 p.c. and a temp. of $27 \pm 2^\circ \text{C}$. The specimen shall be fixed in an approved Breaking strength testing machine in which the test piece is stretched at a constant rate of 46 cm per minute, the length between the supports shall be 18 cm and the specimen tested whilst under the same condition.

If the specimen breaks at a point not within the unsupported length at a load lower than that specified, a duplicate test shall be carried out on another specimen.

APPENDIX 'B'

Method for determination of weight/m in gms (per yd in oz)

Prior to tests, the test specimen shall be conditioned not less than 24 hrs in an atmosphere having a R.H. of $65 \pm 2\%$ and ~~XXXXXX~~ $27 \pm 2^\circ \text{C}$. The test specimen such conditioned shall then be subjected for one minute to a load equal to 1% of the Breaking strength and a specimen of tape cotton shall be cut under tension. The weight/m shall then be determined.

APPENDIX 'C'

Method for determination of pH value of aqueous extract

One gram of representative sample shall either be repped into yarns or cut into small pieces. It shall then be placed in a clean wide mouthed 4 oz glass stoppered bottle which has been thoroughly rinsed with distilled water. 50 ml of distilled water shall then be added to the sample and after wetting out by shaking, the contents left for sufficient time to permit equilibrium to be established. There continuous agitation can be given a period of one hour is sufficient for this purpose. Alternatively the extracts can be left undisturbed overnight.

If the extract is colourless the pH value shall be determined with the help of 'Lovibond' comparator by using a suitable indicator whose pH value ranges from 5.0 to 9.0. In case the aqueous extract is coloured pH metre with "Glass Electrode" shall be used.

APPENDIX 'D'

Method for Testing Fastness of Dye to Washing

(a) Preparation of Test Liquor:-

The Test Liquor shall consist of a 0.2% solution of soap flakes in distilled water. The proportion of soap stated is of absolute dry soap, i.e. the water content of ordinary soap shall not be counted as soap.

(b) Preparation of Sample :-

A portion of the tape, 10 cms long and of full width, shall be cut out and to it shall be sewn with white cotton thread a piece of bleached undyed muslin cloth, 5 cms long and of full width of the tape, and a piece of scoured white woollen material of the same dimensions, so that the dyed test piece is entirely covered on one side.

(c) Method of Test:-

The prepared sample shall be subjected to the washing treatment as follows:-

The washing shall be done in a wash wheel carrying stainless steel covered jars. A quantity of test liquor about 50 times the weight of the prepared sample shall be placed in the jar and heated up to 60°C. The sample shall then be placed in the jar and the jar fixed in the wash wheel, which shall then be rotated at 40 r.p.m. in a water bath also heated to and maintained at 60°C. The test liquor shall be changed after the first 10 minutes in order to minimise the effect of any finishing substances left in the material. The sample shall be removed from the jar after a total period of treatment of one and a half hours, well rinsed in warm water, centrifuged or mangled and finally dried.

N.B. A description of the standard test is published by the Society of Dyers and Colourists, Bradford, Yorkshire. The test described here is Test No. 2 of the standard tests recommended.

"SAYED"

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Checked by

Re. P. m. m.

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9 pH value of Aqueous Extract - When tested in accordance with the method described in Appendix 'C', the pH value of the aqueous extract of the tape shall be between 5.0 to 9.0.

9(a) Scouring Loss - The scouring loss of the undyed tape, when determined by the method prescribed in IS:1383 - 1960 shall not exceed 2%. There shall be no presence of starch.

10 Dye Fastness to Light - When exposed to light from a suitable source (e.g. Carbon arc) the tape shall have a fastness of at least Class V of the classification adopted by the Society of Dyers and Colourists Bradford, Yorkshire.

11 Dye Fastness to Washing - When tested in accordance with the standard wash wheel test No. 2 as described in appendix 'D' there shall be no sign of bleeding on the attached piece of white cotton or white woollen material or change in shade.

MARKING

12 Each roll shall be legibly and indelibly marked with the nomenclature and Cat No of the store, manufacturer's name, length of the roll and the year of supply.

PACKAGING

13 The length of the roll shall be 80 to 100 metres or as required by the procuring authority. The appropriate number of rolls shall be arranged in cylindrical bundles and secured by jute twine to form a unit pack. Suitable number of such unit packs shall be arranged and wrapped with 150 gauge polythene film. It shall then be placed in a cases wood packing provided with Liners waterproof Bag. The gross weight of the packages shall not exceed 40 kg. The empty spaces if any, shall be filled in with cushioning material to prevent any movement of the contents inside the cases wood packing and top lid of the cases shall be nailed in. Packing materials used should be of the best quality and previously approved by the Inspector.

14 If ordered for delivery to a local Inspecting Depot, the tape shall be delivered loose in firms returnable packs. After Inspection the accepted supplies shall be packed by the Inspection Depot authority as indicated in para 13 above.

15 Before despatch, each case wood packing shall be legibly and indelibly marked showing the following.

- (a) Name of the store
- (b) Quantity packed in CWP
- (c) Serial No of the CWP
- (d) Month and year of packing
- (e) Name and trade mark of the manufacturer
- (f) Gross weight of the CWP in kg
- (g) Name and address of the consignee
- (h) Inspection Note No and Date

PRE-INSPECTION

16 Before tendering the store to the Govt Inspector, the supplier will carry out a thorough pre-inspection of each delivery to satisfy himself that the stores fully conform to this specification.

INSPECTION

- 17 i) If on examination, material from any portion of a consignment is found not to be fully in accordance with this specification, the whole consignment is liable to be rejected.
- ii) If on examination of 10 per cent of any delivery - 25 per cent of those examined are found not to conform to this specification in any respect then the whole consignment may be rejected.
- iii) All rolls not fully in accordance with this specification shall be rejected.

KANPUR

DATED 3.8.73

At receipt
for CHIEF INSPECTOR
CHIEF INSPECTORATE OF TEXTILES AND CLOTHING

"SAYEED"

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