
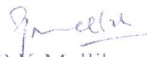
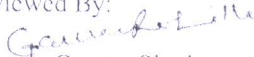
 Prepared By:  Dev Kishan Bairwa Sc 'B', TG(TE)	 P K Mallik, Sc 'D', TG(TE)	Specification No. ADRDE/SPECN/1992/38(a)		Revision no: 1 Dated: 18/06/2019
		Reviewed By:  Gaurav Singh Sc 'E', DH, TG(TE)	Issue: 02 Dated:	Page 1 of 9

Government of India
Ministry of Defence

Specification
For

Tape Nylon Various for Aeronautical Purposes

Approved by


 Group Director
 Technology Group (Textile Engineering)



Aerial Delivery Research and Development Establishment
Ministry of Defence
Post Box No. 51
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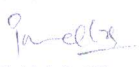
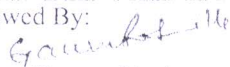
RECORD OF AMENDMENTS

Amendment No.	Sub heading to which amendment pertains	Authority	Incorporated by Name & Rank in Block letters	Initials
1	Clause I, Scope For : Type I: Tape Nylon, 25 mm Type II: Tape Tubular Nylon Braided, 18 mm Amendment: Type I: Tape Nylon, 25 mm, 4440N Type II: Tape Tubular Nylon Braided, 18 mm, 6870N	Director ADRDE	GD, TGTE	
2	Appendix 'A', Column 3 For : Thickness in mm (under 250 g/cm ² pressure) Type I: 0.75±0.02 Type I: 2.0±0.2 Amendment: Thickness under 200 g/cm ² pressure, max. mm Type I: 0.85 Type I: 2.2	Director ADRDE	GD, TGTE	
3	Appendix 'A', Column 10 For : Elongation at break, max, % Type I: 25 Type II: 25 Amendment: Elongation at break, min, % Type I: 20 Type II: 20	Director ADRDE	GD, TGTE	

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 Prepared By: Dev Kishan Bairwa Sc 'B', TG(TE)	 P K Mallik, Sc 'D', TG(TE)	Specification No. ADRDE/SPECN/1992/38(a)		Revision no: 1 Dated: 18/06/2019
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0. FOREWORD

- 0.1 This specification has been prepared by a special committee, reviewed and approved by Group Director, Technology Group (Textile Engineering), ADRDE, Agra.
- 0.2 This specification would be used for manufacture, inspection and procurement of tape nylon various against Defence requirements.
- 0.3 In case of any discrepancy between this specification and any sample or pattern, this specification shall be taken as correct.
- 0.4 Enquiries regarding this specification in relation to any contractual conditions should be addressed to the Inspection Authority named in tender or contract. Other enquiries will be referred to the issuing authority, Director, ADRDE, Agra.
- 0.5 Whenever a reference to any other specification occurs in this specification, it shall be taken as a reference to the latest version of that specification.
- 0.6 Copies of this specification can be obtained on payment from:
- The Director,
A.D.R. & D.E., P.B. No. 51, Station Road,
Agra Cantt. - 282 001
 - Concerned Inspectors and Inspection Authority.
- 0.7 IS specifications quoted in this specification may be obtained directly from B.I.S., Manak Bhawan, 9, Bahadur Shah Zafar Marg, New Delhi - 110 002 or its regional offices located in the country.

1. SCOPE

- 1.1 This specification covers the requirement of two types of tapes as mentioned below:
 Type I Tape Nylon, 25mm, 4440N
 Type II Tape Tubular Nylon Braided, 18mm, 6870N

2. RELATED SPECIFICATIONS

- 2.1 Reference is made in this specification to:
- IS:1954 Methods for determination of length and width of fabrics
 - IS:7702 Method for determination of thickness of woven and knitted fabrics.
 - IS:1964 Determination of weight per square meter & weight per linear meter of fabrics.
 - IS:4437 Nylon breaking cords for personnel parachute.
 - IS:1963 Methods for determination of threads per unit length in woven fabrics.
 - IS:3442 Determination of crimp and count of yarn removed from fabric.



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- vii. IS:1969 Methods for determination of breaking load and elongation at break of woven textile fabrics.
- viii. IS:4905 Method for random sampling.

2.2 All specifications/drawings referred to in this specification for any tender or contract, shall mean the current edition on the date of such tender or contract.

3. MATERIAL

3.1 The basic material of yarn shall be Nylon 6 or Nylon 66. The yarn for both warp and weft shall be bright, multifilament of high tenacity.

4. MANUFACTURE

4.1 The single or folded yarn shall be evenly twisted with a minimum of 100 turns per metre (TPM). The tapes shall be evenly woven under suitable tension. The edges shall be firm and regular.

5. DIMENSIONS AND FINISH

5.1 The tape nylon shall be conform to the essential particulars given in Appendix 'A'.

6. WORKMANSHIP AND FINISH

6.1 The tape nylon shall be free from weaving defects. When laid on a flat even surface the tape shall be in straight line without of any tension.


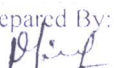

7. MARKING

7.1 Each roll shall be suitably attached with a label. The label shall be legibly and indelibly marked with nomenclature, manufacture's name, initials or recognized trade mark, year of manufacture, length of roll and DS Catalogue number of the store, if any.

8. QUALITY

8.1 Any portion of the samples drawn from a consignment on examination, shall show its conformity to the particulars furnished in the table under appendix 'A' in addition to the following, when tested in accordance with the standard methods.

Tests	Requirement
pH (by cold method)	6 - 8.5

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9. **PRE-INSEPCION OF STORES/CONSIGNMNET**

9.1 Manufacturers/contractors must satisfy themselves that the stores are in accordance with the terms of the contract and fully conform to the required specification by carrying out a thorough pre-inspection of each lot before actually tendering the same for inspection to the Inspecting Officer nominated under the terms of the contract. A declaration by the contractor that necessary pre-inspection has been carried out on the stores tendered, will be submitted along with the challan. The declaration will also indicate the method followed in carrying out pre-inspection showing the features checked/tested and will have the test certificate attached to the challan/declaration.

9.2 If the Inspecting Officer finds that pre-inspection of the consignment as required above has not been carried out, the consignment is liable for rejection.

10. **SAMPLING**

10.1 The manufacturer / supplier shall tender stores duly numbered and arranged in such a way that all the units are easily accessible to the Inspector.

10.2 For carrying out full laboratory tests, the rolls selected as in column 2 of the table given below shall constitute the test samples.

10.2.1 The Inspector shall draw sample for full tests from the bulk lot at random using the technique of the random sampling as given in IS: 4905.

10.2.2 The length of the samples for subjecting to full test shall be 5 m.

10.3 The remaining rolls of the lot shall be subjected to breaking load test only.

10.3.1 The length of the samples for breaking load test shall be 3 m.

10.3.2 **TABLE**
LOT SIZE

No. of Units (In rolls)	Sample size for full tests
upto 25	5 or lot size whichever is less
26 to 50	8
51 to 90	13
91 to 150	20
151 to 280	32
281 to 500	50
501 to 1200	80
1201 and above	125



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- 10.4 The rolls shall be supplied in continuous length of 100 meters. However shorter length of the rolls as given below may be accepted.
- 15% of the lot shall be of length 60 m and above
 - 10% of the lot shall be length 40 m and above

11. CRITERIA FOR CONFORMITY

- 11.1 All the sample units drawn as per clause 10 above shall be tested/examine to the relevant requirement/specification. If all the sample units are found to conform to the specified particulars, as given in the specification, the supply shall be considered to be in conformity, otherwise, not.

12. INSPECTION




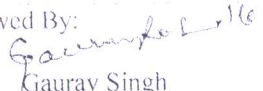
- 12.1 If on examination, material from any portion of a consignment is found not conforming fully to the specification, the whole consignment is liable to be rejected.
- 12.2 If on examination of 20% of any delivery, 20% of those examined are found not conforming to this specification in any respect, then the whole consignment may be rejected.
- 12.3 All rolls not fully in accordance with this specification shall be rejected.

13. WARRANTY

- 13.1 The stores supplied against this order, shall be deemed to bear a warranty of the contractor against defective material, workmanship and performance for a period of 12 months from the date of receipt of the stores at consignee's depot. If, during this period, the stores supplied are found by the consignee to be defective, the same shall be replaced immediately with serviceable stores as per the specification by the contractor at site, free of any charge or cost.

14. PACKAGING

- 14.1 The tape shall be supplied in rolls of continuous length without joints, of 100 m or as required by the procuring authority.
- 14.2 appropriate number of roll shall be arranged in cylindrical bundles and secured by jute twine ply to form a unit pack. Suitable number of such unit packs shall be arranged and wrapped with 0.04 mm thick polythene film. Alternatively, one layer of paper wrapping followed by one layer of paper packing water proof can be used in emergent condition when polythene film 0.04 mm is not readily available. It shall be then placed in cases wood packing provided with liners water proof bag. 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 the top lid of cases shall be nailed in. Care shall be exercised that the nails do not pierce the contents

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inside the cases wood packing. The cases wood packing shall be secure by fastening with metal hoops or metal wire.


- 14.3 Packing material used should be best trade quality and previously approved by Inspecting Officer.
- 14.4 The gross mass of the box shall not exceed 40 kg.
- 14.5 If ordered for delivery to a local Inspecting Depot, the store shall be delivered loose in firms returnable packs. After inspection, the accepted supplies shall be packed by the contractor concerned as indicated in para 14.2 above.
- 14.6 Before despatch, each cases wood packing (CWP) shall be legibly and indelibly marked showing the following details:
- a) Nomenclature and D S Cat number of the store.
 - b) Quantity packed in each CWP.
 - c) Serial no. of the CWP.
 - d) Month and year of packing.
 - e) Name and trade mark of the manufacturer.
 - f) Gross mass of each CWP in Kg.
 - g) Name and address of the consignee.
 - h) Inspection Note No. and date.

15. **DEFENCE STORES CATALOGUE NUMBER**

15.1 Not yet allotted.

16. **SUGGESTION FOR IMPROVEMENT**

16.1 Any suggestion for improvement of this document may be forwarded to the Director, Aerial Delivery Research and Development Establishment, Post Box No. 51, Station Road, Agra Cantt - 282 001.

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APPENDIX 'A'

PARTICULARS OF TAPE NYLON 25 MM, 4440 N AND TAPE TUBULAR BRAIDED 18 MM, 6870 N

Type	Width, mm	Thickness under 200 g/cm ² pressure, max, mm	Ends in full width	Picks or plaits per dm	Linear density of yarn, Tex (tolerance of -3 to +8%)	Mass per unit length, max, g/m	Breaking load on full width x 20 cm, min, N	Elongation at break, min, %	Weave	
										Warp
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
I	25.0 ± 0.5	0.85	60	140	140x1	46.7x1	12.0	4440	20	2/2 Broken Twill
II	18.0 ± 0.5	2.2	44	34	187x2	-	22.0	6870	20	Braided

Note: Plaits per dm and mass per unit length for Tape (Type II) shall be determined as per the method given in Appendices 'A' and 'B' respectively of IS: 4437.