GOVERNMENT OF INDIA
MINISTRY OF DEFENCE
DGQA ORGANISATION

गुणता से विश्वास

PROVISIONAL SPECIFICATION

FOR

BAG SLEEPING LT WEIGHT

CAT No. NIV

ISSUED BY

CONTROLLER
CONTROLLERATE OF QUALITY ASSURANCE
(TEXTILES AND CLOTHING)
DEPARTMENT OF DEFENCE PRODUCTION
MINISTRY OF DEFENCE
ASHOK PATH, KANPUR 208 004

YEAR: 2018

RECORD OF AMENDMENTS

AMENDMENT Sl. No.	DATE	DETAILS OF AMENDMENTS	AMENDMENT CARRIED OUT BY & DATE

CONTENTS

0.0 FOREWORD

0.1 This provisional specification containing 23 pages (including 03 sheets) has been prepared by Controllerate of Quality Assurance (Textiles and Clothing), Kanpur based on MGO Br letter no B/82222/Lt Wt Sleeping Bag/MGO/EM (ECC & E) dt 15/03/2016.This specification is based on the sealed sample provided by the MGO Br.

0.2 This specification shall be used for tender enquiry, procurement, manufacture and Quality Assurance of the stores covered by this specification.

0.3 The Quality Assurance Authority for the store covered by this specification is the Controller, Controllerate of Quality Assurance (Textiles & Clothing), Ashok Path, Kanpur 208004. Inquiries regarding this specification relating to technical or any other contractual conditions shall be referred to the Quality Assurance Authority named in the purchase document viz. tender or contract.

0.4 This specification is a live document and is therefore, likely to undergo change. Any major change in design should have the approval of General staff/User. Therefore, a specification issued holds good only for the supply order for which it is issued.

0.5 Any deviation from this specification will not be restored to without the explicit written sanction of Quality Assurance Authority viz. The Controller, Controllerate of Quality Assurance (Textiles and Clothing), Kanpur or his authorized representative.

0.6 Copies of any other reference /documents such as specification/drawings can be obtained on payment from the respective agencies i.e. ISO, BIS, Dte of Standardisation, CQA (GS) & CQA (T&C).

1.0 SCOPE

1.1 This provisional specification covers the technical, functional amd qualitative requirements of Bag Sleeping Lt wt in three sizes viz. Medium (MI), (L) & Extra Large (XL).

1.2 Bag Sleeping Lt wt governed by this specification is required to provide protection / comfort to the users under extreme cold climatic conditions (minus - 20 deg C with wind chill effect) at high altitude and has been designed to be a light weight and comfortable bag with high loft.

1.3 This specification covers the requirement of Bag Sleeping Lt Wt against Defence requirements and to provide guidance to manufacturers, quality assurance agencies and store holding depots./ indenters.

2.0 RELATED SPECIFICATIONS/REFERENCES

2.1 Reference is made in this specification to: -

Sl No.	SPECIFICATION	PARTICULARS
(i)	IS: 390-1975 (RA-2013)	Method for determination of water repellency of fabric by water spray test.
(ii)	IS: 667-1981 (RA-2013)	Method for identification of textile fibres.
(iii)	IS/ISO 105-C10:2006	Method for determination of colour fastness of textile materials to washing.
(iv)	IS: 1963-2004(RA-2008)	Method for determination of threads per unit length in woven fabric.
(v)	IS: 1964-2001 (RA-2010)	Method for determination of mass per unit length and mass per unit area of fabric.
(vi)	IS: 2454-1985 (RA 2013)/ ISO:105 BO2-2013	Method for determination of colour fastness of textile materials to artificial light (Xenon lamp).
(vii)	IS: 2508-1984 (RA-2008)	Low Density Polyethylene Film
(viii)	IS: 4228-1979 (RA-2008)	Nylon Tapes for aerospace purposes.
(ix)	IS : 4229-1992 (RA-2008)	Nylon Sewing Thread for Aerospace purpose
(x)	IS: 4905-2015	Method for random sampling.
(xi)	IS: 7016(Pt-2)-1981 (RA 2008)	Method for determination of breaking strength of coated & treated fabrics.

(xii)	IS:7016(Pt-3)-1981 (RA-2008)	Method for determination of Tear strength of coated & treated fabrics.
(xiii)	IS: 7016-2009 (Pt-7)	Method for determination of resistance to penetration by water & water proof ness for coated fabrics.
(xiv)	IS: 8156-1994 (RA-2009)	Fasteners for hook & loop tape.
(xv)	IS: 14181-2002(Pt I, II & III) (RA-2013)	Plastic slide fasteners.
(xvi)	IND/GS/1537(b)	Boxes Corrugated Card Board.
(xvii)	DMSRDE/T&GS/93/406	Buckle plastic quick release.
(xviii)	JSS: 8135-10-2004	Polypropylene strapping
(xix)	JSS : 4020-9-1999	Cord Nylon Braided
(xx)	IS:11056-84(RA 2010)	Method for determination of Air Permeability
(xxi)	IS:1969-85 (RA-2006)	Method for determination of Breaking Load &Elongation of woven Textile Fabric
(xxii)	IS:6489-93 (RA-2008)	Determination of Tear Resistance

3.0 STANDARD PATTERN

3.1 The sample approved and sealed by Min of Defence, MGO Branch (Eqpt Mgt Dte/GS&C Gp) shall constitute the standard as regards appearance, shade, workmanship, finish and any other particulars or properties not noted/defined in this specification. One each of such samples shall also, therefore, be provided to the QA Authority and the Inspecting Officer nominated in the contract for reference.

4.0 MATERIAL

4.1 The Bag Sleeping Bag Lt wt shall be manufactured from the materials given below:-

COMPONENTS	MATERIALS	PARTICULARS
A. **Bag**		
a)Outer Layer	Fabric Nylon Rip Stop WR OG	Appendix 'A'
b)Inner Layer	Fabric Nylon Rip Stop OG	Appendix 'A'
B. **Carry Bag**	Fabric Nylon PU Coated, Waterproof, OG	Appendix 'A'
C. **Filling Material**	Non woven polyester batting pre quilted with PP scrim using ultrasonic welding consisting of two layers each of 200g/m^2 ,total filling 400g/m^2 .	Appendix 'A'
D. **Zip fasteners**	Two way, open end heavy duty Zipper 150 cms	IS:14181-2002 (RA-2013)
E. **Sewing Thread**	Nylon Sewing thread OG V No L-2	IS:4229-1992
F. **Draw Cord**	Cord Nylon Braided OG 2452 N	JSS:4020-9-1999

5.0 MANUFACTURE/PROCESSING

5.1 The Bag Sleeping Lt Wt shall be constructed in a mummy shaped bag with side zipper, oval foot section and integrated hood with draw cord that closes up to a very small breathing hole.

5.2 The outer layer of bag shall be made of 100% polyamide Rip stop WR fabric OG of 65 g/m^2 and inner layer shall be of 100% Nylon Rip Stop OG fabric of 50 g/m^2 . The insulation filling material shall be non-woven polyester batting pre quilted with PP scrim using ultra sonic welding constituting of two layers each of 200g/sqm resulting in total filling of 400g/sqm. The bag shall have quilted finish. Both the layer of polyester batting shall be stitched with outer fabric & inner fabric respectively. The design and pattern of stitching/quilting shall be as per sealed sample.

5.3 The carry bag is made of 100% polyamide fabric WP PU coated one side (inner side) OG. The bag shall have Nylon OG draw cord and provided with 3 size compression belts (one horizontal and four vertical belts).

6.0 DIMENSIONS AND TOLERANCE

6.1 The Sleeping Bag Lt wt shall conform to the dimensional requirements as given below :-

PARAMETERS	REFERENCE	SIZE (in mm)		
		M	L	XL
Length (mm),measurement taken at the back, from seam to seam	A	2160	2240	2290
Width at shoulder, measurement taken at the back(2nd stitch from top) from seam to seam	B	780	800	810
Width at foot,measurement taken at the back (1st stitch from bottom) from seam to seam	C	560	560	560
Foot (oval piece)-Major axis	D	340	340	340
Length of Zipper	E	1500	1500	1500
Length from hood to opening	F	350	350	350
Height of opening	G	150	150	150
Width of hood	H	270	270	270
Foot (oval piece)-Minor axis	J	270	270	270
Packed Bag (in outer carry bag)		250(dia) & 400 (length)	250(dia) & 400 (length)	250(dia) & 400 (length)

Note: i) All dimensions taken at the back from seam to seam in normal (unstreched) flat position.
ii) A tolerance of ± 2% in dimensions above is permissible.

6.2 **MASS OF BAG SLEEPING Lt wt-** The bag sleeping shall conform to the mass requirements as given below: -

PARAMETERS	SIZE		
	M	L	XL
Mass of synthetic filled bag (g)	1850	2000	2100
Mass of Carry Bag (g)	135	135	135
Complete mass of total system (g)	1985	2135	2235

Note: A tolerance of ±5% in mass above is permissible.

7.0 WORKMANSHIP AND FINISH

The general workmanship and finish shall be of high standard and similar to sealed sample as per clause 3.1 of this specification. The bag shall be free from stitching defects like uneven stitch, puckering, gathering of threads, cuts & holes, streaky or patchy dying, stains and any other spots affecting the aesthetic appearance.

8.0 MARKING

8.1 The sleeping bag shall be provided with cloth taffeta synthetic size label separately attached adjacent to right top of zipper in a manner as to be visible at the first sight. The size label shall comprise nomenclature of the store, firm's name and address, size and year of manufacture. The sleeping bag shall also be provided with another label showing use/care/washing instructions attached in side seam on inner side of the bag and 30 cm above bottom of the seam.

8.2 The acceptance mark shall be put up on each accepted sleeping bag adjacent to the size label.

9.0 PRE-INSPECTION OF SUPPLIES BY THE PRODUCER

9.1 Manufacturers/Contractors must satisfy themselves first that the store manufactured are in accordance with the contract and fully conform to the specification, by carrying out thorough pre-inspection of each lot/batch before actually tendering the same for inspection to the Quality Assurance Officer nominated under the terms of the contract.

9.2 A declaration by the Contractor that necessary pre-inspection/tests have been carried out on the stores tendered and the same are fit for inspection and test data shall be rendered along with the challan. The declaration shall include the method followed in pre-inspection showing features checked/tested and will have the test certificate attached to the challan / declaration.

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

10.0 QUALITY ASSURANCE

10.1 Examination of samples taken from any portion of the consignment or during surveillance inspection shall conform to the requirement when tested in accordance with the methods mentioned against each in this specification.

11.0 SAMPLING PROCEDURE/PLAN

11.1 Maximum Lot size is restricted to 10000 Nos.

11.2 The sampling plan based on 4 % AQL prepared as per IS: 2500 (Part -I)-2000/ ISO: 2859-1999(Pt-1) is as under:

Table-I

Lots Size in number	Sampling Plan							
	Visual examination/ dimensional check at the time of sampling (L-II)		Sample size for detail check at Bulk QA stage (L-III)		Physical Parameters (for laboratory tests) (S-4)		Chemical Parameters (for laboratory tests) (S-2)	
	Sample Size	Acceptance No.	Sample Size	Acceptance No.	Sample Size	Acceptance No	Sample Size	Acceptance No.
1	2	3	4	5	6	7	8	9
Upto 280	32	3	50	5	13	1	5	0
281 – 500	50	5	80	7	13	1	5	0
501 – 1200	80	7	125	10	20	2	5	0
1201 – 3200	125	10	200	14	32	3	8	1
3201-10000	200	14	315	21	32	3	8	1

Note:-

(i) Sampling plan is prepared with Level II as a standard practice.

(ii) Shift of level and switching of type of inspection will be at the discretion of Inspecting Officer based on QA inputs and switching rules be resorted to.

(iii) Samples drawn as per column (2) to be first examined visually. If found satisfactory, the samples for physical testing as per column (6) be drawn out from the samples originally drawn as per column (2) by the sampling officer and marked accordingly. The sample size is as given in column (2) for visual examination.

(iv) Samples for chemical testing will be drawn as per column (8) from the samples drawn as mentioned in column (6) only.
(v) The sample size for bulk QA check under the column (4) and Acceptance No. for bulk QA stage are mentioned in column (5).
(vi) Acceptance No. in column (7) is inclusive of Acceptance Noo. mentioned in column (9).
(vii) .L : General Inspection Level and S: Special Inspection Level.

12.0 TEST METHODS

12.1 Specified test methods are illustrated in Appendix "A" and Appendix "B".

13.0 CRITERIA FOR CONFOMITY

13.1 All the sample units drawn shall be tested/examined to the specification requirements. If the sample units as per sampling plan are found to conform to the requirement of this specification, the lot shall be considered to be in conformity to the specification.

14.0 PACKING AND MARKING

14.1 **MATERIALS**:- The following materials shall be used for packaging of sleeping bag :

S.No.	Materials	Specification
I.	Polythene Bag for general purpose	IS:9738-2003
II.	H4/8040-000048 Tape Adhesive,Transparent Waterproof width 50MM X Length 65 Mtr	JSS: 8040-8:2014(Rev No 3)
III.	Polypropylene strapping	JSS: 8135-10:2004
IV.	Corrugated card board Boxes Triple Wall 7 Ply.	IND/GS/1537(b)

14.2 METHOD OF PACKING

14.2.1 The stores shall be supplied in new, clean, dry & sound condition.

14.2.2 One number of sleeping bag shall be suitably rolled duly compressed and put into the carry bag and then close the opening mouth of the carry bag after suitably covering with mouth flap and then closed by tightening the tying cord.

14.2.3 The horizontal & vertical belts of the carry bags shall then fastened to form a compact unit pack of compressed cylindrical shape.

14.2.4 Such carry bag shall then be put into a polyethylene bag of suitable size. Four such unit packs shall then be placed in a corrugated card board box of suitable size. All the joints shall then be properly closed with tape adhesive and finally be bound with two band of polypropylene strapping across width and two across length. Each polypropylene strapping shall be one complete piece and the ends shall be sealed with machine.

14.3 MARKING ON PACKAGE

14.3.1 Before dispatch, each package shall be legibly/indelibly marked/printed in black showing the following details:-

i) Cat / Part Number
ii) Nomenclature of the store
iii) AT/SO/Extract No & Date
iv) Inspection Note No & Date
v) Serial No of Package
vi) Month & Year of packing
vii) Gross mass of the Package in 'Kg'
viii) Consignee
ix) Firms Name & Address

15. TECHNICAL LITERATURE AND DOCUMENTS

15.1 Refer clause 2 of this specification.

16. WARRANTY

16.1 "Except as otherwise provided in the invitation to the tender, the Contractor/seller hereby declare that the goods, stores, articles sold/supplied to the purchaser under this Contract shall be of the best quality and workmanship and new in all respects and shall be strictly in accordance with the specifications and particulars contained/mentioned in the Contract.

16.2 The Contractor/seller hereby guarantees that the said goods/stores/articles would continue to conform to the description and quality aforesaid for a period of 12 months from the date of delivery of the said goods/stores/articles to the purchaser or 15 months from the date of shipment/dispatch from the contractor's work, whichever is earlier and that notwithstanding the fact that the purchaser (Inspector) may have inspected and/or approved the said goods/stores, articles, if during the aforesaid period of 12/15 months the said goods/stores/articles, be discovered not to conform to the description and quality aforesaid or not having satisfactory performance or have deteriorated and the decision of the purchaser in that behalf shall be final and binding on the Contractor/seller to rectify replace by acceptable goods/stores/articles or such portion or portions thereof as is found to be defective by the purchaser within a reasonable period not exceeding 3 months or as may be allowed by the purchaser in his discretions on the application made

thereof by the Contractor/seller and in such an event the above mentioned warranty period shall supply to goods/stores/articles rectified/replaced from the date of rectification/replacement thereof, otherwise the Contractor/seller shall pay to the purchaser such compensation as determined by the purchaser as may arise by reason of the break of the Warranty herein contained".

17.0 **DEFENCE STORE CATELOGUE NO.**

17.1 NIV -Bag Sleeping Lt Wt

18. **DRAWINGS/SKETCHES**

18.1 Three drawing plates attached to this specification.

19. **SUGGESTION FOR IMPROVEMENT**

19.1 Any suggestion for improvement of this document may be forwarded to: -

THE CONTROLLER
CONTRAOLLERATE OF QUALITY ASSURANCE
(TEXTILES AND CLOTHING)
Ashok Path, KANPUR-208 004
Tel : 0512-2324529 Fax: 0512-2324529
Email: cqatc-dgqa@nic.in

DATE: 21 July 2017

CONTROLLER
CONTRAOLLERATE OF QUALITY ASSURANCE
(TEXTILES AND CLOTHING)

APPENDIX "A"
(Reference Para 4)

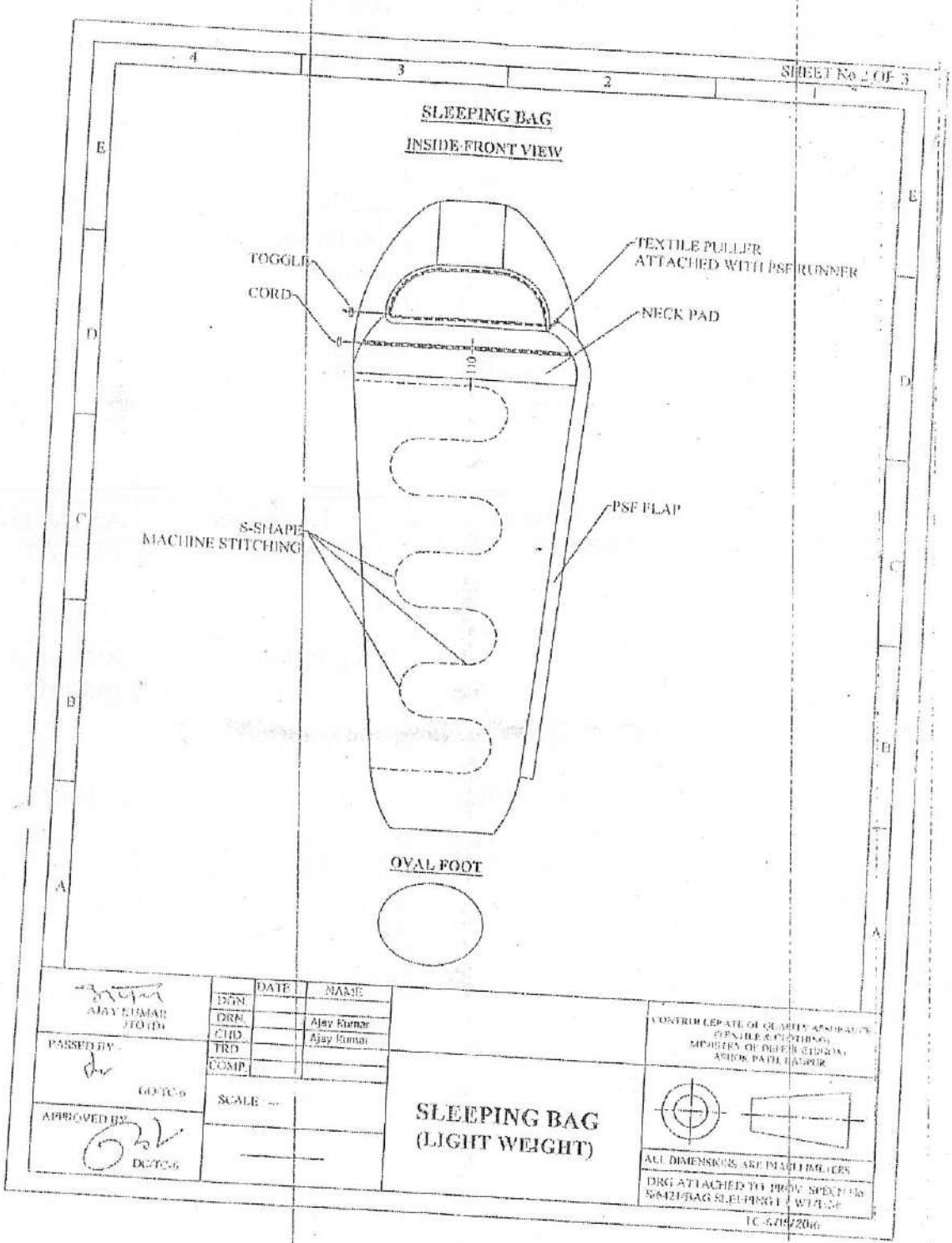
MATERIAL DETAILS

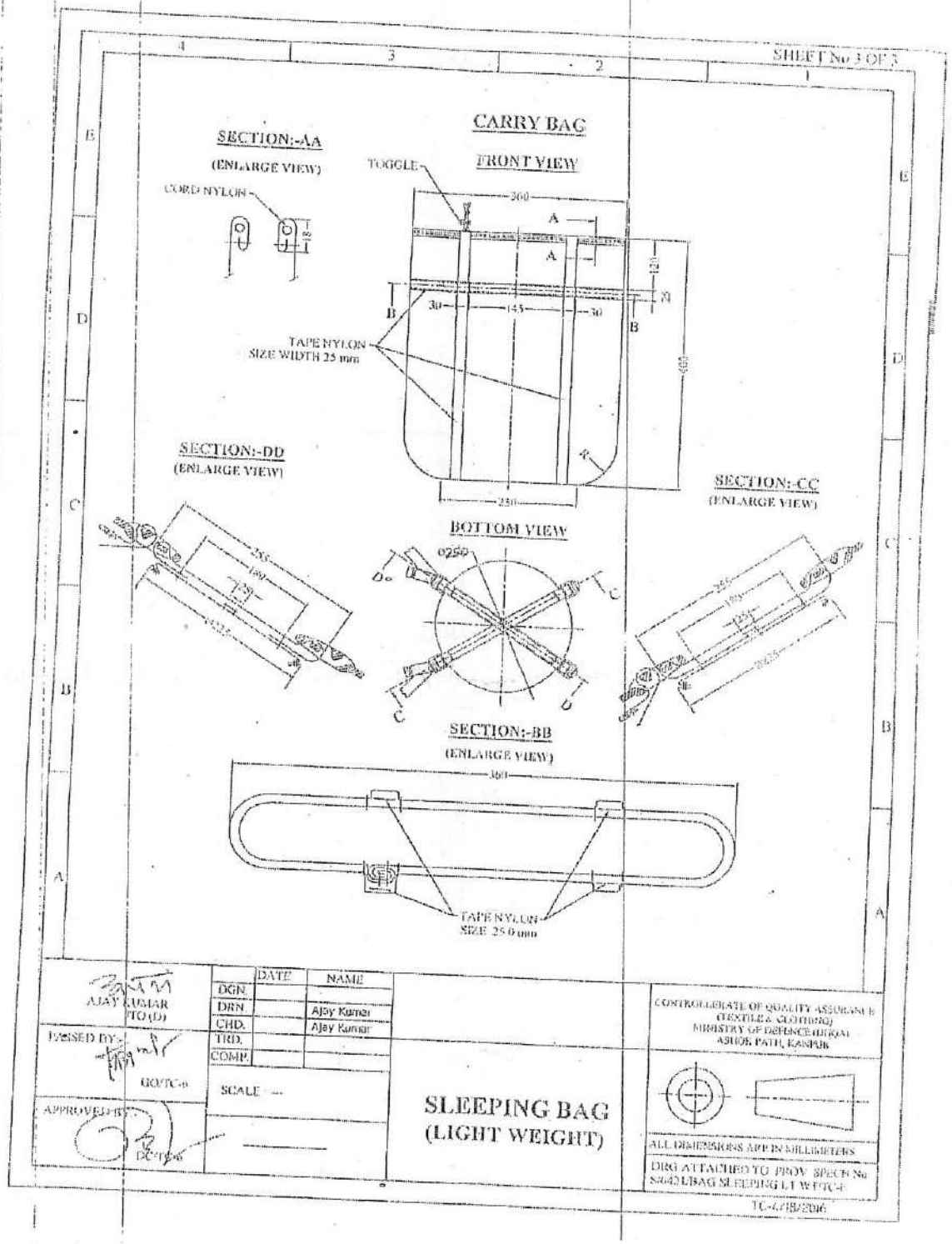
COMPONENTS (1)	MATERIAL (2)	PARAMETERS (3)	REQUIREMENT (4)	TEST METHOD (5)
(a) Sleeping Bag (Outer Layer)	Fabric Nylon Rip Stop WR OG	Nature of material	Nylon	IS:667-1981 (RA 2013)
		Mass/m^2 in g/m^2	65±5%	IS: 1964–2001 (RA-2010)
		No of threads/cm -- Warp -- Weft	 45±2 32±2	IS: 1963–2004 (RA-20 08)
		Weave	Plain with Rib Stop (One side rib after 21 threads and other side rib 14 threads)	Visual u sing pick glass
		Breaking Strength --Warp (Kgf) --Weft (Kgf)	 65 min 45 min	IS: 7016 (Pt-2)-1981 (RA-2008)
		Tearing Strength -- Warp (Kgf) -- Weft (Kgf)	 7.0 min 6.5 min	IS: 7016 (Pt-3)-1981 (RA-2008) Double Tongue method
		Water repellency -- Spray Rating Test	 80	IS:390-1975 (RA 2013)
		Nature of coating	Polyurethane	AATCC -20 /As per Appendix "B"
		Colour Fastness -- Light -- Washing	 5or better 4 or better	IS:2454-1985 (RA-2013) ISO:105B02 2013 (European) IS/ISO 105 C10 2006,C (3)

(b) Sleeping Bag (Inner Layer)	Fabric Nylon Rip Stop OG	Nature of material	Nylon	IS:667::1981 (RA 2013)
		Mass/m^2 in g/m^2	50±5%	IS: 1964-2001 (RA-2 010)
		No of threads/cm -- Warp -- Weft	 72±2 40±2	IS: 1963-2004 (RA-2008)
		Weave	Plain with Rib Stop (One side rib after 20 threads and other side rib after 11 threads)	Visual using pick glass
		Breaking Strength -- Warp(Kgf) -- Weft (Kgf)	 60 min 35 min	IS: 1969-1985 (RA-2006)
		Tearing Strength -- Warp(Kgf) -- Weft (Kgf)	 2.5 min 1.5 min	IS: 6489 1993 (RA-2008)
		Air permeability cc/sec/cm^2	10±2	IS:11056-84(RA2010)
		Colour Fastness to -- Light -- Washing	 5 or better 4 or better	IS:2454-1985 (RA 2013)/ISO: 105 B02 (European) IS/ISO 105 C10 2006,C(3)

(c) Carry bag	Fabric Nylon PU coated, Waterproof, OG/ Black	Nature of material	Nylon	IS:6657-1981(RA-201.3)
		Mass/m^2 in g/m^2	115±5%	IS: 1964-2001 (RA-2·010)
		No of threads/cm -- Warp -- Weft	 25±2 20±2	IS: 1963-2004 (RA-2·008)
		Weave	Plain weave	Visual using pick glass
		Breaking Strength -- Warp(Kgf) -- Weft (Kgf)	 70 min 60 min	IS: 7016 (Pt-2)- 1981 (RA-2008)
		Tearing Strength -- Warp (Kgf) -- Weft (Kgf)	 8 min 7 min	IS: 7016 (Pt-3)-1981 (RA-2008)
		Hydrostatic resistance (Water penetration-Pressure Head Testat 30 cm water column for 60 min.	No penetrations & no wetting on coated side	IS: 7016 (Pt-7)-2009
		Nature of coating	Polyurethane	AATCC -20 /As per Appendix "B"
		Colour Fastness -- Light -- Washing	 5 or better 4 or better	IS: 2454-1985 (RA 2013)/ISO 105 B02-2013 (European) IS/ISO 105 C10 2006,C(3)

(d) Filling material	Non woven polyester batting pre quilted with PP scrim using ultrasonic welding consisting of two layers each of 200g/m^2 total filling 400g/m^2.	Nature of material	100 %Polyester	IS 667-1981(RA 2013) & ASTM D-1577:07
		Mass/m^2 (g)	2x200 gsm ±5% Excluding PP Scrim	IS: 1964-2001 (RA- 2010)
		Compression Recovery	90% (min)	IND/TC/4578 (C)
		Fibre linear density	1.6 denier max	ASTM D-1577:07
		Tenacity	4.5 gm/den	ASTM D-1577:07
		Elongation at break	15% min	ASTM D-1577:07
(e)	CLO value of the system		5 min	ASTM C-518


SHEET No. 2 OF 3
SLEEPING BAG
INSIDE FRONT VIEW
TOGGLE
CORD
TEXTILE PULLER
ATTACHED WITH PSF RUNNER
NECK PAD
PSF FLAP
S-SHAPE
MACHINE STITCHING
OVAL FOOT
AJAY KUMAR
JTO (D)
PASSED BY
GC/TC-6
APPROVED BY
DC/TC-6
DGN
DRN
CHD
TRD
COMP
DATE
NAME
Ajay Kumar
Ajay Kumar
SCALE —
SLEEPING BAG
(LIGHT WEIGHT)
ALL DIMENSIONS ARE IN MILLIMETERS
DRG ATTACHED TO PROV. SPECN No
S/6421/BAG SLEEPING LT WT/TC-6
TC-6/DY/20xx


SHEET No 3 OF 3
CARRY BAG
SECTION:-AA
(ENLARGE VIEW)
CORD NYLON
TOGGLE
FRONT VIEW
TAPE NYLON
SIZE WIDTH 25 mm
SECTION:-DD
(ENLARGE VIEW)
SECTION:-CC
(ENLARGE VIEW)
BOTTOM VIEW
SECTION:-BB
(ENLARGE VIEW)
TAPE NYLON
SIZE 25.0 mm
AJAY KUMAR
TO(D)
PASSED BY:-
GO/TC-6
APPROVED BY:-
DATE
NAME
DGN.
DRN.
Ajay Kumar
CHD.
Ajay Kumar
TRD.
COMP.
SCALE ---
SLEEPING BAG
(LIGHT WEIGHT)
CONTROLLERATE OF QUALITY ASSURANCE
(TEXTILE & CLOTHING)
MINISTRY OF DEFENCE (DGQA)
ASHOK PATH, KANPUR
ALL DIMENSIONS ARE IN MILLIMETERS
DRG ATTACHED TO PROV SPECN No
S/6421/BAG SLEEPING LT WT/TC-6
TC-6/DB/2006