

# Ground Sheet

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MR-XII-001

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JSS: 7210-10  
Dec 1982

(Supersedes JSS: 3-33-16) Apr 1970)

RAKSHA MANTRALAYA  
MINISTRY OF DEFENCE

JOINT SERVICES SPECIFICATION

GROUND SHEET MR-XII-001  
(DS Cat. No. 7210-000-006)

Issued by

MANAKARAN NIDESHALAYA  
RAKSHA UTPADAN VIBHAG  
RAKSHA MANTRALAYA  
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DEPARTMENT OF STANDARDISATION  
DEPARTMENT OF DEFENCE PRODUCTION  
MINISTRY OF DEFENCE  
NEW DELHI-110 011

Price: 22/-

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Controller of Quality Assurance  
Textiles & Clothing, Kanpur

HS 12/11

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RECORD OF AMENDMENTS

Amendment No.	Sub-heading to which amendment pertains.	Authority	Incorporated by "Name & Rank" in Block letters	Initials
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JOINT SERVICE SPECIFICATION

GROUND SHELTER Mk XII O.G.  
(DS Cat. No. 7210-000 006)

0. FOREWORD

0.1 This specification has been prepared by the Stores Standardisation Sub-Committee on the authority of Standardisation Committee, Ministry of Defence.

0.2 This specification is approved by the Ministry of Defence and is mandatory for use by the Defence Services. It supersedes JSS: No. 3-33-16 Apr 1970.

0.3 This JSS would be used to guide design, manufacture, inspection and procurement of the item.

0.4 Enquiries regarding this specification in relation to any contractual condition should be addressed to the Inspection Authority named in the tender or contract, other enquiries will be referred to the Directorate of Standardisation, Ministry of Defence, New Delhi-110 011.

0.5 Copies of this JSS can be obtained on payment from:-  
Directorate of Standardisation  
Ministry of Defence,  
New Delhi-110 011

or concerned Inspection Authorities of Ministry of Defence; viz

I) Controllerate of Inspection Textiles and Clothing  
Post Box No. 294,  
KANPUR-208 002

II) Joint Directorate of Aeronautical Inspection Services  
Air HQ, R.K. Puram,  
NEW DELHI-110 022

or

Asstt. Controller (Stock)  
(Army JSS Publication)  
Department of Publications  
Government of India, Civil Lines,  
DELHI-110 054

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1. SCOPE

1.1 This specification covers the requirements of Ground Sheet made of rubber-proofed double texture fabric of olive green shade.

2. RELATED SPECIFICATIONS

2.1 Reference is made in this specification to:-

- |       |          |  |
|-------|----------|--|
| i)    | IS: 280  | - Mild Steel wire for general engineering purposes                 |
| ii)   | IS: 1029 | - Hot rolled steel strips (baling)                                 |
| iii)  | IS: 1397 | - Kraft paper,   |
| iv)   | IS: 1398 | - Packing paper, waterproof, bitumen laminated.                    |
| v)    | IS: 1720 | - Cotton Sewing Thread   |
| vi)   | IS: 1912 | - Country jute twine   |
| vii)  | IS: 2454 | - Method for determination of colour fastness of textile materials |
| viii) | IS: 2508 | - Low density polyethylene films                                   |
| ix)   | IS: 2818 | - Indian Hessian   |
| x)    | IS: 3751 | - Heavy Coe Cloth  |
| xi)   | IS: 3962 | - Waxed paper for general packaging                                |
| xii)  | IS: 4084 | - Eyelets & Washers  |
| xiii) | IS: 4905 | - Methods for random sampling.                                     |
| xiv)  | IS: 6110 | - Double Texture Rubberised Fabric                                 |
| xv)   | IS: 1544 | - Cotton Calico.   |

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

2.3 Indian Standard specifications are issued by the Indian Standards Institution and are obtainable on payment from the Sales Section, Indian Standards Institution, Menak Bhawan, 9 Bahadur Shah Zafar Marg, New Delhi-110 002 or their regional offices.

S.P. Chhabra  
Controller (Lab.) P. Sec 0  
CONTROLLER (LABORATORY)  
Controller of Quality Assurance  
Textiles & Clothing, Kanpur

3. STANDARD PATTERN

3.1 The Standard Pattern hold by the Controллерate of Inspection Textiles and Clothing, Kanpur shall constitute the Standard as regards any particulars or properties not noted/defined in this specification.

4. MATERIALS

4.1 The sheet shall be manufactured from the following materials:-

<u>Components</u>	<u>Materials</u>	<u>Method</u> (Refer to)
i) Body	Fabric Rubber Proofed, Double Texture, CG.	Quality 1 grade of IS: 6110 using same Fabric Calico Cotton, O.G. to IS: 1541.
ii) Sewings	Sewing, Cotton 16 tex/6, CG	IS: 1720 (Variety 28, dyed with fast color)
iii) Eyelets	Eyelets Aluminium, NS-3, No. 24, Chemically, Passivated.	IS: 4084
iv) Adhesive	Rubber Solution	Best Trade Quality previously approved, by the Inspection Authority.

5. MANUFACTURE

5.1 The sheet shall be made from one rectangular piece of Fabric Rubber-proofed Double texture. The hem shall be formed on the four sides of this piece as shown in the plate attached to this specification. Washers cut from fabric, Rubber-proofed Double Texture, shall be inserted in position within the fold of the hem, except at corners, to take in the eyelets. The washers shall be placed centrally with respect to the eyelets. The hem and the washers shall be securely fixed by means of rubber solution. In addition, the hem shall be machine-stitched with sewing cotton 16 tex x 6, O.G., along the inner edge, with a single row of stitching. The stitching shall consist of not less than 30 stitches per decimetre. The eyelets shall be free from manufacturing defects and shall be properly and securely closed down to a smooth finish. One eyelet shall be fixed at each corner and the remaining eyelets shall be spaced equally between the corner eyelets; seven on each side and two at each end, as shown in the plate (attached).

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6. DIMENSIONS AND MASS

6.1 The sheet shall conform to the dimensions and other details as shown in the plate attached. A tolerance of  $\pm 10$  mm is permissible in the length and the width of the sheet.

6.2 The mass of sheet when determined after conditioning the sample for 48 hours in an atmosphere of  $65 \pm 2$  per cent relative humidity at a temperature of  $27^\circ\text{C} \pm 2$  deg C, shall be not more than 1.4 g.

7. WORKMANSHIP AND FINISH

7.1 The sheet shall be flexible and free from cuts, objectionable weaving flaws such as broken or missing ends or picks and knots in basic fabric and from creases, wrinkles, oil and other stains, pinholes, bare or thin places in the double-texture fabric, joints and other manufacturing defects;

7.2 In appearance, shade, general workmanship and finish and in all other respects not noted/defined in this specification the Ground Sheet, MK XII-OG, shall conform to the standard Pattern.

8. MARKING

8.1 Each sheet shall be legibly and indelibly marked at one of the corners on the underside with the Brief Nomenclature, manufacturer's name, initials or recognised trade mark, the month and year of the manufacture and DS Cat No. of the store as shown in the plate attached.

9. PRE-INSPECTION OF STORES/CONSIGNMENT

9.1 Manufactures/Contractors must satisfy themselves that the stores are in accordance with the terms of 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 the 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.

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P.SCO  
CONTROL LK.  
Contd....8/-  
Textile Department, Bhopal

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10. SAMPLING

10.1 The supplier shall offer the store serially numbered and arranged in such a way that the entire lot is accessible to the Inspector.

10.2 The number of sample units shall be drawn by the Inspector for preliminary examination as per Col. 2 of the table given below. The sampling shall be done adopting any one appropriate sampling method as per IS: 4905. The sample so drawn shall be examined for homogeneity, uniformity of shade, size, appearance and non-conformity pieces do not exceed the corresponding number given in col. 3 of the table, sample units as per col. 4 of the table shall be drawn for laboratory tests from the pieces drawn and examined as per Col. 2 of the table:-

TABLE

Lot Size	Non destructive testing		Destructive testing	
	Pieces drawn	Permissible No. of defectives.	Pieces drawn	Permissible No. of defectives
1	2	3	4	5
Upto 300	10*	1	2	0
301 to 500	20	1	3	0
501 to 1 000	30	2	5	0
1001 to 3000	50	3	8	0
3001 to 10 000	80	5	13	1

\* or lot size when less than 10

11. CRITERIA FOR CONFORMITY

11.1 The sample units drawn shall be tested/examined to the relevant specification requirements. If all the sample units are found to conform to the acceptance number as given in the table, the supply shall be considered to be in conformity, otherwise not.

Contd....9/-



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## 12. WARRANTY

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

## 13. PACKAGING

13.1 Material - The following materials shall be used for packing of the Ground Sheet :-

- |        |   |   |
|--------|---|---|
| 13.1.1 | Polyethylene film 0.04 mm thick or Paper kraft waxed                          | - Conforming to IS: 2509                                |
| 13.1.2 | Kraft paper (grade 2)   | - Conforming to IS: 1360                                |
| 13.1.3 | Packing paper, water proof bitumen laminated (Type I)                         | - Conforming to IS: 1367                                |
| 13.1.4 | Cloth see heavy or Cloth hessian medium (double layer)                        | - Conforming to IS: 1385                                |
| 13.1.5 | Twine Jute 3 ply or String cord   | - Conforming to IS: 500                                 |
|        |   | - Conforming to IS: 2819                                |
| 13.1.6 | Mild Steel strips 16 x 0.4 mm or Galvanised mild Steel wire 1.8 to 2.0 mm dia | - Best trade quality approved by the Inspecting Officer |
|        |   | - Conforming to IS: 1912                                |
|        |   | - Conforming to IS: 1029                                |
|        |   | - Conforming to IS: 280                                 |

Note:- In case of non-availability of the specific packing materials, any suitable substitute material may be used with the approval of the Inspecting Officer.

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13.2 Method

13.2.1 The store shall be delivered in new, clean, dry and sound condition.

13.2.2 Five ground sheets, placed one over the other in a slightly staggered position, shall be rolled to form a roll and tied neatly and securely with 3 ply jute twine or equivalent string at appropriate places over the roll to form a bundle. A suitable number of such bundles shall be wrapped with an inner layer of polyethylene film or alternatively paper kraft waxed/inner layer of kraft paper with an outer layer of paper packing waterproof bitumen laminated to form a bundle.

13.2.3 Each bundle then shall be wrapped with cloth or heavy or double layer of cloth hessian medium to form a bale of rectangular shape as far as possible. The bale shall not be press-packed.

13.2.4 The overlapping of the inner wrapping shall be at least 10 cm so as to ensure full protection to the content of the bale. The overlapping of the outer layer of the hessian cloth shall be such that it can be properly and securely sewn around the bale.

13.2.5 The bale shall be stitched with double 3 ply twine jute with minimum 6 stitches per decimeter taking care not to pierce the contents of the bale during stitching. Sufficient hessian cloth shall be pulled out of each corner to form 'ears' of about 15 cm in length to facilitate easy handling during transit.

13.2.6 Slats wood approximately 7 cm wide and 1 cm thick and free from rot or other harmful fungal or insect attack or alternatively bamboo suitably preserved shall be placed length wise along the length of the bale and finally bound with at least 2 bands of mild steel hoops or alternatively galvanised mild steel wire in each direction along length and width of the bale.

13.2.7 In all cases the mass of the bale shall not exceed 40 kg.

13.2.8 In order to ensure safety and prevent pilferage of the content during transit and storage, following precautions should be taken:-

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# FERTILIZER BAGS

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- a) The unit packs shall be tied firmly with 3 ply twine/jute at sufficient number of places depending upon the size of the contents.
- b) Each band of metal hoops shall be one complete piece and the ends shall be sealed with machine or alternatively securely riveted and the joint so formed shall be covered with a cap of the size where banding machine is used. If not, the hole shall be properly and securely closed with a wire.
- c) The bale shall be bound with additional bands of metal hoops/wires where the dimensions of the bale exceed 60 cm in any direction, so that no two hoops/wires are more than 25 cm apart.
- d) The seams of the bale shall be covered with indelible ink/paint.

13.2.9 If ordered for delivery to a local Inspection Depot, the stores shall be delivered loose in firm's returnable packs. After inspection, the accepted stores shall be packed by the Inspection Depot authorities as described above.

### 13.3 Marking

13.3.1 Before despatch, each bale shall be legibly marked by stencil with indelible marking ink/paint as under:-

- i) DS Cat. number and nomenclature of store.
- ii) Quantity packed in the bale.
- iii) Lot and serial number of the bale.
- iv) Month and year of packaging.
- v) Gross mass of the bale in kg.
- vi) Name and address of the consignee.
- vii) Name, address or recognized trade mark of the supplier.
- viii) A/T No., I/Note number and date.

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 Textile & Apparel Dept.

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14. SUGGESTIONS FOR IMPROVEMENT

14.1 Any suggestions for the improvement of this document may be forwarded to the Director, Directorate of Standardisation, Ministry of Defence, New Delhi-110 011.

"SHYAMJI"  
MAR 1987

GROUND SHEETS

DATE	INITIAL	DIMENSIONS	ABEIN CM

ABEIN RUBBER PROCEED DOUBLE  
TEXTURE 0.6 (SCAMIC 9M)

MINISTRY OF DEFENSE  
D/O STANDARD DISASTIC  
STORES STDS. COMMIT

DETAIL OF CORNER  
SCALE 1:1

TO BE MARKED ON HEM SIDE

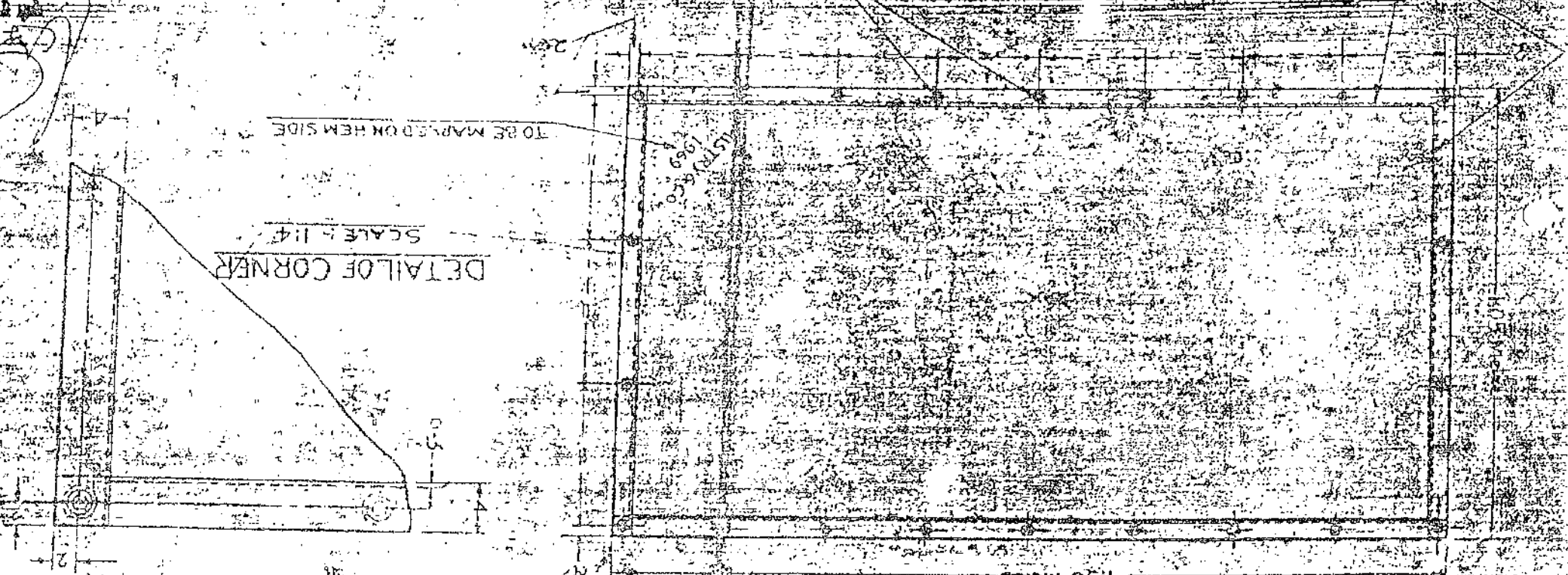


PLATE NO. 1055-7210-10  
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SHEET NO. 1