ADOPTED
BASED ON THE CONTROLLER'S
APPROVAL ON M.S. PAGE No. 18
OF CASE No. S/12373/GS-4/S-9

S. S. KASHYAP
SSO-I
AC/GS-3

FGO.(GS-4)

भारत सरकार, रक्षा मंत्रालय
GOVERNMENT OF INDIA, MINISTRY OF DEFENCE

DGQA Organisation

Specification

For

LADDER ICE WALL CLIMBING

DS CAT NO. 4240-000486
NSN – 4240720312234

Issued By

नियन्त्रक
गुणता आश्वासन नियन्त्रणालय (सामान्य भण्डार)
डी0 जी0 क्यू0 ए0 कॉम्प्लेक्स, अशोक पथ
कानपुर-208004

THE CONTROLLER
CONTROLLERATE OF QUALITY ASSURANCE (GENERAL STORES)
DGQA COMPLEX, ASHOK PATH
KANPUR-208004

₹300/- + 6 x ₹ 60 = ₹660/-

YEAR-2018

GO/554

RECORD OF AMENDMENTS

Amendment Sr. No.	Date dd/mm/yy	Details of Amendments	Amendment Carried out by & Date

CONTENTS

GO/GS-4

0.0 FOREWORD

0.1 This specification has been prepared by Controllerate of Quality Assurance [General Stores], Kanpur on behalf of the Director General Quality Assurance, Ministry of Defence, New Delhi.

0.2 This specification supersedes Unsealed Specification No. CQA(GS)/US/477 which was adopted from Reseach & Development Establishment (ENGRS.),Dighi, Pune Specification No.RDEE/ ENGR/SPECN/0206. The grade X04Cr18Ni10 as per IS: 6528- 1995, 1ST Rev. RA-2012 Stainless Steel Wire Specification has adopted for strands for ropes as a equivalent suitable grade as against Stainless Steel recommended 304 as per ASTM in the Specn RDEE/ ENGR/SPECN/0206. This grade is general corrosion resistance for stainless steel wire. The grade of chemical composition recommended in Specification for Round Steel Wire for Ropes IS:1835 – 1976 (Re-affirmed 2012) could not be considered as these grades are not corrosion resistance grades.

0.3 The Specification for Small Wire Ropes IS 3459 : 2004 (Reaffirmed 2015) 2nd Rev and suitable grade X04Cr18Ni10 as per IS: 6528- 1995, 1ST Rev. RA-2012 Specification for Stainless Steel Wire has been adopted for ropes in this departmental standard.

0.4 This departmental specification shall be used to guide procurement, manufacture & Quality Assurance of the store for which it is intended.

0.5 The Quality Assurance Authority for the store covered by this specification is the Controller, Controllerate of Quality Assurance [General Stores],DGQA Store Complex, Ashok Path, Meerpur Cantt., Kanpur-208 004. Enquiries regarding this specification related to technical or any other contractual conditions shall be referred to the Quality Assurance Authority named in the purchase document viz. tender or contract. All clauses in this departmental specification shall be complied within every respect in respective of store of supply of the material or components.

0.6 Any discrepancy be found between this specification and any sample or pattern, loaned for any purpose, this specification and /or other connected specification/or drawings shall be taken as correct. All the specification / drawings referred to this specification for any tender or contract shall mean the addition current on the date of such tender or contract.

0.7 This specifications is a live document and is, therefore, likely to undergo changes. Any major change in design should have the approval of General Staff/Users, financial concurrence in the form of DGQA approval. Therefore, the specification holds goods only for the supply which specifically mention in this specification.

0.8 This specification may be obtained on payment from the address given below:

The Controller,
Controllerate of Quality Assurance (GS),
DGQA Store Complex, Meerpur Cantt., Ashok Path, Kanpur-208004

1.0 SCOPE

1.1 This specification covers the requirement of DS Cat No. 4240-000486, NSN - 4240720312234, Ladder Ice Wall Climbing for high altitude war fare and provided guidance to contractors /suppliers, manufacturers, Quality Assurance Agencies and Stockiest / Indenters etc.

2.0 RELATED SPECIFICATIONS AND DOCUMENTS

Sl. No.	Specification No.	Title/Subjects
(a)	IS : 1285 – 2002, RA- 2012 (3rd Rev.)	Specification for Wrought Aluminium & Aluminium alloys, Extruded Round Tube and Hollow section for General Engineering Purpose
(b)	IS : 2102 (Pt.-1) – 1993 (3rd Rev.) RA-2014	General Tolerances : Tolerances for Linear & Angular dimensions without individual tolerance indications.
(c)	IS : 1570 (PT-V)-1985 RA-2014, (2ND Rev).	Schedule for Wrought Steels.
(d)	IS : 2315 – 1978, RA-2017	Specification for Thimbles for Wire Ropes.
(e)	IS: 2363 -1981,RA – 2017, (1st Rev.)	Glossary of terms relating to Wire Ropes
(f)	IS : 2500 (Pt.-1) –2000,Amdt.-1&2, RA-2016 (3rd Rev.)	Sampling Inspection procedures : Attribute Sampling Plans Indexed by Acceptable Quality Limit (AQL) for Lot-by-Lot inspection
(g)	IS : 3459 – 2004, RA-2015 (2nd Rev.)	Specification for Small Wire Ropes.
(h)	IS : 4905 – 2015(Ist Rev.) RA-2015 &Random Sampling & randomization Procedure	Methods for Random Sampling.
(i)	IS : 5522 : 2014 (3rd Rev.)	Stainless Steel Sheets and Strips for Utensils - Specification
(j)	IS : 6528 -1995, 1ST Rev., RA-2012	Stainless Steel Wire -Specification
(k)	JSS : 8115-1-2007 with Amdt. No. 1 (Rev.3) &CIGS/SS/27(e)	Boxes Rigid Collapsible Covered Type 'D'
(l)	IS: 13262 -1992, RA-2013	Pressure Sensitive Adhesive Tape with Plastic Base
(m)	JSS : 9330-2-2014, Rev.3 and CIGS/SS/313(a)	Polythene film 0.08 mm thick.
(n)	IND/GS/1683(a)	Polypropylene Strapping (0.55 mm Thick x 12 mm Width).
(o)	Specn. No. CQA(GS)/US/445(a)	Boxes Fibre Board Rigid Corrugated Double wall 5 Ply.

GO/SS-4

3.0 STANDARD PATTERN

3.1 Standard pattern of of DS Cat No. 4240-000486, NSN - 4240720312234, Ladder Ice Wall Climbing held by the Purchase Officer shall constitute the standard as regard any particulars or properties not noted or defined in this specification.

4.0 MATERIAL

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

Srl No.	Store/component	Material & Grade if any / Specification
(a)	Tube 12.7mm outer Dia 2.55 mm wall Thickness	Aluminium Alloy Extruded Tube Grade 64430 WP as per IS: 1285-2002, RA -2012 (3rd rev.)
(b)	SS Wire Rope Nominal dia 3 mm	Chemical composition of SS Wire, Grade X04Cr18Ni 10 as per , IS: 6528- 1995, 1ST Rev. RA-2012 & construction of Wire as per IS: 3459-2004 RA-2015,(2nd Rev.)
(c)	Ferrule, Type A &B	Aluminium Alloy Grade 52000 as per IS: 1285-2002, RA- 2012, (3 rd Rev)
(d)	Thimble	Stainless Steel Grade X 04Cr19 Ni 9 as per IS: 5522 :2014 (3rd Rev.)
(e)	Hook (Chain Link)	Stainless Steel Grade X04Cr19Ni9Confirming to IS :1570 (PT-V) - 1985, RA-2014, (2ND Rev).

4.2 Test certificates of materials from NABL accredited laboratories shall be obtained showing physical and chemical properties if the manufacturer does not have his own laboratory.

5.0 MANUFACTURING

5.1 Ladder Ice Wall Climbing shall be manufactured to the shape and design as shown in the relevant drawing plate attached to this specification.

5.2 The Ladder Ice Wall Climbing consist of an array of 33 Nos. of Aluminium Alloy tubes of OD 12.7 mm x ID 7.6 mm equidistance placed at a spacing of 310 mm centre to centre and connected by stainless steel wire ropes of 3 mm dia passing through the holes drilled at the ends of each tube. The tubes are secured firmly on to the rope by crimping the wire rope with Aluminium Ferrules on both the sides of the tubes. Each end of the wire rope is formed in the shape of eye with the use of Thimbles crimped with aluminum ferrules. Hooks are fitted in the Thimbles for joining more Ladder Ice Wall Climbing to increase the length of Ladder for climbing for greater heights.

5.2.1 Tubes :- The Aluminium alloy tubes of OD 12.7 mm and 2.55 mm wall thickness are extruded in alloy 64430 WP as per IS: 1285- 2002,RA-2012, (3rd Rev). Piece of 150 mm length are cut from these tube. 33 Nos.of these pieces of Aluminium alloy tubes are inserted in tube SS Wire ropes (130 mm apart) and fixed by crimping at centre to centre distance of 310 mm along the length of these SS Wire ropes to make a Ladder. The tubes are drilled at both ends for hole of dia. 3.5 mm at a distance of 10 mm from either ends.

5.2.2 Stainless Steel Wire Rope :- The wire rope has 7 strands made out of stainless steel confirming to Chemical composition of SS Wire, Grade X04Cr18Ni10 as per, IS: 6528- 1995, 1ST Rev. RA-2012. The dia of the rope shall be 3 mm nominal and shall have 7 strands out of which one strands shall be the core and other six shall be right hand ordinary lay. Each strands of 1 mm dia. shall consist of seven wires each of 0.3 mm dia of which one shall be the centre core and six other shall be of right hand ordinary lay. The flexibility of the rope shall be such that it can be rolled into a coil of 150 mm height x 200 mm dia. The tensile strength and breaking strength shall confirm to IS standard. Breaking strength shall not be less than 6.3 kN. Construction of rope shall be in accordance with IS: 3459-2004, RA-2015,(2nd Rev.) and IS: 2363-1981,RA-2017, (1st Rev.) There shall be no discontinuity in any strand wire.

5.2.3 Ferrules :- These are used to crimp the stainless steel rope. These are of two types. Type 'A' ferrule has a two holes of dia. 3.5 mm in the centre and is used to keep the tubes in position at a distance of 310 mm centre to centre. These are thus position placement ferrules. Type 'B' ferrule has one hole of 3.5 mm dia. and are used to permanently secure thimbles at the ends of wire ropes. The material for the ferrule shall be Aluminium alloy grade 52000 as per IS: 1285-2002, RA-2012, (3rd Rev.)

5.2.4 Thimble :- The thimbles are fitted at the ends of the wire ropes with the help of ferrules by crimping. Thimbles shall manufacture by using necessary tooling from stainless steel grade X04Cr19Ni 9 as per IS: 5522: 2014 (3rd Rev.). The Hooks are permanently attached to the thimbles for subsequent joining of Ladder Ice Wall Climbing to achieve longer lengths.

5.2.5 Hooks (Chain Link) :- The hooks attached with thimbles at the ends of the wire ropes are meant for joining of subsequent Ladder Ice Wall Climbing to make longer lengths when required to negotiate greater heights of ice walls. The material for Hooks shall be stainless steel Grade X04Cr18Ni10 as per, IS: 6528- 1995, 1ST Rev. RA-2012 or Grade X04Cr19Ni9 confirming to IS :1570 (PT-V) -1985, RA-2014, (2ND Rev).

6.0 DIMENSION AND TOLERANCES

6.1 DIMENSIONS

6.1.1 The store shall conform to the dimensions shown in the drawing plate attached to this Specification.

6.2 TOLERANCES

6.2.1 Unless otherwise specified general tolerances to IS: 2102 (Pt – I) – 1993,RA -2014, (3rd Rev) as given below shall apply.

Tolerance class				
Designation	:	Description	:	Applicable on components/Parts
m	:	Medium	:	On all dimensions.

7.0 WORKMANSHIP AND FINISH

7.1 Specific requirements relevant to the store are given below:-

7.2 The general workmanship and finish shall be of a high standard and similar to sealed pattern held by Purchase Officer.

7.3 There shall be no discontinuity in any strand wire and outer surface of the rope shall be free from kinks, burrs and sharp edges of discontinued wire protruding out. Uniformity of right hand lay shall be ensured.

7.4 The ferrules shall be free from manufacturing and material defects.

7.5 Tubes shall be straight and machining of open ends shall be free from burrs.

7.6 The Wire Rope shall be straight and shall be no protrusion of broken strands of wire.

7.7 Tubes shall be placed horizontally and placed correctly at centre to centre.

7.8 Tubes, Thimbles and Hooks shall be finished smooth.

8.0 PRE INSPECTION OF SUPPLIES BY THE PRODUCER.

8.1 **ADVANCE SAMPLE: -** The manufacturers shall submit Three (03) Nos. advance samples for acceptable quality fabricated from specified material for clearance by AHSP prior to commencement of bulk production as per stipulated in the contract. Basic material is to be submitted wherever test could not be carried out from finished product.

8.2 Manufacturers 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.

8.3 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 & test shall be rendered along with the challan. The declaration shall include the method followed in pre-inspection showing features checked/tested and the challan will be accompanied by the reports.

9.0 QUALITY ASSURANCE

9.1 FORMATION OF LOT

The delivery shall be visually inspected by the Quality Assurance Officer at the spot in the first instance to ascertain it's homogeneity in respect of nature, size, shape, source and year of manufacture. If it is homogeneous, the delivery shall be treated as one lot, if not it shall be segregated by the supplier in to separate groups so that each group, which is homogeneous within itself forms a lot.

9.2 The suppliers shall arrange the units of the homogeneous lot in such a way that all the units are easily accessible to the Quality Assurance Officer to enable him to draw samples from any portion of the homogeneous lot.

9.3 Examination of samples taken from any portion of the consignment or during Quality Assurance, shall conform to the requirement when tested in accordance with the methods against each in this specification.

10.0 SAMPLING PROCEDURE

Sampling of stores shall be done adopting appropriate sampling method as per IS: 4905-2015 (Ist Rev.) RA-2015 and Random sampling & Randomization procedure so that samples drawn as per Sampling Table given for assessing various quality requirements, are truly representative of the lot.

10.1 SCALE OF SAMPLING-

10.2 NUMBER OF SAMPLE- Number of sample-units to be drawn for assessing the quality of the store, characteristic wise, should be in accordance with the Sampling Table for dimensional/non destructive/visual inspection and for detailed laboratory testing

SAMPLING PLAN TABLE

Sampling plan AQL 4.0 % for visual inspection as per Table II A (Based on general inspection level II) for Laboratory testing Based on inspection levels S-1 & S-3)

Lot Size	Table-I Sampling Plan for visual Inspection.			Table –II Samples for laboratory testing					
				For Physical testing (S-3)			For Chemical testing (S-1)		
	Sample size.	Accep -tance No	Rejec- tion No.	Sample size	Accep -tance No	Rejec- tion No.	Sample size	Accep -tance No	Rejec- tion No.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Up to 50	8	1	2	3	0	1	2	0	1
51 to 90	13	1	2	5	0	1	3	0	1
91 to 150	20	2	3	5	0	1	3	0	1
151 to 280	32	3	4	8	0	1	3	0	1
281 to 500	50	5	6	8	0	1	3	0	1
501 to 1200	80	7	8	13	1	2	5	0	1
1201 to 3200	125	10	11	13	1	2	5	0	1
3201 to 10000	200	14	15	20	1	2	5	0	1

Note: - i) Inspection level S-3 for physical and S-1 for chemical tests (individual samples to be tested).
ii) The rejection number (Re) will always be one more than the acceptance number (Ac).
(iii) When the sample size equals or exceeds lot size, do 100% inspection/non-destructive testing with zero acceptance number.

SOURCES: IS: 2500 (Part –I)-2000, Amdt. – 1&2, RA-2016 (3rd Rev). (Sampling Inspection procedures).

11.0 CRITERIA FOR CONFORMITY

11.1. All the sample units drawn shall be tested /examined to the relevant specification requirement. If all sample units are found to confirm to the requirement of this specification the supply would be considered to be in conformity otherwise not.

11.1.1 The lot shall be considered confirming to the specified quality, if the number of the defective units observed in the sample is not more than the respective acceptance number for each class of defects.

11.1.2 Confirmation shall be carried out as per Table I of clause 10.1for workmanship, finish & other critical parameters.

11.1.3 The visual examination for following tests are as under:-

(a) Shape & design - 100%
(b) Visual examination - 100%
(c) Workmanship &Finish – 100
(d) Major dimensions 10% of the samples size (Minimum 3 Nos.)
(e) Weight 100% of the sample size
(f) Performance Test 10% of the sample size (Minimum 3 Nos.)

12. TESTS:-

12.1 **PHYSICAL TESTS: -** Shape, design, & dimensions shall confirm to the plate attached to this specification. The length of the Ladder shall be 10.25 m and width 150 mm. The rolled pack of Ladder shall be 200 mm dia x150 mm height and weight 2 Kg. The load carrying capacity shall be 100 Kg.

12.1.1 PERFORMANCE TESTS:-

12.1.2 PROCEDURE FOR LOAD TESTING: – Two special fixture shall be manufactured to be fitted in the table of a universal testing machine and Ladder shall be fixed with its steps in the fixtures. A load of 600 Kg shall than be applied gradually and than kept for two minutes. No failure in the ferruls in the form of slippage shall occur.

12.1.3 **CHEMICAL TESTS:-** Material shall be tested as per IS specification mentioned in Cl.4.1 of specification.

12.1.4 SAMPLING FOR LABORATORY TESTING

12.1.5 If the lot is considered conforming to the quality standards as specified in column (2) of Sampling Table, sampling for laboratory tests shall be carried out as per column (5) of Sampling Table and the samples shall be subjected to the laboratory tests as under-

(A) Sample for lab testing shall be drawn as per clause (5) of sampling Table from the samples originally drawn as per column (2) of sampling Table, for visual examination by the Sampling Officer and individual sample should be marked and duly sealed by him accordingly.

(B) Samples for physical testing shall be drawn as per column (5) of sampling table and samples for chemical testing shall be drawn as per column (8) of sampling table from the samples originally drawn as per column (5) of sampling table for physical tests shall be examined for the following tests-

(i) Shape & design
(ii) Visual examination
(iii) Weight
(iv) Practical / Performance Test

12.2 BULK QUALITY ASSURANCE

12.2.1 If the laboratory test report indicates that the lot does not conform to the standards as specified, the whole lot shall not be considered for acceptance. Otherwise the lot shall be inspected hundred present thoroughly for workmanship, finish & other critical and visual defects. Dimensional parameters shall be checked as per Table I of clause 10.1. All items found defective during inspection shall not be considered for acceptance.

12.2.2 Control samples shall be forwarded to the controller CQA (GS), Kanpur from bulk supplies to check/monitor the quality wherever required as per Policy.

13.0 WARRANTY

Except as otherwise provided in the invitation to the tender, the contractor/ seller hereby declares that the stores sold / supplied to the purchaser under this contract shall be of the best quality and workmanship and new in all respect and shall be strictly in accordance with the specification and particulars contained in the contract. The contractor /seller hereby guarantee that the said stores would continue confirm to the description and quality aforesaid for period of twelve months from the date of delivery of the said stores to the purchaser or 15 months from the date of shipment/dispatch from the contractors works whichever is earlier with standing the fact that the purchaser (QA Agency) may have inspected and / or approved the said stores. If during the aforesaid period of 12 /15 months the said stores, be discovered not to confirm to the description and quality aforesaid or not giving satisfactory performance or have deteriorated and the decision of the purchaser in the behalf shall be final and binding on the contractor / seller to rectify /replace by acceptable stores, or such portion or portion there of as is found to be defective by the purchaser in this discretion on the application made thereof by the Contractor / seller. In such an event the above mentioned warrantee period shall be apply to the stores 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 breach of the warrantee there in contained.

14.0 MARKING

14.1 MARKING BY THE SUPPLIER

14.1.1 The store and its components (when demanded separately) shall be legibly and indelibly marked with suitable label to be tagged to the store as depicted in Fig 1.

(a) Manufacturer's Name, initials or recognized Trade mark.
(b) Year of Manufacturing.
(c) NSN & DS Cat No. and Nomenclature of store.

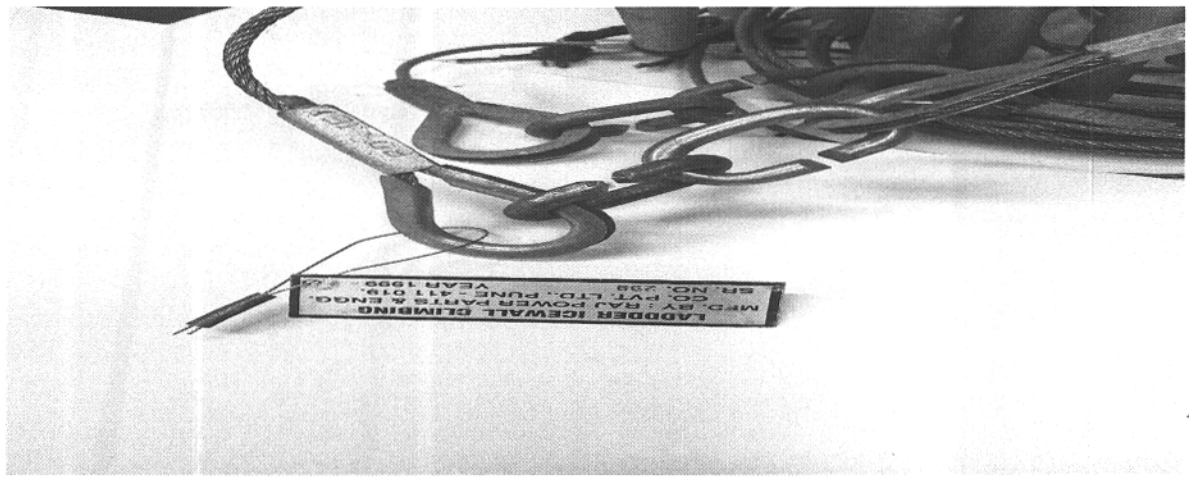


Fig 1

15.2 MARKING BY THE QUALITY ASSURANCE OFFICER

15.2.1 Each accepted store shall be legibly and indelibly marked using stencil plate or Rubber/steel stamp of letter size 6 mm. depending upon the size of the store/components.

15.2.2 In case of small components, where steel stamping or stenciling is not possible, the rubber acceptance mark shall be stamped on individual packages containing the items for this purpose; each package shall be sealed by a continuous piece of gummed tape such that ends overlap each other. Acceptance marks shall be affixed on the joint of the tape and partly covering the package.

15.2.3 The final rejections may be marked by Quality Assurance Officer by stamping the letter X on both sides or the manufacturer & marking thus-

D. S. Cat No.
X M - - - & Co. X
2018

16.0 PACKAGING

16.1 **Packing Materials**	**Conforming to Specification No.**
(a) Box Fiber Board Rigid Corrugated Double Wall, 5 Ply.	Specn. No. CQA (GS) /US / 445 (a)
(b) Pressure Sensitive Adhesive Tape with Plastic Base	IS: 13262 -1992 (RA-2013.)
(c) Boxes Rigid Collapsible Covered Type 'D'	JSS: 8115 -1-2007 with Amdt. No. 1 (Rev.3) & CIGS/SS/27 (e)
(d) Polythene Film 0.08 mm Thick	JSS:9330 -2 -2014 (Rev.3) & CIGS/SS/ 313 (a)
(e) Polypropylene Strapping (0.55 mm thick x12 mm Width)	Specn. No. IND/GS/1683 (a)
(f) Label Carton 50 mm x 25mm	Best Trade Quality.

16. METHOD

16.1 The gross weight of Ladder Ice Wall Climbing shall be 2.0 Kg and the over all dimensions are 10.25 m length x 150 mm width. The coiled size of the Ladder Ice Wall Climbing of length 10.25 m shall be 150 mm height x 200 mm dia. Each coiled Ladder Ice Wall Climbing shall be kept in polythene bag of suitable size. Each bag shall be individually packed in Boxes Rigid Collapsible Covered Type 'D'. Eight such boxes shall than be packed in Box Fiber Board Rigid Corrugated Double Wall, 5 Ply of suitable size. The opening of the box shall then be sealed by means Pressure Sensitive Adhesive Tape with Plastic Base as per IS: 13262 -1992 (RA-2013.)

16.1.1 One item in each package shall be tied with a label Card Board 45 mm x 25 mm bearing Cat No. and Nomenclature of the store.

16.1.2 Each final package shall be strapped with Polypropylene Strapping at two places as so that to ensure compact packing.

16.1.3 MARKING ON PACKAGES

16.1.4 Each final package shall be legibly and indelibly marked as under: -

(a) Front and Top
- i) DS Cat No. and nomenclature of store.
- ii) Quantity packed preceded by the abbreviation 'QTY'.

(b) Back

- (i) Name and address of the consignee as given in the contract.
- (ii) Mass of the package in kilogram preceded by the abbreviation 'Kg'.
- (iii) Number of individual package and total numbers of packages in the consignment i.e. 1 of 4, 2 of 4, 3 of 4 and 4 of 4 when the consignment consists of 4 packages.

(c) Left End.

- i) Consignors Name, initials or recognized Trade mark.
- ii) Month and year of packing.
- iii) A/T , SO, or Extract No. and date
- iv) I / Note No. and date.

17.0 TECHNICAL LITERATURE / DOCUMENTS

17.1 Illustrated spare parts list history sheet/ maintenance manual shall be supplied with each store wherever required/demanded.

18. DEFENCE STORE CATALOGUE NUMBER

S. No.	DS Cat. No.	NSN	Nomenclature
1.	4240 -000486	4240720312234	Ladder Ice Wall Climbing

18.1 DRAWING / SKETCHES

18.2 The Drg. to which the store is to be manufactured is attached to the specification (No. of sheets – 06)

S.L. No.	Sheet No.	Detail No.	Component/Assembly
1	1of 6	1 to 6	Assembly
2.	2 of 6	1	Tube
3.	3 of 6	4	Ferrule 'A'
4.	4 to 6	3	Ferrule 'B'
5.	5 to 6	5	Thimble
6.	6 to 6	6	Hook

19. SUGGESTIONS FOR IMPROVEMENT

The suggestion to improve this specification may be addressed to :-

The Controller
CQA(GS),
DGQA Store Complex,
ASHOK Path, Kanpur – 208004
Email cqagsknp-dgqa@nic.in

(JS Lotay)
Maj Gen
Controller
CQA(GS)
Kanpur- 208004.

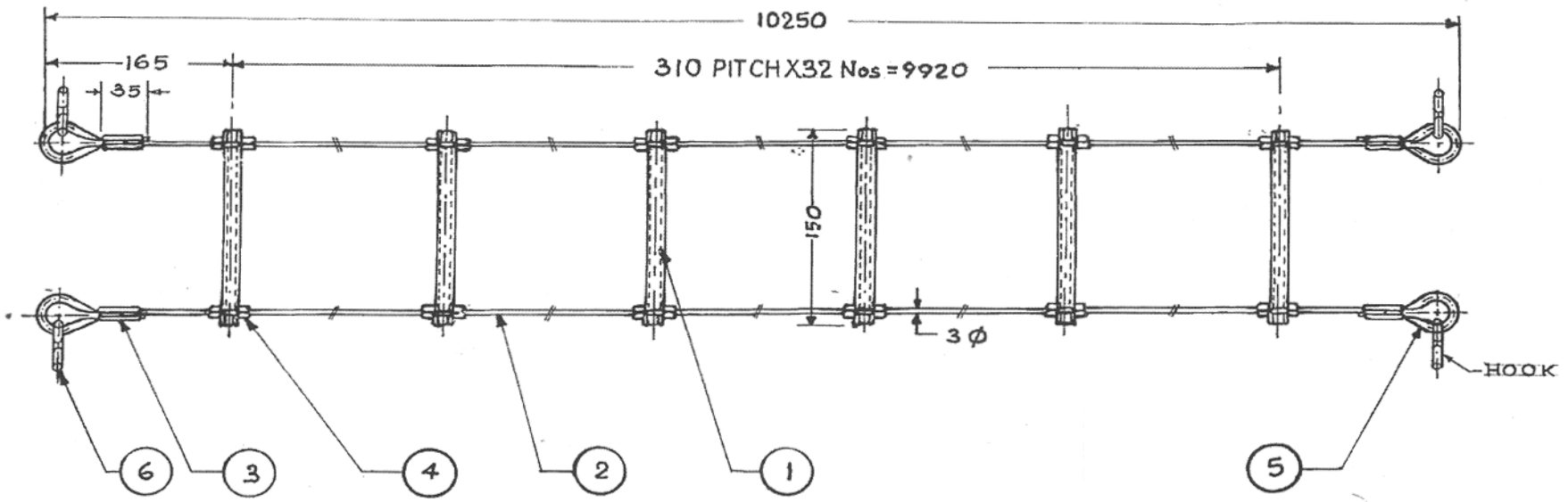
Dt 28 Mar 2018

(Manjeet Singh)
AE(OA)
GO/GS-4

(Er. M. Satyanarayana)
PSCO
DC/GS-4

(Rajesh Srivastava)
JAG(NFSG)
Addl. Controller

SHEET 1 OF 6



CHIEF D/MAN		DATE	NAME	CQA (GS) KANPUR
PASSED BY GO (GS-4)	DGN			
	DRN			D.S.CAT.No.- 4240 - 000486
	CHD			
	TCD			
APPROVED BY DC (GS-4)	COMP			LADDER ICE WALL CLIMBING
	SCALE :- NTS			DIMENSION IN mm
				DRG ATTD UNSEALED SPECN No CQA(GS)/US/477(a)

GS-9/22/2018

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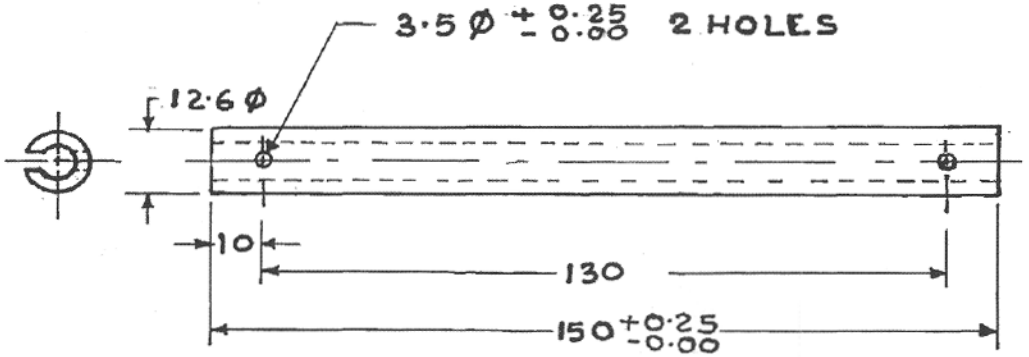
TUBE



~~CHIEF D/MAN~~ J.T.O(D)		DATE	NAME
PASSED BY TGO (GS-II)	DGN		
APPROVED BY DC (GS II)	DRN		D.S.CAT.No.- 4240 - 000486
	CHD		
	TCD		LADDER ICE WALL CLIMBING
	COMD		
	SCALE :- NTS		

CQA (GS) KANPUR

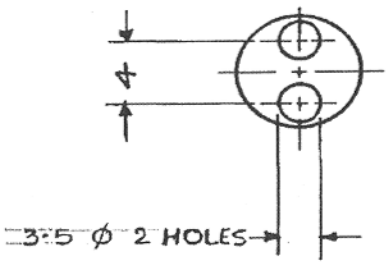
DIMENSION IN mm

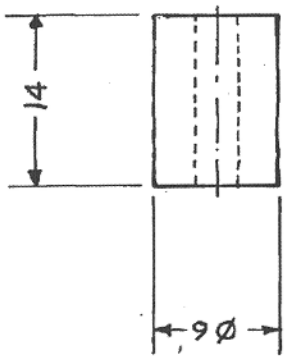
DRG ATTD UNSEALED SPECN No CQA(GS)/US/477(a)

GS-9/22/2018

SHEET 3 OF 6

FERRUL 'A'



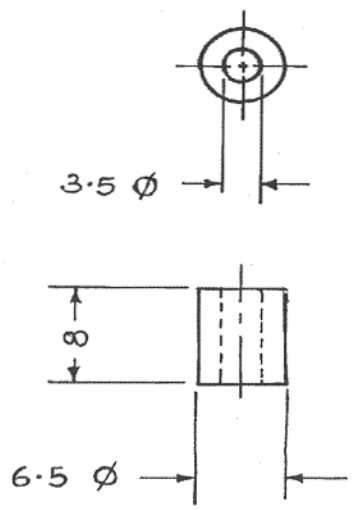


GO(GS-4)

		DATE	NAME		
JTO(GS-4) CHIEF D/MAN	DGN				CQA (GS) KANPUR
	DRN			D.S.CAT.No.- 4240 - 000486	
PASSED BY FG O (GS-4)	CHD				
	TCD				
	COMP			LADDER ICE WALL CLIMBING	DIMENSION IN mm
APPROVED BY DC(GS-4)	SCALE: NTS				DRG ATTD UNSEALED SPECN No CQA(GS)/US/477(a)

SHEET 4 OF 6

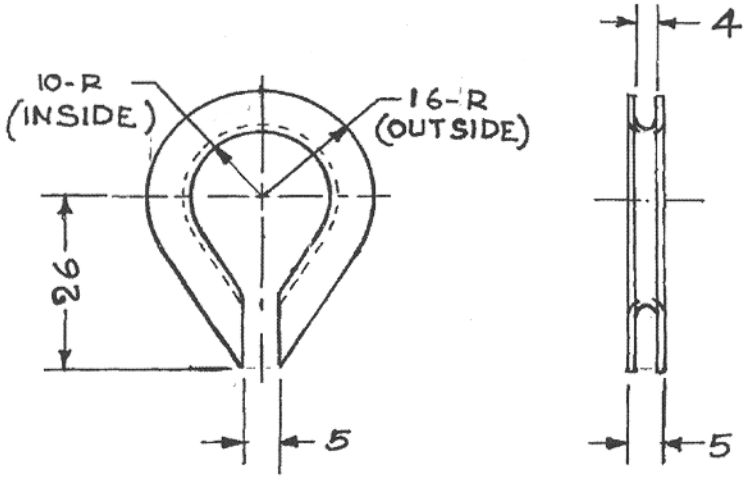
FERRUL 'B'



GD/GS-4

~~CHIEF D/MAN~~ JTO(P)		DATE	NAME	CQA (GS) KANPUR
	DGN			
	DRN			D.S.CAT.No.- 4240 - 000486
PASSED BY JGO (GS-4)	CHD			
	TCD			
	COMP			LADDER ICE WALL CLIMBING
APPROVED BY DC(GS-4)	SCALE : NTS			DIMENSION IN mm
				DRG ATTD UNSEALED SPECN No CQA(GS)/US/477(a)

THIMBLE



GO/GS-4

~~CHIEF D/MAN~~ JTO(I)		DATE	NAME	CQA (GS) KANPUR
	DGN			
	DRN			D.S.CAT.No.- 4240 - 000486
PASSED BY JTO(GS-4)	CHD			
	TCD			
	COMP			LADDER ICE WALL CLIMBING
APPROVED BY DC(GS-4)	SCALE:- NTS			DIMENSION IN mm
				DRG ATTD UNSEALED SPECN No CQA(GS)/US/477(a)

GS-9/22/2018

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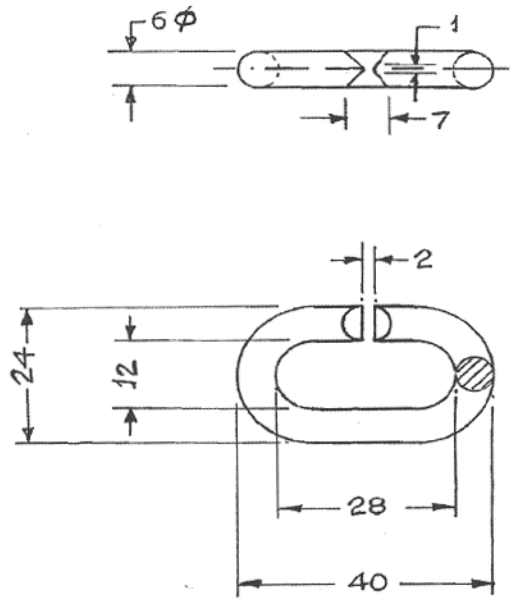
HOOK



GO/GS-4

		DATE	NAME		
JTO(D) / CHIEF D/MAN	DGN				C.Q.A (GS) KANPUR
	DRN			D.S.CAT.No.- 4240 - 000486	
PASSED BY GO-GS-4	CHD				
	TRD			LADDER ICE WALL CLIMBING	
	COMP				DIMENSIONS ARE IN mm
APPROVED DC(GS-4)	SCALE- N.T.S.				DRG ATTD UNSEALED SPECN No CQA(GS)/US/477(a)

GS-9/22/2018