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GO/G-10

Specification No. IND/GS/1777(a)

Sealed vide DC No 347-GS&T 28-12-98

भारत सरकार
रक्षा मंत्रालय
गुणता आश्वासन महानिदेशालय
GOVERNMENT OF INDIA
MINISTRY OF DEFENCE
(DGQA ORGANISATION)
SPECIFICATION

FOR

MUGS STAINLESS STEEL DOUBLE WALLED
DS Cat No. 7350-000192

ISSUED BY

नियंत्रक
गुणता आश्वासन नियंत्रणालय (सामान्य वस्तु)
रक्षा उत्पादन तथा आपूर्ति विभाग
रक्षा मंत्रालय
(गुणता आश्वासन महानिदेशालय)
पोस्ट बाक्स संख्या 127
कानपुर 208 001

CONTROLLER
CONTROLLERATE OF QUALITY ASSURANCE (GENERAL STORES)
DEPARTMENT OF DEFENCE PRODUCTION & SUPPLIES
MINISTRY OF DEFENCE (DGQA)
POST BOX No. 127
KANPUR - 208 001

PRICE : Rs. 80/-

YEAR : 1998

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RECORD OF AMENDMENTS

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

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CONTENTS

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 Specification No.CIGS/US/277(a).

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

0.4 The Quality Assurance Authority for the store covered by this specification is the Controller, Controllerate of Quality Assurance(General Stores), P.B.No.127, Kanpur-208 001. 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.

0.5 This Specification 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. Thus, it may involve some price difference. Therefore, a specification issued holds good only for the supply order for which it is issued.

0.6 Copies of any other reference documents such as specification/drawing/ instructions/guides etc. can be obtained on payment from the addresses as shown below :-

Specification	Source	
I.S. Series		Director General Bureau of Indian Standards, Manak Bhawan 9, Bahadur Shah Zafar Marg, NEW DELHI-110 002. Or its Regional Offices at Mumbai, Calcutta, Chennai and Kanpur.
IND/GS/series JSS & Supple. Schedule in CQA(GS)/SS. Series	The Controller, Controllerate of Quality Assurance (GS), PB No.127, KANPUR-208 001.	Or their Regional Establishments 1. Sr. Quality Assurance officer S. Q. A. Estt.(GS) Hastings, CALCUTTA - 700 022.
IND/SL series	The Controller, Controllerate of Quality Assurance (Materials), PB.No.229,KANPUR-208 001.	2. Sr. Quality Assurance officer S. Q. A. Estt.(GS) DGQA Complex, LBS Marg Vikhroli, Mumbai - 400 083.
IND/TC series	The Controller, Controllerate of Quality Assurance (T&C),PB No 294, KANPUR-208 001.	3. Sr. Quality Assurance Officer S. Q. A. Estt.(GS) P. B. No. 307, KANPUR-208 001.
IND/SL series for petroleum products (if required).	The Controller, Controllerate of Quality Assurance (petroleum products), P.B. No.244, KANPUR-208 001.	4. Sr. Quality Assurance Officer S. Q. A. Estt (GS) DGQA Complex, Pazhavanthangal, Chennai-600 114.

'DMSRDE' series (if required) The Director, DMSRDE, GT Road, KANPUR-208 013.

5. Sr. Quality Assurance Officer S. Q. A. Estt(GS), Anand Parbat NEW DELHI-110 005.

6. Sr. Quality Assurance Officer S. Q. A. Estt(GS), Shahjahanpur - 242 001.

1.0 SCOPE

1.1 This specification covers the requirements of Mugs Stainless Steel Double Walled (DS Cat No 7350-000192) & provides guidance to contractors/ suppliers, manufacturers, Quality Assurance Agencies and stockists/ indentors etc.

2.0 RELATED SPECIFICATIONS AND DOCUMENTS

Srl.No.	Specification No.	Title / Subjects
(a)	IS:2102 (Pt-I)-1993 (Third Revision)	General Tolerances, Tolerances for linear & angular dimensions without individual tolerance indications.
(b)	IS:2500 (Pt-I)-1992 (Second Revision)	Sampling Inspection procedures; Attribute sampling plans indexed by Acceptable Quality Level (AQL) for lot by lot inspection.
(c)	IS:4905-1968 (Amdt. 1) (Reaffirmed-1991)	Methods for Random Sampling.
(d)	IS:5522-1992 (Second Revision)	Stainless steel sheet coils and circles for utensils & hospitalware conforming to designation 04Cr18Ni11 or 07Cr18Ni9.
(e)	CQA(GS)/US/445(a)	Boxes, Fibre Board, Rigid Corrugated, Double Walled 5 Ply.
(f)	JSS:9330-2 with Amdt. list No.1 and CIGS/SS/313(a)	Polythene Film 0.08 mm thick.
(g)	IND/GS/1683(a)	Polypropylene Strapping 0.55 mm thick x 12 mm width.

3.0 STANDARD PATTERN

3.1 Standard pattern of Mugs Stainless Steel Double Walled(DS Cat No.7350-000192) held by the Controllerate of Quality Assurance (General Stores), Post Box No.127, Kanpur shall constitute the standard as regards 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)	Stainless steel Sheet	Conforming to Designation 04 Cr 18 Ni 11 or 07 Cr 18 Ni 9 for for stainless steel sheet coils and circles for utensils and Hospitalware.	IS:5522-1992 (2nd Rev.)
(b)	Handle	Moulded Phenol Formaldehyde ~~or High impact Polystrene.~~ (a)	

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

5.0 PROCESSING

5.1 Mugs stainless steel double walled shall be manufactured to the shape and design as shown in the relevant plate attached to this specification.

5.2 Thickness of sheet mentioned in the plate shall be in finished condition. Finished thickness of outer & inner wall shall not be less than 0.56 mm at any point.

5.3 The Mug stainless steel double walled consists of two single walled ordinary mug, one placed inside the other in such a manner that bottom of both the Mug are in contact with each other, having an annular space alround between the two walls as shown in the attached plate. The top ends of the two mugs shall be jointed together by means of a single seam joint which shall be pressed tightly. There shall not be any gap between the free end of the inner mug & the vertical wall of outer mug on the under side of seam. Finished thickness of each constituting mug shall not be less than 0.56 mm at any point.

5.4 The Handle shall be fabricated to shape & size & then attached to the body as shown in the Plate. It shall be attached to the wall of the outer Mug by spot welding at least at four places at each end. The Phenol Formaldehyde piece shall be so clenched between the stainless steel walls of the Handle that there is no gap or play & that it shall not come out.

6.0 DIMENSIONS AND TOLERANCES

6.1 DIMENSIONS

6.1.1 The store shall conform to the dimension shown in the plate attached to this specification.

6.2 Tolerances

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

Tolerance class		
Designation :	Description	: Applicable on Components/Parts
C	: Coarse	: On all dimensions.

7.0 WORKMANSHIP AND FINISH

7.1 The Mug shall be free from sharp edges, cracks, splits, Burrs, pits, dents, scratches, waviness,wrinkles & other surface defects.All sharp edges shall be removed & the Mug shall be finished smooth & polished all over. The inner surface of outer wall of mug & the outer surface of the inner wall of Mug shall also be finished smooth & polished before assembly.

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

8.0 PRE-INSPECTION OF SUPPLIES BY THE PRODUCER

8.1 ADVANCE SAMPLE : If required the manufacturers shall submit three(3) advance samples of acceptable quality fabricated from specified material for approval by CQA(GS) prior to commencement of bulk production.

8.2 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.

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 and test, shall be rendered along with the challan. The declaration shall include the method followed in pre-inspection showing features checked/tested.

9.0 QUALITY ASSURANCE

9.1 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.

9.2 Control samples shall be forwarded to CQA(GS) from bulk supplies to check/monitor the quality whenever required.

10.0 SAMPLING PROCEDURE

10.1 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.

10.2 Sampling of stores shall be done adopting appropriate sampling method as per IS:4905-1968 Amdt.1 (Reaffirmed-1991) so that samples drawn as per Table I and II given for assessing various quality requirements, are truly representative of the lot.

11.0 SCALE OF SAMPLING

11.1 The number of sample-units to be drawn for assessing the quality of the store, characteristic wise, should be in accordance with the Table I for dimensional/non destructive/visual inspection and Table II for detailed laboratory testing.

12.0 CRITERIA FOR CONFORMITY

12.1 All the sample units as specified in Table I and II are required to be tested / inspected irrespective of the rejection number (= Ac+1) being achieved earlier.

12.2 The Quality Assurance Officer shall draw samples as per Table I for dimensional/nondestructive/visual inspection to assess the quality of the lot. If the quality of the lot indicates conformity to the standard as laid down in Table I, sampling for laboratory testing will be done. Otherwise the lot shall be straightway rejected.

12.3 Sampling for Laboratory Testing

12.3.1 If the lot is considered conforming to the quality standards as specified in Table I, sampling for laboratory tests shall be carried out as per Table II and the samples shall be subjected to the laboratory tests.

12.4 Bulk Sentencing

12.4.1 If the laboratory test report indicates that the lot does not conform to the standards as specified in Table II, the whole lot shall be rejected.

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

12.4.3 When the sample size equals to the lot size, do 100% Quality Assurance.

12.4.4 The number of sample units to be sampled for laboratory testing should be a multiple of the number of Characteristics / tests which can not be carried out simultaneously on the same sample units.

12.5 Sampling and Formation of Lot

12.5.1 The delivery shall be visually inspected by the Quality Assurance Officer at the spot in the first instance to ascertain its 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 into separate groups so that each group which is homogeneous within itself forms a lot.

12.6 Sampling Tables

Table I
Sampling plan for visual inspection
(Based on AQL 4% General Inspection Level II)

Lot Size	Sample Size (n)	Acceptance Number(Ac)
Up to 150	20	2
151 to 280	32	3
281 to 500	50	5
501 to 1200	80	7
1201 to 3200	125	10
3201 to 10000	200	14

Table II
Sampling plan for Laboratory Testing, AQL 4%
(Based on AQL 4% Special Inspection Level S-3)

Lot Size	Sample Size (n)	Acceptance Number(Ac)
Up to 150	5	0
151 to 280	8	1
281 to 500	8	1
501 to 1200	13	1
1201 to 3200	13	1
3201 to 10000	20	2

Note : i) When the sample size equals lot size do 100 % inspection/non-destructive testing with zero acceptance number.

ii) The rejection number (Re) will always be one more than the acceptance number (Ac).

Source : IS:2500(Pt-I)-1992 (2nd Rev.) : (Sampling Inspection Procedures).

12.7 Test Methods

12.7.1 Physical Tests - The capacity of the mug shall be 635 ml when filled up to brim. The weight of the mug shall not be less than 350 gms. The mug when placed on a level and even surface shall not rock.

12.7.2 Chemical Tests - The Mug when dipped for 16 hours in the following solutions shall not show any sign of staining after removal from each solution at the end of the above period.

A solution of 10 gms of Glacial Acetic Acid (99%) dissolved in distilled water to make 100 ml.

A solution of 5 gms of pure Sodium Chloride dissolved in distilled water to make 100 ml.

12.7.3 Leakage Test - The empty (Dry) weight of the Mug shall be taken and & then completely immersed in water at normal temperature for four hours. At the end of period the Mug shall be reweighed after completely drying the outer & inner surface with cloth. There shall be no increase in weight.

12.7.4 Strength Test of Handle

A mass of 2 kg shall be hung on the Handle for a period of 5 minutes while the body of the Mug is suitably rested on supports. At the end of the period the Handle should show neither deformation in shape nor failure of spot welding joints.

13.0 MARKING

13.1 Marking by the supplier

13.1.1 The store and its components (when demanded separately) shall be legibly and indelibly marked with :

(a) Manufacturer's name, initials or recognised trade mark.
(b) The year of manufacture.
(c) D. S. Catalogue number of the store.

13.2 Marking by the Quality Assurance Officer

13.2.1 Each accepted Mug shall be legibly and indelibly embossed below handle using Steel stamp of letter size 6 mm.

13.2.2 In case of small components, where steel stamping or stencilling 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 end partly covering the package.

13.3 The final rejections may be marked by Quality Assurance Officer by stamping the letter 'X' on both sides of the manufacturer's marking thus :

7350-000192
X M - - - & CO X
1998

14. PACKAGING

14.1 Packing Materials	Conforming to
(a) Polypropylene Strapping (0.55 mm thick x 12 mm width)	IND/GS/1683(a).
(b) Boxes, Fibre Board, Rigid, Corrugated, Double Walled 5 Ply	U/S specn No.CQA(GS)/US/445(a).
(c) Polyethylene Film 0.08 mm thick	JSS:9330-2 with Amdt. list No.1 & Supp. Sch. No CIGS/SS/313(a).

14.2 Method of packaging G0/G-10

14.2.1 Each mug shall be wrapped in polyethylene film. Seventy such mugs shall then be packed in a Corrugated Fibre Board Box of suitable size. A single layer (3 ply) of Corrugated Fibre Board shall be kept in between the layers of mugs including one each at the top and bottom of the box.The box shall be filled with some cushioning material to prevent movement during transit of the store. The box shall be tied at least two places cross wise by polypropylene strapping thickness.

14.2.2 Each package shall be affixed with a label carton 50 x 25 mm bearing DS Cat No., Nomenclature, Qty packed and year of manufacture. The label shall be coated by Varnish Clear.

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

14.2.4 Each final package shall be strapped at two places as mentioned below :

(i) Box Fibre Board, Rigid, Corrugated - Polypropylene Strapping.

NOTE - (i) Before packing all components are to be given protective coating as laid down in clause No. 4.5.1 to 4.5.3.

(ii) The Polypropylene Strappings are further sealed with a crimped metal seal or permacel seal.

14.2.5 Mass of any Box, Fibre Board, Rigid Corrugated shall not exceed 40 kg. In order to maintain the limit of mass, the number of items in the package may be altered at the discretion of the Quality Assurance Officer.

14.3 Marking on package

14.3.1 Each final package shall be legibly and indelibly marked as under.

(a) Front and Top

i) D.S. Cat.No. and designation of the store.

ii) Qty 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 the individual package and total number 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) Consignor's name, initials or recognised Trade Mark.

ii) Month and year of packing.

iii) A/T, S/O or Extract No. and Date.

iv) I/Note No. and Date.

15.0 TECHNICAL LITERATURE / DOCUMENTS

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

16.0 WARRANTY

16.1 Stores supplied against this specification shall be deemed to bear the warranty of the contractor against defective design material, workmanship and performance for a period of twelve months from the date of receipt of store at consignee end, and if during the specified period, the store supplied are found to be defective, the same shall be replaced immediately with serviceable store by the contractor at site free of any charges as may be decided by the purchasing officer, on recommendation of consignee/Quality Assurance Authority.

17.0 SUGGESTIONS FOR IMPROVEMENT

17.1 This specification is a live document and subject to change/updating. Any suggestions for improvement of this document may be sent to the Controller, CQA(GS) Kanpur.

CONTROLLER

CONTROLLERATE OF QUALITY ASSURANCE (GS)

POST BOX NO.127.

KANPUR - 208 001

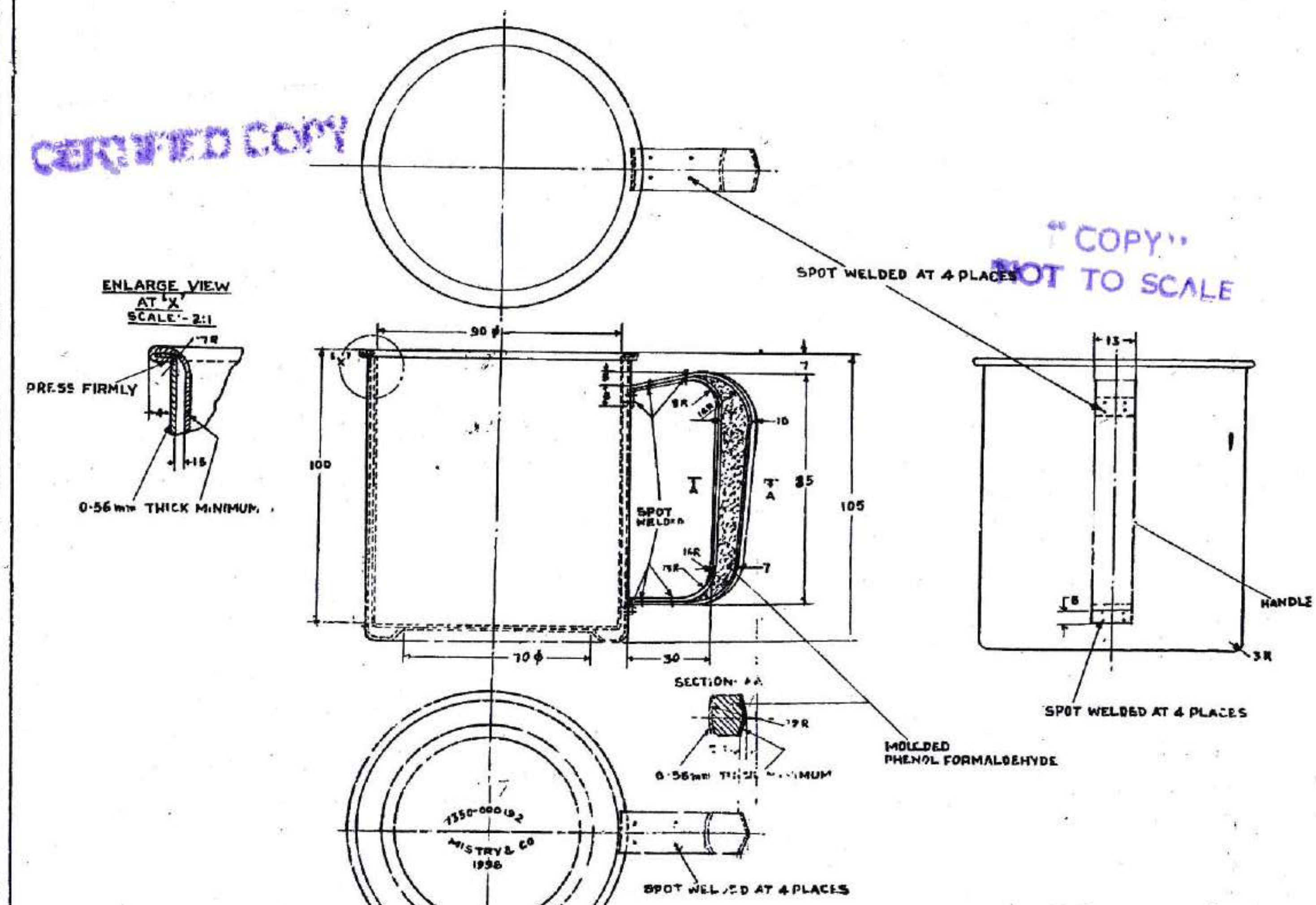
(K.A BHATNAGAR) S.S.O.II GO/G-10

(J.C. MAKANI) P.S.C.O. D/. CONTROLLER (B)

(S.P.CHAKRABARTI) JAG (SG) JOINT CONTROLLER

<gs1777>

PLATE ATTACHED TO SPECN. No. IND/GS/1777 (B)



STORAGE No. 277	CHIEF D/MAN; PASSED BY NO/G-10; APPROVED	DGH / DRN. / CHD. / TRD. / COMP.	DATE	NAME: R.A. RAI	B.S. CAT. No. 7350-000192	C.Q.A.(GS) KANPUR
		SCALE - 1:1 & 2:1			MUGS STAINLESS STEEL DOUBLE WALLED	DIMENSIONS IN MILLIMETRES

C-18/211/97