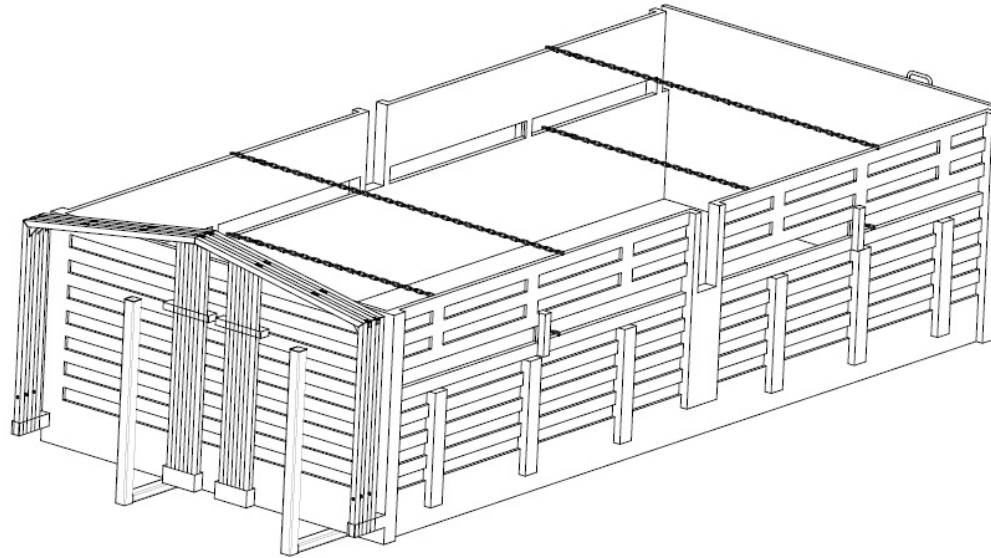




EMD, KGF COMPLEX
QUALITY ASSURANCE PLAN (QAP)
FOR
PLATFORM & ACCESSORIES (P/N: 510 BD 01007)



QAP No : EMD-QAP-RR6X6-001
 Revision level : 00
 Date of Issue : 06 MAY 2021

	PREPARED BY	APPROVED BY
SIGNATURE	Sd/-	Sd/-
NAME	SRIKANTH RAMA	G ASHOK
DESIGNATION	ASST.MANAGER - QE	AGM – QE

PREFACE

1) PURPOSE:

To establish procedures for inspection, testing and acceptance of PLATFORM & ACCESSORIES at supplier end.

2) SCOPE:

Covers Inspection, Testing and Acceptance of PLATFORM & ACCESSORIES (P/N: 510 BD 01007)

3) RESPONSIBILITY

- a. The section head of Defence Materials group to ensure that the Quality Assurance Plan (QAP) is sent to all suppliers along with the Tender Enquiry and Purchase Order.
- b. The suppliers shall ensure that Quality Assurance Plan (QAP) is followed for testing, inspection and acceptance of item mentioned in purchase order.

4) PROCEDURE

- a. The suppliers shall carry out inspection and testing of components as detailed in this QAP.
- b. All measuring Instruments & Testing Equipments used for inspection & testing shall have valid calibration.
- c. Calibration reports shall be produced to the QA inspector at the time of inspection & testing.
- d. Items are to be offered to BEML Source Inspection Team (SIT) for stage inspection / final assy prior to dispatch.
- e. BEML reserve the right to opt or co-opt any third party inspection agency for inspection at supplier end
i.e CQA(BEML) / SQA (V) / QUEST / any other third party inspection agency as desired by BEML.

QUALITY ASSURANCE PLAN (QAP) FOR PLATFORM & ACCESSORIES (P/N: 510 BD 01007)

Applicable Drawings	BEML Drawings			
Legends	P = Perform	W = Witness	V = Verification	R = Review
	GC = Guarantee Certificate	IR = Inspection Reports	TC = Test Certificate	COC = Certificate Of Conformance / Compliance
	CL = Class	Gr. = Grade	MTC = Mill Test Certificate	Mi. = Minor
	Mj. = Major	Mfg - Manufacturer	Insp - Inspection	NABL – National Accredited Board Laboratory

Abbreviations	A	Approver	MPT	Magnetic Particle Test
	ASME	American Society of Mechanical Engineers	NA	Not Applicable
	ASTM	American Society for testing material	NDT	Non Destructive Testing
	CQA(BEML)	Controllerate of Quality Assurance(BEML)	PO	Purchase Order
	DFT	Dry film thickness	P/N	Part Number
	Dimn	Dimensions	QAP	Quality Assurance Plan
	DP	Dye Penetrate Test	SIT	Source Inspection Team BEML
	HT	Heat treatment.	Spec.	Specification
	HTR	Heat treatment Report	VC	Vendor code

Sampling Plan (IS 2500 Pt- 1 :2000, Level II,)	Lot size (No)	02 ~ 08	09 ~ 15	16 ~ 25	26 ~ 50	51 ~ 90	91 ~ 150	151 ~ 280	281 ~ 500
	Sample Qty (No)	02	03	05	08	13	20	32	50

SEC-A. QUALITY ASSURANCE PLAN: – MANUFACTURING

Sr. No.	Component	Characteristics	Class	Quantum of check	Types of check	Ref. Doc	Acceptance Norms	Format of record	QA Agency		Remarks
									Vendor	BEML	
1	Raw Materials (RM Under vendor scope)	Material identification	Critical	1 Sample per heat.	Mill TC & Check test at NABL Lab	Drawings/ Standards	Drawings/ Standards	Mill TC & NABL Lab TC	P	W	1 No/Heat - test specimen to be supplied to BEML.
		Chemical composition							P	W	
		Mechanical properties							P	W	
		Physical Properties		3 Sample per heat.	Check test at NABL Lab	Drawings/ Standards	Drawings/ Standards	NABL Lab TC	P	W	
2	Welding Procedure Specification (WPS) & Procedure Qualification Record (PQR) for welding of steel	Procedure Qualification Test	Critical	100%	Weld Visual, NDT (DPT&RT),DT	ASME Sec IX	ASME Sec VIII-D1 Appendix 8 & 4 for RT & DP Resp.	WPS/PQR	P	W	
	Welder/Welding Operator Performance Qualification (WPQ/WOPQ) for welding of steel.	Performance Qualification Test	Critical	100%	Weld Visual, NDT (DPT&RT),DT	ASME Sec IX	ASME Sec VIII-D1 Appendix 8 & 4 for RT & DP Resp.	WPQ/WOPQ	P	W	

Sr. No.	Component	Characteristics	Class	Quantum of check	Types of check	Ref. Doc	Acceptance Norms	Format of record	QA Agency		Remarks
									Vendor	BEML	
3	Bought out-Items (Hardware)	(i) Make (ii) Size (iii) Finish (iv) Property class/Gr.	Major	100%	Visual, TC / COC	Drawings/ Standards	Drawings / Standards	TC / COC	P	W	
4	Bought out-Items (Paints)	(i) Appearance/ Colour SCAMIC ISC No.294 (ii) Batch Code (iii)Exp .date (iv) Make	Major	100%	Visual, TC / COC from OEM	Drawings/ IS:5-2007	Drawings / Standards	TC / COC from OEM	P	W	
5	Bought out-Items (Electrodes)	(i) Visual (ii) Chemical (iii) Make (iv) Batch Code (v) Exp. date	Critical	100%	Visual, TC / COC from OEM	Drawings/ Standards	Drawings / Standards	TC / COC from OEM	P	W	
6	Fabrication/ Manufacturing (All components)	(i) Set up/Fit up inspection (ii) NDT(DP) of weld joints (after root weld & Final pass) (iii) UT (Critical joints) (iv) Dimensions	Critical	100%	Verification of (i) Fitment (ii) DP test (iii) UT (iv) Dimensions	Drawings/ Standards/ DP procedure	Drawings/ Standards/ DP procedure	Dim. & Welding Check sheets, DP/UT Test report	P	W	

Sr. No.	Component	Characteristics	Class	Quantum of check	Types of check	Ref. Doc	Acceptance Norms	Format of record	QA Agency		Remarks
									Vendor	BEML	
7	Surface Treatment: (i) Degreasing (ii) Grit / Shot blasting	(i) Appearance. (ii) Batch Code (iii) Exp .date (iv) Make	Major	100%	Visual, TC / COC from OEM	Drawings/ Standards	Drawings / Standards	i) TC / COC from OEM ii) Degreasing & Shot blasting check sheet	P	W	
8	Painting: (i) PU Primer Zinc Phosphate (Two Pack) as per IS:13759-93 (20 Microns) (ii) PU Full Gloss Enamel (Two Pack) as per IS:13213-91 (60 Microns) (iii) Colour: SCAMIC – ISC:294 as per IS:5-2007)	(i) Appearance. (ii) Coating Thickness (DFT)	Major	100%	Verification of (i) DFT - PU Primer 20μ (ii) DFT - PU Final 60μ (iii) Drying time (iv) Paint Peel off test report	Drawings/ Standards	Drawings / Standards	i) Painting Check sheet. ii) Peel off report	P	W	
9	Identification Mark	Punch/Engrave of suitable font size: (i) Part No. (ii) Description (iii) Vendor Code. & Date of Mfg. (iv) Sl.No	Major	100%	Visual check.	Drawings/ Standards	Drawings / Standards	Check Sheet	P	W	

SEC-B. QUALITY ASSURANCE PLAN: – PERFORMANCE TESTING

Sr. No.	Component	Characteristics	Class	Quantum of check	Types of check	Ref. Doc	Acceptance Norms	Format of record	QA Agency		Remarks
									Vendor	BEML	
1	(i) Side doors opening test (LH & RH) (ii) Rear door opening test	(i) Spring action. (ii) Free Movement	Critical	100% 2 Times	Verify/ Visual	Drawing/ Process Sheet/ISPL	Drawing/ Process Sheet/ISPL	Check Sheet	P	W	
2	Side & Rear doors locking function	(i) Effectiveness of locking (ii) Wing nut tightening							P	W	
3	Step Board Function	(i) Opening/Closing (ii) Locking							P	W	
4	1) Seat cum box Assembly (10 Nos) 2) Box Assy (Ballast)	(i) Fitment (ii) No free play (iii) Re-fitment							P	W	
5	Inspection Cover	(i) Opening/Closing (ii) Locking bolts matching & seating							P	W	
6	Mounting of Hoop Structures on Platform assy	(i) Qty (ii) Painted Condition							P	W	Remove & Store in front wall
7	Mounting of Hoop Rods on Hoop Structures	(iii) Fitment (iv) Locking									

8	Mounting of Jib Crane Assy.	(i) Fitment (ii) Ensure free Rotation (360 °) (iii) Re-fitment (iv) Functioning of Chain Pulley Block (0.5 Tonne) (v) Ensure free Movement of Inner Tube Assy. in Outer Tube Assy.	Critical	100% 2 Times	Verify/ Visual	Drawing/ Process Sheet/ISPL	Drawing/ Process Sheet/ISPL	Check Sheet	P	W	
9	Spare Wheel Mounting Brackets	(i) Fitment (ii) Ensure pitch									

Note :

- During Pilot batch, Qty: 02 No's, of RR 6x6 Platform & Accessories are to be offered for BEML in stage wise and also after full welding and Clearance for bulk to be obtained from BEML QA/ CQA clearance.
- Technical personnel are to be deployed to ensure correct fitment of supplied RR 6x6 platform & accessories till acceptance of Pilot sample.
- During Bulk supplies, the firm should ensure quality requirements as per BEML QAPs on their own.
- The supplier has to ensure CQA clearance of Pilot & Bulk supplies as per QAP.
- All the terms and conditions mentioned in the Bid Invitation to be satisfied.
- Maintain a record sheet to ensure all aggregates are fitted as per the drawing.
- Maintain all individual Sub- Assys / components inspection reports for cross verification by Inspection Authority.