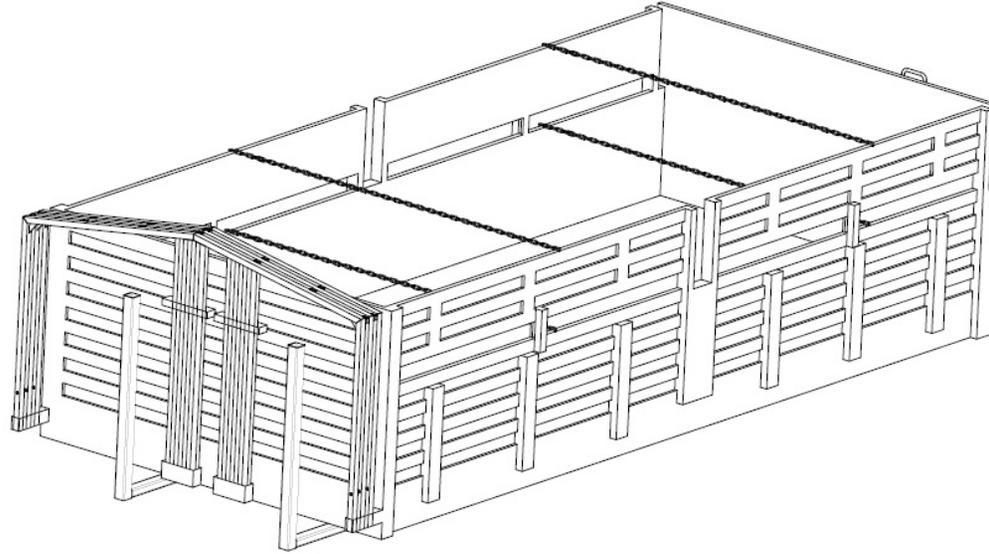




**EMD, KGF COMPLEX**  
**QUALITY ASSURANCE PLAN (QAP)**  
**FOR**  
**PLATFORM & ACCESSORIES (P/N: 510 BD 01007)**



QAP No : EMD-QAP-RR6X6-001  
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	PREPARED BY	APPROVED BY
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## 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)**

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

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

<b>Sampling Plan (IS 2500 Pt- 1 :2000, Level II,)</b>	<b>Lot size (No)</b>	02 ~ 08	09 ~ 15	16 ~ 25	26 ~ 50	51 ~ 90	91 ~ 150	151 ~ 280	281 ~ 500
	<b>Sample Qty (No)</b>	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	<b>Surface Treatment:</b> (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	<b>Painting:</b> (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	<b>Identification Mark</b>	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 :**

- a) 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.
- b) Technical personnel are to be deployed to ensure correct fitment of supplied RR 6x6 platform & accessories till acceptance of Pilot sample.
- c) During Bulk supplies, the firm should ensure quality requirements as per BEML QAPs on their own.
- d) The supplier has to ensure CQA clearance of Pilot & Bulk supplies as per QAP.
- e) All the terms and conditions mentioned in the Bid Invitation to be satisfied.
- f) Maintain a record sheet to ensure all aggregates are fitted as per the drawing.
- g) Maintain all individual Sub- Assys / components inspection reports for cross verification by Inspection Authority.