

परियोजना (PROJECT) :

ग्राहक (CLIENT) :

उपस्कर का नाम (NAME OF EQUIPMENT) :Gantry crane including Fixed Rope Drum Hoist

विक्रेता (VENDOR) :

एनआईटी/ क्रय आदेश संदर्भ (NIT/P.O. REFERENCE) :

MODEL QUALITY ASSURANCE PLAN (MQAP)

SET Special instructions: -	
1	Contractors/Manufacturers/Sub-suppliers are advised to submit QAP for equipments/ materials after incorporating all tests for bought out items, in process inspection and final inspections as per their latest manufacturing practice and Indian/ International Standards (with latest amendments, if any).
2	Contractors/Manufacturers/Sub-suppliers are required to use properly calibrated instruments /equipments during testing/inspection, for which necessary calibration certificates are required to be provided/presented to the Inspecting Officer.
3	Contractors/Manufacturers/Sub-suppliers has to make on their own all arrangements for testing facilities at their works for testing of equipments/materials.
4	One set of complete test certificates as per the requirement of QAP be made available to the Inspecting Officer at the time of inspection/testing.
5	All the records, as per the requirement of QAP are to be made available for review by the Inspecting Officer during inspection.
6	Field tests are to be carried out as per the requirements of the contract / purchase order.

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क्र. सं. SR. NO.	मद/घटक एवं विशेषता ITEM /COMPONENTS & CHARACTERISTICS	जाँच की प्रकृति NATURE OF CHECKS	जाँच की मात्रा QUANTUM OF CHECKS	संदर्भ दस्तावेज़ / स्वीकृति मानदंड REFERENCE DOCUMENTS/ ACCEPTANCE NORMS	रिकॉर्ड प्रारूप RECORD FORMAT	निरीक्षण एजेंसी (INSP. AGENCY)			टिप्पणी REMARKS
						प्रदर्शन Perform	गवाह Witness	सत्यापन Verify	
1	Raw Material (As applicable)								
1.1	Structural Steel (Crane structure, rail, Base Frame, Girders, Columns etc)	Chem. & Mech. properties	Sample/lot	Relevant Std./ App. Drg./ Tech. Spec.	TC	3/2	-	1	TC
1.2	Cast Steel / Forged Steel (Rope Drum, Shaft, Pulleys, Gear & Pinions etc)	Chem. & Mech. properties	Sample/lot	-do-	TC	3/2	-	1	TC
1.3	NDT of Plates/Cast/Forged Steel	RT, UT, MPI, DPT (as applicable)	100%	-do-	TC	3/2	-	1	TC
2	Bought Out Items (As applicable)								
2.1	Electric Motors (Main hoist & CT/LT Drive)								
2.1.1	Make, Type, Rating	Visual	-do-	-do-	TC	3/2	-	1	TC
2.1.2	Routine Test	Test	-do-	-do-	TC	3/2	-	1	TC
2.2	Electro-Magnetic Brakes / Thruster Brakes								
2.2.1	Make, Type, Rating	Visual	-do-	-do-	TC	3/2	-	1	TC
2.2.2	Routine Test	Test	-do-	-do-	TC	3/2	-	1	TC
2.2.3	Dimension check	Measurement	-do-	-do-	TC	3/2	-	1	TC
2.3	Gear Boxes								
2.3.1	Make, Type, Rating	Visual	-do-	-do-	TC	3/2	-	1	TC
2.3.2	Gear ratio	Measurement	-do-	-do-	TC	3/2	-	1	TC
2.4	Misc. Items:- (Wire Rope, Bearings, Plummer Blocks, Gate Position Indicator, Limit Switches, Load cell & cable, storm anchor etc.)								
2.4.1	Make Type, Rating	Visual	-do-	-do-	TC	3/2	-	1	TC
2.4.2	Chem and mech analysis (As applicable)	Chem. & Mech. properties	Sample/lot	-do-	TC	3/2	-	1	TC
2.4.3	Dimension check (If applicable)	Measurement	100%	relevant std/ app drawing/ tech specs.	TC	3/2	-	1	TC
2.4.4	Routine test (if applicable)	test	-do-	-do-	TC	3/2	-	1	TC

Signature
(QA&I DEPT.)

Signature & Seal
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3	In-process – Fabrication (As applicable)			Relevant Std./ Tech. Spec./ Approved Drgs.					
3.1	Welding			-do-					
3.1.1	Welder Certification	Visual	100%	-do-	TC	3/2	-	1	TC
3.1.2	Fillet weld	RT, UT, MPI, DPT (as applicable)	-do-	-do-	TC	3/2	-	1	TC
3.1.3	Full strength weld	RT, UT, MPI, DPT (as applicable)	-do-	-do-	TC	3/2	-	1	TC
3.2	Post weld Heat treatment (Fabricated Rope Drum, Gear Box housing etc)	Heat Treatment	-do-	-do-	TC	3/2	-	1	TC
3.3	Machining Dimensional Checks (Rope Drums, Wheels, Shaft, Axle , Sheaves, Brake Drums etc)	Measurement	-do-	-do-	TC	3/2	-	1	TC
4	Sub assembly- Gear Pinions, shaft, Plummer Blocks, Gear Boxes & Motors with Couplings								
4.1	Alignment, Noise level, Vibration,Gear Box leakage (As applicable)	Test	-do-	-do-	TC/COC	3/2	-	1	TC/COC
5	Final Inspection and Testing on Hoist platform with Control Panel								
5.1	BOM check	Visual	-do-	-do-	JIR	3/2	1	-	CHP
5.2	Dimensional check on Assembled Hoist	Measurement	Critical Dim.	-do-	JIR	3/2	1	-	CHP
5.3	Hoist speed and Lowering Speed- full load	Measurement	1	-do-	JIR	3/2	1	-	CHP
5.4	Load Test at rated load & 125% over load	-do-	-do-	-do-	JIR	3/2	1	-	CHP
5.5	Brake Test –Hoist up and Lowering	Visual	-do-	-do-	JIR	3/2	1	-	CHP
5.6	LT/ CT speed	Measurement	-do-	-do-	JIR	3/2	1	-	CHP
5.7	Hoist girder camber (if applicable)	-do-	-do-	-do-	JIR	3/2	-	1	CHP

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5.8	Deflection test at overload (if applicable)	-do-	-do-	Relevant Std./ Tech. Spec./ Approved Drgs.	JIR	3/2	1	-	CHP
5.9	Travelling of gantry crane/ jacking of wheel carriage or crane	Visual/ Measurement	-do-	-do-	JIR	3/2	1	-	CHP
5.10	Verification of TR of drawing	Visual/ Measurement	-do-	-do-	JIR	3/2	1	-	CHP
6	Control Panel		-do-						
6.1	Soft Starter/VVVF Modules, Transformers, Circuit Breakers, Switches etc. (As applicable)	Electrical	-do-	-do-	TC	3/2	-	1	TC
6.2	BOM checking, Verification of scheme, make & rating of components	Visual	-do-	-do-	JIR	3/2	1	-	CHP
6.3	Cubicle dimensions	Measurement	-do-	-do-	JIR	3/2	1	-	CHP
6.4	Functional check including HV & IR tests	Electrical	-do-	-do-	JIR	3/2	1	-	CHP
6.5	Sequence of operation and interlock tests	-do-	-do-	-do-	JIR	3/2	1	-	CHP
6.6	Single phase protection, Thermal overload relay, Under voltage protection , Instantaneous over current protection etc. (As applicable)	-do-	-do-	-do-	JIR	3/2	1	-	CHP
6.7	Radio control tests of speed control of bridge travel, trolley travel & hoist motion, control of master contactor, indication & alarm (as applicable)	Functional test	-do-	-do-	JIR	3/2	1	-	CHP
7	Surface preparation & Painting	Visual/ Measurement	100%	-do-	TC	3/2	-	1	TC

- Note:
- In 'Inspection Agency' column figure 1,2,or 3 to be filled. 1- will indicate 'NHPC Ltd', 2- will indicate 'supplier' & 3- will indicate 'sub-supplier'.
 - In 'Remarks' column following abbreviations shall be used - RR-Review of Records, T.C. - Test Certificate, COC- Certificate of conformity CHP - Customer Hold Point & JIR-Joint Inspection Report.
 - The firm shall obtain acceptance/clearance of finished product for further activities based on Test Certificates & Internal Report (IR)
 - Any additional test required as per the requirement of equipment in accordance with Contract Agreement/Relevant standard apart from QAP will be carried out by the firm without any additional financial implication.
 - This QAP does not absolve the Contractor/sub-contractor of his responsibility to supply the correct products, strictly in conformity to the specifications given in the purchase order/contract. The above Model QAP stipulates the bare minimum requirements which shall be complied by the contractor. The above QAP has been made presuming subletting of work shall be allowed in the tender. In case subletting of work is not allowed in the tender, then "3/2" shall be replaced by "2" under the column " Perform".
 - At the time of Inspection the supplier shall arrange the requisite calibrated measuring instruments i.e. micrometer, vernier caliper, pie tape, surface roughness tester, dial gauge etc. Material testing shall be conducted from NABL accredited lab/Govt. approved lab. NDT shall be conducted from NABL accredited lab/Govt. approved lab/Level-2 or 3 certified person.

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