

**INDIA PORTS GLOBAL PVT. LTD.**  
**Tender No. IPGPL/RMQC/2016**

Tender for "Design, Manufacture, Supply, Installation, Testing, Commissioning and Guaranteeing the performance of (04) four Nos. of New Rail Mounted Quay Cranes (RMQCs), post Panamax Size at Shahid Beheshti Port, Chabahar, Islamic Republic of Iran". : Clarifications/amendments to the pre-bid queries of the meeting held on 1<sup>st</sup> December 2016.

<b>Sr. no.</b>	<b>Clause No.</b>	<b>Tenders Specification Requirements</b>	<b>Queries</b>	<b>Clarification From IPGPL</b>
1	1.18.2	The final 24 hours of testing shall be performed without interruption. In the event an interruption due to crane malfunction occurs, the test shall be continued until 24 hours of interruption free operation is achieved.	The cycle will be repeated after the 24h to reach 8 (eight) our trouble free, while minor fault that require only reset action to be solved will not be counted.	Not accepted - Tender condition prevails.
2	2.3	BS EN 1435: Radiographic Testing.	Is it acceptable that UT and MT replace RT (radiographic testing)?	Radiographic Testing shall be done for minimum 30% welds of critical joints.
3		All fabricated box sections shall be air tight and Nitrogen Gas to be inserted to prevent ingress of water and subsequent corrosion.	Is it acceptable that all main steel structure (box sections) will be sealed with air tight test without Nitrogen Gas?	Not accepted. Tender condition prevails.
4	2.4	Painting and protective treatment	Shop priming DFT 25microns for the sealed interior surfaces, and the painting specification of all the bought-out components shall be as per the manufacturer's standard.	Not accepted. Tender condition prevails.

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5	3.3	Automatic hydraulically operated rail clamps and rail brakes with the capability of holding the crane under a wind speed of at least 20m/s shall be provided. They shall be applied to both seaward and landside rails (At least two sets shall be considered for each land side and seaward rails. The brakes condition & operation cycles should be monitored via crane management system)	Bidder will only provide rail brakes, as the function for rail clamps and rail brakes are same. Also qty of rail brake will be verified to hold the crane on the condition of wind speed 20m/s together with working of gantry motors' brake.	Not accepted. Tender condition prevails.
6	3.7	The anti-sway system shall be capable of damping the sway of the spreader, with rated load at a height above ground and beneath the spreader of 4.5 metres, bringing it to rest within + 50 mm displacement in less than five seconds after the trolley is brought to a halt from full speed.	Please so kindly clarify the test procedure for anti-sway to achieve specified efficiency.	The test procedure will be finalised at least four weeks before testing is due to commence. Please refer Cl. 1.18.1 of technical specification.
7	3.23	Grease Lubrication Systems	It is Bidder understanding that only automatic grease lubrication system will be used for parts on trolley frame, and central grease lubrication system by manual operation will be used for other area like gantry etc. please clarify.	The localized lubrication system shall be automatic.
8	4.1	All motors shall be 400 V, AC, 50 Hz type	Is it acceptable that all motors will be 500V A?	Not accepted – Tender conditions shall prevail.

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9		Motors mounted indoors shall be IP54,(Hoist motors could be at least IP23 where it is installed in environment controlled E-Room) whilst motors exposed to outdoor conditions shall be totally enclosed to IP65 protection	Is it acceptable that indoors motors will be IP 23?	All indoor motors only can be IP 23.
10	4.22	temporary three phase and neutral supply derived from the ports LV system or a standby generator can be connected to the crane.	Please clarify if damping resistor would be provided by Bidder or not in case standby generator be used.	All required arrangement shall be considered to make crane capable for connected to LV System or standby generator.
11	1.4.5	<u>Seismic Design Data (minimum values):</u> <u>Horizontal acceleration (50</u>	Bidder propose seismic load will be considered only on structure design, but not considered on wheel load. When earthquake, wharf may be destructed directly by seismic load but not by exceeded wheel load. Seismic load transfers from ground to STS. So wharf will be destructed earlier than STS. So, it is not necessary to limit the wheel load when earthquake. But seismic load will be considered in the STS structure design	The design criteria is to Protect both structure and the rails
12	1.5	The crane shall be capable of working with the boom in the raised or lowered positions.	Bidder propose the crane only can be operated without load and at reduced speed, not more than 20% rated speed when boom in raised position.	Reduced speed could be considered, not less than 20% rated speed.
13	2.1	Structural steel shall be to BS EN10113 Grades S275N or S355N or equivalent.	Bidder propose Chinese standard steel Q345B will be used for main structure steel, that is equivalent with S355N. And Bidder propose Chinese standard steel Q235 will be used for secondary structure steel.	Equivalent steel grade are acceptable

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14	2.3	Welding shall be undertaken in accordance with BS EN 1011-2:2001 Recommendation for welding of metallic materials.....	Welding shall be undertaken in accordance with AWS standard that is more widely used.	AWS Standard accepted
15	2.3	Welding shall be undertaken by welders who are certified according to BS EN 287-1:1992 requirements.	Welding shall be undertaken by welders who are certified according to AWS requirements, which are more widely used.	Like above item
16	2.3	Weld testing shall be in accordance with the following standards or approved equivalent: BS EN 970: Visual Inspection BS 6072: Magnetic Particle flaw Testing BS EN 1714: Ultrasonic Testing BS EN 1435: Radiographic Testing.	Welding testing shall be undertaken in accordance with AWS standard that is more widely used.	Equivalent standards could be acceptable
17	2.4	The recommendations of BS 5493 Code of Practice for “Protective Coating of Iron and Steel Structures against Corrosion” and BS EN ISO 12944 shall be followed.	Painting and coating will follow SIS/ISO standard, which is more widely used.	EN ISO 12944 shall be followed. Protective systems shall be compatible with C5-M corrosion category, suitable for coastal and offshore areas with high salinity
18	3.3	Automatic hydraulically operated rail clamps and rail brakes with the capability of holding the crane under a wind speed of at least 20m/s shall be provided.	Bidder propose only rail brakes without rail clamp shall be provided.	Not accepted.

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19	3.3	The brakes condition & operation cycles should be monitored via crane management system	As comments from suppliers, a pad wear limit switch would be possible for monitoring. But for this, the rail would have to be used as the "switch-rod". But They think the rail brake is intended as a static holding brake, which normally should have no wear at all. So Bidder propose to cancel the brakes wearing condition monitoring.	Accepted
20	3.17	The pitch diameter of wire rope sheaves shall not be less than 30 times the wire rope diameter for main hoist system and at least 24 times for the boom hoist system unless otherwise approved.	Bidder proposes the equalizer sheave will be not be less than 18 times the wire rope diameter following the FEM standard.	Not accepted. The tenderer shall follow the technical specification for sheaves design.
21	3.17	All sheaves (except for the boom hoist system) shall be mounted independently on individual shafts such that if one sheave is removed, the others will not be affected.	We propose the main hoist sheaves on trolley will be arrangement as that twin sheaves can be mounted on individual shafts. If each sheaves on trolley mounted independently on individual shafts, the trolley and the whole gantry will be much bigger and heavier because of much extra weight.	Not accepted. It is recommended to follow technical specifications.
22	3.19	An oil level indicator shall be provided on every gear reducer. In addition to these indicators, the vibration levels, oil levels and temperature of the gear reducers for the main hoist, boom hoist and trolley travel systems shall be continuously monitored by the computerized crane management system as specified elsewhere in this Specification	Oil level is much difficult to monitor by the computerized crane management system, which comments were from suppliers of the reducer. Then Bidder propose to cancel the requirement.	A side glass oil level indicator will suffice.

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23		List of Manufacturer	Now many components were manufactured all over the world. Bidder propose to use components without limited producing area. But the brand of manufactured will follow requirement of specification or others approved by end users.	Not accepted. The other brands maybe indicated by the tenderers. However, the acceptance of the same will be confirmed by the tender holder prior to the end of technical evaluation
24	4.2	Internal wiring shall be PVC insulated conforming to BS 6231, 600 V grade.	We propose internal wiring shall be conforming to IEC or CE standard, which is more widely used.	Equivalent international standards are acceptable
25	4.5	Communications cables forming the data base around the crane shall be installed such that it maintains at least 600mm clearance from power cables.	Bidder propose communications cables forming the data bus around the crane shall be installed such that it maintains at least 80mm clearance from power cables conforming to IEC standard or with some clapboard.	The technical specification shall be followed. Not accepted
26	1.5	The Manufacturer shall also supply spare single lift telescopic spreaders	How much set should be supplied?	One Set
27	1.9	Sea levels in metres above chart datum are as follows: MHHW: 3.30. MLLW: 0.70. MSL: 2.30. Quay Level will be +3.2m according to MSL.	Quay level is lower than MHHW. Is it correct?	<ul style="list-style-type: none"> <li>• Mean o Higher High Water: MHHW +2.53 mCD</li> <li>• Mean of Lower High Water: MLHW +1.93 mCD</li> <li>• Mean Sea Level: MSL +1.61 mCD</li> <li>• Mean of Higher Low Waters MHLW +1.28 mCD</li> <li>• Mean of Lower Low Waters MHLW +0.69 mCD</li> </ul> 3. Quay and yard • New quay level: +5.00 mCD The theoretical weight and maximum wheel loads for the crane shall be declared by the tenderer

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28	3.1	The mam hoist shall be equipped with an emergency drive which can be connected manually by suitable means, in the event of failure to main hoist system. The power to the emergency drive shall be taken from the 400V 3 phase emergency power supply.	Do we have to supply the engine generator for emergency power?	The arrangement for connecting to diesel generate shall be provided.
29	1.4.5 Seismic	Seismic Design Data (minimum values) : Horizontal acceleration (50 year) 0.34g Vertical (50% x horizontal) 0.17g	.Please provide $S_{DS}$ & $S_{D1}$ based on ASCE 7-10 or seismic design response spectrum. . Based on ASCE 7-10, we undersand vertical seismic factor is under 0.05g ( $0.2*0.7*SDS$ ).	To be discussed later.
30	1.18.1 Acceptance Testing	Vibration tests of the structure, operator cabin and trolley shall be carried out and results recorded at the complete range of operating speeds and loads.	With Bidder's experience, vibration test does not need to be carried out for those equipment. If required, the detailed requirement shall be provided for clarification before contract.	To be clarified later.
31	1.18.2 Durability test	The test shall include putting the crane ~ for period of 48 hours, ~	With more than 30 years Bidder's experience and to reduce the cost, we recommend to test the crane for 24 hours, which is still satisfy all the requirement. (12 hours : Allow fault, 12 hours : Fault free)	Not accepted. Tender condition shall prevail.
32	2.1 General	The allowable bearing stress of pins shall not exceed 0.3 times the yield stress of the material.	At the operating condition, the indicated bearing stress will be applied. But at the overload condition, the allowable bearing stress will be increased as per stress increase factor.	Accepted.
33	3.1 Main hoist	Rated load shall be taken as 65t under spreader (twin lift) and 95t on the ropes.	The maximum rope loads shall be 84t not 95t. (LS+LL= 84t)	Minimum acceptable load on the ropes shall be 90 Tonnes.

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34	3.2 Trolley travel	The tips of the rails at the joint shall be surface-hardened ~.	The entire trolley rail raw material shall have the hardness of HB261.	In case it is not possible to harden tips of the rail joints, certainly the joint part is to be designed narrow or L-type joints are also acceptable.
35	3.3 Gantry travel	Anchor sockets shall be provided with the crane.	Anchor socket for storm anchor shall be supplied by customers because this is the civil work.	Accepted
36	3.17 Sheaves	All sheaves shall be statically balanced.	According to experience in performing many projects, Bidder recommend that sheaves do not need to be static balanced because they are non-critical items that give no any impact to crane life.	Not accepted. required to comply with tender condition
37	3.19 Gearbox	Vibration levels shall be monitored in both the horizontal and vertical directions at the input and output shafts of the above reducers.	With Bidder's experience, the vibration level does not need to be monitored because the alignment of gearbox will not be changed during crane operation and easily maintain by maintenance step.	Unless otherwise must be vibration free.
38	3.24 Crane wash down system	The crane shall be equipped with a suitable clean water wash down system incorporating storage tank, pumps, fixed pipes, valves and hoses. The storage capacity of the tank and pressure / flow provided at the discharging points shall be sized to ensure through cleaning of the crane structural surfaces can be achieved during routine maintenance shutdowns.	The tank installation on the crane is harmful to crane structure because the crane operation can make a water fluctuation inside tank. Bidder recommend to install crane washing piping on the crane and the cleaning water to be supplied by customer.	the water pumps is required with proper debi and presure



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39	4.5 Wiring	Cabling for 380/415V shall be 600/1000V grade XLP/SWA/PVC cable.	Cabling for 380/415V shall be 600/1000V grade XLPE/PVC cable. With Doosan's experience, due to the various conduit way and limited space, Crane can not use XLPE/SWA/PVC cable (Armored Cable). Normally it should be XLPE/PVC cable. .XLPE : Materials of Insulation .SWA : Single Layer of Round Wire Armored (Steel Wire Armored) .PVC : Materials of Sheath	Acceptable.