



Port of Hai Phong Joint Stock Company

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V/v: Chào giá cung cấp các cầu STS
Ref.: Request for Quotation for STS

Hải Phòng, ngày 15/07/2026
Hai Phong, July 15, 2026

Kính gửi Quý Công ty,

Dear Sirs/Madams,

Công ty cổ phần Cảng Hải Phòng (Cảng Hải Phòng) xin gửi tới Quý Công ty lời chào trân trọng.

Port of Hai Phong Joint Stock Company (hereinafter referred to as “Port of Hai Phong”) would like to extend our respectful greeting.

Hiện nay, Cảng Hải Phòng đang có nhu cầu mua cần trục xếp dỡ container tại Chi nhánh Cảng Tân Vũ. Để có cơ sở xây dựng dự toán mua sắm của dự án, Cảng Hải Phòng đề nghị Quý Công ty cung cấp chào giá cung cấp cần trục với các thông tin theo tài liệu kèm theo. Cảng Hải Phòng đề nghị Quý Công ty gửi chào giá (giá ước tính) trước ngày 30/7/2026 để đảm bảo tiến độ cho việc lập dự toán mua sắm.

Port of Hai Phong are currently planning to procure a STS crane for Tan Vu Terminal. To facilitate the preparation of the project's procurement budget, Port of Hai Phong kindly request that your company provide a budgetary quotation for the supply of the crane based on the specifications and information contained in the attached documents.

Port of Hai Phong would appreciate receiving your quotation (estimated cost) by 30 July 2026 at the latest to ensure the equipment procurement cost estimate can be prepared on time.

Biểu mẫu chào giá theo bảng như sau.

The quotation form is as follows.

Nội dung	Lựa chọn 1 Option 1		Lựa chọn 2 Option 2	
	Yêu cầu của Cảng Hải Phòng Requirement	Đề xuất của nhà cung cấp An alternative proposal	Yêu cầu của Cảng Hải Phòng Requirement	Đề xuất của nhà cung cấp An alternative proposal
Giá CIF CIF price				
Giá dịch vụ Related Services Price				

Ghi chú:

Notes:

1. Giá chào là giá CIF tại cảng Tân Vũ, đã bao gồm các loại thuế, phí và lệ phí mà nhà thầu phải nộp tại quốc gia sản xuất, bao gồm:

The Quotation price is CIF Tan Vu Terminal, inclusive of taxes, fees, and charges payable by the contractor in the country of manufacture, including:

(i) Giá hàng hóa: Giá CIF tại Cảng Tân Vũ, đã bao gồm tất cả các loại thuế, thuế suất, lệ phí và các khoản phí do Nhà cung cấp phải nộp tại quốc gia sản xuất.

Goods Price: The CIF price at the Tan Vu Terminal, inclusive of all taxes, duties, fees, and charges payable by the Supplier in the country of manufacture.

(ii) Giá các dịch vụ liên quan: Đã bao gồm 10% thuế giá trị gia tăng (VAT) và có thể được điều chỉnh theo các quy định pháp luật hiện hành tại thời điểm xuất hóa đơn (nếu có).

Related Services Price: Inclusive of 10% value-added tax (VAT), and subject to adjustment in accordance with applicable laws and regulations in effect at the time of invoice issuance (if any).

2. Nhà cung cấp chào giá (chi phí ước tính) cho cả hai phương án được mô tả ở trên. Mỗi phương án có thể bao gồm hai lựa chọn thay thế sau đây

The Supplier shall submit quotations (estimated costs) for both options described above. Each option may include the following two alternatives:

(i) Đề xuất tuân thủ đầy đủ các yêu cầu kỹ thuật do Chủ đầu tư quy định, bao gồm các thông số kỹ thuật, nhãn hiệu và quốc gia xuất xứ của các thành phần chính được liệt kê trong bảng kèm theo; và

A compliant proposal that fully meets the Employer's specified technical requirements, including the required specifications, brands and countries of origin of the main components as listed in the attached documents; and

(ii) Một đề xuất thay thế dựa trên các thương hiệu và/hoặc quốc gia xuất xứ do Nhà cung cấp khuyến nghị đối với các thành phần chính, với điều kiện là thiết bị được đề xuất phải tuân thủ đầy đủ các yêu cầu kỹ thuật của Chủ đầu tư và đạt được hiệu suất, chất lượng, độ tin cậy, khả năng bảo trì, tiến độ dự án cũng như các yêu cầu về bảo hành tương đương hoặc vượt trội hơn.

An alternative proposal based on the Supplier's recommended brands and/or countries of origin for the main components, provided that the proposed equipment fully complies with the Employer's technical requirements and achieves equivalent or superior performance, quality, reliability, maintainability, project schedule and warranty requirements.

Trân trọng.

Yours sincerely.

Recipient:

- As addressed;
- General Director (to report);
- Company Office (for website posting);
- Archive: VT, KT



Chu Minh Hoang
Deputy General Director

GENERAL TECHNICAL SPECIFICATION

1. General Technical Specification

No.	Criteria	Requirement		Supplier to fill in
I	General Information	Option 1	Option 2	
1.	Crane Type	Ship-to-Shore Gantry Crane (QC/STS) specialized for container handling. Rail-mounted, powered by the main grid. Includes spreader, cable reel and cable, storm anchors and tie-down cable	Ship-to-Shore Gantry Crane (QC/STS) specialized for container handling. Rail-mounted, powered by the main grid. Includes twin lift 20' spreader, cable reel and cable, storm anchors and tie-down cable	
2.	Quantity	02 unit& 01 beam hook	02 unit& 01 beam hook	
3.	Condition	100% brand new	100% brand new	
4.	Delivery time (maximum)	13 months	13 months	
5.	Warranty time condition			
	a- General Crane Components All general components of the crane, including but not limited to the crane structure and mechanisms, brakes, couplings, wire-rope systems, cable reels, elevators, drive systems, motors, operator's cabin, control panels, electrical cabinets and components, air-conditioning systems, main transformers, LED lighting, and all other electrical and mechanical components,	24 months	24 months	
	b- Painting system	36 months	36 months	

No.	Criteria	Requirement		Supplier to fill in
		36 months	36 months	
	c- Steel structure			
	d- Boom- Hoist-Trolley gearboxes	60 months	60 months	
II	Detailed specifications			
1.	Manufacturing Standard	FEM / DIN EN/JIS	FEM / DIN EN/JIS	
2.	Boom Type	Double girder type or single girder type	Double girder type or single girder type	
3.	Steel Structure	FEM	FEM	
4.	Crane Duty Class	FEM	FEM	
5.	Rated capacity under cargo beam hook	50 tons	65 tons	
6.	Rated capacity under spreader	40 tons	50 tons (twin lift 20' spreader)	
7.	Outreach Seaside calculated from the center of the waterside rail	43 meter	43 meter	
8.	Backreach Landside calculated from the center of the landside rail	16 meter	16 meter	
9.	Rail Span	20 meter (Existing)	20 meter (Existing)	
10.	Rail Type	QU80 (Existing)	QU80 (Existing)	
11.	Longitudinal distance between leg bogies	≥17 meter	≥17 meter	
12.	Minimum vertical clearance under portal beam	14 meter	14 meter	
13.	Max. lift height from waterside rail top to the bottom of the container spreader	33 meter	33 meter	

No.	Criteria	Requirement		Supplier to fill in
14.	Max. dredging depth from waterside rail top to the bottom of the container spreader	12 meter	12 meter	
15.	Crane travel distance	200 meters each side from the power connection box	200 meters each side from the power connection box	
16.	Trolley travel mechanism	Direct drive	Direct drive	
17.	Trolley drive type	Direct drive	Direct drive	
18.	Trolley wheels	Made of forged steel or cast steel	Made of forged steel or cast steel	
19.	Crane travel mechanism (Gantry)	The crane is supported by 4 wheel bogies. Equipped with at least 02 storm pins at the crane centerline and 04 storm anchors at the corners. Equipped with an automatic anti-collision system between cranes (laser or ultrasonic sensors); and between the crane and ship structures/equipment (laser or ultrasonic sensors). The crane shall be equipped with electrical interlocks to ensure no travel movement occurs during hoisting/lowering	The crane is supported by 4 wheel bogies. Equipped with at least 02 storm pins at the crane centerline and 04 storm anchors at the corners. Equipped with an automatic anti-collision system between cranes (laser or ultrasonic sensors); and between the crane and ship structures/equipment (laser or ultrasonic sensors). The crane shall be equipped with electrical interlocks to ensure no travel movement occurs during hoisting/lowering	
20.	Maximum wheel load on rail	≤ 400 KN	≤ 400 KN	
21.	Gantry travel operation	- The travel is performed by 4 wheel bogies. All 4 bogies are driven units, powered by electric motors, gearboxes, and integrated brakes. Motors and gearboxes are protected by covers. - Number of wheels per bogie: ≤12 pcs	- The travel is performed by 4 wheel bogies. All 4 bogies are driven units, powered by electric motors, gearboxes, and integrated brakes. Motors and gearboxes are protected by covers. - Number of wheels per bogie: ≤12 pcs	
22.	Wind load resistance	The crane is capable of withstanding wind speeds as follows: - Operating: 0 m/s to 20 m/s. - Non-operating (storm stowed): 20 m/s to 55 m/s - The crane shall be capable of traveling over a distance of 200 m under wind speeds of up to 25 m/s	The crane is capable of withstanding wind speeds as follows: - Operating: 0 m/s to 20 m/s. - Non-operating (storm stowed): 20 m/s to 55 m/s - The crane shall be capable of traveling over a distance of 200 m under wind speeds of up to 25 m/s	

No.	Criteria	Requirement		Supplier to fill in
23.	Lightning protection system	Equipped with a complete lightning protection system, including a lightning rod, surge protective devices (SPDs), lightning down conductors, rail grounding shoes, and surge protection devices for the power supply system	Equipped with a complete lightning protection system, including a lightning rod, surge protective devices (SPDs), lightning down conductors, rail grounding shoes, and surge protection devices for the power supply system	
24.	Cable reel installation	- Installed on the waterside (seaside) leg. - The distance from the center of the cable to the center of the outer seaside rail must be compatible with the infrastructure at the Project Site	- Installed on the waterside (seaside) leg. - The distance from the center of the cable to the center of the outer seaside rail must be compatible with the infrastructure at the Project Site	
25.	Tallyman's cabin located between the landside sill beams	Equipped	Equipped	
26.	Safety stoppers (Bumpers)	Safety stoppers are arranged at the bogie frames to prevent the crane from dropping more than 20 mm in the event of a wheel or axle failure.	Safety stoppers are arranged at the bogie frames to prevent the crane from dropping more than 20 mm in the event of a wheel or axle failure.	
27.	Interlocks	Equipped with electrical interlocks to ensure the main hoist and gantry travel do not operate during boom hoisting/lowering. The boom hoist shall not be operated while the trolley is in motion.	Equipped with electrical interlocks to ensure the main hoist and gantry travel do not operate during boom hoisting/lowering. The boom hoist shall not be operated while the trolley is in motion.	
28.	Power Supply	AC 22 KV $\pm$ 12%, 50 Hz $\pm$ 1%, 3 phase	AC 22 KV $\pm$ 12%, 50 Hz $\pm$ 1%, 3 phase	
29.	Total installed capacity	$\leq$ 1.250 KVA	$\leq$ 1.500 KVA	
30.	Power supply cable	Round cable type	Round cable type	
31.	Electric motors	Three-phase asynchronous motors	Three-phase asynchronous motors	
32.	Gearbox type	The gearbox shall be of an oil-tight design, equipped with an oil dipstick and oil drain/fill plugs	The gearbox shall be of an oil-tight design, equipped with an oil dipstick and oil drain/fill plugs	
33.	- Full load hoisting speed - Acceleration/Deceleration	$\geq$ 90 meter/min $\leq$ 3,75s/3,75s	$\geq$ 90 meter/min $\leq$ 3,75s/3,75s	

No.	Criteria	Requirement		Supplier to fill in
34.	- Empty hoisting speed - Acceleration/Deceleration	≥ 180 meter/min $\leq 1,88s/1,88s$	≥ 180 meter/min $\leq 1,88s/1,88s$	
35.	- Full load trolley speed - Acceleration/Deceleration	≥ 210 meter/min $\leq 5,0s/5,0s$	≥ 210 meter/min $\leq 5,0s/5,0s$	
36.	- Gantry travel speed - Acceleration/Deceleration	≥ 46 meter/min $\leq 5,0s/5,0s$	≥ 46 meter/min $\leq 5,0s/5,0s$	
37.	Boom hoist speed	≤ 6 minutes per one hoist or lower cycle	≤ 6 minutes per one hoist or lower cycle	
38.	Crane handling rate	≥ 36 moves/h	≥ 36 moves/h	
39.	Operating temperature	0°C to $+ 50^{\circ}\text{C}$	0°C to $+ 50^{\circ}\text{C}$	
40.	Absolute humidity	100%	100%	
41.	List/Stream/Skew	$\pm 3^0/\pm 3^0/\pm 5^0/$	$\pm 3^0/\pm 3^0/\pm 5^0/$	
42.	Spreader	The spreader shall be capable of handling standard ISO containers of 20 ft, 40 ft, and 45 ft, and shall also be suitable for handling overheight containers. The spreader shall be equipped with guide flippers, which shall be directly controlled from the operator's cabin. Each corner of the spreader shall be fitted with at least one (1) guide roller or guide pad to facilitate accurate engagement of the spreader with containers during loading and unloading operations in the ship's hold. Each twistlock corner shall be equipped with at least the following: • One (1) landing sensor to detect container contact; • One (1) lock sensor to confirm the twistlock locked position;	Twin-lift spreader 2x20', which is convenient for maintenance and repairs; with automatic adjustable length and suitable for ISO 20', 40', and 45' container, and shall also be suitable for handling overheight containers. When required, able to lift two 20' container at the same time. Each corner of the spreader shall be fitted with at least one (1) guide roller or guide pad to facilitate accurate engagement of the spreader with containers during loading and unloading operations in the ship's hold. Each twistlock corner shall be equipped with at least the following: • One (1) landing sensor to detect container contact; • One (1) lock sensor to confirm the twistlock locked position;	

No.	Criteria	Requirement	Supplier to fill in
		One (1) unlock sensor to confirm the twistlock unlocked position. The twistlock locking and unlocking mechanism shall be provided with a mechanical interlock to ensure safe and reliable operation. The connection between the spreader and the headblock shall be made by means of connecting pins, allowing quick and convenient removal and installation for maintenance and repair. The spreader shall be equipped with locking and anti-shift mechanisms at both the 20 ft and 40 ft operating positions. These mechanisms shall be interlocked to ensure safe operation during telescoping between container sizes. The spreader shall be equipped with an automatic grease lubrication system supplying grease to all required lubrication points. The telescoping time from 20 ft to 40 ft and vice versa shall not exceed 30 seconds. The twistlock locking or unlocking time shall not exceed 1.5 seconds	One (1) unlock sensor to confirm the twistlock unlocked position. Equipped with locking mechanism, anti-movement mechanism at the position of 20, 40, 45ft. Equipped with automatic greasing system to location on the spreader Equipped with TTDS to detect two 20' containers Able to record two position data (to calculate the gap between two containers), when handling 2*20' containers The spreader shall be equipped with locking and anti-shift mechanisms at both the 20 ft and 40 ft operating positions. These mechanisms shall be interlocked to ensure safe operation during telescoping between container sizes. The spreader shall be equipped with an automatic grease lubrication system supplying grease to all required lubrication points. The telescoping time from 20 ft to 40 ft and vice versa shall not exceed 30 seconds. The twistlock locking or unlocking time shall not exceed 1.5 seconds
43.	Spreader Structure	Single or double girder structure sliding within a box-type main girder. Design ensures excellent visibility for the operator from the cabin	Single or double girder structure sliding within a box-type main girder. Design ensures excellent visibility for the operator from the cabin
44.	Telescoping drive (20ft/40ft)	Driven by belts or chains, ensuring resistance to impact loads during expansion/retraction	Driven by belts or chains, ensuring resistance to impact loads during expansion/retraction
45.	Anti-sway system	Automatic control via the crane's central controller or an independent controller.	Automatic control via the crane's central controller or an independent controller.
46.	Control system & Inverter	Features regenerative braking and resistor braking (switchable via cabin). Equipped with sockets/panels for backup generator connection to	Features regenerative braking and resistor braking (switchable via cabin). Equipped with sockets/panels for backup generator connection to

No.	Criteria	Requirement		Supplier to fill in
		operate boom hoist, trolley, and main hoist in emergency mode	operate boom hoist, trolley, and main hoist in emergency mode	
47.	Motor voltage	AC 400 V $\pm$ 10%, 50 Hz, 3-phase; speed controlled by inverter.	AC 400 V $\pm$ 10%, 50 Hz, 3-phase; speed controlled by inverter.	
48.	Control voltage	AC 230V $\pm$ 10%, DC 24V	AC 230V $\pm$ 10%, DC 24V	
49.	Lighting voltage	AC 230V $\pm$ 10%	AC 230V $\pm$ 10%	
50.	Elevator	Capacity $\geq$ 400kg. Travel: from ground level to the highest floor level with the machinery room door. 04 stops: near ground, cable reel entrance, cabin entrance, and machinery room entrance.	Capacity $\geq$ 400kg. Travel: from ground level to the highest floor level with the machinery room door. 04 stops: near ground, cable reel entrance, cabin entrance, and machinery room entrance.	
51.	Electric hoist $\geq$ 5,000 Kg	Installed electric hoist 5,000 Kg in the main hoist room and boom hoist room for internal equipment handling.	Installed electric hoist 5,000 Kg in the main hoist room and boom hoist room for internal equipment handling.	
52.	Overload protection & Anemometer	Uses a dedicated processor or integrated into the crane's central controller; error margin $<$ 1%. Load parameters displayed on cabin screen and in the electrical room	Uses a dedicated processor or integrated into the crane's central controller; error margin $<$ 1%. Load parameters displayed on cabin screen and in the electrical room	
53.	Industrial PC, Printer, and Displays	PC and printer installed in the electrical room (vibration-resistant). Cabin equipped with a touch screen (min. 5.7 inches) to display status, operating hours, and faults.	PC and printer installed in the electrical room (vibration-resistant). Cabin equipped with a touch screen (min. 5.7 inches) to display status, operating hours, and faults.	
54.	Air conditioning in Electrical Room	At least 02 air conditioners operating alternately according to a preset program, maintaining internal temperature at 20-25°C	At least 02 air conditioners operating alternately according to a preset program, maintaining internal temperature at 20-25°C	
55.	Cleaning, Coating, and Preservation	The crane shall be cleaned and painted in accordance with the standards of the crane manufacturer or the paint manufacturer	The crane shall be cleaned and painted in accordance with the standards of the crane manufacturer or the paint manufacturer	
56.	Crane Management System	Equipped with a monitoring system to display and store minimum information as below: + Fault Display: Errors are displayed and archived chronologically. Data can be stored on the hard drive.	Equipped with a monitoring system to display and store minimum information as below: + Fault Display: Errors are displayed and archived chronologically. Data can be stored on the hard drive.	

No.	Criteria	Requirement		Supplier to fill in
		+ Fault Diagnosis: Display data that allows for fault tracing (analog or digital data) via graphs and lists for investigating and diagnosing root causes. All data can be stored on the hard drive + Production data: Operational logs (cycles, container size/ weight, timestamps) shall be recorded. This information can be printed or stored on the hard drive. The monitoring system shall be integrated with the Client's IT system to allow for remote monitoring of crane activities via computers or mobile devices	+ Fault Diagnosis: Display data that allows for fault tracing (analog or digital data) via graphs and lists for investigating and diagnosing root causes. All data can be stored on the hard drive + Production data: Operational logs (cycles, container size/ weight, timestamps) shall be recorded. This information can be printed or stored on the hard drive. The monitoring system shall be integrated with the Client's IT system to allow for remote monitoring of crane activities via computers or mobile devices	
57.	Synchronized Spare Parts	01 set per crane (according to manufacturer standards)	01 set per crane (according to manufacturer standards)	
58.	Operational Safety System	Equipped with lights, sirens, bells, speakers, microphones, and telephones.	Equipped with lights, sirens, bells, speakers, microphones, and telephones.	
59.	Toolkits	01 toolkit per crane (base on manufacturer's standards). Contractor must provide a full list of materials, spares, specialized tools, consumables ... (hereinafter referred to as 'Materials and Spare Parts') necessary to ensure the proper and continuous operation of the commodity throughout the crane's warranty period)	01 toolkit per crane (base on manufacturer's standards). Contractor must provide a full list of materials, spares, specialized tools, consumables ... (hereinafter referred to as 'Materials and Spare Parts') necessary to ensure the proper and continuous operation of the commodity throughout the crane's warranty period)	
60.	Laptop	01 unit per crane (Includes licensed control software compatible with the crane, including: PLC, inverters, and CMS) Config: 15-inch screen, Minimum Core i7 Gen 10+, 16GB RAM, 1TB SSD, Dedicated GPU.	01 unit per crane (Includes licensed control software compatible with the crane, including: PLC, inverters, and CMS) Config: 15-inch screen, Minimum Core i7 Gen 10+, 16GB RAM, 1TB SSD, Dedicated GPU.	
61.	Technical Documentation	01 sets per crane (Catalogue, Part Manual, Instruction Manual) Includes source codes and software access codes. Lifetime licenses for PLC and CMS software.	01 sets per crane (Catalogue, Part Manual, Instruction Manual) Includes source codes and software access codes. Lifetime licenses for PLC and CMS software.	

No.	Criteria	Requirement		Supplier to fill in
62.	External electric maintenance hoist, lifting capacity $\geq 2,000$ kg	The crane shall be equipped with three (03) electric maintenance hoists installed at three (03) locations: one (01) hoist at the land-side end of the girder, one (01) hoist at the waterside end of the girder, and one (01) hoist at the connection area between the waterside and landside girders. Each electric hoist shall have a minimum lifting capacity of 2,000 kg, a working reach of 3.5–4 m, and a lifting height from the quay deck level to the underside of the electric hoist boom, allowing equipment to be lifted from below the quay for maintenance and repair of external components of the crane	The crane shall be equipped with three (03) electric maintenance hoists installed at three (03) locations: one (01) hoist at the land-side end of the girder, one (01) hoist at the waterside end of the girder, and one (01) hoist at the connection area between the waterside and landside girders. Each electric hoist shall have a minimum lifting capacity of 2,000 kg, a working reach of 3.5–4 m, and a lifting height from the quay deck level to the underside of the electric hoist boom, allowing equipment to be lifted from below the quay for maintenance and repair of external components of the crane	

2. Table of main components

No	Part Name	Requirement		Supplier to fill in
		Manufacturer	Origin	
I.	Main Hoist			
	Gearbox	Siemens/Flender/Sew/Nord/PIV/ Zollern/ Samshin/ Sumitomo	G20	
	Bearings of gearbox	SKF/ Timken/ FAG/NTN/Nachi	EU/G7	
	Main Electric Motor	Yaskawa/Fuji/ABB/Siemens	G7	
	Service brake	Hilmar/ Ican/Sibre/ Bubenzer	EU/G7	
	Emergency Brake	Hilmar/ Ican/Sibre/ Bubenzer	EU/G7	
II.	Boom Hoist			
	Gearbox	Siemens/Flender/Sew/Nord/PIV /Zollern/ Samshin/ Sumitomo	G20	
	Bearings of gearbox	SKF/ Timken/ FAG/NTN/Nachi	EU/G7	
	Main Electric Motor	Yaskawa/Fuji/ABB/Siemens	G7	
	Service brake	Hilmar/ Ican/Sibre/ Bubenzer	EU/G7	
	Emergency Brake	Hilmar/ Ican/Sibre/ Bubenzer	EU/G7	
III.	Trolley Travel Mechanism			
	Gearbox	Siemens/Flender/Sew/Nord/PIV/Zoll ern/ Samshin/ Sumitomo	G20	
	Bearings of gearbox	SKF/ Timken/ FAG/NTN/Nachi	EU/G7	
	Main Electric Motor	Siemens /Fuji/Sew /ABB	G20	
IV.	Crane Travel Mechanism			
	Gearbox	Siemens/Flender/Sew/Nord/PIV/Zoll ern/ Samshin/ Sumitomo	G20	
	Bearings of reducer	SKF/ Timken/ FAG/NTN/Nachi	EU/G7	
	Main Electric Motor	Siemens /Fuji/Sew/ABB	G20	

No	Part Name	Requirement		Supplier to fill in
		Manufacturer	Origin	
	Rail Wheel Bearing	SKF/ Timken/ FAG/ NBI/NSK/NTN/Nachi	G20	
V.	Spreader	STINIS/Bromma/Elme	Not required	
VI.	Other Mechanical			
	Hydraulic Equipment	Rexroth/ Vicker/ Packer/ Eton/ Hydac	G7/ G20	
	Trim/List/Skew Mechanism	Flender/ Nord/ PIV/ Zollern/ Sumitomo/ SEW	G20	
VII.	Power Supply System			
	Power Cable Reel (including power cable and slip ring assembly)	Cable reel: Delacheaux/ Hilmar/ Stemann/ Wampfler/ Cavotec/ Nichiden shoko Reel cable: Stemann/ Wampfler/ Cavotec/ Prysmian	Not required	
	Festoon Cable	Conductix-Wampfler/ Siemen/Lapp/ Sumitomo/Fujikura/Yaskawa/ Vahle/Igus/Stemann/ Prysmian	Not required	
	Medium Voltage Power Cable (from cable reel to transformer)	Conductix-Wampfler/ Siemen/ Lapp/ Fujikura Yaskawa/ Igus/ Prysmian/ Pirelli/ Nexans/ Witt+Arnold	Not required	
	Fixed Power Cable	Conductix-Wampfler/ Siemen/ Lapp/ Fujikura Yaskawa/ Igus/ Prysmian/ Pirelli/ Nexans/ Witt+Arnold	Not required	
	Spreader Cable	Igus/ Prysmian/ Brevetti	EU	
	Medium Voltage Transformer	Siemen. ABB/ Yaskawa/ Fuji/ TMC/ GE	G20	
VIII	Control System			

No	Part Name	Requirement		Supplier to fill in
		Manufacturer	Origin	
	PLC + modul I/O	Siemens/Schneider/Yaskawa /Fuji	G7	
	Inverter	Siemens/Schneider/Yaskawa/Fuji (same manufacturer as PLC + I/O module)	G7	
	Power Regeneration System	Siemens/Schneider/Yaskawa/Fuji (same manufacturer as PLC + I/O module)	G7	
	CMS	Siemens/Schneider/Yaskawa/ Omron/Fuji	G7/ G20	
	ACB	Siemens/Schneider/ Yaskawa/ Omron/Fuji	G7/G20	
	Protection Devices	Siemens/Schneider/Yaskawa/ Omron/Fuji	G7/G20	
IX.	Other Electrical Equipment			
	Encoder	Siemens/Baumer/Leine Linde/ Tamagawa	EU	
	Weighing System	Lasstec/ Kruger/PAT/Magtrol/ Vibrometer/WIKA/Brosa/ Isetron/ Kyowa/Toyo Sokki	G20	
	Limit Switch	IFM/ Dr. Tiefenbach/ Stromag/ Schmersal/ Sakamoto/Omron/Efector/ Tamagawa/ Matsushima/ Hirschmann/SICK	EU/G7/ China	
	Loadcell	Lasstec/ Kruger/PAT/Magtrol/ Vibrometer/WIKA/Brosa/ Isetron/ Kyowa/Toyo Sokki	G20	
	LED lights for main girder, boom, and cabin	Philips/ Hubell/GE Estra-Schneider/LiproFa/Sill/ Iwasaki/ Kokosha/ Nanhua	G20	
X.	Elevator	Alimak/Geda/Stros/Yoneyama	G20	

No	Part Name	Requirement		Supplier to fill in
		Manufacturer	Origin	
XI.	Paint	International/ Jotun/Nippon/Kansai/Chugoku	G20	
XII.	Wire Rope	Casar/Diepa/ Bridon/ Tesac- Shrinko/Tokyo/J-Witex/ Teufelberger	G20	
XIII	Air Conditioner	The air-conditioning outdoor unit shall be suitable for installation and operation in a marine port environment. Non R22	Not required	