

## **TRANSNET NATIONAL PORTS AUTHORITY**

### **TECHNICAL SPECIFICATION FOR THE SUPPLY AND DELIVERY OF PONTON CONNECTORS FOR THE INFRASTRUCTURE DEPARTMENT – PORT OF RICHARDS BAY**

#### **1. SCOPE OF WORK**

The work covered by this part of the contract consists of the following:

Supply and Delivery of Pontoon Connectors for the Infrastructure Department-  
Transnet National Ports Authority, Port of Richards Bay.

#### **2. TO BE SUPPLIED BY THE SERVICE PROVIDER**

The Service Provider shall supply and deliver pontoon connectors for the Infrastructure Department in the Port of Richards Bay within a period of six (6) months.

The material shall conform to the specified quality and standards as outlined in this specification.

#### **3. TO BE SUPPLIED BY TRANSNET NATIONAL PORTS AUTHORITY**

None.

#### **4. ADVANCE PAYMENT FOR MATERIAL SUPPLIED BY THE SERVICE PROVIDER**

No advance payments will be made by TNPA for materials supplied by the Contractor. Payment will be made upon successful delivery and verification of material compliance.

#### **5. GENERAL**

No amendment or variation of, or addition to this agreement shall be of any force or effect unless reduced to writing and signed by both parties.

The Delivery notes will be signed with the front page retained by Transnet

representative at the delivery site and the duplicate must be kept by the Service Provider and submitted with the invoices as evidence.

## **6. WORK SPECIFICATION**

### **6.1 PONTOON CONNECTORS**

The Service Provider shall supply and deliver:

- 65 x connectors, each connector shall meet the following requirements:
  - Tensile Force = 750 kN
  - Compressive Force = 140 kN
  - Pre-load on Assy. = 140 kN
  - Angle of rotation = 6.05°
  - Contain a 36 mm diameter x 690 mm long (685 mm minimum length) carbon steel wire cable with the following material properties:
    - Ref 6 x 36 IWRC
    - Tensile strength not less than 810 Kn
    - Yield strength not less than 680 kN
    - The ability to elongate more than 10% of the original size.
  - The ends of the wire cable shall be crimped within 316L stainless steel threaded tie rods to a depth of 120mm. The threaded tie rods shall have a tensile strength not less than 550 MPa, yield strength not less than 305 MPa and the dimensions of the threaded tie rods be as per the drawing number 1500 (Section D-D).
  - The wire cable and a section of the tie rods (as per drawing number 1500) shall be vulcanized (as per drawing number 1500) with a natural rubber sleeve that complies with the following material properties:
    - A hardness of 68-75° shore A (DIN 53505) with a 3 second delay.
    - Tensile strength not less than 20 MPa.
    - The ability to elongate no less than 400% of the original size.
    - Conform to the material properties outlined in drawing number 1500.
  - The dimensions of the rubber shall be as per drawing number 1500.

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- 130 x 316L stainless steel M56 lock nuts.
- 130 x 316L stainless steel M56 retainer nuts.
- 130 x 316L stainless steel M56 flat washers with a thickness of 4mm.
- 130 x 316L stainless steel end plates with an outer diameter of 180 mm, inner diameter of 60 mm and a thickness of 30 mm.
- 65 x rubber bearings of 24 kg mass and which meet the following requirements:
  - A hardness of 68-75° shore A (DIN 53505) with a 3 second delay.
  - Tensile strength not less than 20 MPa.
  - The ability to elongate not less than 400% of its original length.
  - Rubber shall be UV resistant.
  - Rubber shall be fabric reinforced to achieve a bearing compressive stiffness of 15.5 kN/mm (at 140 kN the deflection should be 9mm ± 10%) and rotational stiffness at 6.05° not exceeding 50kN.
  - Bearing compression set test shall be conducted as outlined in drawing number 1500.
  - Conform to the material properties outlined in drawing number 1500.

All dimensions must be as per the attached drawing number 1500 (where applicable).

All 316L Stainless steels shall meet the following material properties:

- Tensile strength of 550MPa
- Yield strength of 305 MPa
- Ability to elongate at least 30% of its original length.

## **7. QUALITY REQUIREMENTS AND DOCUMENTS RETURNED UPON DELIVERY**

- Laboratory load test results and certificate indicating the pontoon connector test specimen results and a quality assurance certificate, for the supplied pontoon connectors, signed off by a certified competent person.
- Laboratory load test results and certificate indicating the natural rubber test specimen Shore A results and a quality assurance certificate, for the supplied natural rubber, signed off by a certified competent person.

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- Laboratory load test results and certificate indicating the rubber bearings test specimen results and a quality assurance certificate, for the supplied tie bars, signed off by a certified competent person.
- As part of the submission, the Service Provider shall submit an installation methodology.
- The Service Provider shall submit a manufacturer's warranty- a formal warranty certificate covering workmanship, material defects, and corrosion resistance for 12 months.
- TNPA shall witness the testing process. The Service Provider shall notify TNPA of the testing at least a week prior to the testing.

**8. HANDLING AND STORAGE**

- The material shall be handled and stored in accordance with the manufacturer's instructions.

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**\*For Technical Drawings refer to Annexure B**

**SITE PICTURES**