



Oil Companies International Marine Forum

MTIS Programme

Terminal TPQ

Terminal TPQ: REPSOL BANATICA

ReportName d8c3ed32-1105-473c-84aa-4fff16a8ca99

Terminal Name: REPSOL BANATICA

Terminal Port: LISBOA

Terminal Port Authority: ADMINISTRAÇÃO DE PORTO DE LISBOA

Country: Portugal

13 November 2015

1 General

| | | |
|-----|--|--------------------------|
| 1.1 | Date this TPQ document was completed/updated | 24 September 2015 |
| 1.2 | Specify units used | Metres and Metric Tonnes |

2 Port Details

| | | |
|-----|---|---|
| 2.1 | Port Name | LISBOA |
| 2.2 | UN LOCODE | PTLIS |
| 2.3 | Country | Portugal |
| 2.4 | Latitude and Longitude of Port | |
| 1 | Latitude | 384040 North |
| 2 | Longitude | 0091147 West |
| 2.5 | Is this location affected by ice? | No |
| 2.6 | Name of port authority | ADMINISTRAÇÃO DE PORTO DE LISBOA |
| 2.7 | Port authority contact name and title | PAULO ESTEVES CARDOSO & Comandante |
| 2.8 | Port authority full style contact address | |
| 1 | Address Line 1 | APL / Administração do Porto de Lisboa S.A. |
| 2 | Address Line 2 | Edifício Infante D. Henrique |
| 3 | Address Line 3 | Doca de Alcantara (Norte) |
| 4 | City | LISBOA |
| 5 | County/State | PORTUGAL |
| 6 | Postcode/Zipcode | 1399-012 |
| 7 | Phone | 00351213922000 |
| 8 | Fax | 00351213922041 |
| 9 | Email | hmajor@portodelisboa |
| 10 | Website | www.portodelisboa.pt |

3 Terminal Details

| | | |
|-----|---|--------------------------------------|
| 3.1 | Terminal name | REPSOL BANATICA |
| 3.2 | Terminal owner | REPSOL PORTUGUESA S.A. |
| 3.2 | Number of berths included in this TPQ | 2 |
| 3.3 | Name of first point of contact for terminal owner | JOSE LUIS FIGUEIRA |
| 3.4 | Terminal owner full style contact address | |
| 1 | Address Line 1 | REPSOL BANATICA |
| 2 | Address Line 2 | R: Conselheiro Manuel Luis Fernandes |
| 3 | Address Line 3 | BANATICA |
| 4 | City | Monte de Caparica - Almada |
| 5 | County/State | SETUBAL |
| 6 | Postcode/Zipcode | 2825-031 |

| | | |
|-----|--|--------------------------------------|
| 7 | Phone | 00351212945200 |
| 8 | Fax | 00351212950511 |
| 9 | Email | jasilva@repsol.com |
| 10 | Website | www.repsol.com |
| 3.5 | Terminal operator, if different from owner | REPSOL PORTUGUESA S.A. |
| 3.6 | Name of first point of contact for terminal operator | JOSE LUIS FIGUEIRA |
| 3.7 | Terminal operator full style contact address | |
| 1 | Address Line 1 | REPSOL BANATICA |
| 2 | Address Line 2 | R: Conselheiro Manuel Luis Fernandes |
| 3 | Address Line 3 | BANATICA |
| 4 | City | Monte de Caparica - Almada |
| 5 | County/State | SETUBAL |
| 6 | Postcode/Zipcode | 2825-031 |
| 7 | Phone | 00351212945200 |
| 8 | Fax | 00351212950511 |
| 9 | Email | jfigueira@repsol.com |
| 10 | Website | www.repsol.com |

4 TPQ Accountability

| | | |
|-----|--|---|
| 4.1 | Name and title of person completing this TPQ | JOSE ANTONIO ALMEIDA SILVA -Chefe de Movimentação de Produtos |
| 4.2 | Full style contact details of person completing this TPQ | |
| 1 | Address Line 1 | Rua Conselheiro Manuel Luis Fernandes |
| 2 | Address Line 2 | N/A |
| 3 | Address Line 3 | N/A |
| 4 | City | Banatica - Monte de Caparica |
| 5 | County/State | Almada / Portugal |
| 6 | Postcode/Zipcode | 2825-031 |
| 7 | Phone | +351 212945200 |
| 8 | Fax | +351 212 950 511 |
| 9 | Email | jasilva@repsol.com |

5 Port Facility Security Officer Details

| | | |
|-----|---|---|
| 5.1 | Does the port facility comply with the ISPS code? | |
| 1 | | Yes |
| 2 | Port Facility Security Officer contact name | Comandante Santos Costa |
| 5.2 | Port Facility Security Officer full style contact details | |
| 1 | Address Line 1 | APL / Administração do Porto de Lisboa S.A. |
| 2 | Address Line 2 | Edifício Infante D. Henrique |
| 3 | Address Line 3 | Doca de Alcantara (Norte) |
| 4 | City | LISBOA |

| | | |
|---|------------------|----------------------|
| 5 | County/State | PORTUGAL |
| 6 | Postcode/Zipcode | 1399-012 |
| 7 | Phone | +351213922000 |
| 8 | Fax | +351213922041 |
| 9 | Email | hmajor@portodelisboa |

6 Operational Integrity Details

| | | |
|-----|--|--|
| 6.1 | State details of any pre-arrival/operational clearance formalities for vessels | 1- Confirm vessel has Repsol Vetting approval. 2- Confirm vessel compatibility with terminal particulars. |
| 6.2 | Has the terminal completed an assessment using the standard industry process? | |
| 1 | | Yes |
| 2 | If 'Yes', state date completed | 01 May 2007 |
| 6.3 | Additional comments or information | None |



Oil Companies International Marine Forum

MTIS Programme

Berth TPQ

Berth TPQ: CAIS 1

ReportName 5dee89b8-ac0c-4c59-8e9f-3361e9762dd1

Terminal Name: REPSOL BANATICA

Terminal Port: LISBOA

Terminal Port Authority: ADMINISTRAÇÃO DE PORTO DE LISBOA

Country: Portugal

Berth Name: CAIS 1

13 November 2015

1 Berth General

| | | |
|-----|---|---|
| 1.1 | Berth name or number | CAIS 1 |
| 1.2 | Berth type | |
| 1 | | Jetty - 'T' finger |
| 2 | If 'Other' please specify | |
| 1.3 | Terrestrial co-ordinates of manifold centreline | |
| 1 | Latitude | 384042 North |
| 2 | Longitude | 0091138 West |
| 1.4 | Berth users for liquid and gas cargoes | Repsol Portuguesa Suministros y Descargas |
| 1.5 | Has a structural survey of the berth been undertaken, including its underwater structure? | |
| 1 | | Yes |
| 2 | If 'Yes', state date of last survey | 31 March 2011 |
| 1.6 | Has an engineering (mooring and fendering) analysis of berth been undertaken? | |
| 1 | | Yes |
| 2 | If 'Yes', state date of last analysis | 30 November 2013 |
| 1.7 | Additional comments or information | None |

2 Berth Approaches

| | | |
|-----|--|--|
| 2.1 | Is pilotage compulsory? | |
| 1 | | Yes |
| 2 | If 'Yes', state if any vessels are exempted | No exemptions |
| 2.2 | State distance from pilot station(s) to berth | 12 nautical miles for vessels proceeding from / to sea. 2.5 nautical miles for waiting anchorage. |
| 2.3 | Is a waiting anchorage available? | |
| 1 | | Yes |
| 3 | If 'Yes', state distance from waiting anchorage to berth | 2.5 nautical miles. |
| 2.4 | Controlling depth of water for transit to and from berth | |
| 1 | Water depth | 11.50 Metres |
| 2 | State datum used | Chart Datum (CD) |
| 3 | If 'Other' please specify datum | |
| 2.5 | Date of latest survey from which transit depth has been determined | 01 September 2012 |
| 2.6 | Date next survey is due | 01 September 2014 |
| 2.7 | State Maximum Tidal Range in berth approaches | 4.00 |
| 2.8 | Is laden transit to and/or from the berth conducted using the tide? | |
| 1 | | Yes |
| 2 | If 'Yes', state optimum transit window (i.e. at High Water, HW +/- 1 hr) | Tide restrictions only for vessels with LOA above 105 meters. |

| | | |
|------|---|---|
| 2.9 | State details of any specific berthing and/or unberthing restrictions | Tide restrictions only for vessels with LOA above 105 meters. |
| 2.10 | Minimum under keel clearance (UKC) in berth approaches | |
| 1 | Value | 45.00 Centimeters |
| 2 | Percentage | 4.00 Depth of water |
| 3 | Specify other UKC criterion where applicable | none |
| 2.11 | Absolute maximum draught in berth approaches, if applicable | 11.00 |
| 2.12 | State minimum vertical clearance of any bridges/power cables/vertical obstructions | |
| 1 | Vertical clearance | 999.00 Metres |
| 2 | State datum used | Chart Datum (CD) |
| 3 | If 'Other' specify other datum used | No restriction |
| 4 | Further details | No obstructions. 999 m used to indicate no bridges or cables encountered from sea to berth and as a Non Applicable response is not offered. |
| 2.13 | Does the port require tankers and gas carriers to be escorted by tugs? | |
| 1 | | Yes |
| 2 | If 'Yes', state whether Active or Passive escort is employed and the maximum towline force that the tug is able to generate | passive escort for dangerous cargo carriers, except gas carriers which require active scort. |
| 2.14 | Additional comments or information | . |

3 Water Depth Alongside

| | | |
|-----|--|---|
| 3.1 | Minimum controlled water depth alongside berth at chart datum | |
| 1 | Water depth | 11.50 Metres |
| 2 | State datum used | Chart Datum (CD) |
| 3 | If 'Other' specify datum | |
| 3.2 | Date of latest survey from which alongside depth has been determined | 31 March 2012 |
| 3.3 | Date next survey is due | 31 March 2014 |
| 3.4 | Minimum static under keel clearance (UKC) alongside berth | |
| 1 | Value | 45.00 Centimeters |
| 2 | Percentage | 4.00 Vessel static draft |
| 3 | Specify other UKC criterion where applicable | None |
| 3.5 | State range of water densities at berth | |
| 1 | From | 1000.00 |
| 2 | To | 1025.00 |
| 3 | Further details | 1000 kg/cu.m when at low tide. 1025 kg/cu.m when at high tide. |
| 3.6 | Type of bottom alongside berth | |
| 1 | | Rock |
| 2 | If 'Other' please specify | |
| 3.7 | Absolute maximum draft alongside, if applicable | 11.00 |

| | | |
|-----|---|------|
| 3.8 | State maximum tidal range at berth, if applicable | 4.00 |
|-----|---|------|

| | | |
|-----|---|----|
| 3.9 | Are 'over-the-tide' cargo handling operations permitted at the berth? | No |
|-----|---|----|

| | | |
|------|---|----|
| 3.10 | Does the berth location experience water-level anomalies? | |
| 1 | | No |
| 2 | Provide details | |

| | | |
|------|------------------------------------|---|
| 3.11 | Additional comments or information | . |
|------|------------------------------------|---|

4 Limiting Vessel Dimensions

| | | |
|-----|-------------------|-----------------|
| 4.1 | Summer deadweight | |
| 1 | TPQ NA Selector | No restrictions |
| 2 | Minimum | 0.00 |
| 3 | Maximum | 0.00 |

| | | |
|-----|-----------------------|-----------------|
| 4.2 | Berthing displacement | |
| 1 | TPQ NA Selector | No restrictions |
| 2 | Minimum | 0.00 |
| 3 | Maximum | 0.00 |

| | | |
|-----|------------------------|-----------------|
| 4.3 | Alongside displacement | |
| 1 | TPQ NA Selector | No restrictions |
| 2 | Minimum | 0.00 |
| 3 | Maximum | 0.00 |

| | | |
|-----|--|-----------------|
| 4.4 | State any deadweight/displacement exceptions | |
| 1 | TPQ NA Selector | No restrictions |
| 2 | | No exceptions |

| | | |
|-----|-------------------------------|-----------------|
| 4.5 | Cubic capacity (gas carriers) | |
| 1 | TPQ NA Selector | No restrictions |
| 2 | Minimum | 0.00 |
| 3 | Maximum | 0.00 |

| | | |
|-----|-----------------------|---------------|
| 4.6 | Length over all (LOA) | |
| 1 | TPQ NA Selector | |
| 2 | Minimum | 0.00 Metres |
| 3 | Maximum | 105.00 Metres |

| | | |
|-----|-----------------|-----------------|
| 4.7 | Beam | |
| 1 | TPQ NA Selector | No restrictions |
| 2 | Minimum | 0.00 |
| 3 | Maximum | 0.00 |

| | | |
|-----|------------------------------------|-----------------|
| 4.8 | Minimum parallel body length (PBL) | |
| 1 | TPQ NA Selector | No restrictions |
| 2 | | 0.00 |

| | | |
|-----|---------------------------------|--|
| 4.9 | Minimum PBL forward of manifold | |
|-----|---------------------------------|--|

| | | |
|------|--|-----------------|
| 1 | TPQ NA Selector | No restrictions |
| 2 | | 0.00 |
| 4.10 | Minimum PBL aft of manifold | |
| 1 | TPQ NA Selector | No restrictions |
| 2 | | 0.00 |
| 4.11 | Bow to centre of manifold (BCM) | |
| 1 | TPQ NA Selector | No restrictions |
| 2 | Minimum | 0.00 |
| 3 | Maximum | 0.00 |
| 4.12 | Stern to centre of manifold (SCM) | |
| 1 | TPQ NA Selector | No restrictions |
| 2 | Minimum | 0.00 |
| 3 | Maximum | 0.00 |
| 4.13 | Freeboard | |
| 1 | TPQ NA Selector | No restrictions |
| 2 | Minimum | 0.00 |
| 3 | Maximum | 0.00 |
| 4.14 | Manifold height above water | |
| 1 | TPQ NA Selector | No restrictions |
| 2 | Minimum | 0.00 |
| 3 | Maximum | 0.00 |
| 4.15 | Manifold to shipside rail distance | |
| 1 | TPQ NA Selector | No restrictions |
| 2 | Minimum | 0.00 |
| 3 | Maximum | 0.00 |
| 4.16 | Height of manifold above deck or drip tray | |
| 1 | TPQ NA Selector | No restrictions |
| 2 | Minimum | 0.00 |
| 3 | Maximum | 0.00 |
| 4 | Specify whether height is from the deck or the drip tray | As per OCIMF |
| 4.17 | Manifold spacing | |
| 1 | TPQ NA Selector | No restrictions |
| 2 | Minimum | 0.00 |
| 3 | Maximum | 0.00 |
| 4.18 | Maximum air draft alongside | |
| 1 | TPQ NA Selector | Not applicable |
| 2 | | 0.00 |
| 4.19 | Vessel's minimum derrick/crane Safe Working Load (SWL) | |
| 1 | TPQ NA Selector | No restrictions |
| 2 | | 0.00 |

4.20 Additional comments or information None

5 Mooring and Berthing Information

5.1 State availability and specifications of tugs and mooring craft required for berthing and/or unberthing. Svtizer Portugal tugs, Lengths and power and/or bollard pull of tugs available for berthing/unberthing :Betwen 37 and 50 T at the terminal. (Minimum 3000 CV until 4000 CV), Mediu from work 10/20 T. Usualy one.

5.2 Are ship's or tug's lines used?
 1 Ship/Tug Ship's Lines
 2 Comments One line for each tug.

5.3 Type of fenders installed at berth
 1 Arch Type
 2 If 'Other' please specify

5.4 State orientation of vessel alongside berth Either Port & Starboard Side To

5.5 At buoy moorings, state which side hose is normally connected
 1 Not applicable
 2 If 'Other' please specify

5.6 Minimum mooring arrangement 3 headlines, 3 asternlines and 2 springlines at each end.

5.7 Describe any additional mooring requirements None.

5.8 Are there any restrictions using wire mooring ropes?
 1 No
 2 If 'yes', provide details of restrictions in wire moorings as part of the mooring pattern

5.9 Are there any restrictions using synthetic mooring ropes?
 1 No
 2 If 'yes'; provide details of restrictions in synthetic mooring ropes as part of the mooring pattern

5.10 Are there any restrictions on using high modulus synthetic mooring ropes?
 1 No
 2 If 'yes' provide details

5.11 Details of any specific mooring equipment required for any vessel utilising the berth All lines in same direction to be of the same material. Others as per OCIMF MEG.

5.12 Does the terminal require the vessel to rig Emergency Towing Off Pennants (ETOPs) while at the berth?
 1 Yes
 2 If 'Yes', provide details of particular requirements regarding ETOPs. Towing off pennants to be kept between 1 and 2 meters above seawater level and secured on the vessel bits.

5.13 Details of any shore-provided mooring equipment None.

| | | |
|----------|---|--|
| 5.14 | Are berthing aids provided? | |
| 1 | | No |
| 2 | If 'Yes', state type of aids | |
| 5.15 | State allowable speed of approach if applicable | |
| 1 | | As per Pilot instructions. |
| 1 | | 0.40 Knots |
| 5.16 | Is a mooring tension monitor fitted? | No |
| 5.17 | Are mooring hook quick release arrangements provided? | No |
| 5.18 | Chain stopper requirements | |
| 1 | Applicable | No |
| 2 | | Not an SBM |
| 5.19 | Largest ship handled at berth to date | IMO9438949, IVER BITUMEN |
| 5.20 | Additional comments or information | No restrictions |
| 6 | Berth Equipment and Facilities | |
| 6.1 | Number, type and size of cargo transfer connections | 2 x 8 inches. Dunlop hoses. for F.O. and G.O. |
| 6.2 | List grades handled at berth | Bitumen (including cut-backs), Black Petroleum Products, Gasoils, Diesels and Kerosenes |
| 2 | State specific grades handled at berth (e.g. Ekofisk crude oil, Unleaded Gasoline, Jet A1). | Bitumen, Gasoil, Fueloil. |
| 6.3 | State transfer rate restrictions and back pressure for each cargo grade | FO and GO: 1000 c.m./h Bitumen: 400 c.m./h |
| 6.4 | Are transfer connections fitted with insulation flanges? | |
| 1 | | Yes |
| 2 | Provide details | Hose isolated to shore line by insulation flange always. Insulation tests performed annually. Last on June 2013. |
| 6.5 | State storage type for LPG | Not applicable |
| 6.6 | Describe any terminal-specific requirements for vessel manifolds | 8 inches ASA 350, connections required for FO and GO and Bitumen. |
| 6.7 | Is berth fitted with a vapour manifold connection? | |
| 1 | | No |
| 2 | If 'Yes' state type and size of vapour connection | |
| 3 | State cargo types for which it is required to use vapour connection (if applicable) | |
| 6.8 | State throughput rate(s) of vapour recovery system | Not available. |
| 6.9 | Are Powered Emergency Release Couplings (PERCS) installed to the cargo transfer arms? | |
| 1 | | No |
| 2 | Supply details | Not supplied |

| | | |
|----------|---|---|
| 6.10 | Does the berth have an emergency shutdown (ESD) capability that can be activated by the ship? | |
| 1 | | No |
| 2 | If 'yes' provide details | |
| 6.11 | Describe access arrangements between ship and shore. | Ship gangway. According port regulations access to the vessel is responsibility of vessel operator. |
| 6.12 | Does the berth have pollution response equipment? | |
| 1 | | Yes |
| 2 | If 'yes' provide details | Containment booms and boat to deploy it, skimming equipment, absorbent materials, dispersant. Drills performed in coordination with Lisbon port authorities. |
| 6.13 | Additional comments or information | None. |
| 7 | Berth Operations | |
| 7.1 | What is the primary and backup communication system between ship and terminal during cargo operations? | Terminal provides vessel with a radio as primary mean of communication. Then a jetty operator is available at all times and a verbal communication will be available in case radio communications are not possible. |
| 7.2 | Is it required that terminal or shore representatives stay on board during operations? | |
| 1 | | No |
| 2 | If 'Yes', state requirements including number of persons and their roles | |
| 7.3 | Specify weather/environmental restrictions for stopping cargo operations, disconnecting hoses or arms and vacating the berth? | Operations to be stopped when wind speed reaches 30 knots. Cargo hoses to be disconnected when wind speed reaches 35 knots. Vessel to vacate berth when wind speed reaches 40 knots. |
| 7.4 | Are there any restrictions regarding tank cleaning/Crude Oil Washing (COW) operations at the berth? | |
| 1 | | Yes |
| 2 | If 'Yes' provide full details of these restrictions | No tank cleaning or COW allowed while at berth. |
| 7.5 | Are there any berth specific requirements regarding tanker inerting procedures? | |
| 1 | | Yes |
| 2 | If 'Yes', state requirements | Vessel operating at this terminal should maintain all tanks with volatile products under inert gas with an oxygen content below 8%. (REPSOL requirement). |
| 7.6 | Is there a temperature limit for cargo handled? | |
| 1 | | No |
| 2 | If 'Yes', state temperature limits | |

| | | |
|------|--|---|
| 7.7 | Is it permitted for vessels to undertake double-banked operations alongside the berth? | |
| 1 | | No |
| 2 | If 'Yes', state limiting criteria | |
| 7.8 | Is vessel required to pump water ashore or receive water on board for line clearance purposes? | |
| 1 | | No |
| 2 | If 'Yes', provide operational details | |
| 7.9 | Can the berth be used for Ship-to-Ship transfers using terminal facilities? | |
| 1 | | No |
| 2 | Provide details | |
| 7.10 | State details regarding any environmental restrictions applicable at the berth | Engine smoke to be kept controlled at all time by crew. |
| 7.11 | Are there any restrictions regarding Hydrogen Sulphide content in Cargo Tanks? | |
| 1 | | No |
| 2 | If 'Yes', state restriction | |
| 7.12 | Are there any restrictions regarding Mercaptan content in Cargo Tanks? | |
| 1 | | No |
| 2 | If 'Yes', state restriction | |
| 7.13 | Are there any restrictions on handling stores when a ship is moored alongside berth? | |
| 1 | | Yes |
| 2 | If 'Yes', state restriction | Handling of stores not allowed either by shore or by sea. |
| 7.14 | Additional comments or information | . |

8 Available Services

| | | |
|-----|--|----------|
| 8.1 | Are Fuel Oil bunkers available? | |
| 1 | | Yes |
| 2 | If 'Yes', state how delivered (e.g. Ex-Pipe, barge, truck) | Ex-pipe |
| 8.2 | Are Diesel Oil bunkers available? | |
| 1 | | Yes |
| 2 | If 'Yes', state how delivered (e.g. Ex-Pipe, barge, truck) | Ex-pipe. |
| 8.3 | Are Intermediate Oil bunkers available? | |
| 1 | | Yes |
| 2 | If 'Yes', state how delivered (e.g. Ex-Pipe, barge, truck) | Ex-pipe |
| 8.4 | Is fresh water available? | |
| 1 | | Yes |
| 2 | If 'Yes', state how delivered (e.g. Ex-Pipe, barge, truck) | Ex-pipe |
| 8.5 | Are slop reception facilities available? | |
| 1 | | Yes |

| | | |
|-----|---|--|
| 2 | If 'Yes', state how received (e.g. Ex-Pipe, barge, truck) | by Track and responsibility of Port Authorities. |
| 3 | State capacity of slop reception facilities (if applicable) | 10.00 Cubic metres |
| 4 | State any specific exclusions for slop receipts (e.g. chemicals, detergents, cleaning agents) | No exclusions |
| 8.6 | Are dirty ballast reception facilities available? | |
| 1 | | No |
| 2 | If 'Yes', state how received | |
| 3 | State capacity of dirty ballast reception facilities | |
| 8.7 | Are engine room sludge and bilge reception facilities available? | |
| 1 | | No |
| 2 | If 'Yes', state how received (e.g. Ex-pipe, barge, truck) | |
| 8.8 | Are garbage reception facilities available at the berth. | |
| 1 | | Yes |
| 2 | If 'Yes', provide details | Several containers available at berth, which are being controlled by Port Authority. |
| 8.9 | Additional comments or information | . |

9 Berth Low Temperature Impact

| | | |
|------|---|--|
| 9.1 | What is the typical range of temperatures the terminal operates in during a winter season? | |
| 9.2 | Which months of the year can ice be expected? | |
| 9.3 | Specify any terminal requirements for vessel Ice Class notation and winterisation capabilities | |
| 9.4 | State any limitations for cargo operations in sub-zero temperatures | |
| 9.5 | State the minimum allowable ambient temperature for safe cargo operations | |
| 9.6 | State the minimum temperature of cargoes handled | |
| 9.7 | State the minimum temperature for the emergency shut-down system to operate safely | |
| 9.8 | Does the terminal have its own resources for conducting icebreaker escort | |
| 1 | | |
| 2 | If 'Yes' provide details and specify how they can be requested | |
| 9.9 | Are there icebreakers available to operate in the terminal area | |
| 1 | | |
| 2 | Specify details (e.g. Name/IMO Nr/GRT/Power/Ice Class) | |
| 9.10 | Does the terminal have ice-capable tugs and support craft | |
| 1 | | |
| 2 | Specify details (e.g. Name/IMO Nr/GRT/Power/Ice Class) | |
| 9.11 | Does the terminal have specific requirements for the vessel speed and manoeuvrability characteristics in ice? | |
| 1 | | |
| 2 | If 'Yes', provide details | |

- 9.12 Does the terminal provide its own ice navigator/advisor?
- 1
 - 2 If 'Yes', provide details of how the service may be requested

9.13 Additional comments or information

10 Supplementary Information

10.1 Berth transparency Solid wharf.

10.2 Specify datum used for height and depth measurements in this section

- 1 Chart Datum (CD)
- 2 If 'Other' please specify other

10.3 Berth height above datum 6.00

10.4 Berth heading 085

10.5 Width of the channel adjacent to the berth 35.00

10.6 Position of mooring bollards and hooks

| Hook/Bollard ID Number and Type | 'x' dist to Fender Face (m) | 'y' dist to Target Line (m) | Height (m) | SWL (tonnes) |
|---------------------------------|-----------------------------|-----------------------------|------------|--------------|
| 9 | 43.00 | 27.00 | 0.20 | 50.00 |
| 10 | 45.00 | 11.00 | 0.20 | 50.00 |
| 11 | 12.00 | 4.00 | 0.20 | 15.00 |
| 12 | 0.20 | -10.00 | 0.20 | 15.00 |
| 13 | 0.20 | -12.00 | 0.20 | 10.00 |
| 14 | 8.00 | -15.00 | 0.20 | 10.00 |
| 15 | 44.00 | -70.00 | 0.20 | 50.00 |
| 16 | 44.00 | -100.00 | 0.20 | 50.00 |

10.7 Position of mooring buoys

| Mooring Buoy ID Number | 'x' Distance to Target Line F & A (m) | 'y' Distance to Target Line athwart (m) | Height (m) | Max. Allow Load (tonnes) |
|------------------------|---------------------------------------|---|------------|--------------------------|
| N/a | 0.10 | 0.10 | 0.10 | 0.10 |

10.8 Fender Location

10.9 Fender Reaction Data

10.10 Fender friction coefficient (μ)

10.11 State identity and horizontal position of loading arms

10.12 State loading arm operating limits

10.13 Additional comments or information No mooring buoys. No fixed loading arms, only hoses.



Oil Companies International Marine Forum

MTIS Programme

Berth TPQ

Berth TPQ: CAIS 2

ReportName a08c8e80-a6c9-4eb9-977e-80919cccf55a

Terminal Name: REPSOL BANATICA

Terminal Port: LISBOA

Terminal Port Authority: ADMINISTRAÇÃO DE PORTO DE LISBOA

Country: Portugal

Berth Name: CAIS 2

13 November 2015

1 Berth General

| | | |
|-----|---|--|
| 1.1 | Berth name or number | CAIS 2 |
| 1.2 | Berth type | |
| 1 | | Jetty - 'T' finger |
| 2 | If 'Other' please specify | |
| 1.3 | Terrestrial co-ordinates of manifold centreline | |
| 1 | Latitude | 384042 North |
| 2 | Longitude | 0091145 West |
| 1.4 | Berth users for liquid and gas cargoes | Repsol Portuguesa Suministros y Descargas. |
| 1.5 | Has a structural survey of the berth been undertaken, including its underwater structure? | |
| 1 | | Yes |
| 2 | If 'Yes', state date of last survey | 31 March 2011 |
| 1.6 | Has an engineering (mooring and fendering) analysis of berth been undertaken? | |
| 1 | | Yes |
| 2 | If 'Yes', state date of last analysis | 30 November 2013 |
| 1.7 | Additional comments or information | . |

2 Berth Approaches

| | | |
|-----|---|--|
| 2.1 | Is pilotage compulsory? | |
| 1 | | Yes |
| 2 | If 'Yes', state if any vessels are exempted | No vessel exempted. |
| 2.2 | State distance from pilot station(s) to berth | 12 nautical miles for vessel coming from open sea. Waiting anchorage at 2.5 miles. That is the place vessel pick up pilot, too. |
| 2.3 | Is a waiting anchorage available? | |
| 1 | | Yes |
| 3 | If 'Yes', state distance from waiting anchorage to berth | 2.5 miles. |
| 2.4 | Controlling depth of water for transit to and from berth | |
| 1 | Water depth | 11.50 Metres |
| 2 | State datum used | Chart Datum (CD) |
| 3 | If 'Other' please specify datum | |
| 2.5 | Date of latest survey from which transit depth has been determined | 01 September 2012 |
| 2.6 | Date next survey is due | 01 September 2016 |
| 2.7 | State Maximum Tidal Range in berth approaches | 4.00 |
| 2.8 | Is laden transit to and/or from the berth conducted using the tide? | |
| 1 | | Yes |

| | | |
|------|---|---|
| 2 | If 'Yes', state optimum transit window (i.e. at High Water, HW +/- 1 hr) | Vessel longer than 110 meters will require slack tide for berthing. |
| 2.9 | State details of any specific berthing and/or unberthing restrictions | Only as stated in paragraph 2.8 |
| 2.10 | Minimum under keel clearance (UKC) in berth approaches | |
| 1 | Value | 0.45 Meters |
| 2 | Percentage | 4.00 Vessel static draft |
| 3 | Specify other UKC criterion where applicable | None |
| 2.11 | Absolute maximum draught in berth approaches, if applicable | 11.00 |
| 2.12 | State minimum vertical clearance of any bridges/power cables/vertical obstructions | |
| 1 | Vertical clearance | 999.00 Metres |
| 2 | State datum used | Chart Datum (CD) |
| 3 | If 'Other' specify other datum used | |
| 4 | Further details | No bridges or cables or any type of obstructions. |
| 2.13 | Does the port require tankers and gas carriers to be escorted by tugs? | |
| 1 | | Yes |
| 2 | If 'Yes', state whether Active or Passive escort is employed and the maximum towline force that the tug is able to generate | Gas carriers active escort. Other dangerous cargo carriers passive escort. |
| 2.14 | Additional comments or information | . |

3 Water Depth Alongside

| | | |
|-----|--|--|
| 3.1 | Minimum controlled water depth alongside berth at chart datum | |
| 1 | Water depth | 11.50 Metres |
| 2 | State datum used | Chart Datum (CD) |
| 3 | If 'Other' specify datum | |
| 3.2 | Date of latest survey from which alongside depth has been determined | 31 March 2012 |
| 3.3 | Date next survey is due | 31 March 2016 |
| 3.4 | Minimum static under keel clearance (UKC) alongside berth | |
| 1 | Value | 0.45 Meters |
| 2 | Percentage | 4.00 Vessel static draft |
| 3 | Specify other UKC criterion where applicable | None. |
| 3.5 | State range of water densities at berth | |
| 1 | From | 1000.00 |
| 2 | To | 1025.00 |
| 3 | Further details | Lower density at low tide and higher density at high tide. |
| 3.6 | Type of bottom alongside berth | |
| 1 | | Rock |
| 2 | If 'Other' please specify | |

| | | |
|------|---|-------|
| 3.7 | Absolute maximum draft alongside, if applicable | 11.00 |
| 3.8 | State maximum tidal range at berth, if applicable | 4.00 |
| 3.9 | Are 'over-the-tide' cargo handling operations permitted at the berth? | No |
| 3.10 | Does the berth location experience water-level anomalies? | |
| 1 | | No |
| 2 | Provide details | |
| 3.11 | Additional comments or information | . |

4 Limiting Vessel Dimensions

| | | |
|-----|--|-----------------|
| 4.1 | Summer deadweight | |
| 1 | TPQ NA Selector | No restrictions |
| 2 | Minimum | 0.00 |
| 3 | Maximum | 0.00 |
| 4.2 | Berthing displacement | |
| 1 | TPQ NA Selector | No restrictions |
| 2 | Minimum | 0.00 |
| 3 | Maximum | 0.00 |
| 4.3 | Alongside displacement | |
| 1 | TPQ NA Selector | No restrictions |
| 2 | Minimum | 0.00 |
| 3 | Maximum | 0.00 |
| 4.4 | State any deadweight/displacement exceptions | |
| 1 | TPQ NA Selector | Not applicable |
| 2 | | No exceptions |
| 4.5 | Cubic capacity (gas carriers) | |
| 1 | TPQ NA Selector | No restrictions |
| 2 | Minimum | 0.00 |
| 3 | Maximum | 0.00 |
| 4.6 | Length over all (LOA) | |
| 1 | TPQ NA Selector | Applicable |
| 2 | Minimum | 0.00 Metres |
| 3 | Maximum | 205.00 Metres |
| 4.7 | Beam | |
| 1 | TPQ NA Selector | No restrictions |
| 2 | Minimum | 0.00 |
| 3 | Maximum | 0.00 |
| 4.8 | Minimum parallel body length (PBL) | |
| 1 | TPQ NA Selector | No restrictions |
| 2 | | 0.00 |

| | | |
|------|--|-----------------|
| 4.9 | Minimum PBL forward of manifold | |
| 1 | TPQ NA Selector | No restrictions |
| 2 | | 0.00 |
| 4.10 | Minimum PBL aft of manifold | |
| 1 | TPQ NA Selector | No restrictions |
| 2 | | 0.00 |
| 4.11 | Bow to centre of manifold (BCM) | |
| 1 | TPQ NA Selector | No restrictions |
| 2 | Minimum | 0.00 |
| 3 | Maximum | 0.00 |
| 4.12 | Stern to centre of manifold (SCM) | |
| 1 | TPQ NA Selector | No restrictions |
| 2 | Minimum | 0.00 |
| 3 | Maximum | 0.00 |
| 4.13 | Freeboard | |
| 1 | TPQ NA Selector | No restrictions |
| 2 | Minimum | 0.00 |
| 3 | Maximum | 0.00 |
| 4.14 | Manifold height above water | |
| 1 | TPQ NA Selector | No restrictions |
| 2 | Minimum | 0.00 |
| 3 | Maximum | 0.00 |
| 4.15 | Manifold to shipside rail distance | |
| 1 | TPQ NA Selector | No restrictions |
| 2 | Minimum | 0.00 |
| 3 | Maximum | 0.00 |
| 4.16 | Height of manifold above deck or drip tray | |
| 1 | TPQ NA Selector | No restrictions |
| 2 | Minimum | 0.00 |
| 3 | Maximum | 0.00 |
| 4 | Specify whether height is from the deck or the drip tray | as per OCIMF |
| 4.17 | Manifold spacing | |
| 1 | TPQ NA Selector | No restrictions |
| 2 | Minimum | 0.00 |
| 3 | Maximum | 0.00 |
| 4.18 | Maximum air draft alongside | |
| 1 | TPQ NA Selector | Not applicable |
| 2 | | 0.00 |
| 4.19 | Vessel's minimum derrick/crane Safe Working Load (SWL) | |
| 1 | TPQ NA Selector | No restrictions |

| | | |
|----------|--|--|
| 2 | | 0.00 |
| 4.20 | Additional comments or information | None. |
| 5 | Mooring and Berthing Information | |
| 5.1 | State availability and specifications of tugs and mooring craft required for berthing and/or unberthing. | the name Svitzer Portugal, lengths and power and/or bollard pull of each tug available for berthing/unberthing (Betwen 37 and 50 T) at the terminal. In addition, outline port and/or terminal regulations in respect of the minimum requirements for tugs (Minimum 3000 CV until 4000 CV), Medium from work 10/20 T. |
| 5.2 | Are ship's or tug's lines used? | |
| 1 | Ship/Tug | Ship's Lines |
| 2 | Comments | One ship line for each tug. |
| 5.3 | Type of fenders installed at berth | |
| 1 | | Arch Type |
| 2 | If 'Other' please specify | None |
| 5.4 | State orientation of vessel alongside berth | Either Port & Starboard Side To |
| 5.5 | At buoy moorings, state which side hose is normally connected | |
| 1 | | Not applicable |
| 2 | If 'Other' please specify | Berth. |
| 5.6 | Minimum mooring arrangement | 3 headlines and 3 astern lines and 2 spring lines at each end. |
| 5.7 | Describe any additional mooring requirements | None. |
| 5.8 | Are there any restrictions using wire mooring ropes? | |
| 1 | | No |
| 2 | If 'yes', provide details of restrictions in wire moorings as part of the mooring pattern | All in good condition |
| 5.9 | Are there any restrictions using synthetic mooring ropes? | |
| 1 | | No |
| 2 | If 'yes'; provide details of restrictions in synthetic mooring ropes as part of the mooring pattern | all in good condition |
| 5.10 | Are there any restrictions on using high modulus synthetic mooring ropes? | |
| 1 | | No |
| 2 | If 'yes' provide details | All in good condition |
| 5.11 | Details of any specific mooring equipment required for any vessel utilising the berth | All lines in same direction to be of the same material. Others as per OCIMF MEG. |
| 5.12 | Does the terminal require the vessel to rig Emergency Towing Off Pennants (ETOPs) while at the berth? | |
| 1 | | Yes |
| 2 | If 'Yes', provide details of particular requirements regarding ETOPs. | Towing Off Pennants to be rigged at each end and hanging between 1 and 2 metres above sea level |

| | | |
|---|---|---|
| 5.13 | Details of any shore-provided mooring equipment | None. |
| 5.14 | Are berthing aids provided? | |
| 1 | | No |
| 2 | If 'Yes', state type of aids | |
| 5.15 | State allowable speed of approach if applicable | |
| 1 | | Not applicable. As per Pilot instructions. |
| 1 | | 0.40 Knots |
| 5.16 | Is a mooring tension monitor fitted? | No |
| 5.17 | Are mooring hook quick release arrangements provided? | No |
| 5.18 | Chain stopper requirements | |
| 1 | Applicable | No |
| 2 | | Not an SBM |
| 5.19 | Largest ship handled at berth to date | VOGE TRUST, IMO 9420863. |
| 5.20 | Additional comments or information | None. |
| 6 Berth Equipment and Facilities | | |
| 6.1 | Number, type and size of cargo transfer connections | 2 x 8 inches. Dunlop hoses. for F.O. and G.O. 2 x 4 inches. Dunlop hoses for Butane and Propane. |
| 6.2 | List grades handled at berth | Bitumen (including cut-backs), Black Petroleum Products, Gasoils, Diesels and Kerosenes, Commercial LPG |
| 2 | State specific grades handled at berth (e.g. Ekofisk crude oil, Unleaded Gasoline, Jet A1). | Propane, Butane, Gasoil, Fueloil, Bitumen, scarcely some chemical cargoes... |
| 6.3 | State transfer rate restrictions and back pressure for each cargo grade | Propane and Butane: 200 c.m./h FO and GO: 1000 c.m./h Bitumen: 400 c.m./h |
| 6.4 | Are transfer connections fitted with insulation flanges? | |
| 1 | | Yes |
| 2 | Provide details | Hose isolated to shore line by insulation flange always. Insulation tests performed annually. Last on June 2013. |
| 6.5 | State storage type for LPG | Pressurised |
| 6.6 | Describe any terminal-specific requirements for vessel manifolds | 4 inches ASA 350, connections required for LPG 8 inches ASA 350, connections required for FO and GO and Bitumen. |
| 6.7 | Is berth fitted with a vapour manifold connection? | |
| 1 | | No |
| 2 | If 'Yes' state type and size of vapour connection | |
| 3 | State cargo types for which it is required to use vapour connection (if applicable) | |
| 6.8 | State throughput rate(s) of vapour recovery system | not applicable |

| | | |
|------|---|--|
| 6.9 | Are Powered Emergency Release Couplings (PERCS) installed to the cargo transfer arms? | |
| 1 | | No |
| 2 | Supply details | 23 sep 2015 Installed wire operated Breakaway Coupling (non-powered) for gasoil line (8 inches). Particulars: EMERGENCY SAFETY DISCONNECTOR WITH CABLE CONTROL NTS-SZ DN150DN250 BY ARTA GmbH & Co. KG |
| 6.10 | Does the berth have an emergency shutdown (ESD) capability that can be activated by the ship? | |
| 1 | | No |
| 2 | If 'yes' provide details | |
| 6.11 | Describe access arrangements between ship and shore. | Ship gangway. According port regulations access to the vessel is responsibility of vessel operator. |
| 6.12 | Does the berth have pollution response equipment? | |
| 1 | | Yes |
| 2 | If 'yes' provide details | Containment booms and boat to deploy it, skimming equipment, absorbent materials, dispersant. Drills performed in coordination with Lisbon port authorities. |
| 6.13 | Additional comments or information | . |

7 Berth Operations

| | | |
|-----|---|---|
| 7.1 | What is the primary and backup communication system between ship and terminal during cargo operations? | Shore radio provided. Always one operator alongside as secondary means of communication in case of failure of the radio. |
| 7.2 | Is it required that terminal or shore representatives stay on board during operations? | |
| 1 | | No |
| 2 | If 'Yes', state requirements including number of persons and their roles | |
| 7.3 | Specify weather/environmental restrictions for stopping cargo operations, disconnecting hoses or arms and vacating the berth? | Stop loading operations when wind 30 knts. Disconnect hoses when wind 35 knts. Vacate berth when wind above 40 knts. |
| 7.4 | Are there any restrictions regarding tank cleaning/Crude Oil Washing (COW) operations at the berth? | |
| 1 | | Yes |
| 2 | If 'Yes' provide full details of these restrictions | No tank cleaning or COW allowed while vessel alongside. |
| 7.5 | Are there any berth specific requirements regarding tanker inerting procedures? | |
| 1 | | Yes |

| | | |
|------|--|---|
| 2 | If 'Yes', state requirements | Vessel operating at this terminal should maintain all tanks with volatile products under inert gas with an oxygen content below 8%. (REPSOL requirement). |
| 7.6 | Is there a temperature limit for cargo handled? | |
| 1 | | Yes |
| 2 | If 'Yes', state temperature limits | LPG cargoes should be received with temperature above 0°C. Bitumen minimum 145°C. |
| 7.7 | Is it permitted for vessels to undertake double-banked operations alongside the berth? | |
| 1 | | No |
| 2 | If 'Yes', state limiting criteria | |
| 7.8 | Is vessel required to pump water ashore or receive water on board for line clearance purposes? | |
| 1 | | No |
| 2 | If 'Yes', provide operational details | |
| 7.9 | Can the berth be used for Ship-to-Ship transfers using terminal facilities? | |
| 1 | | No |
| 2 | Provide details | |
| 7.10 | State details regarding any environmental restrictions applicable at the berth | Engine smoke not allowed. |
| 7.11 | Are there any restrictions regarding Hydrogen Sulphide content in Cargo Tanks? | |
| 1 | | No |
| 2 | If 'Yes', state restriction | |
| 7.12 | Are there any restrictions regarding Mercaptan content in Cargo Tanks? | |
| 1 | | No |
| 2 | If 'Yes', state restriction | |
| 7.13 | Are there any restrictions on handling stores when a ship is moored alongside berth? | |
| 1 | | Yes |
| 2 | If 'Yes', state restriction | Stores supply not allowed either by shore or by sea. |
| 7.14 | Additional comments or information | . |

8 Available Services

| | | |
|-----|--|----------|
| 8.1 | Are Fuel Oil bunkers available? | |
| 1 | | Yes |
| 2 | If 'Yes', state how delivered (e.g. Ex-Pipe, barge, truck) | Ex-pipe. |
| 8.2 | Are Diesel Oil bunkers available? | |
| 1 | | Yes |
| 2 | If 'Yes', state how delivered (e.g. Ex-Pipe, barge, truck) | Ex-pipe |
| 8.3 | Are Intermediate Oil bunkers available? | |
| 1 | | Yes |

| | | |
|-----|---|---|
| 2 | If 'Yes', state how delivered (e.g. Ex-Pipe, barge, truck) | Ex-pip |
| 8.4 | Is fresh water available? | |
| 1 | | Yes |
| 2 | If 'Yes', state how delivered (e.g. Ex-Pipe, barge, truck) | Ex-pipe |
| 8.5 | Are slop reception facilities available? | |
| 1 | | Yes |
| 2 | If 'Yes', state how received (e.g. Ex-Pipe, barge, truck) | Truck. |
| 3 | State capacity of slop reception facilities (if applicable) | 10.00 Cubic metres |
| 4 | State any specific exclusions for slop receipts (e.g. chemicals, detergents, cleaning agents) | No exclusions. |
| 8.6 | Are dirty ballast reception facilities available? | |
| 1 | | No |
| 2 | If 'Yes', state how received | |
| 3 | State capacity of dirty ballast reception facilities | |
| 8.7 | Are engine room sludge and bilge reception facilities available? | |
| 1 | | No |
| 2 | If 'Yes', state how received (e.g. Ex-pipe, barge, truck) | |
| 8.8 | Are garbage reception facilities available at the berth. | |
| 1 | | Yes |
| 2 | If 'Yes', provide details | Provide by Lisbon Port Authorities. Several containers at berth which are taken care by port. |
| 8.9 | Additional comments or information | . |

9 Berth Low Temperature Impact

| | | |
|-----|--|------------------|
| 9.1 | What is the typical range of temperatures the terminal operates in during a winter season? | -10°C and + 20°C |
| 9.2 | Which months of the year can ice be expected? | None |
| 9.3 | Specify any terminal requirements for vessel Ice Class notation and winterisation capabilities | None |
| 9.4 | State any limitations for cargo operations in sub-zero temperatures | N/A |
| 9.5 | State the minimum allowable ambient temperature for safe cargo operations | N/A |
| 9.6 | State the minimum temperature of cargoes handled | N/A |
| 9.7 | State the minimum temperature for the emergency shut-down system to operate safely | N/A |
| 9.8 | Does the terminal have its own resources for conducting icebreaker escort | |
| 1 | | No |
| 2 | If 'Yes' provide details and specify how they can be requested | N/A |
| 9.9 | Are there icebreakers available to operate in the terminal area | |
| 1 | | No |
| 2 | Specify details (e.g. Name/IMO Nr/GRT/Power/Ice Class) | N/A |

| | | |
|------|---|---|
| 9.10 | Does the terminal have ice-capable tugs and support craft | |
| 1 | | No |
| 2 | Specify details (e.g. Name/IMO Nr/GRT/Power/Ice Class) | N/A |
| 9.11 | Does the terminal have specific requirements for the vessel speed and manoeuvrability characteristics in ice? | |
| 1 | | No |
| 2 | If 'Yes', provide details | N/A |
| 9.12 | Does the terminal provide its own ice navigator/advisor? | |
| 1 | | No |
| 2 | If 'Yes', provide details of how the service may be requested | N/A |
| 9.13 | Additional comments or information | This Chapter is not applicable, as reported at heading, but still can be edited. Failure of new MTPQ version already reported to OCIMF but no action. |

10 Supplementary Information

| | | | | | | | |
|------|--|---------------------------------|-----------------------------|-----------------------------|------------------|-------------------|--------------------------|
| 10.1 | Berth transparency | Solid wharf. | | | | | |
| 10.2 | Specify datum used for height and depth measurements in this section | | | | | | |
| 1 | | Chart Datum (CD) | | | | | |
| 2 | If 'Other' please specify other | | | | | | |
| 10.3 | Berth height above datum | 6.00 | | | | | |
| 10.4 | Berth heading | 085° | | | | | |
| 10.5 | Width of the channel adjacent to the berth | 34.00 | | | | | |
| 10.6 | Position of mooring bollards and hooks | | | | | | |
| | | Hook/Bollard ID Number and Type | 'x' dist to Fender Face (m) | 'y' dist to Target Line (m) | Height (m) | SWL (tonnes) | |
| | | 1 | 177.00 | 50.00 | 0.20 | 50.00 | |
| | | 2 | 100.00 | 55.00 | 0.20 | 50.00 | |
| | | 3 | 70.00 | 45.00 | 0.20 | 50.00 | |
| | | 4 | 35.00 | 0.10 | 0.20 | 20.00 | |
| | | 5 | 15.00 | 0.10 | 0.20 | 15.00 | |
| | | 6 | -15.00 | 0.10 | 0.20 | 15.00 | |
| | | 7 | -35.00 | 0.10 | 0.20 | 20.00 | |
| | | 8 | -60.00 | 48.00 | 0.20 | 50.00 | |
| | | 9 | -110.00 | 45.00 | 0.20 | 50.00 | |
| | | 10 | -140.00 | 45.00 | 0.20 | 50.00 | |
| 10.7 | Position of mooring buoys | | | | | | |
| 10.8 | Fender Location | | | | | | |
| | | Fender ID Number | 'x' Dist to Target Line (m) | Elevation of Fenders (m) | Fender Width (m) | Fender Height (m) | Fender Contact Area (m2) |
| | | 1 | 0.10 | 28.00 | 0.60 | 3.00 | 2.70 |

| | | | | | |
|---|------|--------|------|------|------|
| 2 | 0.10 | 14.00 | 0.60 | 3.00 | 2.70 |
| 3 | 0.10 | 0.10 | 0.60 | 3.00 | 2.70 |
| 4 | 0.10 | -14.00 | 0.60 | 3.00 | 2.70 |
| 5 | 0.10 | -28.00 | 0.60 | 3.00 | 2.70 |

10.9 Fender Reaction Data10.10 Fender friction coefficient (μ)**10.11 State identity and horizontal position of loading arms**

10.12 State loading arm operating limits

10.13 Additional comments or information

No loading arms only hoses.