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<th><strong>DEFINITIONS</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cyclone Mooring</td>
<td>In the Port of Dampier, a cyclone mooring must have minimum capability of holding a nominated vessel in 30-second gusts, wind speeds of 90 knots (at 10 metres above sea level) for a <strong>50 year</strong> return period.</td>
</tr>
<tr>
<td>Non-Cyclone Mooring</td>
<td>Moorings other than cyclone moorings, capable of withstanding winds and weather up to 60 knots.</td>
</tr>
<tr>
<td>Mooring Designer/Naval Architect/Engineer</td>
<td>Means a person or organisation with appropriate professional qualifications to:</td>
</tr>
<tr>
<td></td>
<td>a) prepare the technical specifications of a mooring system including configuration and materials and as-built drawings;</td>
</tr>
<tr>
<td></td>
<td>b) review and make recommendations on mooring inspection reports;</td>
</tr>
<tr>
<td></td>
<td>c) ensure on-going suitability of mooring systems; and</td>
</tr>
<tr>
<td></td>
<td>d) who has been approved by the Harbour Master.</td>
</tr>
<tr>
<td>Dive Inspector</td>
<td>A person or organisation duly qualified for their range of business and licenced in Western Australia:</td>
</tr>
<tr>
<td></td>
<td>a) capable of conducting mooring inspections above or below water;</td>
</tr>
<tr>
<td></td>
<td>b) to produce measurements and records suitable for evaluation by a Naval Architect/Engineer; and</td>
</tr>
<tr>
<td></td>
<td>c) who has been approved by the Harbour Master.</td>
</tr>
<tr>
<td>Klein Moorings Management System</td>
<td>The moorings in the Ports of Dampier and Ashburton are managed through the Klein Moorings Management System (KMMS).</td>
</tr>
<tr>
<td>Mooring Licence</td>
<td>In the Port of Dampier, a mooring licence is issued to use a mooring for the upcoming cyclone season.</td>
</tr>
<tr>
<td>Mooring Licence Terms and Conditions</td>
<td>Means the terms and conditions set out in the terms and conditions document as varied from time to time by the PPA. The Mooring Licence Terms &amp; Conditions document is available at <a href="http://www.pilbaraports.com.au">www.pilbaraports.com.au</a>.</td>
</tr>
<tr>
<td>Mooring Requirements</td>
<td>The requirements and other terms contained in this document.</td>
</tr>
<tr>
<td>Mooring Owner/User</td>
<td>The mooring owner or user of any mooring or proposed mooring.</td>
</tr>
<tr>
<td>Port</td>
<td>The Port of Dampier and the Port of Ashburton, Western Australia and its seabed and port waters together with all wharves, piers and</td>
</tr>
</tbody>
</table>
land that are owned, vested in, occupied by, licenced to or controlled by the PPA.

| Significant Event | Close passing of a Category 3 cyclone and above; a tsunami of significant proportion or as determined by the Harbour Master. |

### ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPA</td>
<td>Pilbara Ports Authority</td>
</tr>
<tr>
<td>E</td>
<td>East</td>
</tr>
<tr>
<td>HAT</td>
<td>Highest Astronomical Tide</td>
</tr>
<tr>
<td>LOA</td>
<td>Length Overall</td>
</tr>
<tr>
<td>MHWN</td>
<td>Mean High Water Neap</td>
</tr>
<tr>
<td>MHWS</td>
<td>Mean High Water Spring</td>
</tr>
<tr>
<td>SE</td>
<td>South East</td>
</tr>
<tr>
<td>SW</td>
<td>South West</td>
</tr>
<tr>
<td>WA</td>
<td>Western Australia</td>
</tr>
</tbody>
</table>
1. PURPOSE

Pilbara Ports Authority strives to develop, maintain and improve an efficient and effective strategy for managing approximately hundred forty cyclone and other moorings which have been deployed within its gazetted waters.

After each cyclone season the results and feedback are correlated and the system is improved to benefit from these inputs.

PPA is statutorily obliged to maintain a safe port at all times and the requirements of the Moorings Handbook must be met by all mooring owners.

1.1 PORTS OF DAMPIER AND ASHBURTON MOORING REQUIREMENTS

This document has been produced to:

a) meet the Port Authority Regulations 2001;

b) meet the information needs of the owner, designers, and installers of moorings in the Port of Dampier and the Port of Ashburton;

c) provide information with regard to mooring design, installation, maintenance and usage. However, this document in no way absolves companies from their duty of care to their employees, contractors, products, operations or any other obligations they may owe in relation to their employees, contractors, products or operations; and

d) set rules and procedures that bind all mooring owners.

This document must be read in conjunction with the PPA Ports of Dampier and Ashburton Mooring Licence Terms and Conditions.

1.2 PILBARA PORT AUTHORITY

The PPA is a State Government agency that operates the Port under the Port Authorities Act 1999.

The PPA has responsibilities:

- to facilitate trade within and through the Port and plan for future growth and development of the Port;
- for the safe, secure and efficient operation of the Port; and
- to protect the Port environment.

In this role, the PPA approves the installation and usage of moorings in the Port and regulates the usage and maintenance of the moorings through its broad mooring licencing regime.
PPA Contact Details

Marine Operations Coordinator
Phone: (08) 9159 6528
Email moorings@pilbaraports.com.au
Web: http://www.pilbaraports.com.au

MOF Road, Burrup Peninsula, Dampier, Western Australia 6713
(Postal Address: Locked Bag 5006, Karratha Western Australia 6714)

1.3 DISCLAIMER

The information contained in these requirements is believed to be correct at the time of issue; however, the PPA does not guarantee the accuracy of the information and accepts no liability for any damage, delay or loss resulting from any such inaccuracy.

2. PREAMBLE

The Port of Dampier (see Figure 1) hosts a vast range of recreational and commercial vessels each year, many of which use moorings instead of anchoring within port limits. These moorings may be non-cyclone moorings or heavier construction cyclone moorings utilised for commercial and recreational purposes. All moorings within the Port are managed by PPA and PPA’s approval is required for the design and installation of a mooring and the use of moorings. PPA monitors annual inspections, maintenance and repair of moorings within the Port. PPA’s aim is to promote fair and equitable public access to moorings and to ensure all moorings are maintained to a high standard.

Rental moorings are commercial by nature, being owned by individual companies. PPA does not own moorings for rental purposes and makes no guarantees for the availability or access to rental moorings. Owners who rent/loan their moorings are required to follow the mooring requirements as set out in this Moorings Handbook and the Mooring Licencing Terms & Conditions.

Each mooring must be capable of holding the assigned vessel and correct guidance and advice from the Naval Architect/Engineer is necessary to safeguard the vessel owner’s investment. The Mooring Dive Inspectors and Naval Architect-Engineer List is available on our website for your reference; however PPA makes no guarantee of individual company performance or capability.
All mooring licences are of a temporary nature and no person has a property right in any mooring location without an express grant by the Commonwealth or WA State Governments.

3. Dampier Weather Conditions

The Port of Dampier is centred at 20º 30.00’ S and 116º 45.00’ E and lies within Australia’s cyclone belt. Between three and five cyclones might typically approach the Pilbara Coast during the season (November to May) and winds over 100 knots can be experienced along with associated sea conditions. In 2005-06 Dampier directly experienced a record number of six cyclones.

Typically during November to May the winds blow in excess of 20 knots from the SW and winds over 60 knots might be experienced during seasonal tropical non-cyclones. The SW winds might blow strongly and continuously for 3-5 days.

During May to November the winds typically blow from E-SE, increasing in strength from the early morning and easing by late afternoon or early evening. Morning winds may exceed 30 knots. Sea conditions within the harbour after prolonged SW winds can produce seas to 1.5 metres through Mermaid Strait and whenever a cyclone is in the vicinity of the coast a ‘fetch’ from the north can create seas to 2 metres through Mermaid Sound. During past cyclones, red alert phase seas to 9 metres have been
encountered in Mermaid Sound. Tidal surges are possible in conjunction with any cyclone.

Accordingly, mooring owners in the region should familiarise themselves with the risks associated with mooring vessels during adverse weather, including risks to the vessel and to personnel and responsibilities towards other vessels moored in the vicinity.

Table 1 and Table 2 show Significant Wave Heights and Indicative Tidal Heights respectively.

**Table 1 Significant Wave Heights**

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>SIGNIFICANT WAVE HEIGHT (METRES)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southern Mermaid Sound</td>
<td>3.0 to 4.5</td>
</tr>
<tr>
<td>Hampton Harbour</td>
<td>1.5 to 3.0</td>
</tr>
<tr>
<td>Mermaid Strait (South of West Lewis Island)</td>
<td>2.0 to 4.0</td>
</tr>
</tbody>
</table>

NOTE: Maximum cyclone waves may be 1.6 – 2.0 times higher than significant wave height

**Table 2 Indicative Tidal Heights**

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>LEVEL TO CHART DATUM CD (METRES)</th>
<th>LEVEL TO AUSTRALIAN HEIGHT DATUM AHD (METRES)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAT</td>
<td>5.22</td>
<td>2.51</td>
</tr>
<tr>
<td>MHWS</td>
<td>4.55</td>
<td>1.84</td>
</tr>
<tr>
<td>MHWN</td>
<td>3.22</td>
<td>0.51</td>
</tr>
</tbody>
</table>

NOTE: – Non-cyclone Surge + Wind may add 3.5 metres to Sea Heights

**4. INDICATIVE MOORING LOADINGS**

The port authority commissioned an engineering consultancy group to prepare a mooring report and design assessment (report) based on previous tropical cyclone analysis plus mooring assessments undertaken by several operators in the region.

In the report, Table 3 provides a range of indicative loadings for various vessel sizes and mooring locations. These indicative figures are shown for general guidance only.
and PPA does not warrant the accuracy of any of the information contained in Table 3 or elsewhere in the report.

The 300 tonne mooring force for the large vessels illustrates the high loadings that might occur due to a combination of low tide, shallow water depths, high winds and near breaking wave conditions.

Table 3  Indicative Vessel Loadings on Moorings

<table>
<thead>
<tr>
<th>VESSEL SIZE</th>
<th>CYCLONE MOORING LOCATION</th>
<th>APPROXIMATE RETURN PERIOD (YEARS)</th>
<th>TOTAL MOORING FORCE (TONNES)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small Vessel 10 metre LOA, 10 tonne displacement</td>
<td>Hampton Harbour</td>
<td>50</td>
<td>3-8</td>
</tr>
<tr>
<td>Medium Vessel 18 metre LOA, 25 tonne displacement</td>
<td>Hampton Harbour</td>
<td>50</td>
<td>10-15</td>
</tr>
<tr>
<td>Large Vessels 30-35 metre LOA, 500-800 tonne displacement</td>
<td>West Lewis Island</td>
<td>10-50</td>
<td>50-300</td>
</tr>
<tr>
<td>Small Ship 60-75 metre LOA, 2000 tonne displacement</td>
<td>West Lewis Island</td>
<td>25-100</td>
<td>40-70 (Wind Only) Total loadings not available (but would be expected to exceed 250-500 tonnes)</td>
</tr>
</tbody>
</table>

Other factors that might significantly influence actual mooring behaviour and loadings include:

- type of seabed anchorage (such as embedment anchor, drag anchor, spread mooring);
- mooring configuration (such as chain and mass, clump weights, hawsers and buoys);
- vessel behaviour (such as wind, length, displacement, response amplitude); and
- method of analysis (such as dynamic, static, frequency or time-domain numerical modelling).

Mooring owners should engage a Naval Architect/Engineer to perform inquiries and calculations for mooring parameters and loadings to suit their specific vessel characteristics, mooring location and risk assessment.
5. MOORING DESIGN AND COMPONENTS

5.1 GENERAL

All moorings are to be designed, installed, used and maintained according to the design specifications of the Naval Architect/Engineers and PPA’s mooring requirements.

The PPA's mooring requirements include:

- Moorings must be designed for a nominated vessel or class of vessel and certified by a Naval Architect/Engineer. The as-built drawing must include a permissible design wear table.
- Recreational non-cyclone moorings must comply with Table 4. Recreational craft mooring buoys must be more than 300 millimetres in diameter and bright in colour.
- Commercial moorings buoys must be bright in colour.
- Mooring owners must ensure that their allocated mooring number is on the mooring, positioned where it will always be clearly legible and if possible away from marine growth, bird droppings and tackle chaffing areas.
- Moorings must have visibility aids to avert collision between moving craft and moorings, positioned at all four quadrants where it will be clearly visible. As a minimum retro reflective material or "cats eyes" must be fitted to all moorings. Moorings with lights should also have retro reflective material or "cat's eyes" in case of a light failure.
- Specifications for moorings may not be varied without certification from a Naval Architect/Engineer, and an updated as-built drawing and permissible wear table must be provided. Any specification amendments must be approved by the Harbour Master.
- Hawsers are the responsibility of the vessel owners and need to meet the Naval Architect/Engineer requirements.
- Owners must inspect and maintain the hawser on a regular basis.
- Moorings must not have a hawser secured to the mooring riser chain.
- Hawsers must not be left floating free from moorings to prevent damage to other craft. Should a hawser need to remain on the buoy, it should be shortened and made visible, with a Norwegian buoy attached to the end.

Failure to comply with these requirements or the Mooring Licence Terms and Conditions may result in the suspension, termination or non-renewal of a Mooring Licence, the removal of a mooring, a fine being levied against the mooring owner, or other legal action against the mooring owner.

5.2 MOORING CLASSIFICATIONS

Moorings within the Dampier Archipelago typically fall into five classifications:

- Recreational craft non-cyclone moorings;
- Commercial craft non-cyclone moorings;
- Recreational craft non-cyclone moorings for vessels less than 12 metres;
- Recreational craft cyclone moorings for vessels greater than 12 metres; and
- Commercial craft cyclone moorings.
5.3 NON-CYCLONE MOORINGS

5.3.1 POSITIONS

Non-cyclone mooring locations:

- Hampton Harbour
- Tide Pole
- King Bay

5.3.2 NON-CYCLONE MOORING COMPONENT REQUIREMENTS

Table 4  Non-Cyclone Mooring Component Specifications

<table>
<thead>
<tr>
<th>VESSEL LENGTH (M)</th>
<th>MUSHROOM ANCHOR/WHEEL (KG)</th>
<th>CONCRETE BLOCK (WEIGHT IN WATER) (KG)</th>
<th>CHAIN SIZE (MM)</th>
<th>HARDWARE SIZE (MM)</th>
<th>LINE SIZE (MM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.0 – 6.0</td>
<td>70</td>
<td>230</td>
<td>13</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>6.0 - 7.5</td>
<td>115</td>
<td>450</td>
<td>13</td>
<td>13</td>
<td>16</td>
</tr>
<tr>
<td>7.5 - 8.5</td>
<td>160</td>
<td>900</td>
<td>16</td>
<td>16</td>
<td>20</td>
</tr>
<tr>
<td>8.5 - 9.5</td>
<td>N/A</td>
<td>1400</td>
<td>19</td>
<td>20</td>
<td>22</td>
</tr>
<tr>
<td>9.5 - 12.0</td>
<td>N/A</td>
<td>1800</td>
<td>26</td>
<td>26</td>
<td>26</td>
</tr>
<tr>
<td>Over 12.0</td>
<td>Seek advice from Mooring Designer/Naval Architect/Engineer</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5.3.3 DEADWEIGHT ANCHORS

Deadweight anchors such as wagon wheels and concrete blocks (clumps) become lodged in the seabed over time, providing a degree of suction resistance in any bottom material with cohesive properties. Thus, a deadweight anchor is not likely to break free from its set like a mushroom anchor. (An anchor is “set” when it becomes buried in the seabed over time.) Figure 2 and Figure 3 illustrate railway wheels and concrete block anchors respectively.

Railway wheels of 320 to 400 kilograms are used extensively in single or group lots for Hampton Harbour non-cyclone moorings.

The holding power of a concrete block anchor is approximately 1:2. In other words, a properly-designed concrete anchor provides up to 50 per cent of its weight in air. For example, to provide a holding power of 900 kilograms in water, a concrete anchor would weigh 1640 kilograms in air (displacement factor of 0.55). A square-block concrete anchor is
designed with the base dimensions greater than the anchor’s height for a low centre of gravity to reduce transverse leverage.

5.4 CYCLONE MOORINGS

5.4.1 POSITIONS

Cyclone mooring locations:

- Causeway
- Dockrell Reef
- West Lewis Island
- Malus Channel
- Hampton Harbour
- Enderby Island
- West Mid Intercourse

Figure 2 Railway Wheels

Figure 3 Concrete Block Anchor

Figure 4 Admiralty Style Mooring – Typical Cyclone Mooring Layout
6. RESPONSIBILITIES OF A MOORING OWNER/USER

6.1 COMPLIANCE WITH MOORINGS HANDBOOK AND MOORING LICENCE TERMS AND CONDITIONS

Mooring owner/users must comply with the Moorings Handbook and the Mooring Licence Terms and Conditions.

6.2 VESSEL CHANGE ON A MOORING

Mooring owners’ must seek approval from PPA for vessel changes on a mooring prior to the new vessel occupying the mooring.

The mooring will require vessel analysis showing suitability by a Naval Architect/Engineer.

6.3 TRANSFER OR SALE OF MOORING OWNERSHIP

Mooring owner/purchaser must seek approval from PPA for the transfer or sale of a mooring. No recreational or commercial mooring or location may be sold, transferred, rented, swapped, assigned, relocated or bartered except as permitted by the relevant Mooring Licence or these mooring requirements and Mooring Licence Terms and Conditions.

The holder of a recreational mooring may transfer their mooring to an immediate family member with the approval of the Harbour Master.

The mooring change in vessel that may occur with the transfer or sale of a mooring, will require a vessel analysis showing suitability by a Naval Architect/Engineer.

The transfer/sale of a mooring does not guarantee the purchaser of the existing location of the mooring. The purchaser is required to contact PPA to discuss their requirements for the mooring and an alternative location maybe identified.

6.4 THIRD PARTY USE OF MOORINGS

Mooring owners may rent or loan their licenced mooring and must seek approval from PPA prior to renting the mooring. A vessel analysis is required from a Naval Architect/Engineer to ensure the moorings suitability for the new vessel.

A third party use application must be completed in the Klein system and approved by PPA prior to use. The mooring responsibility remains with the mooring owner.
The mooring licence remains in the name of the mooring owner with the third party vessel listed on the mooring licence.

6.5 **ANNUAL MOORING DIVE INSPECTION REPORT**

Mooring owners are required to complete an Annual Mooring Dive Inspection Report from 1 May each year and submit the Report to PPA by 1 October. Should a mooring not be licenced by 1 November each year, the mooring owner may be requested by the PPA, to remove the mooring at the owner’s expense.
IS IT A COMMERCIAL (CYCLONE & NON-CYCLONE) MOORING?

IS IT A RECREATIONAL (CYCLONE & NON-CYCLONE) MOORING FOR VESSELS GREATER THAN 12MTRS?

IS IT A RECREATIONAL CYCLONE MOORING FOR VESSEL LESS THAN 12MTRS?

THE RECREATIONAL NON-CYCLONE MOORING AND FOR VESSEL LESS THAN 12 MTRS?

NEW MOORING INSTALLATIONS REQUIRE:
- Approval to install the mooring
- A mooring installation inspection report.
- An as-built drawing of the mooring containing a design permissible wear rate table

REQUIRES A DIVING INSPECTION:
- Annually for licence renewal.
- Following a CAT 3 cyclone event/significant event

REQUIRES A NAVAL ARCHITECT/ENGINEER ASSESSMENT:
- On the installation of the mooring.
- When a mooring construction is altered from the original design or significantly damaged

REQUIRES A COMPULSARY 5TH YEAR NAVAL ARCHITECT/ENGINEER ASSESSMENT:
- The owner must have the mooring reviewed no later than five (5) years after the mooring installation or re-deployment or the last Naval Architect/Engineer review, or as directed by the Harbour Master.
- The owner must liaise with the Naval Architect/Engineer prior to the dive inspection in order to ensure that the Dive Inspector is aware of what the Naval Architect/Engineer requires to be inspected/audited.
- The Naval Architect/Engineers assessment must include an updated assessment of the mooring capacity, construction and wear tolerances.

Figure 5 Mooring Licencing Flow Chart
6.6 HARBOUR MASTER TO BE NOTIFIED OF VESSEL MOVEMENT

Mooring owner/users or vessel operators are to notify Dampier VTS on VHF 11 or telephone 08 9159 6556 when a vessel is secured to or removed from a mooring.

7. INSTALLATION PROCEDURE FOR NEW MOORING

7.1 APPLICATIONS

In the first instance, contact the PPA Marine Operations Coordinator to establish the requirements for the mooring and a potential location. Applications are managed via the Klein Moorings Management System. Login details can be obtained from the Marine Operations Coordinator.

- Fees payable for all mooring applications can be found on the PPA website [www.pilbaraports.com.au](http://www.pilbaraports.com.au).
- No mooring shall be placed in the Port unless permitted by the Harbour Master and compliant with these mooring requirements and the Mooring Licence Terms and Conditions. A mooring set without prior authorisation of the Harbour Master may be removed immediately by the Harbour Master at the mooring owner’s expense.
- Approved applications for the installation of a new mooring will be valid for three (3) months from the date of approval. Approved moorings not deployed within this time frame will be considered void and a new application will need to be submitted.

7.2 MOORING INSTALLATION

- Upon installation, the mooring must be inspected by a Dive Inspector for structural integrity, disposition on the seabed. The Dive Inspectors report the results via KMMS and will upload photographs of all components and specified configuration.
- Mooring buoys should be clearly marked with the mooring number and have appropriate aids for visibility using lights, or at a minimum, retro reflective material or cats eyes on every quadrant as pictured below.
- On receipt of the dive inspector’s results, the mooring owner must forward the completed installation report to the naval architect/engineer for review and certification for use.

Figure 6 Mooring buoy marked with mooring number
Mooring Installation/ Relocation Procedure Flow Chart

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Please ensure that you have read the Terms and Conditions of owning a mooring that is located in Port waters. The relevant documentation can be found at <a href="https://www.pilbaraports.com.au/Port-of-Dampier/Port-Operations/Moorings">https://www.pilbaraports.com.au/Port-of-Dampier/Port-Operations/Moorings</a></td>
</tr>
<tr>
<td>2</td>
<td>Seek clarification from PPA on your preferred mooring location prior to Applying for... a new Install application in the Klein Moorings Management System (KMMS). Once the location is approved, confirm with your Naval Architect/Engineer that the mooring design is suitable for your vessel, in the PPA approved location. Obtain a preliminary drawing containing a table of permissible wear rates and attach it to the application.</td>
</tr>
<tr>
<td>3</td>
<td>On the approval of the application to install a mooring, PPA will issue an invoice for the application fee through KMMS.</td>
</tr>
<tr>
<td>4</td>
<td>The Mooring Owner can then engage a mooring installer to install the mooring as per the Naval Architect’s preliminary drawing. Installation/Relocation must occur within three months of the application being approved.</td>
</tr>
<tr>
<td>5</td>
<td>Once installed, a dive inspection is required. Upload the Installation report, along with any component certifications into the documents section of KMMS. Forward the application to PPA for uploading the component information into the KMMS for the dive inspectors reference and completion.</td>
</tr>
<tr>
<td>6</td>
<td>The Dive Inspector will conduct an in water inspection (as per the Mooring Dive Inspection Standards and Deliverables) and complete the mooring components list, inclusive of photos. The completed Installation report should be forwarded to the Mooring Owner for review.</td>
</tr>
<tr>
<td>7</td>
<td>When the Mooring Owner is satisfied that all the information is complete, forward the application to the Naval Architect/Engineer for review and certification for use.</td>
</tr>
<tr>
<td>8</td>
<td>The Naval Architect/Engineer will provide a certification for use of the mooring and update the preliminary drawing to an as-built drawing including a table of permissible wear rates of the mooring.</td>
</tr>
<tr>
<td>9</td>
<td>The Mooring Owner then completes the owner declaration in the application and forwards it to PPA for approval.</td>
</tr>
<tr>
<td>10</td>
<td>Once approved, PPA will issue an annual mooring licence and a tax invoice for the licencing fee through the KMMS.</td>
</tr>
<tr>
<td>11</td>
<td>Each year the mooring will require an annual mooring dive inspection between May and October. Any mooring components that exceed the permissible wear rates, as prescribed by the Naval Architect/Engineer, will require replacing or further review by the Engineer. The annual inspection is to be submitted to PPA prior to 1 October.</td>
</tr>
</tbody>
</table>
8. **ANNUAL MOORING LICENCE APPROVAL PROCESS**

8.1 **ANNUAL MOORING DIVE INSPECTION REPORTS**

(As per the Port Authorities Regulations 2001)

A mooring owner must arrange for an annual mooring dive inspection with a PPA approved dive inspection company between 1 May and 1 October each year. The annual inspection is managed through the Klein Moorings Management System (KMMS). Login details can be obtained from the Marine Operations Coordinator.

The Annual Mooring Dive Inspection should:

- Provide the inspection details of your mooring ie; inspection and review type, licences season, nominated inspection company and architect/engineer;
- contain all vessel specifications;
- contain jpg photos of the inspected mooring components;
- demonstrate that the permissible design wear rates have not been exceeded;
- show that maintenance has been completed as per Section 8 (maintenance report with photos attached);
- show that no alterations have been made to the mooring outside of its design specification;
- should there be vessel or mooring changes an analysis and certification for use of the mooring is required by the architect/engineer;
- contain a previous naval architect certification for use that is no greater than five years old.

Approval for the issue of an annual mooring licence is granted by the Harbour Master.

Once approved, the Owner will receive a tax invoice via KMMS.

All mooring licences expire on 31 October each year. Should a mooring not be inspected and the report not submitted to the PPA, your mooring will be ineligible for use. If requested by the PPA, the mooring owner must remove the mooring at the Owner’s expense.

8.2 **ANNUAL MOORING DIVE INSPECTION RECORD – 5TH YEAR NAVAL ARCHITECT REPORT**

All moorings must have a review by a Naval Architect/Engineer every five years.

The Naval Architect/Engineer should be consulted prior to the annual dive inspection and they will advise the mooring owner as to what need to be inspected/audited for review. Should the mooring require an uplift or major maintenance, please contact the PPA Marine Operations Coordinator. The Naval Architect/Engineer will complete the Certification for Use on your annual inspection.
## Annual Mooring Dive Inspection Flow Chart

Each year all moorings require an annual mooring dive inspection conducted between May and October. Any mooring components that exceed the permissible wear rates, as prescribed by the Naval Architect/Engineer, will require replacing or further review by the Engineer. Every 5th year the Mooring Owner must have their mooring reviewed by a Naval Architect/Engineer. The Inspector will be required to carry out the inspection according to the Naval Architect/Engineer requirements. The annual inspection is to be submitted to PPA prior to the 1 October.

**1.** The Mooring Owner is required to log into the Klein Moorings Management System (KMMS) and *Apply for... an Annual Inspection*
   Refer to the Klein On-line Moorings Management – Owner's Manual.

**2.** The Mooring Owner can include a purchase order number (if applicable) and complete the Inspection Details. Select an Inspection Company and Engineering Company if required to inspect the mooring. It is recommended that you contact the companies to discuss your inspection requirements prior to completing the application. Submit the application to the Inspector.

**3.** Every 5th year the Mooring Owner must have their mooring reviewed by a Naval Architect/Engineer.

**4.** The Inspector is to complete the moorings component inspection record by populating the component measurements and upload photos of the components inspected. Once completed, finalise the application by editing the inspection results and recording maintenance required/completed etc. The Inspector will submit the completed application to the Mooring Owner.
   Refer to the Klein On-line Moorings Management – Inspectors Manual.

**5.** The Mooring Owner must replace and/or make repairs on any components that have exceeded the wear rates, to ensure compliance with mooring requirements. Please ensure a maintenance report is uploaded or your annual inspection component record updated for review.

**6.** The Mooring Owner may need to forward the inspection report to the Engineer for review. Eg. Change in mooring components, review of drawing, and change of vessels. Refer to the Klein On-line Moorings Management – Engineers Manual.

**7.** The Mooring Owner then completes the *owner declaration* in the application and submits it to PPA for approval.

**8.** Once approved, PPA will issue an annual mooring licence and a tax invoice for the licencing fee through the KMMS.

**9.** Once PPA has approved the mooring for licencing, an invoice will be issued through KMMS.
9. MOORING INSPECTION

9.1 RESPONSIBILITY FOR INSPECTION

The mooring owner is solely responsible for the inspection, care, use and maintenance of all mooring components and the cost of their replacement.

The mooring owner must arrange and pay for all inspections required by these mooring requirements and Mooring Licence Terms and Conditions.

9.2 ANNUAL INSPECTIONS

The frequency and scheduling of the different types of inspections shall be determined by the mooring owner and the Harbour Master, taking into account inputs such as: mooring type; location; usage; previous mooring reports and climatic events.

As a minimum, each mooring must be inspected by a Dive Inspector annually or after any significant event as determined by the Harbour Master.

9.3 INSPECTION REQUIRED WHEN A MOORING IS SOLD OR TRANSFERRED

When a mooring is sold or otherwise transferred, the purchaser must:

a) arrange for a naval architect/engineer to carry out a mooring analysis to ensure that the mooring is suitable for the intended vessel; and
b) ensure a copy of the analysis is uploaded to the Sale/Transfer application submitted to PPA.

9.4 MISCELLANEOUS INSPECTIONS

An additional inspection may be required where a mooring:

a) is intended to be configured differently;
b) has been dragged or the position of the mooring has changed significantly from previous inspection; or
c) a significant event has occurred, as determined by the Harbour Master.

9.5 INSPECTION REPORTS

a) Following any mooring inspection, the Dive Inspector must submit the Mooring Inspection results to the Mooring Owner.
b) The Mooring Owner must provide the Mooring Inspection to PPA together with evidence of any maintenance work, and inclusive of current photographs. Annual Inspection must be submitted to PPA before 1 October each year.

9.6 DETERIORATION AND NON COMPLIANCE OF MOORINGS

a) If excessive deterioration is observed by the Dive Inspector, the mooring is not to be used until all worn components are replaced with equivalent items as per the as-built drawing. Mooring Owners are to forward maintenance details as part of an inspection report to the Mooring Officer.
b) If the permissible design wear rates of a mooring are exceeded, the mooring is not to be used until all worn components are replaced and details of maintenance forwarded to the Marine Operations Coordinator.

c) If the Dive Inspector determines the mooring components do not conform to as-built standards and specifications, PPA may suspend the relevant mooring licence. The Mooring Owner must remove the assigned vessel from the mooring immediately after receiving notification from PPA. A mooring Owner’s failure to remove the vessel may result in the immediate termination of the mooring licence by PPA.

d) Further, if the nonconformity specified by PPA is not rectified within fourteen (14) days after notification has been given by PPA, PPA may deem the mooring to be a dangerous thing as defined in the Port Authorities Act 1999, and the licence for that mooring may be revoked. The mooring owner may be required to remove the mooring in its entirety.

9.7 DIVE INSPECTORS AND NAVAL ARCHITECTS/ENGINEERS

Companies wishing to conduct inspections or provide Naval Architect/Engineering services should contact the PPA in writing, listing qualifications and providing current insurance documentation by 1 May each year.

9.8 TYPES OF INSPECTIONS

Three types of mooring inspections are conducted at Dampier and Ashburton – in water, partial raising and shore inspections:

- **In water inspections** are conducted by divers without removing the mooring to examine the anchors, chains and fittings for wear, corrosion and marine growth fouling and to check that shackle pins are not loose. The subsequent report should contain recommendations for work required.

- **Partial raising inspections** involve bringing the mooring buoy and chain components on-board a vessel for inspection. This is required for major works, e.g. repositioning, chain replacement, clearing marine growth, end-for-ending chain etc.

- **Shore inspections** involve complete removal of the mooring to a shore location for a detailed inspection of all components. This operation might be required for change of ownership, repositioning the mooring, or for assessment following an insurance claim. Redeployment will require a mooring installation report to be submitted for approval.

Mooring designs are not to include a under buoy hawser as shown in figure 8.
Figure 7 Un-acceptable mooring design

10. REFERENCES

Port Authorities Act 1999

Port Authorities Regulations 2001

Ports of Dampier and Ashburton Mooring Licence Terms and Conditions

Mooring Dive Inspectors and Naval Architect/Engineer List

Ports of Dampier and Ashburton Mooring Dive Inspection Standards and Deliverables

Schedule of Fees
11. APPLICATIONS AVAILABLE IN KLEIN MOORINGS

The following applications are available in KMMS:

Apply For…

Mooring Installation
Annual Inspection
Change of vessel / add vessel
Third Party Use
Miscellaneous Dive Inspection
Sale/Transfer
Change Contact

12. ANNEX


DOCUMENT AMENDMENT TABLE

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<th>Version</th>
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<th>Date</th>
<th>Amendment</th>
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<td>Michelle Boyce</td>
<td>07/10/2015</td>
<td>Document amendment table and footer added.</td>
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<td>Michelle Boyce</td>
<td>04/11/2015</td>
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<td>Donna Banks</td>
<td>27/01/2016</td>
<td>Review to align with Klein</td>
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<td>01/04/2016</td>
<td>Mooring Dive Inspection Standards and Deliverables</td>
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<tr>
<td>9</td>
<td>Judith van Manen</td>
<td>23/05/2018</td>
<td>Revised and updated</td>
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