

## Port Hedland Mooring Management Standard

### Purpose

BHP values safety and strives to ensure that everyone ends each day safe from harm.

This standard sets out the revised mandatory mooring requirements, that will apply to all vessels calling at the BHP Port Hedland Terminal (Terminal) and the crew on board from 1 July 2021, along with details of an incentive program for the adoption of new mooring line technology.

### Background

In 2018, BHP released a Port Hedland mooring line standard and incentive scheme following an increasing trend of mooring related incidents. These type of incidents can result in fatalities or serious injuries, a vessel to drift off the berth resulting in a grounding or allision, or a commercial delay to the vessel loading.

The initiative was successful in tackling the underlying causes of these incidents and resulted in a 35% reduction in incident frequency. Of the incidents that occurred since 2018, we identified the causal factors and the requirements in this standard will aim to reduce the incident occurrences in these categories.

We will also continue to incentivise the industry for adoption of innovative technology which is aimed at encouraging further safety developments in the industry.

### Requirements

All vessels calling at the Terminal and their crew must comply with the mandatory requirements described below from 1 July 2021 at 0001 AWST. Verification that the vessel and crew are compliant with the requirements will occur through the vessel vetting process, the Terminal Questionnaire and/or an inspection on board the vessel.

Certification	Status
1. Vessels shall have on board, valid and up-to-date certificates for all mooring lines and mooring tails that are in use or kept as spares. These certificates must be produced for inspection if requested by BHP.	New

  

Mooring lines	Status
2. Mooring lines shall not exceed a maximum duration of 5 years from the date stated in each line certificate, unless the vessel can demonstrate to BHP's satisfaction that: <ul style="list-style-type: none"><li>i. The condition and quality of each mooring line is acceptable and verified by an independent third party in accordance with the ISO 2307 standard for the vessel's deadweight tonnage (DWT);</li><li>ii. Owners may wish to consider purchasing mooring lines of sufficient length to allow for testing to be done after 5 years of use, if they wish to keep lines in service beyond 5 years.</li><li>iii. The mooring lines meet the conditions of the Terminal's new mooring line technology incentive.</li></ul>	Modified
3. At all times, the minimum length of the mooring line shall be 200 metres.	Existing
4. The maximum diameter of the mooring line must not exceed 110mm.	New

5. The guaranteed minimum breaking load on all lines shall be >75T, if the DWT>=120k.	Existing
6. Mooring lines on the vessel must be uniform in all respects i.e. the same type of material, diameter and have the same minimum breaking load (MBL).	Existing
7. All mooring lines (including spares) shall be in good condition and free from knots, bends, splices and wear/abrasion damage.	Existing
8. Each vessel shall carry a minimum of 2 spare mooring lines of each type of mooring line carried on board, and the spare mooring lines must meet all the same requirements as the lines in use.	Modified
9. Wire ropes will not be accepted.	New
<b>High modulus synthetic fibre lines</b>	<b>Status</b>
10. Lines with limited stretch (elasticity), such as high modulus polyethylene (HMPE) lines, must be used with mooring tails in line with the recommendations of the original equipment manufacturer (OEM).	New
<b>Mooring tails</b>	<b>Status</b>
11. Vessels shall ensure that all tail (pendant) connections to the main line are in accordance with the requirements of the OEM.	New
12. Tails must have a breaking force of 125% to 130% of the mooring line that they are joined to.	New
13. Tails must have a minimum length of 11 metres.	New
14. Metal shackles will not be accepted.	New
<b>Winch brakes</b>	<b>Status</b>
15. Winch rendering limits are to be in accordance with the requirements of: <ul style="list-style-type: none"> <li>i. The mooring winch manufacturer, and</li> <li>ii. The vessel's safety management system.</li> </ul> <p>The winch brakes must complete and pass brake-rendering tests according to the testing frequency recommended by the mooring winch manufacturer, or the vessel's safety management system, or once every 2.5 years, whichever comes first.</p>	New
16. If new lines are fitted to drums, brake render tests will be required.	New
17. Mooring winch brakes shall be set at 60% of the vessel's design MBL >45T, if the DWT>=120k.	New
18. The rating pulling power of the winches shall be within the following tolerances: <ul style="list-style-type: none"> <li>&gt;=15T if the DWT 120-155k</li> <li>&gt;=16T if the DWT 155-220k</li> </ul>	New

Vessel crew and line management	Status
19. All deck crew who are tending to mooring lines must be adequately trained and competent to do so.	New
20. Adequate vessel crewing shall be made available to ensure moorings can be monitored at intervals of no more than 30 minutes.	New
21. Vessel crew shall continuously monitor the vessel's mooring lines every 30 minutes, for 2 hours before and 2 hours after the turn of the tide (both high and low tides).	New
22. Mooring lines shall run from winches or, if approved, on bits.	New
23. Mooring lines shall not be secured on crucifixes or on to warping drums (drum ends).	New
24. The full length of all mooring lines shall undergo at least one detailed inspection at intervals of not more than 12 months and all records shall be kept on board and made available for inspection upon request.	New
25. Mooring lines shall be turned/rotated end to end every 2.5 years from the time in first use and records shall be made available for verification by BHP.	Modified

## New mooring line technology incentive

BHP will discount the line handling fee for certain new technology adoption, to incentivise the advancement of mooring line safety improvements. The incentive will apply to the use of products incorporating technology aimed at reducing the snap backs of mooring lines together with the appropriate line management plan, as determined or approved by BHP.

The Wilhelmsen Timm Master 12 Snap Back Arrestor F100 (73mm) 220m and the Wilhelmsen Line Management Plan technology is currently approved by BHP. Alternative mooring line technology options will be reviewed by BHP.

If a vessel berthing at the Terminal has all mooring lines installed of the Wilhelmsen Timm Master 12 Snap Back Arrestor F100 (73mm) 220m type and their use and condition is continually monitored through the Wilhelmsen Line Management Plan, the vessel will benefit from:

1. Reduced line handling charges from AU\$1600 to AU\$600 per Terminal call.
2. Mooring lines turned/rotated end to end at a minimum 2500 hours of active service.
3. A review of the line condition completed at 4500 hours of active service, or 5 years from certificate date to determine suitability for ongoing use. The line condition will be endorsed by the mooring line manufacturer and approved by BHP.

NB: All lines of the Wilhelmsen Timm Master 12 Snap Back Arrestor F100 (73mm) 220m type, must be retired at age of 5000 hours of active service. Hours of active service is the time the lines are used in mooring operations as logged in the Wilhelmsen Line Management Plan.

The 2018 Terminal mooring line incentive scheme will be superseded by the above incentive scheme on 1 April 2021 at 0001 AWST. The new mooring line technology incentive will be valid for all vessels calling the Terminal meeting this option from 1 April 2021 until 30 June 2022 at 2359 AWST.

## Questions

For questions regarding these requirements, please contact your BHP representative.