

Shire of Exmouth



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Exmouth Marina Village Canal Boat Mooring Management Plan and Standard Operating Procedures

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Introduction

This document is published by the Shire of Exmouth, being the Waterways Manager, to delineate the responsibilities of all those including canal lot owners involved in the ongoing operations of the Exmouth Marina Village canal and waterways. It contains the Standard Operating Procedures, Code of Conduct and Cyclone Management Plan for waterfront lot owners and others. This document should be read in conjunction with DPI's Welcome to Exmouth Boat Harbour booklet.

The Exmouth Boat Harbour (DPI) Cyclone Plan is available on the DPI website line at http://www.dpi.wa.gov.au/mediaFiles/mar_cf_exmouth_ccp_07.pdf

Any private jetties, pens and moorings constructed at individual waterfront lots are subject to design and engineering criteria that are also described.

Throughout the document wherever the Waterways Manager is referred to this has the same meaning as the Shire of Exmouth. Under the Local Government Act, the Jetties Act and the Navigable Waters Regulations of the WA Marine Act, the Shire of Exmouth and its officers act as managers of the waterways of the Exmouth Marina Village. Nominated Shire officers are authorised under the Western Australian Marine Act 1982 to enforce the relevant regulations under the above Acts and Regulations.

Cyclone and Fresh Water Flood Events in Exmouth

Cyclones

Exmouth can be subject to severe weather conditions at any time of the year. Nominally between 1 November and 30 April there may be cyclonic wind and tidal surge effects of severe tropical cyclones and, at any time of the year, flooding caused by heavy rains can cause raised water levels and strong currents within the Marina Village canal waterways and the boat harbour.

In these conditions, boats berthed on the waterfront of residential sites within the Marina Village would be subject to immense forces. Any boat breaking loose could cause great damage to other boats and infrastructure within the Marina Village canal, waterways and the boat harbour.

Exmouth is located in an area periodically experiencing such strong winds that building and engineering works require the highest construction standards in Australia. Vessels, and the structures they are moored to, must also withstand these winds. In addition, vessels, canal walls and jetties have to cope with the large and sudden rise in water levels caused by the storm surge associated with cyclones. These surges are mainly caused by the extreme low pressure in the cyclone's eye, and travel with the cyclone in the form of a large dome of water. If the storm surge coincides with high tide, the water level will be even higher.

Cyclone Vance, which hit Exmouth in March 1999, had peak wind speeds of 267 km/hour and a storm surge that temporarily raised the sea water level to 3.5 metres above the predicted tide level.

For further information please refer to the Shire of Exmouth Cyclone Contingency Plan and DPI's Exmouth Boat Harbour A3 Cyclone Contingency Plan.

Fresh Water Floods

Major fresh water flood events due to run-off from the Range after extreme rainfall events, and will be substantially routed through the canal system, are common enough that they must have similar consideration to cyclones. Notice of these events is typically short, and owners may be absent from their properties.

For those properties exposed to these floods, withstanding the current and the rise in water levels caused by such events requires moorings of similar strength and design to those designed to withstand the storm surge of a severe cyclone.

Especially if the storm surge or flood coincides with high tide, the rise in water level can put an immense strain on the mooring lines.

Jetties Approval Process

Planning Application to the Shire of Exmouth

- Applications available from the Shire of Exmouth (9949 1399) or download from www.exmouth.wa.gov.au
- Once a Planning Approval has been given you need to obtain a Jetty Licence from the Department of Planning & Infrastructure -

Jetty Licence Application to the Department for Planning and Infrastructure

- More information is available on the DPI website at <http://www.dpi.wa.gov.au/imate/19430.asp>
 - Jetty Licence Application are available at: http://www.dpi.wa.gov.au/mediaFiles/mar_cf_Application-License-Public-Jetty.doc
- Once a Jetty Licence has been obtained you need to apply for a Building Licence from the Shire of Exmouth -

Building Licence Application to the Shire of Exmouth

- Applications available from the Shire of Exmouth (9949 1399) or download from www.exmouth.wa.gov.au
- Once you have your planning approval, jetty licence and building licence you may commence construction of your jetty in accordance with your approvals -

General Information

The following is provided as general information relating to landowners and canal users responsibilities. The issues identified in this section reflect the principle of the Village and various state laws.

Should visitors use the private jetties the property owner is responsible to advise the visitor of the Shire of Exmouth 'Standard Operating Procedures', 'Code of Conduct' and the 'Exmouth Marina Village Waterways Boat Mooring Management Plan'. The owner of the property is responsible for the visitor's actions within the waterways.

You must always keep your property water frontage, vessel, jetty, pen and surroundings safe by not leaving loose equipment, or other items which may become projectiles under extreme wind or flood conditions. This also ensures that flash flooding will not result in equipment or other items being washed into the canal waterways

You are responsible for the mooring security of your vessel. Should your boat or equipment break free and damage the pens, wharf, property or other vessels, you will be liable for the costs of repairs.

You are not permitted to dump any fuel, oil or rubbish into the waters of the canal waterways and harbour or elsewhere, except where areas/facilities are specifically set aside for such purpose.

It is your responsibility to ensure that your vessel has appropriate mooring lines for all weather conditions and that they are kept in good order. The standards for boat moorings are detailed later in this Management Plan.

You must at all times comply with the Acts, Regulations and Code of Conduct applicable to the operation and management of the canal waterways and DPI Boat Harbour.

When moving about the canal waterways, a suitably qualified responsible person, who is able to control the vessel in a safe and courteous manner, should always control your vessel.

Environmental Management

It is your responsibility to ensure that any actions or activities you undertake do not pollute or risk damaging the environmental condition of the canal waterways or harbour. The Pollution of Waters by Oil and Noxious Substances Act 1987 is one of the States applications of international rules that are rigorously applied. The definition of pollution includes the introduction of any foreign matter to the waterways.

Oil and Bilge Water

State regulations require that oil may not be dumped into water anywhere, and offenders of this rule are subject to severe penalties. Inadvertent dumping of oil can occur when dirty bilge water is pumped overboard; owners should ensure that bilges are maintained in a clean state to prevent this happening. In any case, pumping of bilges is not permitted within the Marina Village canal waterways.

Automatic bilge pumps should only be used provided the water level at which they are activated is such that any further flooding would endanger the vessel.

If any spill of fuel or other noxious substance occurs this must be reported to both the Waterways Manager telephone no: 9949 1399 and DPI's Marine Environmental Protection Unit telephone no: 92168803. Information to be given is:

- when and where the incident occurred;
- name and registration number of the offending vessel;
- type and extent of pollution;
- any other relevant information.

Failure to make this report is subject to penalties.

You must also:

- take every possible action to contain the spill;
- advise the Waterways Manager.

Fuel spill containment equipment is stored in a sea container at MG Kailis's fleet base site adjacent to the Exmouth Boat Harbour Service Wharf.

Call out costs apply to containment services provided by the Shire of Exmouth MG Kailis and DPI.

Sewage

No discharge of sewage, treated or untreated, is permitted into the Exmouth Marina Village canals or the Exmouth Boat Harbour. The only acceptable disposal method is to have a vessel's sullage tank emptied by a Shire of Exmouth and Department of Environment & Conservation approved sewage disposal truck. This must take place at Exmouth Boat Harbour Service Wharf.

Rubbish

State boating rules applying to the dumping of rubbish prohibit the dumping of:

- Oil, noxious substances or plastics anywhere;
- Floating rubbish within 25 nautical mile of the nearest land;

- Garbage, including food wastes within 12 miles of the nearest land.

Rubbish, waste oils and filters must be disposed of in the containers supplied at the Exmouth Boat Harbour or at the Shires Waste site oil disposal area. Waste disposal fees apply.

Boating rules

The Marina Village canals are part of State Waters and are subject to the legislation that governs all boating in the state. You are particularly reminded of the need to obey the posted speed limits (5 knots within the canals), and not to cause annoyance to other water users or canal residents by noise or misbehaviour.

The state regulations, and regulations applying only locally, will be policed by both DPI officers and by Waterways Manager officers empowered under state legislation.

Any private jetties, pens and moorings constructed at individual waterfront lots are subject to design and engineering criteria that are also described further in this document.

Boat Trailer Security Points

Trailer boats that will be stored on dry land during the cyclone season will require “Cyclone Security Points” for the trailer and boat in accordance with the Outline Development Plan Design Guidelines on the property where it is to be stored.

Entry on Vessels & Jetties

Council Officers may enter uninvited onto your property, including your vessel or jetty provided the provisions of the Local Government Act are adhered to. This includes providing you with written notice not less than 24 hours before the officer needs to access your property. If you further object to the Officer entering your property, the Officer may seek a warrant to obtain access without your permission.

Entry on Vessels & Jetties During an Emergency

Council Officers may enter onto your property, jetty or vessel in an emergency situation, provided it meets the requirements for an emergency under the Act.

Department for Planning and Infrastructure – Jetty Licence

Under Section 7 of the Jetties Act 1926, private jetties anywhere in state waters may only be constructed after the issue of a licence by the Department for Planning and Infrastructure, Coastal Infrastructure Business Unit. Conditions of the licence will govern the construction, maintenance and use of the jetty, and will vary with local climate and circumstances. When you apply to DPI for a jetty licence within the Exmouth Marina Village, these are some of conditions you must comply with. Please refer to your jetty licence for the full list of conditions you must adhere to.

- The marine engineered jetty certification details need to be fastened to the jetty structure for compliance inspection. A template for this identification plate is attached at Annex 4. (DPI Jetty Licence condition 1 (g))
- You must allow the Waterways Manager or any other persons authorised by the Shire of Exmouth to access your jetty for inspection purposes of the structure (DPI Jetty Licence condition 1 (b)), the boat moorings, and the vessel and associated equipment, to ensure safety and operational conditions are being met.
- If, in your absence from your property and subject to expiry of a notice served by the Waterways Manager, the Waterways Manager requires a situation to be remedied with respect to your use of your jetty, the Waterways Manager may have the work performed by others and charge the cost to you. (DPI Jetty licence condition 1 (d))
- You must not make any alterations to the pen without prior written approval from Waterways Manager. (DPI Jetty Licence condition 1 (i))
- In applying to the DPI for a jetty licence, you accept that the Waterways Manager and its officers and agents, cannot be held responsible for any damage or loss to property, or injury or death, as a result of your use of the mooring envelope or Marina Village canal waterways. (DPI Jetty Licence condition 1 (k)) Property owners may consider ensuring their property insurance public liability covers issues that may arise in this area.
- You must not put up any signs or advertisements on any portion of the jetty. (DPI Jetty Licence condition 1 (e))

Exmouth Marina Village Canals Local Law

The following is provided as an explanatory summary of the Exmouth Marina Canals Local Law. A full copy of the Local Law is available by contacting the Shire of Exmouth or visiting the website at www.exmouth.wa.gov.au

Swimming

Swimming is prohibited within the Exmouth Boat Harbour and the Exmouth Marina Village canal waterways except for minor boat, jetty or canal wall maintenance / inspection.

Fishing

Fishing is prohibited from certain areas within the Exmouth Marina Village canal waterways. This includes from the footbridge and public moorings. Fishing must also not cause a nuisance to other people in the village.

Fuelling Procedures

Fuelling a vessel is not permitted within the Marina Village Canals. Owners may fuel only at the designated fuelling berth in the Exmouth Boat Harbour or with permission from the Shire of Exmouth.

Living on Board

Living on board a vessel is not permitted within the Exmouth Marina Village canals. 'Living on board' also includes using a vessel as temporary accommodation for guests or family and includes sleeping on the vessel for one or more consecutive nights.

Use of Mooring Pens & Harbour Facilities

You may not use the canal waterways, pen or other harbour facilities for any purpose other than for the normal designated purpose.

Maximum Number of Boats at a Property

The maximum number of boats that may be moored at a property at one time is one (1). This is because all boats must be suitably moored at all times in case of flash floods and moorings have been designed for single vessel use only.

Boat Lifting Devices

Boat lifting devices will be permitted within the canals provided they are wholly contained within the mooring envelop and moored with the appropriate mooring lines for the vessel and boat lifting device size and weight. During a cyclonic event the boat lifting device must be submerged and the boat and boat lifting device moored appropriately.

Mooring of Vessels Generally

The owner of the property must not moor vessels that exceed the engineering specifications of:

- the canal waterway (“the design boat”) jetty structure or
- the maximum mooring length allocated to the property

You are not permitted to allow any other boat to use your jetty if

- the size/weight of the boat exceeds the engineering specifications of the jetty structure
- the boat length exceeds the maximum mooring length allocated to the property
- the boat does not have the marine engineered certification referred to in the Standard Operating Procedures

Removal of Vessels

The Waterways Manager can, at any time, order your vessel to be moved or remove it from the canal waterways or harbour, if there is a need, such as an emergency or some other valid reason. The cost of vessel movement or removal can be recouped from the vessel owner.

Vessel to be Moored within the Mooring Envelope

When moored in the pen, your vessel must not extend beyond the pen in a way that will hinder other vessels manoeuvring about the pens. No part of your vessel shall protrude over or beyond the mooring envelope.

Vessel Maintenance

Routine servicing and minor maintenance is permitted within the Exmouth Marina Village Waterways. Work must not pollute the waterways or cause inconvenience or annoyance to the public or other waterway users.

‘Servicing’ means prescribed periodic work on a vessel’s machinery rather than repairs. ‘Minor maintenance’ is limited to the level of replacing windows, awnings and fittings, touching up small areas of paint, repairing plumbing and the like.

Cleaning of hulls is prohibited within the waterway.

Major repairs, or work involving the use of lifting equipment, or which is likely to generate dust or excessive noise is prohibited within the waterways.

Major repairs are to be carried out in the Exmouth Boat Harbour marine facilities by arrangement with the harbour manager. The Exmouth Boat Harbour manager’s contact details are available in the Exmouth Marina Village Cyclone Contingency Plan.

Connection to Domestic Power Supply

If you choose to connect your vessel's electrical system with your dwelling's power supply your boat's low-voltage electrical system shall comply with AS/NZS 3004. The shore terminal shall be installed by a licensed electrical contractor and is to conform to AS/NZS 3004.

Cord Extension

The cord extension set shall comply with the following:

- The current rating of the flexible cord shall be not less than 15 amps.
- Plug shall be rated at not less than 15 amps and shall have a degree of enclosure protection to IP 56 (dustproof and weatherproof to heavy seas force) when connected to the socket outlet.
- The flexible cord shall be in one length and shall not be used coiled.
- The flexible cord shall be heavy duty 3 core (including earth conductor) sheathed cord type complying with AS 3191.
- All components shall be in good condition. No corrosion on electrical contacts, no damage to plugs, sockets and to the cord sheath.
- Only one boat's Cord Extension Set shall be connected to any one-plug socket. (No double adaptors).
- The extension cord set should be tested 6 monthly and fitted with a non re-useable, non metallic tag that contains the name of the electrical worker, the electrical workers license and the date of test or re-test.

Precautionary Comments

The entry of moisture and salt into the inlet socket may cause a hazard. Examine carefully and clean before connecting to the supply.

It is dangerous for unskilled persons to attempt any electrical repairs or alterations. If any difficulty arises consult a licensed electrical contractor.

You are advised to fit an isolating transformer on board to isolate the low-voltage electrical system of your boat from the shore electrical supply system. This may reduce corrosion activity caused by the coupling of your boat to the copper-based electrical protective earthing system and/or other boats. Additional sacrificial anodes or galvanic isolators may be used to reduce these effects.

(Refer to the AS/ANZ 2382 Series of Standards for suitable cathodic protection practices).

The earthing of conductive parts on boats with non-metallic hulls may result in the degradation of timber (including wooden plugs in boats of reinforced plastic construction).

Vessel Gas Installations

Owners of vessels fitted with gas appliances are to have a current Gas Compliance Certificate, completed by a licensed installer in accordance with the Energy Safety WA regulations.

Moorings

Direction in which vessels must be moored

In order for vessels to give minimum resistance to water flows in the event of a fresh water flood, the Waterways Manager will allocate the direction in which any vessel must always be moored; ie with the bow facing the direction from which the flood would come.

Working Life and Inspections of Mooring Systems

Exmouth is subject to high ultra violet levels from sunlight that degrade the strength of synthetic fibre ropes. The small movements of boats within their pens create wear on both the ropes and the mooring collars and shackles. For these reasons, the mooring systems of all vessels in the Village Marina may be subject to annual inspections by the Waterways Manager or their approved contractor. Fees for the inspection will be payable by the owner.

The approved mooring ropes only have a life span of 2 years due to their deterioration in sunlight and even less should they be subject to Cyclone Category 3 (mean wind speed greater than 64 knots or approximately 120 km/hr) conditions. Mooring lines need to be replaced following a Cyclone Category 3 event.

Moorings: (Cyclone and Flood Conditions)

All vessels, other than those in mooring areas designated for vessels of under eight

All vessels moored in canal arms 1, 2, 3, 4, the main canal, and that portion of canal 5 catering for vessels greater than 8 metres are subject to cyclone moorings.

The vessels moored in canal arms 1, 4 and the main canal are also subject to flood waters under extreme rainfall events, including cyclones. Vessels moored in these canals are to be moored bow pointing upstream at all times, i.e. bow pointing eastwards (towards Murat Road) in canals 1 and 4 and in the main canal pointing northwards (towards Warne Street). See cyclone contingency plan.

Vessels that DO NOT require cyclone-mooring systems

All vessels of 8 metres or less moored in canal arms 4A, 5A and that portion of canal 5 catering for vessels 8 metres or less in length do not require cyclone

moorings. However, these vessels are to be removed from the water in the event of a cyclone alert. See cyclone contingency plan.

The vessel mooring lines for cyclone and flood conditions are the same, however the orientation of the moored vessel (bow upstream) in canal arms 1, 4 and the main canal is essential.

If a vessel's owner is to be absent from Exmouth at any time during the cyclone season, he or she must make alternative arrangements for the removal of a vessel under the Stage Blue Alert.

Vessels that DO require cyclone-mooring systems

All vessels moored in Canal Arms 1, 2, 3, 4 and the portion of canal arm 5 catering for vessels greater than 8 metres in length and the main Floodway Canal are required to have cyclone moorings at all times.

The mooring system comprises four mooring lines, and floating mooring collars. The lines will be supplied cut to length and of the correct material and thickness for each boat's dimensions. At one end will be a shackle, strength rated for the task, at the other an adjustable jiffy splice. See Appendix 2

The lines must be shackled to the eyes of the floating mooring collars. After tightening the shackle, the eye on the end of each shackle's pin must be wired (moused is the technical term for this) to the main part of the shackle. For the sake of durability you must use the wire supplied with the shackle. The supplier's agent can demonstrate the mousing technique.

The rearward lines cross over the vessel, and the spliced loop is placed over the mooring cleat on the opposite side of the vessel to the collar to which it is attached.

The loops of the forward lines are either both placed over the central bitts (or samson post), or crossed over to individual cleats. The hardware, ie central bitts or cleats, used must be those with engineering certification.

Annexe 2 contains a drawing showing the mooring ropes' layout.

It is crucial that, after placing the loops over the hardware, the splices be adjusted (the supplier's agent can demonstrate the simple technique). The rope type supplied has no stretch in it and, for it to work to its maximum efficiency; there must be no slack in the line. Make each line as tight as possible.

Vessels that may remain

(1) Any vessel 8 metres and under in length may remain if;

- a) the mooring the vessel is moored to has been certified to withstand the load placed on the mooring by the vessel during a flood or cyclone;
- b) the mooring lines used to moor the vessel have been certified as being able to withstand the load on the mooring lines placed on them by a flood or cyclone;
- c) the cleats, bollards or bitts on the vessel have been certified by an engineer or equivalent as being able to withstand the load placed on the vessel by a flood or cyclone;
- d) the vessel is moored within a vessel mooring pen; and
- e) the vessel is moored in accordance with schedule 4

Canal Wall Maintenance

Revetment and Limestone Block Walls

1. Individual lot owners are responsible for the ongoing maintenance of the stabilised surfaces, revetment walls and retaining walls within or abutting that lot. The maintenance of private jetties and pen systems is also an individual responsibility. Maintenance must be carried out such that these items remain fit for the purpose to which they were originally constructed. The canal edge revetment has been constructed as an excavated batter slope clad with a geotextile cloth (to prevent loss of fine material from the earth to the canal) covered with a layer of limestone filter material and topped with two layers of limestone 'armour' rocks as shown in the attached drawing.
Being a flexible structure the revetment may move while withstanding the forces for which it has been designed. It is standard practice for maintenance to revetments to be undertaken to replace or reinstate dislodged rocks and to restore the revetment height from time to time.
2. Between the lower revetment and the upper block work walls, each lot has been provided with a concrete pathway at a level just above highest astronomical tide. The path forms part of the canal edge protection as well as providing a landing/access for a possible future boat jetty, which the lot owner may elect to have built at the Lot waterfront.
3. The canal edge retaining walls have been constructed in reconstituted limestone block work to create a vertical edge treatment with an intermediate compacted earth terrace and steps from the lot to the path.
4. The edge structures lie fully within the lot owner's property and responsibility for their maintenance and integrity in service rests with the lot owner i.e. at purchase the canal edge structures, revetment, path and walls become part of the lot owner's property.
5. The edge structures have been designed to account for both tidal and storm surge flood levels, as well as from the load caused by earth retained on the landward side of the structures.
6. Housing designs and water edge treatments behind the canal edge structures will differ from lot to lot and therefore it is the responsibility of each lot owner through their structural engineer to ensure that the canal edge structures, as constructed, will be adequate to accommodate all loadings applied to them and take account of soil and material properties and other factors.

7. The lot owner should be aware that during storms, including cyclones, the water level in the canals can rise such that the revetment and concrete path are fully inundated and wind generated waves will lap at the face of the lower block work wall or overtop it in extreme cyclone events.
8. The lot owner should carry out regular inspections of his canal edge structures on the basis of
 - Six monthly visual inspections
 - After extreme events such as cyclones or major floods
 - After any other event where damage to the canal edge may have taken place, e.g.: through collision by an errant boat or through jetty construction.

If the lot owner's inspection reveals that any of the canal edge structures have incurred damage, or appear to have been altered from their original or previous state by a particular event or through erosion over years the lot owner should make appropriate repairs to minor damage by replacing the dislodged rocks. In the event of significant damage or deterioration, the lot owner should seek specialist advice and have remediation undertaken by persons experienced in this type of work this may require the mobilisation of floating plant.

9. No structure shall be built closer to the upper block work retaining wall (on the landward side). This requirement is part of the development plan for the marina precinct.
10. Moorings, jetties and similar structures shall not be erected or attached to the canal walls without the prior approvals being obtained from the Shire of Exmouth and the Department of Planning and Infrastructure.
11. The Shire of Exmouth may, under the Shire of Exmouth, Exmouth Marina Village Local Law request the landowner to undertake remedial works. In certain circumstances, the Shire may undertake remedial works and recover the costs from the landowner.

Design and construction of all Lot modifications, including earthworks, walling, pavement and buildings should take account of this information. Provided that such design and construction are adequate, with appropriate maintenance of the canal edge structures, it is anticipated that the canal edge structures component of the landholdings will provide a long service life appropriate to a water based residential development of this nature.

Lot owners should seek insurance advice regarding cover for repairs to the revetment after a major storm event, even if they do not intend building on the lot in the short term.

Revetment and Panel Concrete or Primary and Secondary Panel Concrete Walls

Please refer to 'Canal Wall Maintenance - Revetment and Limestone Block Walls' for detailed information. In addition to this information, drilling or cutting of the concrete panels can be a cause of corrosion in the reinforcing steel, thus weakening, or leading to a loss of structural integrity and possibly eventually destroying the wall. Any alterations to these walls, including drilling or cutting, may only be carried out with the express written authorisation of the Shire of Exmouth.

Note: Vertical panel concrete walls have a fabric (1 m below surface) which must not be damaged. This fabric secures the vertical walls.

Annexures

Annexe 1

All vessels moored in the Marina Village Canals canal arms 1, 2, 3, 4, the main canal and that portion of canal arm 5 catering for vessels greater than 8 metres in length are subject to cyclone moorings. during cyclone season, and all vessels moored there at any time of year, with the exception of vessels in Canal Arms 2 & 3 and vessels in moorings limited to less than eight metre vessel length, must be provided with a pen system using four piles. This structure is a part of the total jetty structure and is a condition of the jetty licence.

Pen Structure for vertical walled lots, Canal Arms 4a, 5 and 5a in Super Lot B

Vessel length	15m	13m	10m	8m
Mooring pen length	18m	15.5m	12m	10m

(length is measured between mooring pile centrelines which are on the lot boundaries)

Mooring pen widths	5.5 m	5.1m	4.6m	3.5m
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(Width is the distance between outside mooring pile outer face and the face of the vertical wall. 8m mooring pens have no mooring piles)

Mooring pile size (Grade 350)	406 ODx9.5	323 ODx9.5	273 ODx9.5	NA
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Each pile must be provided with a buoyant sliding collar fitted with lugs for attaching the mooring lines.

Annexe 2

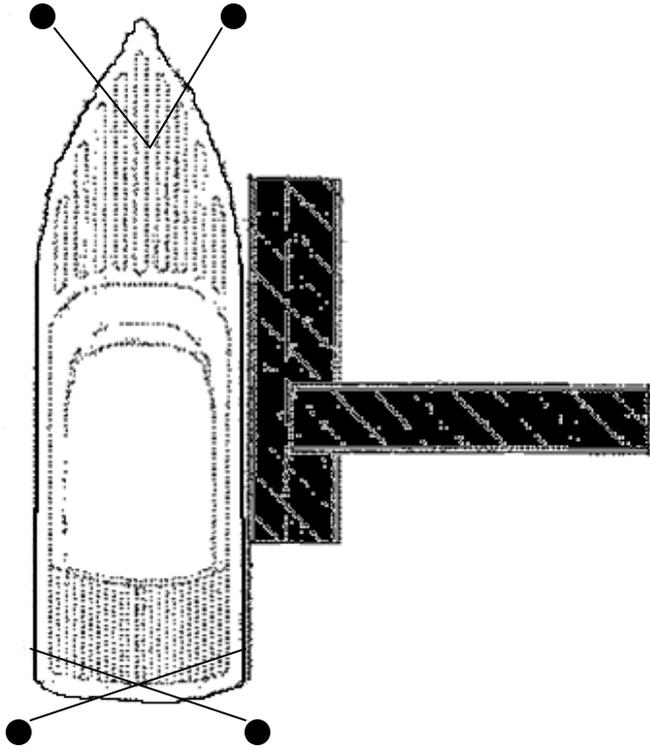
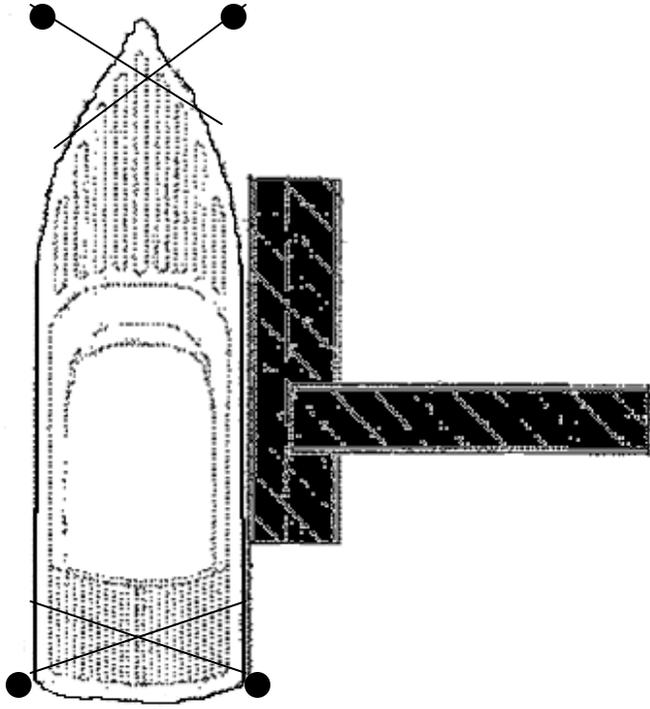
Mooring Lines

Rope shall be Plasma 12 strand or equivalent, of the following minimum diameters:

Vessel length	13-15m	10-13m	8-10m	up to 8m
Rope diameter	12mm	9mm	8mm	6mm

Two bowlines are required either in vee configuration to a single point at the bow or crossed over to separate cleats.

Two stern lines are required in crossed over configuration.



Annexe 3

Vessel Mooring Hardware

Mooring points on vessels shall have sufficiently strong cleats or bitts, and be adequately reinforced to withstand the maximum breaking load (MBL) of the mooring lines at any design angle without failing.

The minimum MBLs for each cleat or bitts shall be:

Vessel length	15 m	13 m	10 m	8 m
	139.3kN	77.8kN	50.0kN	36.5kN

Vessel owners must provide certification from the vessel's builder, from a naval architect, or from a qualified consulting engineer that the vessel's mooring points meet these standards.

Annexe 4

Jetty Compliance Plate



THIS PLATE MUST BE AFFIXED TO THE CANAL SIDE OF THE JETTY

Jetty Mooring Compliance Plate

Jetty Licence Number: Building Licence Number:

Property Details

Lot No: House No: Street No

Vessel Details

Maximum Permissible Length:

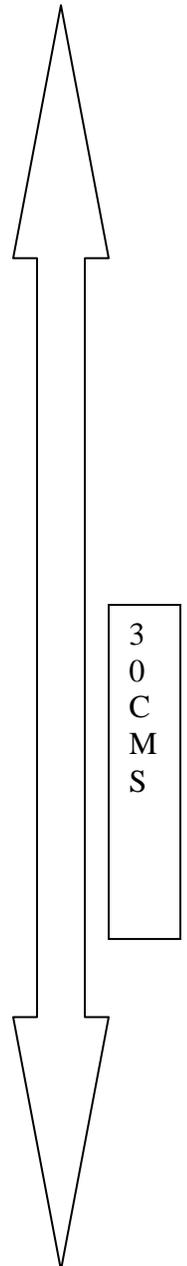
Maximum Permissible Weight:

Mooring Details

Mooring Direction (arrow):

Mooring Rope Inspections:

Date Installed	Installer Detail
Reinspection:	Inspector Detail
Reinspection:	Inspector Detail
Reinspection:	Inspector Detail



Annexe 5

Precinct Map & Canal Detail

