**PART W50**

**SUNDRIES**

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**1. GENERAL**

This Part refers to work affecting any furniture, fixture or attachment to the jetty such as: jetty lights, power outlets, electric cables, water services, signs, navigation beacons, handrail, lifebuoy boxes, cranes, railway lines, fuel lines and dispensers, ladders, steps, ramps and bollards. It may involve repair, replacement or installation of new fixtures or attachments.

If non-standard work is required, it will be described in **Contract Specific Requirements**.

Documents referenced in this Part are listed below:

|  |  |
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| AS 1214 | Hot-dip Galvanised Coatings on Threaded Fasteners. |
| AS 1657 | Fixed Platforms, Walkways, Stairways and Ladders - Design, Construction and Installation. |
| AS 1664 | SAA Aluminium Structures Code – Limit State Design. |
| AS 1720 | SAA Timber Structures Code – Design Methods. |
| AS 2053 | Conduits and Fittings for Electrical Installations. |
| AS 2334 | Steel Nails – Metric Series. |
| AS 2648.1 | Underground Marking Tape. |
| AS 3000 | Electrical Installations (known as the Australia/New Zealand Wiring Rules). |
| AS 3004 | Electrical Installations – Marinas and recreational boats. |
| AS 4680 | Hot Dip Galvanised (Zinc) Coating on Fabricated Ferrous Articles. |

The work must be undertaken in accordance with the following drawings:

|  |  |
| --- | --- |
|  | Amendment No. |
| Drawing No. S‑6997, Jetty Construction: |  |
| sheet 1 | Typical Jetty Layout | - |

These drawings are available from the following web site:

<http://www.dpti.sa.gov.au/documents/marine_facilities2>

**2. HANDRAILS**

The handrail system must be either of the following as specified on the Drawings or Scope of Contract:

(a) Timber Post and Handrail (to match existing)

This system must comply with the guardrail provisions of AS 1657.

Posts must be 90 mm x 90 mm Hardwood DAR (Dressed all Round). Top rails must be 90 mm x 90 mm Hardwood moulding DAR or 50 mm galvanised steel pipe. Hardwood rails must have their top corners machined to a 25 mm radius as shown on Drawing No. S – 6997 sheet 1.

Intermediate steel cable must be 7/3.25 strand, galvanised steel wire rope, threaded through pre-drilled holes in posts and tensioned and tied off with 3 wire rope grips at terminal posts.

The top rail must be connected to posts by 150 mm galvanised self tapping screws, screwed vertically through the handrail into the top of the post. The rail must also be strapped to the post with 25 mm wide x 1.0 mm galvanised steel hoop straps, fixed into the post with galvanised nails. Nails must comply with AS 2334.

Hardwood posts must be fixed to the outside vertical face of edge girders with two M16 galvanised bolts. Where spacer blocks are required to be used to maintain the longitudinal alignment of the timber posts the blocks must be as follows:

1. For horizontal gaps between the vertical face of the edge girder and the post greater than 50 mm hardwood timber or approved plastic spacers must be used;
2. For horizontal gaps between the vertical face of the edge girder and the post less than 50 mm only approved plastic blocks must be used.

All spacer blocks must be the full length of the vertical face of the edge girder and must be bolted to the vertical face of the edge girder by the post bolts.

The finish on the handrail must be:

 Prime Coat: One coat of acrylic undercoat.

 Top Coat: Two coats of approved UV stabilised acrylic paint (white).

(b) Steel Tubular Handrail

Where specified, the Contractor must use "Monowills Standard Handrail System" or similar and approved. Installation of handrail must be in accordance with AS 1657. Two washers (one at the head and one at the nut) must be installed for each bolt.

If Type SO has been specified on the Drawings, the handrail must be bolted to the outside vertical face of the edge girder with two M16 galvanised bolts where practicable.

If any other type of handrail is specified on the Drawings the handrail must be fixed to the kerbing or decking using M16 galvanised bolts and a 10 mm backing plate.

All components must be hot-dip galvanised in accordance with AS 4680.

(c) Repair of Existing Handrail

Where specified on the Drawings or Scope of Contract, the existing handrail must be repaired and/or components removed and replaced to match that of existing to the satisfaction of the Principal.

**3. STAIRS/PLATFORMS/LADDERS AND RAMPS**

New ladders and associated fixings/connections must be constructed from marine grade aluminium (Alloy 6061 T6), unless specified otherwise on the Drawings. Steps, platforms and ramps must be constructed of timber unless specified otherwise on the Drawings.

The stairs, platforms, ramps and ladders must be designed and installed to comply with AS 1657. All ladders must be of "Walk Through" design.

Aluminium ladders must comply with AS 1664. Stiles must be constructed of tube not less than 48.4 mm diameter and 4.4 mm wall thickness. Stiles must have a return to the decking and must be free of sharp corners. The stiles must have a single bend of minimum 225 mm radius.

All timber steps, ladders, platforms and ramps must comply with AS 1720. Where these are to replace existing steps, ladders, platforms and ramps, the overall dimensions of the new work must generally be the same as the existing.

Four weeks prior to the manufacture, the Contractor must provide shop drawings for approval prior to commencing manufacture.

**4. ELECTRICAL**

**4.1 General**

All electrical work must comply with AS 3000.

The Contractor is responsible for disconnecting and reconnecting all electrical services.

The Principal must supply all materials for electrical work as detailed in the Scope of Contract.

The Contractor must install all lighting and power fittings in accordance with AS 2053 and AS 3004.

**4.2 Conduits**

Underground electrical conduits must be heavy duty rigid PVC conduit to AS 2053, colour orange. Marking tape must comply with the requirements of AS 2648.1. Under jetty deck conduits must be UV Rated, PVC, colour grey, medium/ordinary duty rigid conduit with flexible conduit tails for terminations and bends, to AS 2053.

Unless otherwise specified, the minimum size of conduit must be as follows:

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| --- | --- |
| Conduit (under jetty) | 32 mm |
| Conduit (under‑road) | 80 mm |
| Conduit (general underground) | 50 mm. |

Conduit joints must be thoroughly cleaned of dirt and grease and burrs removed where any conduit is cut to length, before being cemented together using a solvent cement approved by the conduit manufacturer.

Draw cords must be installed in all electrical conduits and be continuous and without joins for the full length of the conduit. A 1 m length "tail" must be provided at each end of the draw cord. Tails must be coiled and neatly laid in the relevant area. Draw cords must be 4 mm diameter polyethylene mono rope with a breaking load of 5 kN. Except in the case of under jetty conduits, draw cords must remain in the conduit following installation of cables.

All conduit saddles must be 316 grade Stainless Steel.

**4.3 Lighting and Power Outlets**

The installation of lighting and / or power outlets (where specified) must be in accordance with the drawings or Contract **Specific Requirements**.

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