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Intr.08/12aw



**PNG POWER LTD**

**MATERIAL SPECIFICATION**

VOCAB. NUMBER.	ITEM DESCRIPTION:
142040	LADDER, FIBREGLASS STEP—1.8 METRES c/w; SLIP RESISTANT SAFETY FEET, FIXED TO STILES

Item Category = A

**SPECIFICATION DETAILS.**

AS PER SPECIFICATION ATTACHED—3 PAGES

DRAWING REFERENCES: SOB 168

Manufacturers Product code:

**STANDARDS COMMITTEE APPROVAL**

APPROVED BY: *[Signature]* ..... SIGNATURE: ..... DATE 12, 07, 16

Chairman

**DATA REVIEW APPROVAL**

NAME	SIGNATURE	TITLE	DATE
John Mandali	<i>[Signature]</i>	Manager OHS	16/11/15
<i>G. Peni</i>	<i>[Signature]</i>	TLS STANDARDS	09/08/20



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## SPECIFICATION FOR FIBREGLASS RE-INFORCED STEP LADDERS

VOCAB: 142040—1.8M

### SPECIFICATION DETAILS

#### 1.0 SCOPE:

This specification covers the manufacture, supply and delivery of Fiberglass Reinforced Plastic (F.R.P) Step ladders with nominal length of 1.8m and 2.4m to the nominated PNG Power Stores.

#### 2.0 APPLICATION:

The step ladders are intended for use by personnel employed within the Electricity industry for ascending and descending to and from electrical equipment and areas which are removed from the safe reach of persons at ground level.

#### 3.0 STANDARDS:

Reference is made to the following standards.

- AS 1892.1—1986 "Portable Ladders Part 1 Metal."
- AS 1866—1976 "Wrought Aluminium and Aluminium Alloy Extruded Rod, bar, Solid and Hollow Shapes for General Engineering Purposes."
- ASTM D903—49 (1978) Label Testing
- ANIS A 14.5 "Safety Requirements for Portable Reinforced Plastic Ladders"
- AS C 59.48—1968 (R 1973) Short Time Test Method.

#### 4.0 DESIGN: - LADDERS

##### 4.1 GENERAL.

The Step Ladder shall be of "Industrial quality and design self supporting single sided F.R.P stiles and back legs, aluminium treads, braces and spreaders. The Step ladder shall comply with AS 1892.1 —1986 Sections 1.5.3, 2.2.2, (a) 2.3, 2.4, 2.6, 5.1, to 5.10 and 8.5.

##### 4.2 STILES AND BACK LEGS

The Step Ladders stiles and back legs shall be manufactured from F.R.P. preferably by the "Pultrusion" process and used an ultra violet inhibitor in the resin system to retard weathering. The dielectric strength shall not be less than 40, 000 volts per 25.4mm length as determined by the short time test method given in A.N.S C59.48 - 1968 & 1973.

##### 4.3 FEET.

The step ladder shall be fitted with heavy duty slip resistant safety feet securely fixed to the stiles capable of being removed for renewal without the use of any special tools..



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#### 4.4 Treads.

The step ladder treads shall present a bearing surface that will minimize the possibility of slipping. The tread surface used in ascending, descending, working or standing shall be preferably corrugated, serrated, knurled or dimpled. The treads shall be fixed to the stiles by double rivets both front and rear.

#### 4.5 Spreader.

The Spreader shall be designed in accordance with AS 1892.1 - 1986 Section 5.9. In addition, Nylon bushings shall be fitted at the hinged point of attachment to the stiles to prevent wear.

#### 4.6 Top Cap

The Top Cap shall be designed as a light hand tool tray and shall have suitable size holes to carry at least one Claw Hammer and three Screw Drivers.

#### 4.7 Bracing

Double front tread bracing shall be provided on the first tread of all Step Ladders. On 1.8m Step Ladders, the second tread shall be single braced. On 2.4m Step Ladders, the second and third steps shall be single braced. Five rear horizon braces shall be provided on 1.8m step ladders and seven rear horizontal braces on 2.4m step ladders. All rear horizontal bracing shall be double riveted to stiles.

#### 4.8 Rivets

All rivets used on step ladders shall be not less than 4.8mm diameter and shall be manufactured from proven non-corrosive material. All other ferrous components shall be treated in an approved manner to prevent corrosion.

#### 4.9 Length

The nominal length of either 1.8m or 2.4m shall be nominated at the time of ordering.

#### 4.10 Reinforcing

Reinforcing Plates shall be fitted on the inside of stiles at all hinged and pivot points.

### 5.0 ALUMINIUM COMPONENTS:

All aluminium components shall comply with AS 1866 - 1976 and shall not be inferior to mechanical strength to aluminium alloy 6063 when tempered to T5.



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#### 6.0 MARKING:

All A. F. R step ladders shall have the following information legibly and indelibly marked on the outer face of the stiles.

- 6.1 The name of the manufacturer
- 6.2 The length of the Step Ladder
- 6.3 The duty rating "Industrial"
- 6.4 The word "PNG POWER LTD" in 10mm thick Red lettering at the base of left and right front stiles.
- 6.5 A safety warning label with the word "Danger - do not stand on or above this step you can lose your balance" shall be applied on the front face of the top tread.  
An example label is illustrated in Appendix B of AS 1892.1 - 1986. This label shall comply with Section 8.6 "Tests for Label" of AS 1892.1 - 1986.
- 6.6 The ladder shall be painted Blue and White - PPL colour for identification purposes.

#### 7.0 PACKING:

The F.R.P Step ladders shall be packed to avoid chafing and if necessary shall be separated by buffering material.

#### 8.0 INFORMATION TO BE SUPPLIED WITH TENDER:

Tenderers shall submit with their quotation the following:

- 8.1 A dimensioned drawing of the step ladder.
- 8.2 The process used to manufacture F.R.P.
- 8.3 The AC Dielectric strength of F.R.P.
- 8.4 The mechanical properties of all aluminium and ferrous components.
- 8.5 Design details of top card.
- 8.6 Design details of feet.
- 8.7 Details of finished product test procedures.

#### 9.0 ACCEPTANCE:

- 9.1 Before acceptance into PNG Power Stores the F.R.P step ladders shall be inspected by a responsible PNG Power staff to ensure compliance with this specification.
- 9.2 Any F.R.P step ladder not complying with this specification and agreed departures shall be returned to the contractor for rectification or replacement at no cost to PNG Power Ltd.

PNG Power Ltd, reserves the right to reject whole or part of the order not complying with this specification and is not liable for any cost or loss with the return of rejects to the Supplier.

Facilitation of invoice credit must commence between the supplier and PNG Power Ltd through the process of PNG Power Ltd Discrepancy Report provisions.