WINDIMURRA VANADIUM

WINDIMURRA VANADIUM PROJECT

STRUCTURAL DESIGN CRITERIA

PROJECT DOCUMENT NO.: 6033-G-00-S-002

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CONTENTS

1.0 GENERAL

1.1 Scope

This document sets out the structural design criteria for the Windimurra Vanadium Project.

1.2 Reference Documents

This design criteria shall be read in conjunction with the Structural Basis of Design document 6033-G-00-S-001.

1.3 Precedence of Documents

Specific loading requirements and design data and requirements from Proteus Structural Design Criteria shall override data from Proteus Basis of Design.

2.0 SPECIFIC LOADING REQUIREMENTS

2.1 General	AS1170
• Importance level	2 (Normal structures)
• Design working life	25 years
• Geographical location	28deg 17m S ; 118deg 32m E
2.2 Dead Loads	AS1170.1
• Equipment self weight	(certified vendor data)
• Materials	(specified by client)
• Other	
2.3 Live Loads	AS1170.1
• Equipment maintenance platform	5 kPa
• Stairways and landings	4.0 kPa
• Access and conveyor walkways	2.5 kPa
• Electrical switchgear areas	10 kPa or 12 kN minimum
• Control rooms	5.0 kPa
• Storage areas	2.4 kPa/m of height (min 7.5 kPa)
• Cable trays	1.0 kN/m
• Other	
2.4 Wind Loads	AS1170.2
• Wind region	A4 (Figure 3.1)
• Annual probability of exceedance	250 years (Table F2)
• Terrain category	TC 2 (Cl.4.2)
• Wind direction multiplier	Md=1.0 (Cl.3.3)
• Shielding multiplier	Ms=1.0 (Cl.4.3)
• Topographic multiplier	Mt=1.0 (Cl.4.4)
• Other	

2.5 Earthquake Loads

Earthquake Loads	AS1170.4
• Importance level	Normal (Table F1)
• Annual probability of exceedance	1/50 years (Proteus scope only)
• Acceleration coefficient	0.06
• Site factor	S=0.67 (Table 2.4) footings on rock S=1.00 (Table 2.4) footings on fill
• Earthquake design category	A (Table 2.6)
• Structural response factor	As described in Table 6.2.6 (a) or Table 6.2.6 (b)
• Other	

2.6 References

1 Windimurra Vanadium Project Geotechnical Investigation
by Soil & Rock Engineering Pty Ltd (Ref. gb2718_2rep.doc, 9-Sep-98)

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Table 2.6 to be populated with data and vendor information as they become available.

3.0 STEELWORK DESIGN

3.1 General

• Design Code	AS4100

3.2 Steel Grades

• Steel Plate	300 MPa
• Hot Rolled Sections	300 MPa
• Structural Hollow Sections	350 MPa
• Bolts, Nuts and Washers	8.8 grade UON

3.3 Corrosion Allowance

• Corrosion Allowance	Not required for structural steel
• Minimum wall thickness	5 mm
• Protection System	Refer Standard Specification for Painting and Protective Coatings 6033-S-00-G-009

3.4 Other

3.5 References

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