Specification – Precast Concrete Items

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** Shall be the Process Owner and is the person assigned authority and responsibility for managing the whole process, end-to-end, which may extend across more than one division and/or functions, in order to deliver agreed business results.*

*** Frequency period is dependent upon circumstances– maximum is 5 years from last issue, review, or revision whichever is the latest. If left blank, the default shall be 1 year unless otherwise specified.*

Revision Control		
Revision	**Date**	**Description**
0	29/08/2023	Initial Document

STAKEHOLDERS *The following positions shall be consulted if an update or review is required:*	
Manager Engineering & Project Services	Asset Managers
Manager Systems & Network Planning	Manager Assets Services
Senior Manager Safety, Health and Wellbeing	

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1 SCOPE

The specification sets out the mechanical requirements for the design, manufacturing and testing of precast concrete items for use with Distribution Transformers, Metering CTVT Units, Ring Main Units and PENDA (Public Electricity Network Distribution Assemblies).

2 NORMATIVE REFERENCES

2.1 Standards

2.1.1 Horizon Power Standards

[1]. *Horizon Power Environmental Conditions*, standard number HPC-9EJ-01-0001-2013, available at http://horizonpower.com.au/contractors-suppliers/contractors/manuals-and-standards/ under the 'Standards' heading.

2.1.2 Australian Standards

The following standards are available at http://www.saiglobal.com.

[2]. AS 1012.1: 2014 – Methods of testing concrete – Sampling concrete

[3]. AS 1012.3.1: 2014 – Methods of testing concrete - Determination of properties related to the consistency of concrete - Slump test.

[4]. AS 1012.8.1: 2014 - Methods of testing concrete - Method for making and curing concrete - Compression and indirect tensile test specimens.

[5]. AS 1012.8.2: 2014 - Methods of testing concrete - Method for making and curing concrete - Flexure test specimens

[6]. AS 1012.8.3: 2015 - Methods of testing concrete - Methods of making and curing concrete - Mortar and grout specimens

[7]. AS 1012.8.4: 2015 - Methods of testing concrete - Method for making and curing concrete - Drying shrinkage specimens prepared in the field or in the laboratory

[8]. AS 1012.9: 2014 - Methods of testing concrete - Compressive strength tests - Concrete, mortar and grout specimens

[9]. AS/NZS 1170.0: 2002 - Structural design actions – General principles.

[10]. AS 1379: 2007 (R2017) - Specification and supply of concrete

[11]. AS 1478.1: 2000 (R2018) - Chemical admixtures for concrete, Mortar, and grout

[12]. AS 1597.2: 2013 - Precast reinforced concrete box culverts - Large culverts (exceeding 1200 mm span or 1200 mm height and up to and including 4200 mm span and 4200 mm height)

[13]. AS 2067: 2016 - Substations and high voltage installations exceeding 1 kV a.c.

[14]. AS 2758.1: 2014 - Aggregates and Rock for Engineering Purposes, Part 1 – Concrete Aggregates

[15]. AS 3582.1: 2016 - Supplementary Cementitious Materials for Use with Portland and Blended cement – Fly ash

[16]. AS 3600: 2018 - Concrete structures

[17]. AS 3610.1: 2018 - Formwork of Concrete: Part 1 – Formwork

[18]. AS 3850.1: 2015 - Prefabricated concrete elements: Part 1 General Requirements

[19]. AS 3972: 2010 - General purpose and blended cement

[20]. AS/NZS 4671: 2019 - Steel for the reinforcement of concrete

2.1.3 Compliance with Standards

Various Standards are referenced in this Specification. The Standards have reference to the year they were published. If over the life of the Tender the Standards change, the Vendor is required to conform to the new edition of the Standard.

Unless otherwise specified herein, the *Equipment* shall be designed, manufactured and type and routine tested in accordance with the referenced Australian Standards, including all amendments. Where there is no Australian Standard equivalent, International Standards or Codes as defined in this specification shall be used. The specified documents contain provisions that, through reference in the text, constitute requirements of this Specification. At the time of publication of this Specification, the editions indicated were valid. Information on currently valid national and international standards may be obtained from the Australian Standards website. http://saiglobal.com.

2.2 Definitions and Abbreviations

The following definitions are used throughout the Specification:

Equipment – Pre-Cast Concrete Items

MPS – Modular Packaged Substations – Distribution Transformer with a Low Voltage switchgear assembly used for residential supply.

NON MPS – Non-Modular Package Substation – Distribution Transformer with a low voltage circuit breaker used in conjunction with a PENDA.

PENDA – Public Energy Distribution Assemblies – Standalone low voltage switchgear housed in a metal-clad kiosk.

SLS – Serviceability Limit State

ULS – Ultimate Limit State

3 REQUIREMENTS

3.1 General

The *Equipment* specified in this Specification shall be used as a base for MPS/NON MPS distribution transformers, Metering CTVT Units, RMU and PENDA.

The *Equipment* offered that is found on inspection to not conform to the Specification shall be replaced by the Vendor at no cost to Horizon Power.

3.2 Environmental Conditions

The performance of the *Equipment* must meet the requirements set out in Section 4.1 of the *Horizon Power Environmental Conditions* [1].

3.3 Technical Requirements

All precast concrete items shall be designed so that they can be safely lifted onto and removed from transport vehicles, moved, and stored outdoors at Horizon Power's various depots, with the use of a forklift. They shall also be designed so that they can be safely transported to site and installed in a pre-prepared excavation using a crane or Hiab.

The finish of the precast concrete items shall not have a negative impact on the installation and operation of the electrical equipment. It is common for Horizon Power to have electrical equipment that has an ingress protection rating of IP34D. As such clearances around doors and removable panels will have tolerances of no greater than 1.5 mm (Torsional forces applied to the equipment, due to warping or unacceptable level of flatness for the foundation slab or culverts can cause doors and removable panels to jam).

3.4 Design Requirements

3.4.1 Design Criteria

All substation foundations structures shall be designed according to limit state design principles considering both ultimate limit state (ULS) and serviceability limit state (SLS) requirements. The load factors and strength factors shall be in accordance with this document and relevant Australian Standards such as AS/NZS 1170.0 [9] and AS 3600 [16].

The ULS requirements must consider both strength and stability.

The SLS requirements must consider the factors that may deteriorate the structural adequacy of the foundation and oil containment bund structure over the intended design life and incorporate appropriate measures to mitigate any adverse effects.

3.4.2 Design Life

The Vendor shall ensure all structural components of the civil and structural works are capable of a design life of minimum 50 years.

3.4.3 Critical Dimensions

The *Equipment* supplied under this Specification shall have the critical dimensions listed in Table 1.

Table 1 – Critical Dimension

Item	Stock Code	Description	DM#
1 & 2	CA1010 & CA1011	Box Culvert & Base for MPS & NON MPS distribution transformers	40704901
3 & 4	CA1012 & CA1013	Pipe Culvert & Base for Ground mounted Metering CTVT Units	40701984
5	CA1016	Base Slab for Ring Main Unit and Kiosk & Stand	40689553
6 & 7	CA1018 & CA1019	Base Slab for PENDA 1.1, 2.1 & 3.1 and Stands	40698348

3.4.4 Importance Level

The *Equipment* shall be designed with an importance level of 3 in accordance with AS 1170.0 [9] Table 3.2.

3.4.5 Annual Probability of Exceedance

The annual probability of exceedance for wind and earthquake loads shall be:

a) ULS – 1/1000

b) SLS – 1/25

3.4.6 Design Loads

The *Equipment* listed in Table 2 shall be designed to withstand the applicable loads in accordance with AS 1170.0 [9] and AS 2067 [13].

Table 2 - Permanent Loads

Description	*Equipment* Weight (kg)
MPS & NON MPS distribution transformers	4500
Ground mounted Metering CTVT Units	2000
Ring Main Unit + Kiosk & Stand	1500
PENDA & Stand	1000

3.4.7 Minimum Reinforcement

The structural foundation shall satisfy the minimum reinforcement specified in AS 3600 [16] to ensure satisfactory performance. The amount of minimum reinforcement required depends on the nature of the structural elements:

a) If the structural element carries shear, then provision of Clause 8.2.8 in AS 3600 [16] applies.

b) If the structural element carries bending then provision of Clauses 8.1.6, 9.1 and 9.5 in AS 3600 [16] applies.

c) If the structural element carries axial forces, then provision of Clause 10.7 in AS 3600 [16] applies.

3.4.8 Soil Parameters

In the absence of a geotechnical report, the following conservative soil parameters are to be used:

a) γ_{soil} = density of soil = 16 kN/m^3

b) c = cohesion = 0 kPa

c) ϕ = angle of internal friction = 28°

d) Factored ULS bearing capacity = 75 kPa

3.5 Material Selection and Manufacturing

Concrete shall be specified and supplied in accordance with AS 1379 [10].

Where materials are manufactured to a standard other than an Australian Standard the details of the alternative standard must be provided in English and using SI units for comparison with the Australian Standard. The Vendor must provide certification of equivalence of the alternative standard to the appropriate Australian Standard.

3.5.1 Material

Concrete materials shall be in accordance with AS 3600 [16].

All cement shall be Portland type GP (general purpose). Blended cement shall comply to AS 3972 [19].

All aggregate shall be dense aggregate (fine and coarse) to AS 2758.1 [14].

Chemical Admixtures shall be used only if specified or a prior approval has been given and shall be in accordance with AS 1478.1 [11] .

Fly ash shall be in accordance with AS/NZS 3582.1 [15] . Fly ash shall be incorporated as a replacement for part of the cement content in the concrete, and the amount incorporated shall be a minimum of 20% and a maximum of 30% by weight of the cement-fly ash blend, unless approved by Horizon Power.

3.5.2 Mixing

The mixing, transporting, and placing of concrete shall comply with the requirements of AS 3600 [16] and AS 1379 [10].

3.5.3 Compaction

All concrete shall be well compacted by immersion vibrators, vibrating tables or form vibrators having a minimum frequency to effectively compact the concrete. Excessive vibration which would cause settlement of course aggregate and excessive fine material and water on the surface shall be avoided.

3.5.4 Curing

Curing shall be carried out in accordance with AS 3600 [16].

3.5.5 Steel Reinforcement

Concrete reinforcing steel shall be fabricated in accordance with AS 4671 [20].

3.5.6 Formwork

Formwork and surface finish of the *Equipment* shall be in accordance with AS 3610.1 [17].

3.5.7 Lifting Points

The *Equipment* shall include lifting and handling points as shown in the Table 1.

Lifting lugs shall be designed to transmit all loads acting or likely to act on the *Equipment* and shall comply to AS 3850.1 [18].

Anchorage of all lifting points shall be designed in accordance with AS 3600 [16].

4 PACKING REQUIREMENTS

The Vendor shall ensure the *Equipment* is protected and packed to a standard suitable for shipping, delivery and storage.

Damaged Goods will be returned at the Vendor’s cost.

4.1 Marking

The *Equipment* shall be marked with the following information:

a) Order Number
b) Stockcode
c) Dimensions and
d) Weight

5 SAFETY

Material Safety Data Sheets (MSDS) applicable for each different *Equipment* or chemical ingredient in the *Equipment* which is considered harmful to personnel or environment in any manner, shall be supplied with the Tender proposal.

6 ENVIRONMENTAL CONSIDERATIONS

Vendors are required to provide information on the environmental soundness of the design and the materials used in the manufacture of the items offered. Vendors shall provide a detailed outline of the steps that have been put in place to fulfil any obligations that may be required pursuant to the *Waste Avoidance and Resource Recovery Act 2001* and any amendments. In particular:

a) Management of waste reduction;

b) The use of re-usable packing; and

c) Extended producer responsibility for the safe disposal of materials at the end of their life.

7 TEST REQUIREMENTS

7.1 General

The *Equipment* shall be subject to all functionality testing, routine and process testing required by this Technical Specification.

All tests shall be carried out in accordance with the respective Australian Standards.

In the absence of an Australian Standard the relevant International Industry standards shall be followed. Any proposed variation of tests shall be subject to approval by the Horizon Power. This includes using tests from ANSI, ASTM or IEC standards.

7.2 Type Test

Concrete shall be sampled and tested in accordance with AS 1012 and AS 1597.2 [12] with particular attention to the following:

a) AS 1012.1 [2] – Sampling

b) AS 1012.3.1 [3] – Slump Test

c) AS 1012.8 [4] – Making and Curing Specimens

d) AS 1012.9 [8] – Testing for Compressive Strength

e) AS 1597.2 [12] – Rebar properties

Concrete shall be sampled at the discharge point of the truck mixer or the agitator. The number of tests and the test method shall be according to AS 1012.1 [2].

Precast concrete items shall be proof tested as per AS 1597.2 [12].

7.3 Routine Test

The following routine tests, as specified in AS 1597.2 [12], will be carried out on every precast concrete item supplied:

a) Concrete compressive strength

b) Reinforcement properties

c) Reinforcement configuration

d) Cover to reinforcement

e) Dimensional accuracy.

8 DOCUMENTATION AND SAMPLES

8.1 Documentation to be provided during Tender

Submitted proposals shall provide all documentation and information as requested in this Specification, including any further relevant information on the *Equipment* offered. The proposal must be complete in all respects. Failure to comply may cause the proposal to be considered incomplete and hence informal.

The Vendor shall provide an electronic version of all documents in Adobe Acrobat (.pdf) format containing the information detailed below with their offer:

- Any non-compliance of the Specification shall be detailed in the Technical Deviation schedule.

- All information provided in Technical Requirements shall be in English and measurement units shall be in metric units;

- Material Safety Data Sheets;

- CAD drawings (Micro station preferred DGN format) of all *Equipment* showing all critical dimensions;

- *Equipment* data sheets showing the weight, material type, and mechanical & properties;

- Installation instructions included in the packaging; and

- A copy of the Vendor's current Quality Assurance accreditation and category.

Should the Preferred Vendor submit drawings for approval by Horizon Power, this will in no way exonerate it from being responsible for the correct and proper function of the *Equipment*.

8.2 Service History

Vendors shall state:

- Other Australian electricity supply authorities who have a service history of the items offered; and

- Contact details of those supply authorities who can verify the service performance claimed.

8.3 Training Material

Training material in the form of drawings, instructions and/or audio-visuals must be provided for the items accepted under the offer.

Vendors shall state the availability of training materials which could include but is not limited to the following topics:

a) Handling and storage;

b) Installation;

c) Environmental performance;

d) Mechanical performance;

e) Disposal at the end of service life; and

f) Production process and testing.

8.4 Sample

Samples of all proposed *Equipment* types are to be provided upon request of Horizon Power as part of the submitted proposals.

9 *EQUIPMENT* LIST

Table 3 - Standard *Equipment* list and descriptions

Specification Item No	Stockcode	Description	Drawing DM
1	CA1010	Box culvert for MPS/NON MPS transformer; 1200x900x1220 mm	40781832
2	CA1011	Culvert base, 1220x1200 mm	40783620
3	CA1012	Pipe Culvert for Metering CTVT Units	40786333
4	CA1013	Base slab for pipe culvert	40773519
5	CA1016	Base Slab for RMU Kiosk & Stand	40781723
6	CA1018	Base for PENDA 1.1 & 2.1 & Stand	40786339
7	CA1019	Base for PENDA 3.1 & Stand	40782710

APPENDIX A REVISION INFORMATION

(Informative) Horizon Power has endeavoured to provide standards of the highest quality and would appreciate notification of errors or queries.

Each Standard makes use of its own comment sheet which is maintained throughout the life of the standard, which lists all comments made by stakeholders regarding the standard.

A comment sheet found in DM #40781736, can be used to record any errors or queries found in or pertaining to this standard. This comment sheet will be referred to each time the standard is updated.

Date	Rev No.	Notes
29/08/2023	0	Initial Document

APPENDIX B QUALITY ASSURANCE (TO BE COMPLETED BY STORES)

DOCUMENT NUMBER	HPC-8MJ-09-0002-2023		**QUALITY ASSURANCE**	**DM NUMBER**	
DEVICE DESCRIPTION	**LABEL MATERIAL NO.**		**Concrete Items PURCHASE**	**ASSET OWNER**	
	ASSET ID/ STOCK NO				
MANUFACTURER		**DIMENSION**			

ITEM	OPERATION/EQUIPMENT/FACILITY	DOCUMENT REF.	WHO CHECKS	INITIAL	DATE/ TIME	QUALITY ASSURANCE CRITERIA	PASS Y/N	COMMENTS
1	LABELLING							
1.1	Name of Manufacturer					*******		
1.2	Manufacturer's part reference number					*******		
1.3	Horizon Power Order Number					*******		
1.4	Horizon Power Stock Number					*******		
1.5	Concrete Item description					*******		
1.6	Package Weight					*******		
2	CONTENTS							
2.1	Installation Instructions					Clear, Legible and in English		
2.2	Bill of Materials					Clear, Legible and in English		
2.3	Material Safety Data Sheets (if required)					Clear, Legible and in English of all materials		
2.4	Accessories (if required)					As per Bill of Materials		

2.5	Test and Inspection Reports					As per Standards referenced in the specification.		
3	PACKAGING							
3.1	Physical damage					Packages do not show puncture marks or other signs of damage		
3.2	Packaging clearly labelled					Each package easily identifiable		
3.3	Items Individually Marked					Items clearly designated and marked		

SYMBOLS AND ABBREVIATIONS								
H = HOLD POINT	S = SUPERVISOR							
W = WITNESS POINT	T = TECHNICIAN, EL = ELECTRICIAN	REVISION						
V = VERIFICATION POINT	E = ENGINEER	DATE						
S/C = SUBCONTRACTOR	PM = PROJECT MANAGER	APPROVED BY						

APPENDIX C SCHEDULES A & B

C1 TECHNICAL SCHEDULE

Completion of the listed schedules below by the vendor shall indicate the product offered is fully compliant with the nominated Clauses in this specification. All information provided shall be in English and measurement units shall be in metric units.

Any deviation from the specification shall be listed on the "Technical Deviation Schedule C", provided in Appendix D with motivation to Horizon Power for consideration and written approval.

C2 TECHNICAL REQUIREMENTS

Schedule A: Horizon Power's specific requirements

Schedule B: Particular's of *Equipment* to be supplied

C2.1 TECHNICAL SCHEDULES A & B FOR ITEM 1

HORIZON POWER	**SPECIFICATION ENQUIRY**	**HPC-8MJ-09-0002-2023**
	VENDOR'S NAME	
	DATE	

TECHNICAL SCHEDULES A & B

ITEM 1: Culvert for MPS/NON MPS transformers

SCHEDULE A: Horizon Power's specific requirements
SCHEDULE B: Particulars of equipment to be supplied (to be completed by Vendor)

Item	Sub-clause	Description	Schedule A	Schedule B
		Manufacturer's/ vendor's catalogue number	xxxxxx	
		Manufacturer's/ vendor's drawing number	xxxxxx	
		Dimensions		
		Width mm	1250	xxxxxx
		Length mm	1200	xxxxxx
		Height mm	1750	xxxxxx
		Weight kg	xxxxxx	
		The finish and method of control for unformed surfaces		
		Class of formwork for the surface finish specified in this Specification in accordance with AS 3610.1		
		The nominated minimum specified service life.		
		The capacity of the precast concrete items, including the specified strength and steel grade.		
		Class and grade of concrete mix		

C2.2 TECHNICAL SCHEDULES A & B FOR ITEM 2

HORIZON POWER	**SPECIFICATION ENQUIRY**	**HPC-8MJ-09-0002-2023**
	VENDOR'S NAME	
	DATE	

TECHNICAL SCHEDULES A & B

ITEM 2: Base Slab for Item 1

SCHEDULE A: Horizon Power's specific requirements
SCHEDULE B: Particulars of equipment to be supplied (to be completed by Vendor)

Item	Sub-clause	Description	Schedule A	Schedule B
		Manufacturer's/ vendor's catalogue number	xxxxxx	
		Manufacturer's/ vendor's drawing number	xxxxxx	
		Dimensions		
		Width mm	1530	xxxxxx
		Length mm	1200	xxxxxx
		Height mm	125	xxxxxx
		Weight kg	xxxxxx	
		The finish and method of control for unformed surfaces		
		Class of formwork for the surface finish specified in this Specification in accordance with AS 3610.1		
		The nominated minimum specified service life.		
		The capacity of the precast concrete items, including the specified strength and steel grade.		
		Class and grade of concrete mix		

C2.3 TECHNICAL SCHEDULES A & B FOR ITEM 3

HORIZON POWER	**SPECIFICATION ENQUIRY**	**HPC-8MJ-09-0002-2023**
	VENDOR'S NAME	
	DATE	

TECHNICAL SCHEDULES A & B

ITEM 3: Pipe Culvert

SCHEDULE A: Horizon Power's specific requirements
SCHEDULE B: Particulars of equipment to be supplied (to be completed by Vendor)

Item	Sub-clause	Description	Schedule A	Schedule B
		Manufacturer's/ vendor's catalogue number	xxxxxx	
		Manufacturer's/ vendor's drawing number	xxxxxx	
		Dimensions		
		Width mm	Inner Dia 600	xxxxxx
		Height mm	1220	xxxxxx
		Weight kg	xxxxxx	
		The finish and method of control for unformed surfaces		
		Class of formwork for the surface finish specified in this Specification in accordance with AS 3610.1		
		The nominated minimum specified service life.		
		The capacity of the precast concrete items, including the specified strength and steel grade.		
		Class and grade of concrete mix		

C2.4 TECHNICAL SCHEDULES A & B FOR ITEM 4

HORIZON POWER	**SPECIFICATION ENQUIRY**	**HPC-8MJ-09-0002-2023**
	VENDOR'S NAME	
	DATE	

TECHNICAL SCHEDULES A & B

ITEM 4: Pipe Culvert Base Slab

SCHEDULE A: Horizon Power's specific requirements
SCHEDULE B: Particulars of equipment to be supplied (to be completed by Vendor)

Item	Sub-clause	Description	Schedule A	Schedule B
		Manufacturer's/ vendor's catalogue number	xxxxxx	
		Manufacturer's/ vendor's drawing number	xxxxxx	
		Dimensions		
		Width mm	900	xxxxxx
		Height mm	125	xxxxxx
		Weight kg	xxxxxx	
		The finish and method of control for unformed surfaces		
		Class of formwork for the surface finish specified in this Specification in accordance with AS 3610.1		
		The nominated minimum specified service life.		
		The capacity of the precast concrete items, including the specified strength and steel grade.		
		Class and grade of concrete mix		

C2.5 TECHNICAL SCHEDULES A & B FOR ITEM 5

HORIZON POWER	**SPECIFICATION ENQUIRY**	**HPC-8MJ-09-0002-2023**
	VENDOR'S NAME	
	DATE	

TECHNICAL SCHEDULES A & B

ITEM 5: Slab base for RMU

SCHEDULE A: Horizon Power's specific requirements
SCHEDULE B: Particulars of equipment to be supplied (to be completed by Vendor)

Item	Sub-clause	Description	Schedule A	Schedule B
		Manufacturer's/ vendor's catalogue number	xxxxxx	
		Manufacturer's/ vendor's drawing number	xxxxxx	
		Dimensions		
		Width mm	1250	xxxxxx
		Length mm	2000	xxxxxx
		Height mm	100	xxxxxx
		Weight kg	xxxxxx	
		The finish and method of control for unformed surfaces		
		Class of formwork for the surface finish specified in this Specification in accordance with AS 3610.1		
		The nominated minimum specified service life.		
		The capacity of the precast concrete items, including the specified strength and steel grade.		
		Class and grade of concrete mix		

C2.6 TECHNICAL SCHEDULES A & B FOR ITEM 6

HORIZON POWER	**SPECIFICATION ENQUIRY**	**HPC-8MJ-09-0002-2023**
	VENDOR'S NAME	
	DATE	

TECHNICAL SCHEDULES A & B

ITEM 6: Slab for PENDA 1.1 & 2.1

SCHEDULE A: Horizon Power's specific requirements
SCHEDULE B: Particulars of equipment to be supplied (to be completed by Vendor)

Item	Sub-clause	Description	Schedule A	Schedule B
		Manufacturer's/ vendor's catalogue number	xxxxxx	
		Manufacturer's/ vendor's drawing number	xxxxxx	
		Dimensions		
		Width mm	700	xxxxxx
		Length mm	1500	xxxxxx
		Height mm	100	xxxxxx
		Weight kg	xxxxxx	
		The finish and method of control for unformed surfaces		
		Class of formwork for the surface finish specified in this Specification in accordance with AS 3610.1		
		The nominated minimum specified service life.		
		The capacity of the precast concrete items, including the specified strength and steel grade.		
		Class and grade of concrete mix		

C2.7 TECHNICAL SCHEDULES A & B FOR ITEM 7

HORIZON POWER	**SPECIFICATION ENQUIRY**	**HPC-8MJ-09-0002-2023**
	VENDOR'S NAME	
	DATE	

TECHNICAL SCHEDULES A & B

ITEM 6: Slab for PENDA 3.1

SCHEDULE A: Horizon Power's specific requirements
SCHEDULE B: Particulars of equipment to be supplied (to be completed by Vendor)

Item	Sub-clause	Description	Schedule A	Schedule B
		Manufacturer's/ vendor's catalogue number	xxxxxx	
		Manufacturer's/ vendor's drawing number	xxxxxx	
		Dimensions		
		Width mm	700	xxxxxx
		Length mm	2400	xxxxxx
		Height mm	100	xxxxxx
		Weight kg	xxxxxx	
		The finish and method of control for unformed surfaces		
		Class of formwork for the surface finish specified in this Specification in accordance with AS 3610.1		
		The nominated minimum specified service life.		
		The capacity of the precast concrete items, including the specified strength and steel grade.		
		Class and grade of concrete mix		

APPENDIX D TECHNICAL SCHEDULE C: COMPLIANCE DOCUMENT

CLAUSE NUMBER		YES	NO	ATT.
3	Requirements			
3.1	General	☐	☐	
3.2	Environmental Conditions	☐	☐	
3.3	Technical Requirements			
3.4	Design Requirements	☐	☐	
3.4.1	*Design Criteria*	☐	☐	
3.4.2	*Design Life*	☐	☐	
3.4.3	*Critical Dimensions*	☐	☐	
3.4.4	*Importance Level*	☐	☐	
3.4.5	*Annual Probability of Exceedance*	☐	☐	
3.4.6	*Design Loads*	☐	☐	
3.4.7	*Minimum Reinforcement*	☐	☐	
3.4.7	*Soil Parameters*	☐	☐	
3.5	Material Selection and Manufacturing	☐	☐	
3.5.1	*Material*	☐	☐	
3.5.2	*Mixing*	☐	☐	
3.5.3	*Compaction*	☐	☐	
3.5.4	*Curing*	☐	☐	
3.5.5	*Steel Reinforcement*	☐	☐	
3.5.6	*Formwork*	☐	☐	
3.5.7	*Lifting Points*	☐	☐	
4	Packing Requirements	☐	☐	
4.1	Marking	☐	☐	
5	Safety	☐	☐	
6	Environmental Considerations	☐	☐	
7	Test Requirements			
7.1	General			
7.2	Type Test	☐	☐	
7.3	Routine Test	☐	☐	
8	Documentation and Samples			
8.1	Documentation to be provided during Tender	☐	☐	
8.2	Service History	☐	☐	
8.3	Training Material	☐	☐	

CLAUSE NUMBER		YES	NO	ATT.
8.4	Sample	☐	☐	

APPENDIX E SCHEDULE D: DEPARTURES FROM TECHNICAL SPECIFICATION

The Vendor shall nominate the Clause and describe the departure:

CLAUSE NO.	DEPARTURE