



Western Australian School of Mines Faculty of Science & Engineering

ABN: 99 143 842 569

Contact Details

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ITEM	TESTWORK DESCRIPTION
1.0	Mechanical Strength
1.1	Uniaxial Compressive Strength (UCS)
1.2	Uniaxial Tensile Strength (UTS – Brazilian)
1.3	Triaxial Compression Testing
1.3.1	Hard rock (21, 30, 47.5, 50.5 and 63.5mm diameter cores) – Single stage to failure
1.3.2	Same as above, but with post-peak strength results that includes Peak and Residual Friction Angles and Cohesion
1.4	Direct Shear (Shear Box) testing
1.5	Point Load Testing
1.5.1	Axial or Diametral tests
1.5.2	Block test or test sample at specified orientation
1.6	Minefill Testing (mixing, casting, curing and testing)
1.6.1	UCS (50mm)
1.6.2	UCS (100mm)
1.6.3	UCS (150mm)
1.6.4	Triaxial compression testing (50mm) – Single stage *
1.6.5	Triaxial compression testing (100mm) – Single stage *
1.6.6	Triaxial compression testing (150mm) – Single stage *
1.6.7	Triaxial compression testing (50mm) – 3 confinements up to 500kPa *
1.6.8	Triaxial compression testing (100mm) – 3 confinements up to 500kPa *
1.6.9	Triaxial compression testing (150mm) – 3 confinements up to 500kPa *
	* Unconsolidated Undrained (UU) triaxial test
1.6.10	Consolidated undrained (CU) triaxial test – (50mm)
1.6.11	Consolidated drained (CD) triaxial test – (50mm)
1.7	Grout and Fill UCS Testing (50, 100mm)
1.8	Grout and Fill UCS Testing (150mm)
1.9	Minefill UCS Testing (300mm, using the WASM 300 x 600mm mould)
1.10	Minefill UCS Testing (400mm, using the WASM 400 x 800mm mould)
1.11	Minefill UCS Testing (500mm, using client supplied 400 x 800mm mould)
1.11	Minefill UCS Testing (500mm, using the WASM 500 x 1000mm mould)
1.12	Minefill UCS Testing (500mm, using client supplied 500 x 1000mm mould)
1.13	Shotcrete UCS Testing including coring & sample preparation (50mm)
1.14	Shotcrete UCS Testing including coring & sample preparation (100mm)
2.0	Elastic Properties
2.1	Young's Modulus and Poisson's Ratio – Uniaxial loading
2.1.1	(including UCS – Elastic Properties calculated using 10mm strain gauges)
2.1.2	(including UCS – Elastic Properties calculated using 120mm strain gauges)

WASM Geomechanics Laboratory

Rock Properties Testing 2018



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TESTWORK DESCRIPTION	
3.0	Hardness
3.1	Raise Boring Index (RBI)
4.0	Physical Properties
4.1	Rock Bulk Density
4.2	Porosity
4.3	Moisture Content
4.4	Large scale (Max 1000 kg) particle size distribution for coarse aggregates ranging from <10mm to 150mm
4.5	Sieve Analysis (3.35mm to 0.075mm)
5.0	Rheology
5.1	Cemented Pastefill (CPF) slump test
5.2	Cemented Pastefill (CPF) yield stress measurement
5.3	Cemented Pastefill (CPF) viscosity (flow curve) measurement
6.0	Specialised Test Work
6.1	Cylindrical Sample Coring (Up to 50mm diameter)
6.2	Cylindrical Sample Coring (50mm - 100mm diameter)
6.3	Slake - Durability Index
6.4	Beam Flexural Test with third point loading
6.5	Fracture Toughness Test
7.0	Specialised Services
7.1	In-situ Stress Measurements using the WASM AE Methodology
8.0	Additional Test Work Available for Individual Quotation
8.1	Dynamic testing of support and reinforcement elements
8.2	In-situ overcoring of rock reinforcement elements
8.3	Split Pipe Test (load – deformation of reinforcement)
8.4	Plate Deformation test
8.3	Support Element Axial Tensile test

The Client agrees to be bound by Curtin University's full Terms and Conditions associated with any work carried out.
The Terms and Conditions covering this standard price list are contained overleaf.

Terms and Conditions for Consultancy



Curtin University

1. DEFINITIONS

In this Agreement, unless the context otherwise requires, the following expressions have the following meanings:

"Agreement" and **"this Agreement"** means and comprises the terms and conditions of this Agreement which includes the quotation, the hourly rates as notified from time to time, the Client's written acceptance of/approval to proceed with the Services or the Client's purchase order indicating acceptance/approval to proceed with the Services but excludes the Client's terms of business (which may be specified in writing in the Client's purchase order);

"Approved Purposes" means for the sole purpose of performing the Services.

"Background IP" means any IP created independently of the Services that a Party makes available for the performance of this Agreement.

"Client" means the recipient of the Services, whether a company or an individual, as detailed in the quotation;

"Commencement Date" is the most practical date for commencement of the Services, as agreed between the Parties;

"Confidential Information" means:

- (a) information revealed in confidence by the Client or Curtin or either to the other of them;
- (b) information designated as confidential by the Client or Curtin or of either;
- (c) proprietary information including but not limited to trade secrets and proprietary know how of the Client or Curtin or of either;
- (d) information in or relating to the business of the Client or Curtin;
- (e) any other information relating to the Client or Curtin or of either classifiable in equity as confidential information;
- (f) subject to the above, includes but shall not be limited to the following sources of information: source codes, object codes, manufacturing methods, processes, techniques, products, engineering methods, programs and program developments, program listings including microfiche and associated manuals, user manuals, programming manuals, modification manuals, flow charts, drawings, models, drafts, diagrams, methods of operation, marketing studies, marketing plans, customer lists and customers; and
- (g) extends to all forms of storage or representation of the information referred to above including but not limited to loose notes, diaries, memoranda, drawings, photographs, electronic storage and computer printouts and excludes information which:
 - (i) is or becomes part of the public domain otherwise than as a result of unauthorised disclosure by the recipient;
 - (ii) has been independently acquired by the recipient;
 - (iii) becomes available to the recipient from a source other than the disclosing party and who has not obtained it directly from the disclosing party;

"Curtin" means Curtin University of Technology and includes its officers, employees and agents;

"Health and Safety Laws" means all laws and requirements concerning the health, safety and welfare of people at work as amended from time to time;

"Intellectual Property Rights" means all inventions, discoveries, innovations, technical information and data, prototypes, processes, improvements, patent rights, circuitry and circuit layouts, computer programs, drawings, plans, specifications, trade marks, designs, trade secrets and know-how, all rights relating to the preceding, copyright and neighbouring rights, rights relating to literary, artistic and scientific works, rights relating to performances of performing artists, phonograms and broadcasts and all other rights resulting from intellectual activity in the industrial, scientific, education, literary or artistic fields. **"IP"** has a similar meaning;

"Parties" means the Client and Curtin;

"Results" means the results of any testing services provided by Curtin;

"Services" means the services, right of access and/or supply of any report to be provided by Curtin as specified in the quotation and/or as mutually agreed in writing between the Parties from time to time, and includes an individual instance of the services if the services are to be repeated more than once during the Term;

"Service IP" means any IP developed in the course of and as a direct result of carrying out the Services;

"Term" means the period that Curtin is to provide the Services under this Agreement.

2. INTERPRETATION

In this Agreement, unless the contrary intent appears:

- (a) a reference to a legislation includes any amendment to that legislation, any consolidation or replacement of it, and any subordinate legislation made under it;
- (b) a reference to the singular include the plural and vice-versa;
- (c) a reference to a "person" includes an individual, a body corporate, a trust, an agency and other body;
- (d) a reference to the Client includes a reference to its executors, administrators, successors and assigns;
- (e) an obligation, representation or warranty in favour of two or more persons is for the benefit of them jointly and severally.

3. SERVICES

3. Curtin shall provide the Services to the Client in a professional manner.

4. TERM

4.1 The Services shall commence on the Commencement Date and shall be provided for the Term.

5. REMUNERATION

5.1 The Client shall pay Curtin the fees agreed between Client and Curtin in the manner and at the time stipulated, including GST and where applicable local duties and taxes.

5.2 Subject to clause 5.3, the fees agreed as described in clause 5.1 for the Services are the total charges payable by the Client. No further charges shall be made on account of government levies or charges as any other item of expenditure but the Client shall reimburse Curtin for any agreed out of pocket expenses at cost plus an administration charge.

5.3 If any law is introduced, amended or takes effect that has the result of increasing the rate of any taxes (including the goods and services tax), charges, fees or other imposts ("Taxes") levied or assessed in connection with the Services under this Agreement, Curtin may immediately increase the fees chargeable to take into account the net effect of the Taxes.

6. PAYMENT

6.1 Payment of fees shall be made prior to commencement of the Services or as agreed in writing between the Parties. If the Client defaults in payment of such fees, Curtin reserves the right, without prejudice to any other remedy available to it, to not commence the Services, or suspend further performance of the Services under this Agreement until such payment is made. Curtin may also recover all costs and expenses reasonably incurred in the recovery of any money owing by the Client to it including but not limited to all legal fees, process server's charges and collection agent's expenses.

6.2 Until such time as the Client pays Curtin all fees for the Services, the property in any report provided pursuant to the Services shall not pass to the Client and the relationship between the Parties shall be a fiduciary one and during that time the Client shall hold the report as bailee for Curtin. In the event of the Client not paying all fees for the Services within the time specified in Clause 6.1 the Parties agree that the Client must on demand in writing return any report provided pursuant to the Services to Curtin without delay.

7. LAWFUL DIRECTIONS

7.1 In the discharge of its duties under the Agreement Curtin shall comply with all reasonable directions of the Client as may lawfully be given from time to time in relation to the performance of the Services as described in the scope of services to this Agreement.

7.2 Where at any time a Party considers that it is in its best interests to introduce changes to the Services, a Party may prepare and submit to the other Party, at its cost, a written submission for proposed variation to the Services including proposed revisions to the Services and additional fees to be paid under the Agreement.

7.3 If a Party notifies the other Party that it accepts a submission under clause 7.2 the Parties must sign and date the submission, which will vary the scope of the Services and form part of the Services and this Agreement.

8. CONTRACTOR'S STATUS

8.1 Each Party enters into this Agreement as an independent contractor. Nothing in this Agreement constitutes or is deemed to constitute a partnership, agency or employment relationship for any purpose. A Party has no power or authority to bind the other Party or to contract in the name of and create a liability against the other Party in any way or for any purpose.

9. LIABILITY OF CURTIN

9.1 The Client acknowledges that:

- (a) it uses the results of the Services and any advice, opinions or information supplied by Curtin or its consultants at its own risk; and
- (b) it is the responsibility of the Client to make its own assessment of the suitability of the Services and any advice or information generated from the Services.

- 9.2 The Parties acknowledge that the liability of Curtin for any material breach of term, condition or warranty shall be limited, at the option of Curtin to:
- refunding the price of the Services, in respect of which the breach occurred; or,
 - providing those Services again.
- 9.3 The limitation of liability under clause 9.2 does not apply in respect of liability or loss which is caused by a breach of a term or condition of this Agreement which is attributable to a negligent act or omission of Curtin in respect of performance of the Services.
- 9.4 The Client warrants that it has not relied upon any representation made by Curtin that has not been stated expressly in this Agreement or upon any descriptions contained in any document produced by Curtin.
- 9.5 Any description of the Services in any communication from Curtin is given by way of description only and the use of such description shall not constitute a contract of sale by description.
10. CONFIDENTIAL INFORMATION
- 10.1 In this clause, "Recipient" means the Party receiving the other Party's Confidential Information under this Agreement.
- 10.2 In relation to the other Party's Confidential Information, a Recipient must:
- keep the information confidential;
 - adopt security measures in relation to the information that are at least as good as it would adopt for its own confidential information;
 - only disclose or provide the information to those with a need to know for the purposes of this Agreement;
 - only use the information for an Approved Purpose; and
 - notify the other Party immediately if it becomes aware of any unauthorised use, copying or disclosure of the information.
- 10.3 A Recipient may only disclose the other Party's Confidential Information:
- to its directors, officers and employees who have agreed to comply with the confidentiality obligations in this Agreement;
 - to its professional advisers who have agreed to comply with the confidentiality obligations in this Agreement; or
 - to its contractors, subcontractors or consultants who have signed confidentiality undertakings in an agreed form; or
 - if it is required to be disclosed by law;
- 10.4 A Recipient must not copy the other Party's Confidential Information, unless those copies are clearly marked as confidential.
- 10.5 Within three (3) days after any written request from the other Party, a Recipient must:
- at the other Party's option, return or destroy all copies of the other Party's Confidential Information in its possession or control; and
 - if requested by the other Party, give the other Party a signed letter certifying compliance with the previous paragraph.
- 10.6 A Recipient's obligations of confidentiality apply during the term of this Agreement and continue for three (3) years after the Agreement ends.
11. INTELLECTUAL PROPERTY RIGHTS
- 11.1 Nothing in this Agreement affects the Intellectual Property Rights in the Background IP.
- 11.2 Unless otherwise agreed and specified in writing by the Parties, all rights, interest, title and ownership in the Service IP vests in the Client. Curtin shall have a perpetual, irrevocable and royalty free worldwide licence, including the right to sublicense to use the Services IP.
- 11.3 The Client shall own the Results and Curtin shall not publish or utilise those Results outside of the Services without the written permission of the Client.
- 11.4 The Client warrants that neither it, nor its employees, agents or contractors, shall infringe the Intellectual Property Rights or any other rights of any third party in doing any act or thing in connection with this Agreement and that it will notify Curtin promptly in writing if it becomes aware of any such infringement.
- 11.5 The Client shall fully indemnify Curtin against any loss, costs, expenses, demands or liability, whether direct or indirect, arising out of a claim by a third party against Curtin resulting from any infringement under clause 11.4.
- 11.6 The obligations under this clause 11 and the indemnity under clause 11.5 shall survive the expiration or termination of this Agreement.
12. INDEMNITY
- 12.1 In this clause "Claims" means any and all actions, suits, proceedings, claims and demands; and "Liabilities" means any and all loss, damages, costs and expenses.
- 12.2 A Party ("Indemnitor") indemnifies and will keep indemnified the other Party and its respective employees, agents or contractors ("Indemnified") from and against all Claims made against, or Liabilities incurred by, the Indemnified and directly caused by the negligent act or omission of the Indemnitor.
- 12.3 The indemnity given by any the Indemnitor pursuant to clause 12.2 will be reduced proportionately to the extent that any negligent act or omission by the Indemnified or any other party contributed to the Claims or Liabilities.
- 12.4 The Parties agree that no Party will be liable for any special, indirect or consequential loss or damages (including economic loss, loss of profits or an anticipated saving or benefit) arising under or pursuant to this Agreement.
13. INSURANCE
- 13.1 The Parties must effect and maintain from the Commencement Date and during the Term and for a period of 12 months following the expiration of this Agreement all adequate insurance cover required to discharge its obligations under this Agreement and by any legislative requirements with an insurance company authorised by the Australian Prudential Regulation Authority (APRA), or otherwise approved by each Party, including but not limited to professional indemnity insurance, public liability insurance and workers' compensation insurance. Each Party will provide certificates of currency of insurance upon request by the other Party.
14. TERMINATION
- 14.1 Without limiting the generality of any other clause in this Agreement, Curtin may terminate this Agreement immediately by notice in writing if:
- any payment due from the Client to Curtin pursuant to this Agreement remains unpaid for a period of 30 days;
 - the Client breaches any clause of this Agreement and such breach is not remedied within 15 days of written notice by Curtin;
 - the Client or Curtin disposes of equipment or materials or restructures its business, reallocates or reassigns its own personnel or otherwise creates a situation in which Curtin, in its opinion, is no longer able to comply with its obligations under this Agreement or no longer able to provide the Services in an efficient and cost effective manner;
 - the Client becomes, threatens or resolves to become or is in jeopardy of becoming subject to any form of insolvency administration;
 - the Client, being a partnership, dissolves, threatens or resolves to dissolve or is in jeopardy of dissolving;
 - the Client, being a natural person, dies; or
 - the Client ceases or threatens to cease conducting its business in the normal manner.
- 14.2 Without limiting the generality of any other clause in this Agreement, the Client may terminate this Agreement immediately by notice in writing if:
- Curtin breaches any term or condition of this Agreement and such breach is not remedied within 15 days of receipt of written notice by the Client specifying the breach which requires rectification;
 - Curtin becomes, threatens or resolves to become or is in jeopardy of becoming subject to any form of insolvency administration; or
 - Curtin ceases or threatens to cease conducting its business in the normal manner.
- 14.3 If notice is given to the Client pursuant to clause 14.1, Curtin may, in addition to terminating the Agreement:
- retain any monies paid;
 - charge a reasonable sum for work performed in respect of which work no sum has been previously charged;
 - be discharged from any further obligations under this Agreement; and;
 - pursue any additional or alternative remedies provided by law.
- 14.4 Curtin shall not be liable in any circumstances whatsoever for any failure to perform any obligations under this Agreement where such failure is due to any cause beyond the reasonable control of Curtin including but not limited to instrumental breakdown and failure.
15. ASSIGNMENT
- 15.1 The Client will not assign all or any of its rights under this Agreement without the prior written consent of Curtin.
16. WAIVER
- 16.1 No right under this Agreement shall be deemed to be waived except by notice in writing signed by the Party granting the waiver.

- 16.2 A waiver by a Party pursuant to clause 16.1 will not prejudice its rights in respect of any subsequent breach of this Agreement by the other Party.
- 16.3 Subject to clause 16.1, any failure by a Party to enforce any clause of this Agreement, or any forbearance, delay or indulgence granted by one Party to the other, will not be construed as a waiver of the first mentioned Party's rights under this Agreement.
- 17. SURVIVAL
 - 17.1 The covenants, conditions and provisions of this Agreement that are capable of having effect after the expiration of this Agreement including but not limited to such covenants, conditions, and provisions set out in clauses 1, 2, 5, 6, 10, 11, 12, 14 and 15 shall remain in full force and effect following the expiration of this Agreement.
- 18. ENTIRE AGREEMENT
 - 18.1 This Agreement constitutes the entire agreement between the Parties. Any prior arrangements, agreements, representations or undertakings are superseded. No modification or alteration of any clause of this Agreement will be valid except in writing signed by each party.
- 19. SEVERABILITY
 - 19.1 The invalidity or unenforceability of anyone or more of the provisions of this Agreement will not invalidate or render unenforceable the remaining provisions of this Agreement. Any illegal or invalid provision of this Agreement will be severable and all the other provisions will have full force and effect.
- 20. DISPUTES
 - 20.1 Any dispute, controversy or claim arising out of or relating to this Agreement or the breach, termination or invalidity thereof will be addressed as follows:
 - (a) the dispute will be formally referred to the chief executive officer (or delegate) of each Party;
 - (b) if the dispute fails to resolve within five (5) working days of referral pursuant to clause 20.1(a), either Party may refer the dispute to mediation;
 - (c) in default of agreement between the Parties to the contrary, the mediator will be appointed on the application of either Party by

the president for the time being (or delegate) of the Australian Disputes Centre Ltd ("**the Centre**") and will be conducted at Perth and held in accordance with the Mediation Rules of the Centre in force at the date of this Agreement;

- (d) the foregoing will not preclude either Party from making an urgent application for injunctive relief.

21. GOVERNING LAW

- 21.1 This agreement will be governed by and construed according to the law of the State of Western Australia.

22. NOTICES

- 22.1 Notices under this Agreement may be delivered by hand, by mail or by email to the addresses specified in the quotation for each of the Parties;
- 22.2 Notice will be deemed given:
 - (a) in the case of hand delivery, upon written acknowledgement of receipt by an officer or other duly authorised employee, agent or representative of the receiving party;
 - (b) in the case of posting, on the first business day being not less than two days after dispatch; and
 - (c) in the case of email, on the next business day after notification of successful transmission.

Signed for and on behalf of _____
(the "Client")

_____/ / _____
Signature Name

Witnessed by

_____/ / _____
Signature Name

Date: