

# WASM Geomechanics Laboratory

## Rock Properties Testing

### Standard Price List 2012

#### Contact Details

ABN: 99 143 842 569

<b>Contact:</b>	<b>Professor Ernesto Villaescusa</b>
<b>Telephone:</b>	<b>(08) 9088 6155</b>
<b>Fax:</b>	<b>(08) 9088 6151</b>
<b>Email:</b>	<b>E.Villaescusa@curtin.edu.au</b>

**Western Australian School of Mines**  
Division of Science & Engineering

ITEM	TESTWORK DESCRIPTION	UNIT PRICE (GST exclusive)
<b>1.0</b>	<b>Mechanical Strength</b>	
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	
1.6	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	
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 (400mm, using the WASM 400x800mm mould)	
1.10	Minefill UCS Testing (500mm, using a 1000mm long sample)	
1.11	Shotcrete UCS Testing including coring & sample preparation (50mm)	
1.12	Shotcrete UCS Testing including coring & sample preparation (100mm)	
<b>2.0</b>	<b>Elastic Properties</b>	
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)	
2.1.3	Same as above but with post-peak modulus (complete stress-strain curve)	
<b>3.0</b>	<b>Hardness</b>	
3.1	Raise Boring Index (RBI)	

**WASM Geomechanics Laboratory**  
**Rock Properties Testing**  
**Standard Price List 2012**

	<b>TESTWORK DESCRIPTION</b>	<b>UNIT PRICE (GST exclusive)</b>
<b>4.0</b>	<b>Physical Properties</b>	
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	
<b>5.0</b>	<b>Specialised Test Work</b>	
5.1	Cylindrical Sample Coring (Up to 50mm diameter - including sample preparation)	
5.2	Cylindrical Sample Coring (100mm diameter - including sample preparation)	
5.3	Slake - Durability Index	
5.4	Split Pipe Test (load – deformation of reinforcement)	
5.5	Plate Deformation test	
<b>6.0</b>	<b>Specialised Services</b>	
6.1	In-situ Stress Measurements using the WASM AE Methodology	
<b>7.0</b>	<b>Additional Test Work Available for Individual Quotation</b>	
7.1	Dynamic testing of support and reinforcement elements	
7.2	In-situ overcoring of rock reinforcement elements	

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 partially contained overleaf. The full Terms and Conditions are available at <http://consultancy.curtin.edu.au/cons-res.html>

## Terms and Conditions

### 1. DEFINITIONS

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

**"Agreement"** and **"this Agreement"** means the terms and conditions of this Agreement which includes the presentation and comprises of the quotation form, this document and the Client's acceptance of/approval to proceed with the Services or the Client's purchase order in response to the quotation of acceptance/approval to proceed with the Services and excludes Client's terms of business which may be specified in writing in the Client's Purchase Order which constitutes the Client's acceptance of the quotation and these terms & conditions;

**"Curtin"** means Curtin University of Technology and includes its officers, employees, agents and sub-contractors;

**"Client"** means the recipient of the Services;

**"Commencement Date"** is the date specified in the quotation or the most practical date for commencement of the Services;

**"Confidential Information"** means:

- (a) information revealed in confidence by Client or Curtin of either to the other of them;
- (b) information designated as confidential by Client or Curtin of either;
- (c) proprietary information including but not limited to trade secrets and proprietary know how of Client or Curtin of either;
- (d) information in or relating to the business of Client or Curtin;
- (e) any other information relating to Client or Curtin 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; or
  - (iv) Is required to be disclosed by law.

**"Consultant"** means any person who takes part in the provision of the Services by Curtin whether as an officer, employee, agent or sub-contractor of Curtin or of any body corporate engaged by Curtin;

**"Intellectual Property Rights"** means all but is not limited to copyright, patents, trade marks, designs, inventions, trade secrets, ideas, know how, concepts and techniques and all other intellectual property rights as defined in Article 2 of the Convention establishing the World Intellectual Property Organisation, 1963;

**"New Technology"** means any procedures, methods, designs, formulations inventions or improvements that are conceived, instigated, made invented or suggested by the parties at any time during the term of this Agreement or within two years thereafter if connected with or arising out of the provision of the Services or with Confidential Information acquired in providing the Services.

**"Nominated Consultant"** means the person, if any, specified in the quotation as being primarily liable for the provision of the Services;

**"Parties"** means the Client and Curtin;

**"Services"** means the services and/or supply of any report to be provided by Curtin as specified in the quotation or as otherwise mutually agreed between the Parties from time to time;

**"Term"** means the period that Curtin is to provide the Services under this Agreement as specified in the quotation.

### 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 "person" includes an individual, a body corporate, a trust, an agency and other body;
- (d) a reference to the Consultant 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

Curtin shall provide the Services to the Client in a professional manner. If a Nominated Consultant is specified in the quotation then the Services shall be provided primarily by the Nominated Consultant or as otherwise agreed in writing between the Parties from time to time.

### 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 that are set out in the quotation including GST and where applicable local duties and taxes.

### 6. LIABILITY OF CURTIN

- 6.1 The Client acknowledges that:
  - (i) it uses the results of the Services and any advice, opinions or information supplied by Curtin or its consultants at its own risk; and,
  - (ii) 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.
- 6.2 Except as expressly provided to the contrary in this Agreement, all terms, conditions, warranties, undertakings, inducements or representations, whether express, implied, statutory or otherwise relating in any way to the Services or to this Agreement are excluded unless contained as an express term of this Agreement. Without limiting the generality of the preceding sentence, Curtin shall not be under any liability to the Client in respect of any loss or damage (including but not limited to indirect losses, loss of profits, consequential loss or damage) however caused, which may be suffered or incurred or which may arise directly or indirectly in respect of the provision of the Services or the failure or omission on the part of Curtin to comply with its obligations under this Agreement.

- 6.3 Where any Act of Parliament implies in this Agreement any term, condition or warranty, and the Act prohibits provisions in a contract excluding or modifying the application of or exercise of or liability under such term, condition or warranty, such term, condition or warranty shall be deemed to be included in this Agreement.

However, the liability of Curtin for any breach of such term, condition or warranty shall be limited, at the option of Curtin to:

- (a) refunding the price of the Services, in respect of which the breach occurred; or,
  - (b) providing those Services again.
- 6.4 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.

- 6.5 Any description of the Services in any quotation is given by way of description only and the use of such description shall not constitute a contract of sale by description.

### 7. INTELLECTUAL PROPERTY RIGHTS

- 7.1 Unless otherwise agreed and specified in writing by the Parties, Curtin shall retain rights to all Intellectual Property Rights relating to New Technology arising out of or in the course of providing the Services, save that the Client shall have the option to enter into a license to use the New Technology on not less favourable terms than Curtin would offer to a third party.

- 7.2 The Client shall at any time at the cost of Curtin execute all documents and, where relevant, shall procure its employees to execute all documents and do all acts and things required by Curtin for the purpose of vesting Intellectual Property Rights as prescribed by this clause 7.1.

- 7.3 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 performing any services or 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.

- 7.4 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 7.3.

- 7.5 The provisions of clauses 7.1, 7.2, 7.3 and 7.4 shall survive the expiration of this agreement.

### 8. INDEMNITY

- 8.1 Without prejudice to the specific provisions of any other indemnity provided by the Client under this Agreement, the Client shall at all times indemnify, hold harmless and defend Curtin, its officers, employees, agents and consultants from and against any loss including legal costs and expenses or liability incurred by Curtin, its officers, employees, agents and consultants arising from any claim, suit, demand, action or proceeding by any person against Curtin, its officers, employees, agents and consultants where such loss or liability was caused by willful, negligent or unlawful act or omission of the Client, its officers, employees, agents or sub-contractors arising out of or in connection with this Agreement.

The full Terms and Conditions are available at <http://consultancy.curtin.edu.au/cons-res.html>.

Revision 09-06-2004