

# MISSOURI S&T | Rock Mechanics & Explosives Research Center

## RMERC

ROCKS & AGGREGATE  
LAB TESTING SERVICES

### Laboratory Testing of Aggregates and Rocks for Determining The Mechanical/Physical Properties

Rock Mechanics & Explosives Research Center (RMERC) Rock/Aggregate Laboratory is fully equipped to test and evaluate Rock/aggregates and provides high quality results that can be used in designing procedure. At RMERC, the staff takes the requested services to the higher level of care. You just call, we listen and we take action. Primarily our personnel understand the construction industry needs and will add shifts as necessary to accommodate expedited testing. Our laboratory is capable of testing and preparing the following materials:

*Rock Preparation and Testing  
Aggregate Preparation and Testing*

#### Rock Lab Testing :

Evaluating the mechanical properties of a wide range of materials, our laboratory has the equipment to perform cyclic fatigue, tensile strength, compressive strength, flexural strength, hardness, strain measurements, pressure, and many other forms of physical testing. We have multiple load frames to accommodate a wide range of samples, sizes and strengths. The RMERC laboratory is capable to perform high-end strength testing of rock (Unconfined Compression, Brazilian Tensile Strength, Elastic Moduli, Triaxial, etc.).

#### Aggregate Lab Testing :

When you need testing for new aggregate sources, evaluation of concrete aggregate or aggregate base testing, you can rely on RMERC to get the job done. Our technicians use specialty aggregate equipment to perform services ranging from sieve analysis to long-term soundness testing. RMERC is fully equipped to test and evaluate aggregates for use in asphalt concrete, Portland cement concrete and other construction products.



#### RMERC Benefits of our lab testing services :

RMERC facilities undertake Rock & Aggregate analysis for projects around the world and deliver the requested results through your selected method such as : (email, fax or even hardcopy). Key benefits of our laboratory testing services:

- ☐ Led by highly-experienced engineers
  - ☐ Prompt response for periodic, specialized testing
  - ☐ Quick turnaround on testing large volumes of samples
- All tests procedures meeting the ASTM standards  
High precision results  
Full professional deliverables (including before & after photographs of samples  
Very competitive prices  
Consultancy is available before the lab testing begins*

#### QUESTIONS?

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# ROCK TESTING

Typical Rocks Tests Performed	Test Method
Direct Tensile Strength	ASTM D2936
Elastic Moduli of Intact Rock Core Specimens in Triaxial Compression	ASTM D7012/ D5407
Elastic Moduli of Intact Rock Core Specimens in Uniaxial Compression	ASTM D7012/ D3148
Evaluation of Durability of Rock for Erosion Control Under Freezing and Thawing Conditions	ASTM D5312
Evaluation of Durability of Rock for Erosion Control Under Wetting and Drying Conditions	ASTM D5313
Point Load Index Test	ASTM D5731
Preparing Rock Core Specimens and Determining Dimensional and Shape Tolerances	ASTM D4543
Splitting (Brazilian) Tensile Strength of Intact Rock Core Specimens	ASTM D3967
Total Hardness (Schmidt Hammer and Taber Abrasion)	ISRM & 15th Rock Symposium
Triaxial Compression Strength of Undrained Rock Core Specimens	ASTM D7012 / D2664
Specific Gravity And Absorption of Rock	ASTM D 6473
Unconfined Compression Strength of Intact Rock Core Specimens	ASTM D7012 / D2938

# AGGREGATE TESTING

Typical Aggregate Tests Performed	Test Method
Calcium Carbonate Content of Aggregate	ASTM D3042
Clay Lumps and Friable Particles	ASTM C142 / AASHTO T 112
Flat and Elongated Particles	ASTM D4791
Fine Aggregate Angularity	ASTM C1252 / AASHTO T 304
Fractured Faces	ASTM D5821
Lightweight Pieces	ASTM C123 / AASHTO T 113
Resistance to Degradation by Los Angeles Abrasion	ASTM C131 / C535 / T 96
Sand Equivalent	ASTM D2419 / AASHTO T 176
Sieve Analysis & % Passing #200 Sieve	ASTM C136 / C117 / AASHTO T 27 / T 11
Soundness by Freezing and Thawing	AASHTO T103
Soundness by Sodium Sulfate or Magnesium Sulfate	ASTM C88 / AASHTO T 104
Specific Gravity and Absorption—Coarse Aggregate	ASTM C127 / AASHTO T 85
Specific Gravity and Absorption—Fine Aggregate	ASTM C128 / AASHTO T 84
Total Moisture Content	ASTM C566 / AASHTO T 255
Unit Weight and Voids	ASTM C29 / AASHTO T 19
Methods for determination of aggregate impact value (AIV)	BS 812 : Part 112 : 1990
Methods for determination of aggregate crushing value (ACV)	BS 812 : Part 110 : 1990



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