

**MINIMUM QUALITY ASSURANCE TESTING REQUIREMENTS  
FOR SUBGRADE PREPARATION AND GRADING PROJECTS**

TEST SUBGQA/12	STANDARD	FREQUENCY (Minimum)	ATT DATA SHEET(S)
<p align="center"><b>MOISTURE DENSITY TESTS</b></p> <p>1. Standard Compaction, -5000 um 2. Standard Compaction, +5000 um 3. Standard Compaction, One Point</p> <p><b>DENSITY OF SOIL (In-Place)</b></p> <p>1. Sand Cone Method, or 2. Rubber Balloon Method, or 3. Nuclear Density Gauge Method. 4. Correction Factor</p> <p>Note: The nuclear method may only be used under the following conditions:</p> <p>(a) The gauge calibration is checked yearly and a log book of standard counts is maintained as outlined in ATT-11, Section 3.7.</p> <p>(b) Percent compaction and a rock correction are determined as outlined in ATT-11, Section 3.9.1. Correction factors done as outlined in ATT-48</p> <p><b>SOILS IDENTIFICATION, HAND METHOD</b></p> <p align="center"><b>MOISTURE CONTENT</b></p> <p>1. Laboratory determination of moisture content of soils.</p> <p>- Soil and Gravel - Microwave Method</p> <p>2. Nuclear Moisture Content.</p>	<p>ATT-23 ATT-19 ATT-20</p> <p>ATT-9 ATT-8 ATT-11 ATT-48</p> <p>ATT-29</p> <p>ATT-15 ATT-11</p>	<p>One for each representative soil type tested for in-place density.</p> <p>Top 0.3 m, one test per 300 m. Below the top 0.3 m, 3 tests per metre of fill per 1000 m.</p> <p>Each density test corrected.</p> <p>Each significant soil type as required for moisture control.</p>	<p><a href="#">MAT 6 - 22</a></p> <p><a href="#">MAT 6 - 23</a> <a href="#">MAT 6 - 34</a> <a href="#">MAT 6 - 54</a></p> <p>N/A</p> <p><a href="#">MAT 6 - 24</a> <a href="#">MAT 6 - 34</a></p>
<p><b>REPORTING</b></p> <p>1. Compaction</p>	<p>Complete <a href="#">MAT 6 -1</a> Daily Compaction Report. Submit to Project Sponsor on a weekly basis.</p>		

The listed standard test methods and frequencies are to serve as a guideline for Consultants to use on "typical" or "average" projects, around which project specific testing programs may be developed. The listed test methods and frequencies are however to be followed in situations of dispute with the contractor, as per contract requirements.