

Division 6: Aggregate Base And Subbase Course

6.01 **SCOPE:** Aggregate Base and Subbase Course shall consist of natural or artificial mixtures of natural or crushed gravel, crushed stone or slag.

6.02 **MATERIALS:** Aggregate Base and Subbase Course will be designated as Type I and shall consist of crushed stone, crushed slag or crushed gravel, with or without soil mortar or other admixtures. Crushed gravel shall consist of particles with a minimum of ninety percent (90%) by weight of the material retained on the No. 10 sieve with at least one fractured face by artificial crushing and conforming with the following detailed requirements:

A. Detail Requirements:

1. Grading: Shall conform to the job-mix formula that is selected within the design range and applicable tolerances of Tables II-6 & 8 on pages 131 and 132 of the VDOT Road and Bridge Specifications when tested in accordance with VTM-25.
2. Atterberg Limits: The mean Liquid Limit and Plasticity Index shall be no more than the maximum allowed by Table II-7 page 132 of the VDOT Road and Bridge Specifications and in accordance with VTM-7.
3. Soundness: The maximum percent of soundness loss will be seven (7) for Freeze and Thaw (20 cycles) and twenty (20) Magnesium Sulphate (5 cycles).
4. Abrasion Loss: Shall be no more than forty-five percent (45%) when tested in accordance with AASHTO T96.
5. Optimum Moisture: Will be limited to plus or minus two percent (2%).

B. Mixing: Subbase or aggregate base materials shall be mixed in an approved central mixing plant of the pugmill or other mechanical type, unless otherwise specified. The materials shall be blended prior to or during mechanical mixing in such a manner that will insure conformance with the aforementioned detail requirements.

C. The Contractor shall assume responsibility for the quality control and condition of all materials and their sources.

6.03 **EXECUTION:** Furnishing, placing and compaction of aggregate base and subbase must be in accordance with the following conditions:

- A. The surface upon which the base or subbase is to be placed shall be prepared in accordance with the applicable Divisions 1, 2, 4 and/or 5 of these Specifications. Any subgrade material which has become wet will be worked, dried and rolled until necessary compaction has been obtained as per 1.02M.
- B. Should visual examination reveal that the material in any load is obviously contaminated or segregated, that load will be rejected without additional sampling or testing of the lot.
- C. Equipment used for placement of the aggregate base course or subbase shall be approved prior to performing any such work. Any machine, combination of machines or equipment for spreading, moistening, mixing and compacting which will handle the material without undue segregation and produce the completed base in accordance with these Specifications will be approved.
- D. Where the required thickness is more than 6 inches, the material shall be spread and compacted in 2 or more layers of approximately equal thickness, the maximum compacted thickness of any one layer not to exceed 6 inches. When vibrating or other approved types of special compacting equipment are used, the compacted depth of a single layer of the base course or subbase may be increased to 8 inches upon approval.

After mixing and shaping, each layer shall be compacted within twenty percent (20%) of its optimum moisture content. The density of each layer of base aggregate material, when compared to the theoretical maximum density as

determined in accordance with VTM-1 shall conform to the following:

<u>Percent Plus No. 4 Sieve Material</u>	<u>Minimum Percent "D"</u>
0-50	100
51-60	95
61-70	90

The percentages of plus 4 material will be reported to the nearest whole number.

- E. Any irregularities in the surface shall be corrected by scarifying, remixing, reshaping and recompacting until a smooth surface is secured. The surface shall thereafter be protected against the loss of fine materials by the addition of moisture, when necessary, and shall be maintained in a satisfactory and smooth condition until accepted by the Engineer. The cost of the addition of moisture will not be a pay item but shall be incidental to the cost of the material.
- F. Field density determinations will be performed with a nuclear field density device and/or test loading in accordance with the requirements of AASHTO T-191, T-205, or T-214. The method of density determination will be as directed by the Engineer. If such tests are specified by the Engineer, and the area tested fails to meet or exceed the minimum acceptable standards of this Division, costs of the tests and corrective measures for the aggregate base or subbase will be borne by the Contractor at no additional expense to the City. If the test(s) should pass all cost(s) shall be paid by the City.

6.04 MEASUREMENT AND PAYMENT: Costs for all materials, labor, and equipment as well as incidental expenses shall be included in the unit price for furnishing, placing, and compacting the aggregate base and subbase. Aggregate base course and subbase will be measured as the actual square yards in-place and paid at the unit price per square yard at the depth specified in the Unit Price Table.

