



Part 1 General

1.1 DESCRIPTION OF WORK

- .1 The work shall consist of the supply and placing of rip rap bedding, supply and placing of filter cloth (if filter cloth is required) and the supply and placing of rip rap.

1.2 ASSURANCE

- .1 The rip rap and the rip rap bedding shall be well graded as outlined in Part 2 below or as specified in Section 01001, Special Provisions.
- .2 The method of testing rip rap bedding shall be in accordance with CSA Standard A23.2.2, Test for Sieve Analysis of Fine and Coarse Aggregate. Some screens may be added and/or deleted to conform with the gradation limits given in Section 01001, Special Provisions.
- .3 The method of testing rip rap shall be by either measuring the rock as it is delivered or by in-place measurement. A test shall comprise measuring several rocks. Three tip-to-tip measurements shall be taken on each rock, one through the estimated major axis and two through the estimated minor axes, and the size of the rock shall be the average of the three measurements. Rocks having an average diameter smaller than the minimum diameter given in Section 01001, Special Provisions, shall be rejected.

1.3 STANDARDS

The following organizations publish Standards to which reference has been made in this Section:

- .1 CSA International –
 178 Rexdale Boulevard,
 Toronto, Ontario M9W 1R3
- .2 CGSB – Canadian Government Standards Board
 National Research Council,
 Ottawa, Ontario K1A 0S5



- .3 ASTM – American Society for Testing and Materials
100 Barr Harbor Drive, West Conshoeken PA
19428-2959 USA

The Standards referred to shall be the most recent edition.

Part 2 Products

2.1 MATERIAL

- .1 RIP RAP BEDDING - Rip rap bedding shall conform with and be reasonably well graded between the gradation limits outlined below:
- | | |
|-----------------------|----------------|
| 75mm (3 in.) | 100% Passing |
| 4.75mm (No.4 Sieve) | 30-70% Passing |
| 0.75mm (No.200 Sieve) | 0-8% Passing |
- .2 RIP RAP - Rip rap shall be reasonably well graded 75 mm to 200 mm material with at least sixty percent 150 mm diameter size. Rock used shall be hard, dense, durable fieldstone or rock fragments having a specific gravity of at least 2.6 and a limit of 2 percent absorption, in accordance with ASTM Standard C127, "Method of Test for Specific Gravity and Absorption of Coarse Aggregate".
- .3 FILTER FABRIC - Filter fabric shall be non-woven polyester in accordance with CGSB 148.1 – 1705/m², 1.7 mm thickness, or as approved by the Engineer.

Part 3 Execution

3.1 RIP RAP BEDDING

- .1 Rip rap bedding shall be placed to the limits and dimensions as shown on the plans and as described in the Special Provisions or as directed by the Engineer. The Contractor shall place the rip rap bedding in such a manner so as to prevent the intrusion of clay or silt into the bedding material. The bedding material shall be placed in a lift or lifts of uniform thickness. Rutting or displacement of the surface upon which the bedding is to be placed or of the surface of the bedding will not be permitted.



3.2 FILTER FABRIC

- .1 Filter fabric shall be placed in a sequence approved by the Engineer. A minimum of 600 mm of overlap is required on all abutting lengths of filter fabric. The filter fabric shall be placed in accordance with the manufacturer's recommendations.

3.3 RIP RAP

- .1 Rip rap shall be placed in the locations and to the depth and elevations shown on the plans. The larger boulders shall be uniformly distributed and the smaller boulders and cobble shall fill the spaces in between resulting in a well-keyed, void free and stable surface. The placement operation shall be such that the rip rap bedding and/or filter cloth shall not be dislodged or torn during installation.