

**TABLE 205-B APPROXIMATE AVERAGE DIMENSION OF AN ANGULAR ROCK FOR EACH SPECIFIED ROCK CLASS MASS (Sg=2.640)**

| CLASS (KG) | APPROX. AVERAGE DIMENSION (mm) |      |      |
|------------|--------------------------------|------|------|
|            | 15%                            | 50%  | 85%  |
| 10         | 90                             | 195  | 280  |
| 25         | 120                            | 260  | 380  |
| 50         | 155                            | 330  | 475  |
| 100        | 195                            | 415  | 600  |
| 250        | 260                            | 565  | 815  |
| 500        | 330                            | 715  | 1030 |
| 1000       | 415                            | 900  | 1295 |
| 2000       | 525                            | 1130 | 1630 |
| 4000       | 660                            | 1425 | 2055 |

**TABLE 205-C RECOMMENDED TESTS FOR RIPRAP QUALITY**

| Property                               | Test Designation | Allowable Value                  |
|--|------------------|----------------------------------|
| Specific Gravity                       | ASTM D6473       | $\geq 2.60$                      |
| Absorption                             | ASTM D6473       | $\leq 1\%$                       |
| Soundness by use of Magnesium Sulphate | ASTM D5240       | $\leq 10\%$ (following 5 cycles) |
| Micro-Deval Abrasion Loss Factor       | ASTM D6928       | $\leq 20\%$                      |

At the toe of sloped riprap, a sufficient number of the larger rocks shall be placed to form a firm foundation approximately 50% thicker than the required nominal riprap thickness. The remaining larger rocks shall be regularly spaced, at least one every 2.5 m<sup>2</sup>, when placing the general rock mass to the nominal or required thickness over the area indicated. Smaller rocks or spalls shall be

well hammered in to fill the interstices and to form a closely massed regular surface.

Where riprap is required in two layers, the rocks shall be laid up and generally lap jointed between the regularly spaced larger rocks placed as through headers.

**205.08 Grouted Riprap** – Where grouted riprap is shown or required, the surfaces of the rocks shall be cleaned and wetted and the interstices filled with cement mortar, well rodded and pounded in for a minimum mortar depth of 300 mm or as otherwise detailed or required by the Ministry Representative. The mortar shall consist of one part Portland cement to three parts well-graded clean fine aggregate mixed to a proper consistency.

#### MEASUREMENT

**205.09 Measurement** – Measurements shall be made by multiplying the facial area by the average thickness dimensions as shown on the Drawings or as directed by the Ministry Representative. No allowance will be made for the quantity of rock placed in excess of these dimensions.

#### PAYMENT

**205.10 Payment** – Payment shall be on the basis of the Unit Price bid per cubic metre for the type and class of riprap specified or required. The Unit Price bid shall be accepted as full compensation for everything completely furnished and done in connection therewith, but shall not include the excavation for foundation, which shall be paid for under "Roadway Drainage and Excavation" or "Foundation Excavation", whichever is specified in the Contract.

Where the source of supply for the riprap is off-Site or outside the design excavation limits as shown on the Drawings, the Unit Price for Riprap shall include all costs to develop the source and produce the riprap.

Where the source of supply is on-Site and within the design excavation limits as shown on the Drawings, payment to excavate the rock for riprap will be included within the Contract Unit Price for Type A or Type B, as defined in SS 201, as appropriate to the source.

Haul and overhaul are incidental to Unit Prices indicated above unless Schedule 7 includes an Overhaul Item.