

	ROCK MATTRESS	Section 31 36 19
722024		Page 1
Upland Development		
Mary's Harbour, NL		2017-08-03

PART 1 - GENERAL

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| <u>1.1 RELATED WORK</u> | .1 | Section 31 53 13 - Timber Cribwork. |
| <u>1.2 GENERAL</u> | .1 | Rock mattress is only required to supplement unsuitable materials, if present, beneath the design crib seat elevation for the floating dock support cribs. Rock mattress, if required, will not be measured separately for payment. Include a 2m allowance depth of rock mattress in the lump sum to account for this item. |
| <u>1.3 REFERENCES</u> | .1 | <p>American Society for Testing and Materials (ASTM)</p> <p>.1 ASTM C88-05, Standard Test Method for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate.</p> <p>.2 ASTM C127-07, Standard Test Method for Specific Gravity and Absorption of Coarse Aggregate.</p> <p>.3 ASTM C535-03e1, Standard Test Method for Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.</p> |

PART 2 - PRODUCTS

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| <u>2.1 MATERIALS</u> | .1 | <p>Mattress material to following requirements:</p> <p>.1 Crushed quarry stone consisting of hard durable particles free from silt, clay lumps, organic matter, frozen material and other deleterious materials, and free from splits, seams or defects likely to impair its soundness during handling or under action of water.</p> |
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.2 Relative density (formally specific gravity): to ASTM C127 (AASHTO T85), not less than 2.65.

.3 Base layer will be uniformly graded quarry run rock ranging in weight from 45 to 400 kg. A minimum of 50% of the total base layer will contain stones with individual weights of 200 kg. No more than 5% by weight to be rocks weighing less than 10 kg.

.4 Bearing layer will be uniformly graded quarry run rock ranging in weight from 2 to 7 kg with average rock dimensions off 100 and 150 mm respectively. A minimum of 50% of the total bearing layer will contain stones with individual weight of 5 kg.

PART 3 - EXECUTION

3.1 PREPARATION

- .1 Rock mattress is to be placed only after dredged bottom has been approved by Departmental Representative.
- .2 Sound area in presence of the inspector before placing mattress material, and record elevation of bottom on which mattress to be placed.

3.2 PLACEMENT

- .1 Ensure that no frozen material is used in placing.
- .2 Do not place mattress material until bottom area has been approved by Departmental Representative.
- .3 Place mattress materials to elevations and dimensions as indicated.
- .4 Prevent segregation in placing of material

sizes. Do not drop material through water.

- .5 Do not place material during weather judged unsuitable by Departmental Representative.
- .6 Place material immediately prior to planned placement of timber cribs.
- .7 Level top surface of mattress to specified grade. Use sweep beam suspended from barge as screed to level surface of each mattress layer. Other methods of leveling may be employed subject to approval of Departmental Representative.
- .8 In areas where the depth of the rock mattress to be placed is less than the 600 mm required for the full thickness of the bearing layer, only place the required thickness of bearing layer to reach the required crib seat elevation.

3.3 ROCK MATERIAL WASHED OUT OF WORK

- .1 Should during the progress of the work, any rock material be washed out of the work, or through neglect of carelessness of the Contractor or workmen or from any other cause, be dumped into the water near the work or anywhere within the harbour or channel, so as to interfere, in the opinion of the Departmental Representative, with actual depths of water and/or impede navigation, it will be removed by the Contractor when ordered to do so by the Departmental Representative. Any material washed out of the work or displaced beyond the contract limits will be replaced by the Contractor at no cost to Canada.

3.4 TOLERANCES

- .1 Surface of bearing layer to be parallel with elevation as indicated with mean elevation of surface within 50 mm of

elevations as indicated.

- .2 Surface of base layer to be parallel with elevation as indicated with mean elevation of surface within 100 mm of elevations as indicated.
- .3 Establish mean elevation from spot elevations taken at 2 m intervals. Do not allow spot elevation to differ more than 50 mm from mean.

3.5 TESTING

- .1 Submit rock materials samples for testing to testing laboratory approved by the Departmental Representative prior to commencement of quarry production. Allow sufficient lead time to perform and report tests before start of production.
- .2 Contractor will be responsible for procurement of samples for testing and arrange and pay for shipment of samples to testing laboratory.
- .3 Departmental Representative will pay for costs associated with laboratory testing. The cost of retesting due to samples failing to meet the requirements of the contract will be borne by the Contractor.
- .4 Only materials satisfactorily tested and approved by the Departmental Representative will be quarried and placed in the work.