

Cape Spear Lightstation
Remediation/Risk Management
Cape Spear, NL

2016-08-20

PART 1 - GENERAL

- 1.1 DESCRIPTION .1 This section specifies the requirements for the supplying, producing and placing crushed gravel for quarried stone as a granular base course as directed by Departmental Representative.
- 1.2 REFERENCES .1 ASTM C 117-04, Test method for material finer than 0.075 mm sieve in mineral aggregates by washing.
.2 ASTM C 131-06. Test method for resistance to degradation of small size coarse aggregate by abrasion and impact in the Los Angeles machine.
.3 ASTM C 136-6, Method for sieve analysis of fine and coarse aggregates, CAN/CGSB-8.2-M88, Sieves testing, woven wire, metric..
- 1.3 DELIVERY, STORAGE AND HANDLING .1 Deliver as directed by Departmental Representative. No stockpiling permitted on site.

PART 2 - PRODUCTS

- 2.1 MATERIALS .1 Granular base fill (Class "A") will consist of clean, hard, durable crushed gravel or stone, free from shale, clay, friable materials, organic matter and other deleterious substances and graded within the following limits when tested to ASTM C136 and ASTM C117 and giving a smooth curve without sharp breaks when plotted on a semi-chart.

ASTM Sieve % Passing

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Designation

19.0 mm	100
9.51 mm	50-80
4.76 mm	35-60
1.20 mm	15-35
300 um	7-20
75 um	3-6 (Pit Source)
	3-8 (Rock Source)

.2 Physical Requirements for Class "A":

- .1 Liquid Limit ASTM D4318: Maximum 25
- .2 Plasticity Index ASTM D4318: Maximum 0
- .3 Los Angeles Abrasion ASTM C131-81 Maximum % loss by weight: 35
- .4 Crushed Fragments: 50%. The percent of crushed particles will be determined by examining the fraction retained on the 4.76mm sieve and dividing the weight of the crushed particles by the total weight retained on the 4.76 mm sieve.
- .5 CBR: ASSHTO T193-72 Min 100 when compacted to 100% of AASHTO T180-74 Method D.

- .3 Materials from deposits acceptable as to the quality of the particles, but deficient in sizes to provide the required gradation, may be accepted if the contractor furnishes and satisfactorily incorporates into the product supplementary sizes from other sources to produce the required grading.

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If the deficiencies occur in Class "A" materials, corrections may be attempted by crushing to a smaller maximum particle size. In that event, the Departmental Representative will furnish special grading limits on the actual maximum particle size.

- .4 Material shall be considered unsuitable even though particle sizes are within the specified gradation limits if particle shape or any other characteristic precludes satisfactory compaction or fails to provide a roadway suitable for traffic. If, in the opinion of the Departmental Representative, an improved particle shape can be achieved by using a different crushing unit for that proposed by the contractor, then the Contractor shall supply and use a crushing unit of the type directed by the Departmental Representative.
- .5 Class "A" shall be processed by crushing and, when necessary, to eliminate surplus fines passing the 4.76 mm sieve, shall be screened and washed.

PART 3 - EXECUTION

3.1 INSTALLATION

- .1 Place granular base after sub-base surface is inspected and approved by Departmental Representative.
- .2 Placing:
 - .1 Construct granular base as required to suit the surrounding topography (to approval of the Departmental Representative).
 - .2 Ensure no frozen material is placed.

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- .3 Place material only on clean unfrozen surface, free from snow and ice.
 - .4 The contractor shall place all granular bases in such a manner as to prevent contamination by other materials and to prevent segregation.
 - .5 All granular bases shall be placed in uniform layers such that the thickness of the compacted layer does not exceed 50 mm.
 - .6 The materials shall be sprayed with water when and as directed by the Departmental Representative, either to aid compaction or reduce dust nuisance or both. When water is added to aid compaction, it shall be applied immediately ahead of the compacting unit
- .3 Shape each layer to smooth contour and compact to specified density before succeeding layer is placed.
 - .4 Compaction Equipment:
 - .1 Compaction equipment to be capable of obtaining required material densities.
 - .5 Compacting:
 - .1 All Class "A" materials shall be compacted to not less than 100% of the maximum Standard Proctor Dry Density ASTM D698-07e1 Method D.
 - .2 Compaction operations shall be carried out as closely as possible behind the placing and spreading operation.
 - .3 Each layer of material shall be graded and compacted as specified

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before the next layer is placed.

- .4 Where necessary to obtain the required compaction, the contractor shall apply sufficient water by means of an approved distributor.

3.2 PROTECTION

- .1 Maintain finished base in condition conforming to this section until succeeding material is applied or until acceptance by Departmental Representative.