

PART 1 GENERAL

1.1 RELATED SECTIONS

- .1 Section 01 33 00 – Submittal procedures;
- .2 Section 01 74 21 – Construction/Demolition Waste Management and Disposal;
- .3 Section 02 41 14 – Asphalt Pavement Removal;
- .4 Section 32 12 16 – Asphalt Paving;
- .5 Section 33 42 13 – Pipe Culverts;

1.2 REFERENCES

- .1 Bureau de normalisation du Québec (BNQ) :
 - .1 NQ 2560-114/2002, Travaux de génie civil – Granulats.
- .2 American Society for Testing and Materials (ASTM):
 - .1 ASTM D1557-[00], Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³) (2,700 kN-m/m³);
 - .2 ASTM D1883-99, Standard Test Method for CBR (California Bearing Ratio) of Laboratory Compacted Soils.

1.3 DOCUMENTS TO BE SUBJECTED AND ACCESS FOR SAMPLING

- .1 At least 10 working days before the beginning of the works, submit to the Ministerial Representative, for each type of granular material:
 - .1 Identification and location of the quarry or sand pit;
 - .2 A conformity certificate of the materials after treatment (crushing, washing, adding, screening). The certificate shall be recent (less than one year) and shall include the following information:
 - .1 The name of the registered laboratory or the ISO 9001 certified manufacturer laboratory;
 - .2 The complete results of the granulometric analysis, as prescribed in standard NQ 2560-114;
 - .3 The intrinsic characteristics and complementary test results, as defined in standard NQ 2560-114;
 - .4 If the materials are treated, indicate the proportion of added material as well as the treatment method used.
- .2 Advise the Ministerial Representative at least 2 working days before the delivery of the materials.
- .3 Ensure to the Ministerial Representative, for sampling purposes, the access to the supply source and to the prepared materials, as well to the site of delivery.

1.4 MATERIALS REJECTION

- .1 A material with a certificate of conformity that has been accepted can nevertheless subsequently be refused if it does not meet the specified requirements, if the quality or the properties of the material delivered are not uniform, or even if the site performance of the latter is not satisfactory.
- .2 A batch is represented by only one type of granular material and for a quantity not exceeding 2250 m³ or 1000 tons. The control is based on 3 samples arbitrarily taken.
- .3 The Ministerial Representative can reject a batch of material based on the granulometric results when the difference between the average of 3 granulometric results and the specified values in standard NQ 2560-114, part II, exceeds at least one of the critical deviations (Ec) defined below:
 - .1 Ec = -5% (for the 112 mm sieve specification);
 - .2 Ec = +1% (for the greater than 80 microns sieve specification).
- .4 In the event the rejection of a batch by the Ministerial Representative, the contractor removes and replaces at his costs the granular material of the rejected batch.
- .5 The contractor shall pay for the sampling and tests costs of the aggregates if the latter do not comply with the prescribed requirements.

1.5 MANAGEMENT AND ELIMINATION OF UNUTILISED MATERIALS

- .1 The unused granular materials shall be transported off the site at a location found by the contractor in compliance with the requirements of section 01 74 21 - Construction/demolition waste management and disposal.
- .2 The contractor shall submit to the Ministerial Representative a letter certifying the destination and the usage of the unused granular materials transported off the site.
- .3 The unused granular materials shall be managed in compliance with the Politique de protection et de réhabilitation des terrains contaminés du ministère du Développement durable, de l'Environnement et des Parcs (MDDEP 1999). The usable excavated and excess materials could be reused on a property only in the event that they would be compatible to the environmental quality (meet the usage criteria for each of the measured parameters) and to the ground geotechnics of the receiving property. When the materials are transported off site, a backfilling and excavation permit shall be obtained in advance from the concerned municipality. The contractor shall assume the costs pertaining to the soil characterization of the receiving property and the permit costs.
- .4 The unused granular materials shall not be transported to a burial site, unless they are used as daily covering materials in a sanitary burial site.

PART 2 PRODUCTS

2.1 MATERIALS

- .1 Materials of road base and stone pad according to standard NQ 2560-114/2002:
 - .1 Granulometry: MG-20;
 - .2 Intrinsic characteristics: category 5;
 - .3 Fabrication characteristics: category e.

- .2 Material of road sub-base according to standard NQ 2560-114/2002:
 - .1 Granulometry: MG-112;
 - .2 Intrinsic characteristics (if stone): category 6;
 - .3 Intrinsic characteristics (if sand): category 3;
 - .4 Bearing capacity (if sand): CBR index after immersion, measured in compliance with the test described in standard ASTM D1883, shall be at least 30 after 100 % compaction of sample at according to standard ASTM D1557;
 - .5 Recycled material made from recovered asphalt from the site is accepted according to Section 02 41 14 – Asphalt pavement removal, under the condition that it meets the material granulometry of MG-112.
- .3 Pipe bedding material according to standard NQ 2560-114/2002:
 - .1 Granulometry CG-14;
 - .2 Intrinsic characteristics (if stone): category 6;
 - .3 Intrinsic characteristics (if sand): category 3.
- .4 Sub-drain bedding material according to standard NQ 2560-114/2002:
 - .1 Particle size 80 microns .1 BC-5;
 - .2 Distinctive features: category 3.
- .5 The granular materials incorporated to the asphalt are specified in section 32 12 16 – Asphalt Paving:

PART 3 EXECUTION

3.1 PREPARATION

- .1 Manufacturing
 - .1 The granular material must come from a pit or quarry authorized by the Ministry of Sustainable Development, Environment and Parks of Quebec (MDDEP).
 - .2 All materials of the same type must be from the same pit or quarry;
- .2 Handling
 - .1 Transport the aggregates and handle them in such a way to prevent segregation, contamination and degradation.
- .3 Stockpiling
 - .1 Avoid as much as possible to stockpile the imported aggregates. If possible, transport and put in place the imported aggregates as the works progress.
 - .2 Unless indicated otherwise by the Ministerial Representative, put the aggregates in stockpiles on the site at the locations indicated by the latter.
 - .3 No stockpile shall be found at less than 100 m from walls of the training center.
 - .4 The aggregates shall be stockpiled on level ground and well drained, having a sufficient bearing capacity and stability to support the stockpiled materials, as well as the handling equipment.
 - .5 Unless that the materials are stockpiled on an acceptable stabilized surface , the stockpile base shall be composed of a compacted sand layer of at least 200 mm thickness or of a geotextile in order to prevent the contamination of the aggregates. If sand is used, put the aggregates in stockpiles on the ground, but do not incorporate to the works the layer of material 200 mm in thickness at the base of the stockpile.
 - .6 To avoid mixing of aggregates, sufficiently space the different aggregates stockpiles, or separate them by means of robust full height partitions.

- .7 It is forbidden to use mixed or contaminated materials. Remove and eliminate the rejected materials within 48 hours following their refusal, according to the instructions of the Ministerial Representative.
- .8 Stockpile the materials by forming uniform layers of thickness not exceeding 1,5 m.
- .9 Uniformly spot-dump by truck aggregates delivered to stockpile and build up stockpiles in compliance with the prescriptions.
- .10 It is forbidden to cone pile, or spill materials on each side of the piles.
- .11 Do not use conveying stackers.
- .12 During winter operations, prevent ice and snow from becoming mixed to the stockpile materials or to materials being removed from the stockpile.

3.2 CLEANING

- .1 Clean the area where the aggregates have been stockpiled in order to leave the ground clean, well-drained and free from any standing surface water accumulation.
- .2 Remove the unused aggregates from site.

END OF SECTION