

Section 00 00 00 Natureauberme

PART 1 GENERAL

1.1 DÉFINITIONS

- 1.1.1 This section covers work requirements related to the installation of sediment barriers and plant restoration using Natureauberme® in conjunction with the additional elements that are shown in the plans and drawings.
- 1.1.2 Natureauberme® is the registered trademark (TMA856,278) of Savaria's sediment-control and storm-water-runoff filtration device, which also serves as an aid in plant restoration.

1.2 RELATED REQUIREMENTS

- 1.2.1 01 29 83 00 – Payment of laboratory tests
- 1.2.2 01 35 43 00 – Environmental protection
- 1.2.3 31 14 11 00 – Landscaping
- 1.2.4 31 32 19 01 – Geotextiles
- 1.2.5 32 91 19 13 – Placing and spreading of soil – Soil amendments

1.3 REFERENCE STANDARDS

- 1.3.1 The standards set out on related sections apply.

1.4 REGULATORY FRAMEWORKS

- 1.4.1 The prime contractor must execute all contracted work in accordance with the requirements set out in the referenced documents and will be held responsible for the violation of any applicable laws, regulations, and standards, including:
- Laws related to environmental quality
 - Soil protection and contaminated sites rehabilitation policy
 - Protection of riverbanks, shore areas, and flood plains
 - Regulations affecting wastewater discharge into sewer systems and waterways
 - Sampling guides for environmental analyses
 - The Site Characterization Guide

1.5 CONDITIONS OF USE

- 1.5.1 Natureauberme® is recommended for use in controlling sediment runoff on bare ground surfaces that are exposed to the weather for periods of up to one year. If protection for longer periods is needed, reinstallation of Natureauberme® is required.
- 1.5.2 Natureauberme® may be used on slopes that are less than 50% but must not be used for retaining walls. Its use on slopes varying from 50% to 70% is possible when used exclusively in conjunction with the planting of shrubs for erosion control.
- 1.5.3 Natureauberme® is recommended for erosion control with the view of preparing soil for plant restoration. Natureauberme® controls soil erosion for a period of one to two years, allowing time for planting, and as it degrades, serves as an amendment that improves soil conditions for plant life.

1.6 SCOPE OF WORK

- 1.6.1 The prime contractor will provide all the materials, equipment, and labor that are needed to fulfill the contract in accordance with the plans and other documents that accompany the accepted bid.

(Note to the editor: adapt according to the project)

- 1.6.2 Required work includes, but is not limited to, the following items:
- 1) The supply, storage, and onsite placement of all materials.
 - 2) Installation of the Natureauberme® sediment barrier in the following situations:
 - 2.1) Construction that requires ground preparations: around the site
 - 2.2) Ditches and embankments: perpendicular to the slope and water flow
 - 2.3) Sewer or storm drain: around manholes
 - 2.4) Riparian areas or buffer strips: erosion control and revegetation of riverbanks
 - 2.5) Work areas, effluent discharge points: around effluent discharge points and work areas

1.7 SUBMITTALS

- 1.7.1 Product Data: Submit manufacturer's product data sheet.
- 1.7.2 Sample: Submit test samples that certify that the products and materials conform to the physical specifications and performance criteria established in "Part 2" of article "Quality Control at the Source."
- 1.7.3 Certificates: Submit documents signed by the manufacturer, certifying that the products and materials conform to the required physical specifications and performance criteria.

1.8 PAYMENT

- 1.8.1 All work and materials will be paid for either as a global amount or by unit prices in accordance with the tender schedules.

1.9 NOTICE OF NON-CONFORMANCE

- 1.9.1 A written non-conformance notice will be sent to the prime contractor by the client representative in each and every case where the prime contractor is in non-conformance with a law, regulation, federal, provincial or municipal permit, or any other element pertaining to the environmental protection plan.
- 1.9.2 After receiving a non-conformance notice, the prime contractor must propose and execute corrective measures that have been approved by the client representative.
- 1.9.3 The non-conformance notice will create a hold point that will remain in effect until the corrective measures have been satisfactorily executed.
- 1.9.4 No contract extensions or adjustments will be authorized as a result of a non-conformance notice.

1.10 WORK EXECUTED IN PROXIMITY OF A WATERWAY OR WETLANDS

- 1.10.1 See the section on environmental protection in the General Requirements section.
- 1.10.2 See the section on environmental protection in the Specific Requirements section.
- 1.10.3 For any operation that requires a certificate of authorization in compliance with applicable laws and regulations, all of the corresponding provisions must be applied.

PART 2 - PRODUCTS

2.1 SILT FENCE

2.1.1 Sedimentation control and filtration berm:

- 1) A roll made from jute fabric and having a flap; filled with Ramial Chipped Wood (RCW), 200 mm or 250 mm in diameter; standard length of 2.5 meters but other lengths available on special order.
- 2) Berm, free of petroleum-based products; biodegradable within two years; Natureauberme® (distributed by Matériaux Paysagers Savaria) or approved equivalent
- 3) Specifications of geotextile
 - 3.1) Jute fabric
 - 3.2) Industrial grade
 - 3.3) Finish: natural, untreated
 - 3.4) Weight: 269 to 273 g/sq. m. (0.055 to 0.056 lb/sq. ft.)
 - 3.5) Porosity: not specified
 - 3.6) Flammability: ignitable when exposed to open flame; water extinguishable; must not be treated with fire retardants
 - 3.7) Synthetic resins: no synthetic resins; only natural, untreated, jute fiber
- 4) Characteristics of the biological filtering material:
 - 4.1) Ramial Chipped Wood, Compressed at 10%
 - 4.2) Recycled inputs: 100%
 - 4.3) Fresh or partly decomposed organic material obtained by shredding tree branches whose diameter is less than 70 mm.
 - 4.4) Proportion of deciduous trees: minimum of 80%
 - 4.5) Proportion of coniferous trees: maximum of 20%
 - 4.6) Organic materials according to Walkley-Black Method: 30% to 50%
 - 4.7) pH 6.5 to 7.5
 - 4.8) Water-retention capacity: for the filtration phase, a minimum of 20% at the time of installation; during the plant restoration phase, a progressive increase to over 70%
 - 4.9) Fibrous consistency: mixed fiber types
 - 4.10) CEC: a minimum of 150 meq+/100g of dry soil
 - 4.11) Filtration: 1.41 L/sec/meter of berm (height of retained water 10 cm)
 - 4.12) Solid organic matter held back by the berm
 - 4.13) Retention of silt and coarser elements upstream of the berm due to settling and flocculation resulting directly from a reduction in the speed of flow
 - 4.14) Partial berm retention of silt and clay resulting from the humus of RCW
 - 4.15) Biological processing boosted by microfauna and microflora associated with the humification of Ramial Chipped Wood

Ramial Chipped Wood - Particle size distribution

Size in mm	% passing by weight	
	Minimum	Maximum
31.5	100	
20	90	100
14	80	95
10	50	75
5	10	45
2.5	5	25
1.25	0	15
0.630	0	10
0.315	0	10
0.160	0	5
0.080	0	3

- 5) Stakes: untreated wood stakes (25x25x600 mm) for use in soil that offers good cohesion; longer stakes for use in soil with weak cohesion; metal stakes for use in rocky soil

PART 3 - EXECUTION

3.1 INSTALLATION AND MONITORING OF THE FILTRATION BERM

- 3.1.1 Wearing a mask is recommended for personnel that are sensitive to airborne dust. However, untreated jute in itself is not toxic.
- 3.1.2 Filtration berms should be installed before construction work begins.
- 3.1.3 On slopes of less than 10%:
- 1) If necessary, level the ground to ensure proper contact between the roll and the ground surface.
 - 2) If necessary, dig a sediment trap upstream of the berm.
 - 3) Install berms upstream or around the elements or areas that require protection.
 - 4) Rotate the berm roll until the flap is lying flat on the ground.
 - 5) Closely connect all Natureauberme segments to each other to avoid any leakage.
 - 6) Pin the flap to the ground with metal clips or weigh it down with earth or gravel to avoid movement of the berm.
 - 7) Monitor the effectiveness of the berm and carry out any needed corrections without delay.
 - 7.1) Increase berm length or improve the spread of pooled water when the height of the water regularly surpasses the midpoint of the berm or occasionally passes $\frac{3}{4}$ of its height.
 - 7.2) Any sediment that accumulates above the berm and limits the filtering process must be removed.
- 3.1.4 On slopes varying between 10% and 50%:
- 1) Prior to installation, confirm the overall stability of the embankment and that water flows evenly without converging on specific points.
 - 2) Berms must be installed at right angles to the slope. The number of berms used is a function, among other factors, of the slope. At the latest, the number of berms and their placement should be defined and confirmed at the first worksite meeting that deals with environmental protection.
 - 3) Dig a 40mm deep strip along the slope where the rolls will be placed.

- 4) Just below the 40mm strip described above, untreated hardwood retaining stakes should be solidly driven 400mm into the ground while leaving 200mm visible above ground level. Longer stakes should be used when soil cohesion is weak and metal stakes used in rocky soil.
 - 5) Lean the berm roll against the row of stakes.
 - 6) Rotate the roll until the flap is lying flat on the ground.
 - 7) Closely connect all Natureauberme segments to each other to avoid any leakage.
 - 8) Pin the flap to the ground with metal clips or weigh it down with earth or gravel to avoid movement of the berm.
 - 9) Monitor the effectiveness of the berm and carry out any needed modifications without delay:
 - 9.1) Eliminate any excessive water pooling or water escaping between berms by modifying the installation profile or by adding supplementary berms.
 - 9.2) Install extra berms and additional stakes at flow points.
- 3.1.5 Every precaution must be taken to avoid the filtration of fine particles beyond the areas contained within the berms.
- 3.1.6 Berms should be left in place to favor plant restoration.
- 3.1.7 Plant restoration without interference: let nature take charge of itself
- 3.1.8 To add vegetation for accelerated plant restoration, see the sections on seeding and planting.

3.2 CLEANING

- 3.2.1 For berms installed on impermeable surfaces:
- 1) Proceed in accordance with Section 00 00 00 - Cleaning.
 - 2) Confirm that waterways and storm and sanitary public sewers are free of waste, materials retained by the berms, or from berm materials themselves. Wait until water is completely filtered before intervening.

- END OF SECTION -