

## **COMPOST FOR EROSION AND SEDIMENT CONTROL**

Compost is produced from the controlled biological decomposition of organic material, occurring under aerobic conditions that has been sanitized through the generation of heat and stabilized for application. Compost may be derived from a variety of feedstocks, including agricultural, forestry, food, or industrial residues, biosolids (treated sewage sludge); leaf and yard trimmings; manure; tree wood; or source-separated or mixed solid waste.

Alberta Transportation (AT) only uses compost for filter berms (mechanically formed compost berms and compost-filled socks) and blankets (with or without netting cover) for erosion and sediment control.

Compost used on AT erosion and sediment control projects must meet Canadian Council of Ministers of the Environment (CCME) Guidelines for Compost Quality (trace elements, maturity/stability, pathogens). The following summarizes CCME Guidelines as adopted by AT:

Trace Elements –

<b>Trace Elements</b>	<b>CCME Category B Maximum Concentration within Product (mg/kg dry weight)</b>
Arsenic (As)	75
Cadmium (Cd)	20
Cobalt (Co)	150
Chromium (Cr)	1060
Copper (Cu)	757
Mercury (Hg)	5
Molybdenum (Mo)	20
Nickel (Ni)	180
Lead (Pb)	500
Selenium (Se)	14
Zinc (Zn)	1850

Maturity/Stability – compost shall be cured for a minimum of 21 days and meet one of the following 3 requirements:

1. The respiration rate is less than, or equal to, 400 mg of oxygen per kg of volatile solids per hour;
2. The carbon dioxide evolution rate is less than, or equal to, 4 mg of carbon in the form of carbon dioxide per gram of organic matter; or,
3. The temperature rise of the compost above ambient temperature is less than 8° C.

Pathogens –

- a) When compost contains **only yard waste** the following criteria shall be met:
  1. The compost shall undergo the following treatment.

- Using in-vessel composting method, the material shall be maintained at operating conditions of 55°C or greater for 3 days.
- Using the windrow composting method, the material shall attain a temperature of 55°C or greater for at least 15 days during the composting period. Also, during the high temperature period, the windrow shall be turned at least 5 times.
- Using the aerated static pile composting method, the material will be maintained at operating conditions of 55°C or greater for 3 days. The preferable practice is to cover the pile with an insulating layer of material, such as cured compost or wood chips, to ensure that all areas of the feed material are exposed to the required temperature.

OR

2. Organisms shall meet the following:

Fecal coliforms < 1000 most probable number (MPN)/g of total solids calculated on a dry weight basis,

AND

No *Salmonella* sp. with a detection level < 3 MPN/4g total solids calculated on a dry weight basis.

- b) When compost contains **other feedstock**, the following criteria shall be met:

1. Undergo a treatment (described in a),

AND

2. Organisms shall meet the following:

Fecal coliforms < 1000 MPN / g of total solids calculated on a dry weight basis,

OR

No *Salmonella* sp. with a detection level < 3 MPN / 4g total solids calculated on a dry weight basis.

## **COMPOST SYSTEMS**

A number of companies have developed products and systems to incorporate compost in order to provide a more effective use of the compost for erosion and sediment control. These products range from nettings (compost cover) to socks (compost filled) or combinations of products into systems to be used as ditch/channel checks or filters.

Compost for erosion and sediment control used in conjunction with products and systems on AT projects must meet Canadian Council of Ministers of the Environment (CCME) Guidelines for Compost Quality (trace elements, maturity/stability, pathogens).

Compost must not be applied below high water level along stream banks or around water bodies.

<b><i>PROVEN PRODUCTS</i></b>	<b><i>TRIAL PRODUCTS</i></b>	<b><i>POTENTIAL PRODUCTS</i></b>
<a href="#">Rexius EcoBerm™</a> <a href="#">Rexius EcoBlanket™</a> <a href="#">Filtrexx FilterSoxx™</a> <a href="#">Filtrexx SiltSoxx™</a>  <b>REPORT</b> on Proven Products		
<a href="#">Filtrexx Channel Soxx™</a> <b>REPORT</b>		
<a href="#">Filtrexx LocDown™ Netting</a> <a href="#">Filtrexx DitchChexx™</a> <a href="#">Filtrexx EdgeSaver™ System</a>		