



Stormbloc™

Stormwater Infiltration & Storage System

Maintenance Plan Overview

Stormbloc™ is a block-type media used for the temporary underground storage or infiltration of stormwater runoff.

The maintenance regime of a Stormbloc™ detention system should be a part of the comprehensive maintenance plan laid out in the site's Stormwater Management Plan.

Hydro International recommends contacting the Stormwater office to discuss the maintenance procedures and consider contracting a representative from Hydro International for the first maintenance cycle.

Contact Hydro International's Stormwater Support Team

Office hours Monday thru Friday 8:00 A.M. to 5:00 P.M. EST

Toll free: 1-800-848-2706

Phone: 207-756-6200

Fax: 207-756-6212

Stormbloc™ Components

- 1 Pretreatment Filter or Hydrodynamic Separator
- 2 Stormbloc™ Inspect Chamber
- 3 Stormbloc™ Detention Blocks
- 4 Geotextile Fabric Wrap (Infiltration Systems) or Plastic Liner (Detention Systems)
- 5 Outlet Manhole for Detention Systems or Overflow Chamber for Infiltration Systems



Figure 1: Components of a Stormbloc™ storage or infiltration system

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DISCLAIMER: Information and data contained in this manual is exclusively for the purpose of assisting in the operation and maintenance of Hydro International's Stormbloc™ Storage & Infiltration System. No warranty is given nor can liability be accepted for use of this information for any other purpose. Hydro International has a policy of continuous product development and reserves the right to amend specifications without notice.



Figure 2: Stormbloc™ Inspect block provides maintenance equipment with direct access to block inspection tunnels



Figure 3: Stormbloc™ block with central inspection tunnel

Stormbloc™ Inspect chambers provide direct inspection and maintenance access to the long interior tunnel from the surface. Ideally, Stormbloc™ system will have a Stormbloc™ Inspect for each row of Stormbloc™ blocks.



Figure 5: One Stormbloc™ Inspect is used per row of Stormbloc™ blocks

Best Practices for Operation

INTRODUCTION

Stormbloc™ is a versatile stormwater detention tool that can be used for subsurface stormwater infiltration or temporary stormwater storage. A properly designed Stormbloc™ system provides direct maintenance access to the entire storage volume.

PRETREATMENT

Efficient pretreatment upstream of the Stormbloc™ system is always recommended, as stormwater detention allows debris, trash, sediments and neutrally buoyant materials adequate time to settle within the detention volume. Pretreatment may be vortex separation or filtration depending on site-specific constituents and concerns.

STORMBLOC™ INSPECT CHAMBERS

Stormbloc™ blocks should be installed so that their interior access tunnels (Figure 3) are aligned in one long row (Figure 4).



Figure 4: Stormbloc™ modules are aligned such that the inspection tunnels form a long, continuous row through the system

FREQUENCY OF MAINTENANCE

The inspection and maintenance of a Stormbloc™ system should be a part of the overall maintenance program as written in the site's Stormwater Management Plan.

Within the first 6 months of installation, the Stormbloc™ system should be inspected to ensure that proper site stabilization erosion control measures have kept leftover construction detritus from entering the system.

After the first 6 months of installation, the Stormbloc™ system should be inspected annually and cleaned out as needed or as stipulated by the site's Stormwater Management Plan.

WATCH THE MAINTENANCE MOVIE TO PREPARE

Maintenance personnel should become familiar with the Stormbloc™ system and its components prior to maintenance. Maintenance personnel are also encouraged to watch an online movie file showing a Stormbloc™ system undergoing inspection and maintenance.



Figure 6: Watch the Stormbloc™ maintenance video online at www.hydro-international.biz/us/stormwater_us/stormbloc.php

Best Practices for Inspection

Inspection is a simple process that requires monitoring pollutant accumulations. Maintenance crews should be familiar with the Stormbloc™ system and its components prior to inspection.

SCHEDULING

- Inspection may be conducted during any season of the year but should occur shortly after a predicted rainfall to ensure components are operating properly.

RECOMMENDED EQUIPMENT

- Safety Equipment and Personal Protective Equipment (traffic cones, work gloves, etc.)
- Scale to measure the weight of the filter bags
- Crow bar to remove grate or lid
- CCTV camera with light to inspect interior volume of system
- Pole with skimmer or net
- Sediment probe (such as a Sludge Judge®)
- Maintenance Log
- Trash bags for removed floatables

INSPECTION PROCEDURES

1. Set up any necessary safety equipment (such as traffic cones) to provide access to the Stormbloc™ system and its pretreatment device. Safety equipment should notify passing pedestrian and road traffic that work is being done.
2. Inspect the pretreatment device according to the manufacturer's Operation & Maintenance Manual.
3. Remove the grate or lid to the Stormbloc™ Inspect chamber or inlet manhole of the Stormbloc™ System.
4. Without entering the chamber, look down into the chamber to inspect the inside. Make note of any irregularities. Without entering the vessel, use the pole with the skimmer net to remove floatables and loose debris from the chamber.
5. With upstream pretreatment in use, there should be very little sediment in the Stormbloc™ Inspect chamber. If sediment is present, use a sediment probe such as a Sludge Judge® to mea-

sure the depth of sediment that has collected in the sump and note if it is blocking the inlet to the Stormbloc™ blocks.

6. Lower the CCTV camera into the Stormbloc™ blocks via the Stormbloc™ Inspect. Inspect the access tunnels for debris and sediment accumulation.
7. Rotate the camera to view the geotextile fabric wrapping the Stormbloc™ system. Check for caked sediment that could be decreasing the capacity of the fabric.
8. On the Maintenance Log provided by Hydro International, record the date, unit location, estimated volume of floatables and gross debris removed, and the depth of sediment measured. Also note any apparent irregularities such as sediment in the geotextile, damaged components or a high standing water level.
9. Securely replace the grate or lid.
10. Remove safety equipment.
11. Contact Hydro International at 1-800-848-2706 to discuss any irregularities noted during inspection.

WATCH THE VIDEO ONLINE



Figure 7: See a video of Stormbloc™ Inspection and Maintenance online at www.hydro-international.biz/us/stormwater_us/stormbloc.php

Best Practices for Maintenance

A commercially or municipally owned hose with a rotating pressure nozzle is used to dislodge sediments and floatables from the Stormbloc™ blocks. A sump vac is used to remove the water and mobilized debris via the Stormbloc™ Inspect chamber.



Figure 8: A rotating pressure nozzle attachment for pressure jetting

Floatables and loose debris can also be netted with a skimmer and pole.

The Stormbloc™ Inspect provides unobstructed access for a CCTV camera, vactor hose, pressure nozzle or a skimmer pole to be lowered to the base of the sump.



Figure 9: A pressure hose and flexible vactor hose are lowered into the Stormbloc™ Inspect access port

SCHEDULING

- Flushing and cleanout may typically be done during any season of the year - before and after rainy season
- Flushing and cleanout should occur as soon as possible following a contaminated spill in the contributing drainage area

RECOMMENDED EQUIPMENT

- Safety Equipment (traffic cones, etc)
- Crow bar to remove grate or lid
- Pole with skimmer or net (if no vactor truck is on site)

- Sediment probe (such as a Sludge Judge®)
- CCTV camera
- Hose with rotating pressure nozzle attachment (Figure 8).
Note: Pump pressure for jetting should be 150 bar (equivalent to 80 bar at the nozzle) and discharge flow rate should be 80gpm (300L/min).
- Vactor truck with flexible hose (Figure 9)
- Maintenance Log

FLUSHING AND CLEAN OUT PROCEDURES

1. Set up any necessary safety equipment (such as traffic cones) around the access ports of the Stormbloc™ system and its upstream pretreatment chamber. Safety equipment should notify passing pedestrian and road traffic that work is being done.
2. Clean out the pretreatment system upstream of the Stormbloc™ system according to the manufacturer's Inspection & Maintenance Manual.
3. Remove the cover to the Stormbloc™ Inspect.
4. Without entering the vessel, look down into the chamber and lower the CCTV camera into the chamber to inspect the inside. Make note of visible debris and sediment accumulation. Turn the camera to view the geotextile fabric wrapped around the Stormbloc™ blocks. Note if the geotextile fabric appears to be caked with sediment.
5. Retract the camera and lower the vactor hose and the pressure washer nozzle into the chamber. Flush water into the Stormbloc™ system. On Stormbloc™ infiltration systems, take particular care to fully flush Stormbloc™ rows that touch the geotextile fabric. Move the hose down the Stormbloc™ row, jetting the entire length of the system.



Figure 10: The pressure washing nozzle is moved along the entire length of the Stormbloc™ row

6. Stop flushing the system and allow the water to flow back into the Stormbloc™ Inspect chamber carrying debris and trash with it.



Figure 11: The vactor hose draws the water and loosened debris out of the Stormbloc™ system

7. With the vactor hose (or pole skimmer), lift the debris out of the system.
8. Once all floatables have been removed, lower the CCTV camera back into the system to ensure that all visible debris and sediments have been removed from the Stormbloc™ blocks and the geotextile fabric wrap.
9. Repeat the flushing process as necessary. When the CCTV camera shows no more visible trash and sediment accumulation, replace the cover to the Stormbloc™ Inspect chamber.
10. Repeat steps 4-9 on each Stormbloc™ Inspect chamber of the Stormbloc™ system.
11. On the Maintenance Log provided by Hydro International, record the date, site location, estimated volume of floatables and gross debris removed. Note any apparent irregularities such as damaged components or blockages.
12. Remove safety equipment.
13. Contact Hydro International at 1-800-848-2706 to discuss any irregularities noted during cleanout.

WATCH THE VIDEO ONLINE



Figure 12: See a video of Stormbloc™ Inspection and Maintenance online at www.hydro-international.biz/us/stormwater_us/stormbloc.php

Stormbloc™ Inspection and Maintenance Log

| DATE | INITIALS | SCOPE OF MAINTENANCE (INSPECTION OR FLUSHING) | SITE ACTIVITY AND COMMENTS |
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