

STORMCHAMBER™ RETENTION SYSTEM

INSTALLATION GUIDE

INSTALLATION INSTRUCTIONS FOR STORMCHAMBER™ RETENTION CHAMBERS

STEPS

1. Before undertaking the work
2. Handling and storage
3. Preparing the trench
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5. Placing the separation nonwoven geotextile
6. Preparing the bedding
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9. Chambers preparation and installation
10. Connecting the pipes
11. Installing the access wells (if required)
12. Backfilling
13. Installation of frames and covers for the access well (if required)

Note: The warranty applies only if all the components specified in the StormChamber system are installed. No substitute part will be accepted.

STEP 1 BEFORE UNDERTAKING THE WORK

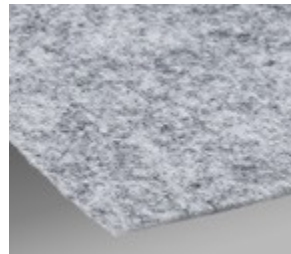
- In case of discrepancy between the instructions contained in this guide and those contained in the plans and specifications, please contact your Soleno representative.
- Contact your Soleno representative at least 48 hours before work begins. A visit from your authorized Soleno representative is recommended after receipt of the materials on site or before work begins.
- Upon receipt of the materials, ensure that all items required on the shop drawing are delivered and in good condition. Please notify immediately your Soleno representative in case of damage.



CHAMBERS



CAST IRON FRAMES
AND COVERS



TX-90 SEPARATION
NONWOVEN
GEOTEXTILE



AASHTO M288 CLASS 1
PROTECTION WOVEN
GEOTEXTILE

STEP 2 HANDLING AND STORAGE

Unloading

Unloading of the chambers must be done with an equipment with forks and with a minimum lifting capacity of 1400 kg (3085 lb). We recommend that you keep the chambers on their respective pallets until use.

Handling the chambers

An iron bar or a piece of wood can be used to separate the stacked chambers on the pallets (two persons are required for this step).



WARNING: The chambers must never be moved by tipping them. This approach could cause product breakage, personal injury or even death.

STEP 3

PREPARING THE TRENCH

- Proceed with the trench localization and excavation according to the approved shop drawings and plans. Make sure the bottom of the excavation is leveled and dry before proceeding further.

STEP 4

INSTALLING THE SEDIMENT TRAP (IF REQUIRED)

- Excavate the exact location of the sediment traps (if required in the plan) providing 152 mm (6 in) of 20 mm (3/4 in) washed crushed angular stone underneath and around the trap.
- Install the TX-90 separation geotextile at the bottom and on the wall of the sediment trap trench. Provide an overlap of 305 mm (12 in) at the joints as well as a surplus to overlap the TX-90 separation geotextile which will be installed at the bottom of the basin.
- Install the sediment trap and backfill the perimeter with stone. The top of the trap will be level with the chamber invert.



STEP 5

PLACING THE SEPARATION NONWOVEN GEOTEXTILE

- Unroll the TX-90 separation geotextile according to the shop drawings* and provide an overlap of 305 mm (12 in) and a surplus to fold back over the stone above the system.

*Normally, the TX-90 separation geotextile is installed at the bottom as well as on the excavation walls and on the stone backfill above the system.



STEP 6 PREPARING THE BEDDING

- Unroll the drain on the downstream side and keep a spacing of 152 mm (6 in) with the chamber rows (if required).
- Level and tamp the 20 mm (3/4 in) washed crushed angular stone bedding with a vibrating plate.

Note: Refer to the shop drawing and engineering plan for the required thickness of the stone layer required for the bedding.



STEP 7 INSTALLING THE PRETREATMENT UNIT (IF REQUIRED)

- Install the pretreatment unit by connecting the inlet pipe and the outlet diffuser, as appropriate.



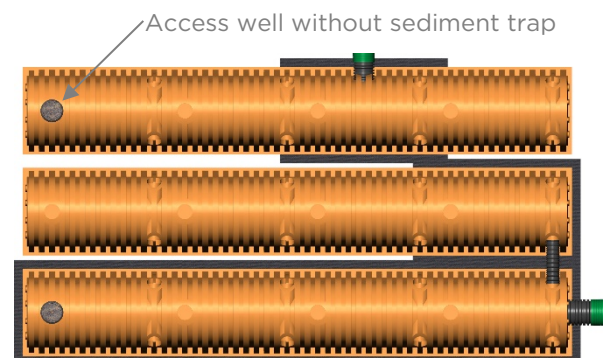
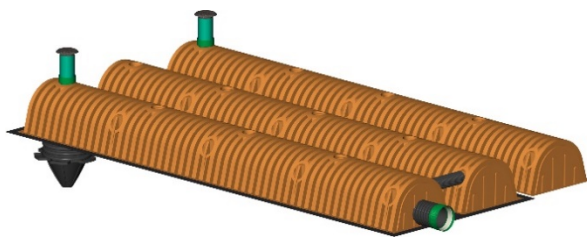
STEP 8

PLACING THE PROTECTION WOVEN GEOTEXTILE

- Unroll the AASHTO M288 CLASS 1 protection geotextile on the washed crushed stone, at the locations indicated in the shop drawings.
- For reference, the stabilization geotextile is installed:
 1. Under chambers with an external water inlet to prevent any stone movement.
 2. Under chambers with interconnecting pipes.
 3. Under chambers with sediment trap, to prevent the absorption of stones in the cleaning hose.
 4. Under the rows of chambers with an inlet and a sediment trap at the end.
- Protection woven geotextile could be provided:
 1. In section of predetermined dimensions depending on the chamber model.
 2. In rolls to be cut on site, according to the layout in the shop drawings.

See details below for system example.

SC-34E CHAMBERS



STEP 9 CHAMBERS PREPARATION AND INSTALLATIONS

- Remove the 100 mm (4 in) small strip on the intermediate and end-of-line chambers.

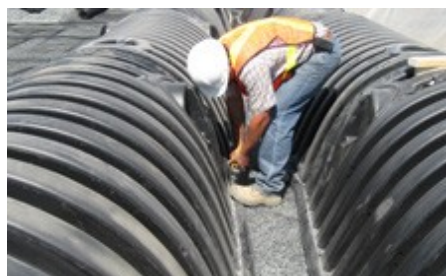


- Installation of the system must always start from the **upstream** side and as per arrows (the starting chambers are labeled “START”).
- Observe the required spacings (see table) with the walls of the trench and between the rows throughout the installation process (spacers are recommended).

| Chamber | Spacing between rows | Spacing with the excavation walls |
|---------|----------------------|-----------------------------------|
| SC-18 | 152 mm (6 in) | 305 mm (12 in) |
| SC-34E | 152 mm (6 in) | 305 mm (12 in) |
| SC-44 | 229 mm (9 in) | 305 mm (12 in) |



- Stabilize the chambers by screwing together the base of two joined chambers.



STEP 10 CONNECTING THE PIPES

Inlet and outlet pipes

Cut out openings at the chamber ends (full wall), considering the planned elevations, to connect the inlet and outlet pipes. Provide a TX-90 separation geotextile at the openings to prevent the infiltration of stone.



Interconnection pipes

Where indicated in the shop drawing, cut the lateral receptacles and insert a 200 mm (8 in) HDPE Solflo Max pipe of a length of 1500 mm (60 in) between two rows of chambers. Provide a TX-90 separation geotextile at the openings to prevent the infiltration of washed crushed stone.



STEP 11 INSTALLING THE ACCESS WELLS (IF REQUIRED)

- Above the sediment traps, cut the top receptacle. Insert the bell outlet part of a 250 mm (10 in) PVC pipe or a 250 mm (10 in) PVC adapter with transition gasket. Insert the 250 mm (10 in) PVC pipe in the bell.



STEP 12 BACKFILLING

- Backfill is critical step to ensure the sustainability of the StormChamber system.
- Backfill with 20 mm (3/4 in) washed crushed angular stone around and between the rows of chambers and on top of the chambers, as per the thickness specified in the shop drawings.

| Chamber | Minimum washed crushed stones above the system |
|---------|--|
| SC-18 | 152 mm (6 in) |
| SC-34E | 152 mm (6 in) |
| SC-44 | 305 mm (12 in) |

NOTES: Begin by filling the upper and central part of the chambers to prevent their displacement. During backfilling, ensure that the stone height difference on each side of the chamber does not exceed 305 mm (12 in).



- Completely cover the top of the stone with the TX-90 separation geotextile, providing an overlap of 305 mm (12 in) at the joints.



STEP 12

BACKFILLING (CONT'D)

- Proceed to backfill of compactable granular material to the thickness specified in the shop drawings.

Note: The compaction equipment must circulate parallel to the chambers.

- Use the material specified to complete the backfill to the required elevations.
- Load traffic (load CL-625, H-25 or HS-25) is allowed if the height between the top of the chambers and the final elevation respects these values:

| Chamber | Minimum backfill above chamber | Maximum backfill above the chamber |
|---------|--------------------------------|------------------------------------|
| SC-18 | 457 mm (18 in) | 4.88 m (16 ft) |
| SC-34E | 457 mm (18 in) | 4.88 m (16 ft) |
| SC-44 | 559 mm (22 in) | 2.44 m (8 ft) |

NOTE: For values below the minimum or above the maximum, please contact your Soleno representative.

STEP 13

INSTALLATION OF FRAMES AND COVERS FOR THE ACCESS WELL (IF REQUIRED)

- Once the final elevation is achieved, install the adjustable frames and covers on the access wells.

