



TERRE KLEEN - GENERAL NOTES:

THE TERRE KLEEN™ (US PATENT 6,676,832 B2) HYDRODYNAMIC SEPARATOR AS DESIGNED, MANUFACTURED AND INSTALLED BY TERRE HILL STORMWATER SYSTEMS, INC. (P.O. BOX 10, 485 WENGLAND VALLEY ROAD, TERRE HILL, PA 17381 (PHONE: 1-800-242-1509) OR WWW.TERRESTORNS.COM)

CONCRETE: f'c = 5000 PSI @ 28 DAYS, WITH ASTM C-33 NO. 57 OR NO. 67 COARSE AGGREGATE. DEFORMED WELDED WIRE FABRIC TO ASTM A155 GRADE 60, WELDED WIRE FABRIC CONFORMS TO ASTM A155. DEFORMED WELDED WIRE FABRIC OF EQUAL SIZE MAY BE SUBSTITUTED FOR SMOOTH WELDED WIRE FABRIC AND SHALL CONFORM TO ASTM A497.

BRIDGES CONSULT CS-1029 JOINT MATERIAL MANUFACTURED BY CONCRETE SEAMANTS, INC. AND WIRE REINFORCING FABRIC, SPECIFIC TO JOINT SEALANT MUST BE INSTALLED IN ACCORDANCE WITH CONCRETE SEAMANTS, INC. RECOMMENDATIONS.

ANNULAR SPACE BETWEEN PIPE AND HOLE TO BE FILLED, BY OTHERS, WITH AN APPROVED NON-SHANK GROUT OR CONCRETE AS SPECIFIED.

ALL PIPES TO BE CUT FLUSH WITH INSIDE WALL, AFTER GROUT HAS DURED.

DRIP-IN ANCHORS TO BE HILTI 316 STAINLESS STEEL WINK BOLT II AS MANUFACTURED BY HILTI CORP. UNI LIFT ANCHORS MANUFACTURED BY UNIVERSAL FORM CLAMP COMPANY, OR EQUAL. UNI LIFT ANCHORS TYPICAL FOR HANDLING.

MANHOLE FRAMES AND COVERS SUPPLIED BY TERRE HILL STORMWATER SYSTEMS, INSTALLATION AND GROUND ADJUST BY OTHERS. COVERS TO BE MARKED WITH TERRE KLEEN STORMWATER TREATMENT SYSTEM™ LOGO. INSTALLATION AND MAINTENANCE MUST BE IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS AND COMPLY WITH LOCAL ORDINANCES AND APPLICABLE REGULATIONS.

- #### Maintenance Procedures
1. Stormwater treatment BMP shall be approved as an equivalent substitution unless the Engineer shall receive and approve drawings and specifications stamped and sealed by a professional engineer registered in the state wherein the project is located showing the following:
 - a. project-specific sizing calculations, with 3rd party performance verification, clearly showing that the unit meets or exceeds the Performance and Design Specifications of the project-specific hydraulic calculations, with 3rd party performance verification, showing the Hydraulic Grade Line (HGL) plotted through the structure for the design flow
- #### Terre Kleen Installation Specifications
1. Terre Kleen inclined plate assembly shall arrive at the job site fully assembled inside the manufacturer's shipping container. If the unit is to be installed in a trench, the manufacturer shall provide lifting equipment required between the unit-lift and the lifting straps / crane hook, which shall be the property of manufacturer. Contractor shall provide equipment with sufficient lifting capacity to unload and set the Terre Kleen.
 2. Contractor shall excavate, digger and store in accordance with project specifications, as specified by Engineer and Owner/regulator.
 3. Contractor shall excavate to the footings. Underlying soil and sub-grade material shall have design loading of not less than 2000 pounds per square foot (psf). Precast components shall be placed on the compacted base (95% Proctor Density), elevation confirmed, level and aligned to ensure that the entire unit will be properly positioned when fully installed.
 4. Contractor shall place "CONSEAL" or equivalent water tight mastic material between each precast component.
 5. Contractor shall verify the Terre Kleen component shall be aligned horizontally and vertically plumb. Contractor shall confirm that the entire Terre Kleen shall be level during and after completion of backfill of the structure.
 6. Manhole frame/cover and inlet frame/grate, if required shall be installed as shown on the drawings and grade adjusted to match final grade elevations by Contractor.
 7. Connect and seal storm drain pipe and outlet pipes to Terre Kleen unit using non-shrink grout material in accordance with project specifications.
 8. Backfill and compact in accordance with project specifications. Backfill above sub-base be compacted a minimum of one foot (1 ft) beyond the exterior face of the precast installation to 95% Proctor Density to sub-grade. Upon completion of the precast installation the backfill material shall be placed and compacted achieving a minimum compaction of 95% Proctor Density, or as specified by the Engineer, when tested by ASTM A1557. Backfill material may be a "minimal compaction effort" material. Native material may be used if the material provides an adequate bearing pressure of 2000 pounds per square foot (psf) and compacts to 90% Proctor Density per ASTM A1557. If approved by the Engineer, in areas of vehicular traffic, a minimum of one foot (1 ft) of backfill shall be aggregate base, compacted to 95% Proctor Density (ASTM A1557).
 9. Contractor shall remove all foreign material and debris, including oil/separant, oils, grease and construction materials and debris from the inlet pipe, outlet pipe and Terre Kleen upon completion of installation.

TERRE KLEEN™ is a registered US Patent (US Patent 6,676,832 B2) **HYDRODYNAMIC SEPARATOR** **IMPROVING YOUR WORLD™** TERRE HILL, PA. (717)445-3100

Terre Kleen Model	Settling area in sq. ft. (d=50)	Design ¹ flow head loss (gal=110)	Design ¹ flow head loss (gal=150)	Design ¹ flow head loss (gal=200)	Design ¹ flow head loss (gal=300)	Peak flow head loss (gal=300)	max pipe diam.	Standard ³ Sediment Storage (Oil Volume)	Standard ³ Trash and Inerts ⁴	Standard ³ Sediment Storage (Oil Volume)	Standard ³ Trash and Inerts ⁴
TK01	8.5 SF	0.126	<0.50 lb.	<0.50 lb.	1.75 lb.	<0.50 lb.	18 in.	68 CF	197 Gallons	3.27 Ft.	6.25 Ft.
TK02	13.5 SF	0.226	<0.50 lb.	<0.50 lb.	2.28 lb.	<0.50 lb.	18 in.	68 CF	197 Gallons	3.27 Ft.	6.25 Ft.
TK05	32.5 SF	0.426	<0.50 lb.	<0.50 lb.	6.93 lb.	<0.50 lb.	18 in.	132 CF	240 Gallons	3.27 Ft.	6.25 Ft.
TK09	57.5 SF	0.626	<0.50 lb.	<0.50 lb.	12.92 lb.	<0.50 lb.	18 in.	132 CF	240 Gallons	3.27 Ft.	6.25 Ft.
TK18	115.5 SF	1.026	<0.50 lb.	<0.50 lb.	24.29 lb.	<0.50 lb.	18 in.	132 CF	240 Gallons	3.27 Ft.	6.25 Ft.
TK27	172.5 SF	1.526	<0.50 lb.	<0.50 lb.	37.42 lb.	<0.50 lb.	24 in.	208 CF	327 Ft.	6.25 Ft.	6.25 Ft.
TK45	288.5 SF	2.526	<0.50 lb.	<0.50 lb.	63.81 lb.	<0.50 lb.	30 in.	388 Gallons	3.27 Ft.	6.25 Ft.	6.25 Ft.
TK64	346.5 SF	4.726	<0.50 lb.	<0.50 lb.	124.11 lb.	<0.50 lb.	30 in.	299 CF	451 Gallons	3.27 Ft.	6.25 Ft.

1. Design flow rates based on weighted removal according to NURP lab protocol and adjusted for a particle density 140lb/cft and 60 degree Fahrenheit water temperature.
2. Flow rates based on design detention time per flow. Higher flows of reduced treatment rates are optional and extend beyond the design detention time.
3. Add 9" for ground outlet and frame and cover otherwise cast into the slab.
4. Excess design overflow through a screen is possible design insert.
5. Special designs are available to increase these values.

REVISIONS

11-12-08	Revision Δ	Initial Release 9-16-08
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TERRE HILL STORMWATER SYSTEMS

TERRE HILL, PA. (717)445-3100

TERRE KLEEN™ 27 PRECAST WATER QUALITY CHAMBER

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