## Terra-Tubes®



Terra-Tubes® are the industry's most cost-effective storm water treatment device—designed to effectively trap, filter and treat sediment-laden runoff while reducing hydraulic energy. Terra-Tubes Fiber Filtration Tubes are engineered composites of wood fibers, man-made fibers and performance-enhancing polymers—all encased in heavy-duty cylindrical tubes.

This revolutionary filtration medium is available as a superior polymer delivery system or as stand alone, high performance fiber tubes to accommodate specific applications, including:

- Slope Interruption Devices (SIDs)
- Channel/Ditch Flow Checks
- Bio-Swale/Storm WaterTreatment Systems
- Drain Inlet Protection
- Perimeter Sediment Control

### Terra-Tubes Outperform Competitive Technologies

- · Does everything better than common fiber rolls and wattles...and more!
- Proven to be far more effective in independent testing
- 15 times more effective in reducing turbidity
- 15 times more effective in controlling sediment loss
- · Lightest weight and easiest to ship, handle and install



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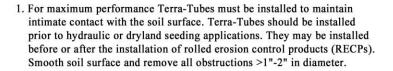
### Terra-Tubes - Fiber Filtration Tubes (FFT) Installation Overview -

#### Slopes:

Vertical spacing for slope installations should be determined by site conditions. Key parameters include slope gradient, length of slope, soil type, climate, design event and anticipated runoff. General guidelines follow:

Slope Gradient	FFT Interval
1H:1V	15' (4.6 m)
2H:1V	25' (7.6 m)
3H:1V	35' (10.7 m)
4H:1V	50' (15.2 m)

When installing on highly erosive soils, decrease interval distance. On less erosive soils, increase interval distance.



Deploy Terra-Tubes FFT where material is to be installed.

- 2. Anchor the upslope/upstream side of FFT using 6"- 8" U-shaped wire staples or approved devices at 1' intervals. Position anchors 1" inward from upper edge of FFT and drive flush to soil surface.
- 3. Raise tube to fullest height and drive 12"-18" wooden stakes or approved metal rods through downslope/downstream side of FFT at 2' intervals. Drive stakes 1" inward from downslope/downstream edge of FFT, leaving 2"- 3" of the stake protruding above the FFT. Take care not to compress the FFT structure.
- 4. The FFT should appear more rectangular than round. Backfill and compact loose soil against upslope/upstream side of FFT.
- 5. Overlap adjacent FFT roll ends by a minimum of 1'. Reduce stake interval on downslope/downstream FFT to 1' interval making sure to place a stake at the terminus of the FFT. Continue to use wire staples on 1" centers on upslope/upstream side of FFT. Extend next FFT 1' past terminus and upslope/upstream of preceding FFT and place wire staples on 1' intervals. Then, drive stakes through outer 1" of both FFTs to complete the overlap. Channels:
- 1. Construct anchor trench 3" deep by FFT roll diameter and place loose soil against upstream side of FFT. For channel gradients of 2% install anchor trenches on 25' intervals. Decrease interval distance of anchor trenches with steeper channel gradients or more highly erosive soils.
- 2. Follow above installation sequence for slope installations, but decrease interval of both upstream and downstream anchoring devices to 1 foot.



step 1



step 2



sten 3



step 4



step5



Notes: Consult detailed Terra-Tubes Installation Guidelines for additional information. Site conditions may dictate the following considerations:

- · Recommended anchoring devices and anchor trench intervals may be adjusted.
- · Anchor trenches on slopes may be advisable.
- When warranted, use a 3.25' wide roll of Futerra® F4 Netless™ blanket as a scour apron beneath FFT.