





American Excelsior Company offers a variety of anchoring devices, staples, and stakes for your erosion and sediment control needs.

Twist anchors have superior pullout strength in a variety of soil types. For loose non-compacted soils, the Gripple® TL-TA1 8" and 12" twist anchors are recommended. For firm compacted soils, the Gripple TL-TA2 8" and 12" twist anchors are recommended. Gripple twist anchors are made in the U.S.A. and meet the Buy American Act.

### Features / Benefits

- Quick and easy to install with an electric drill and custom chuck.
- Superior performance when compared to traditional straight anchors.
- Eliminates time and labor associated with replacing or reworking anchors that have become loose or pulled out altogether.
- The patent pending innovative design of the chuck allows the twist anchor to be installed to the full depth without damaging the mat.
- Integrated top coil form eliminates the need for a washer, distributes the load and helps secure the matting in place.
- Extended tip allows faster placement and enhanced interaction with matting upon install.

*TL-TA1-8" & 12"*



*TL-TA2- 8" & 12"*



*3.5" and 14" Chuck*



For easy installation, use a 3.5" or 14" length chuck tool along with a cordless drill to quickly insert the twist anchor into the soil.



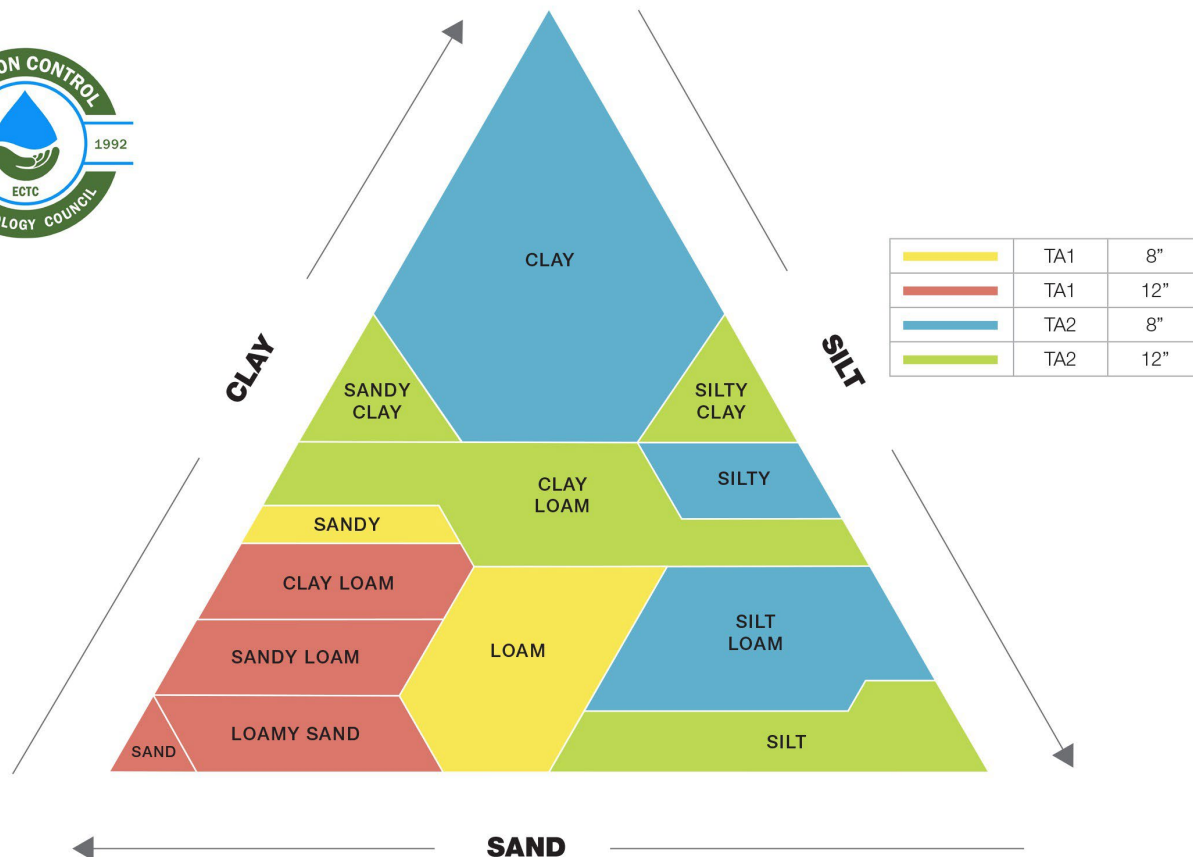
The twist anchor chuck tool accepts all Gripple® twist anchors for easy installation.



TL-TA2 12" twist anchor securing Curlex® Enforcer® to the soil surface.

## Recommended Anchor Type Based on Soil Classification

### Soil Type Recommendations



Gripple's / AEC recommendations are based on the following criteria; The Standard Penetrating Test (SPT) procedure is commonly used to determine the geotechnical engineering properties of subsurface soils and it is a situ testing method of soil properties. The USDA classifies soil types according to a soil texture triangle chart which gives names to various combinations of clay, sand, and silt. The Soil Triangle is a commonly used visual representation of the possible soil type combinations based on soil particle size.

SPT# & Value N	Soil Type	TL-TA1		TL-TA2	
		8"	12"	8"	12"
#1 (0-4)	very soft clays	good	best		
#2 (5-10)	soft clays	good	best		
#3 (11-30)	moderately compact clays	good	good	best	good
#4 (31-50)	compact to stiff clays, compact silt, silt & loose sand, moderately compacted sand & gravel			good	best
#5 (>50)	compact to very compact clays, gravel & rock, hard layers			best	good

The following graphs are only to be used as a template for baseline determinations. If required, Gripple can provide additional technical services to assist in final installation decisions.

## Gripple Twist Anchor Testing

Gripple twist anchors can be used in a variety of soil types. Tests were conducted to compare pullout resistance between the twist anchors and other inferior-performing anchor devices commonly used on construction sites.



Twist anchor pullout test.












Post-pullout test.



Twist anchor bonds to soil.

Pullout test results of various anchors in sand, loam, and clay soils.

TESTED ANCHOR DEVICES									
									
	TL-TA1 (8'')	TL-TA1 (12'')	TL-TA2 (8'')	J-Hook (18'')	Washer Pin (18'')	Washer Pin (12'')	Sod Staple (6'')	Sod Staple (8'')	Wood Stake (8'')
SOIL TYPE									
Clay	189 lb.	233 lb.	216 lb.	45 lb.	40 lb.	45 lb.	24 lb.	30 lb.	232 lb.
Loam	163 lb.	198 lb.	132 lb.	34 lb.	14 lb.	22 lb.	20 lb.	48 lb.	153 lb.
Sand	50 lb.	106 lb.	59 lb.	22 lb.	9 lb.	10 lb.	8 lb.	9 lb.	34 lb.





## EarthStabilizer™ Benefits

- Environmentally friendly
- Reduced carbon emissions
- Fast, easy installation
- Limited earth disturbance
- Economically friendly

EarthStabilizer works by using products from two of the most respected companies in the industry. American Excelsior Company's TriNet® Recyclex® Turf Reinforcement Mat (TRM) provides the surficial erosion control portion of the design and provides protection against sheet flow, rain drop impact, and pre-determined shear velocities both in its unvegetated and vegetated stages.

Gripple Terra-Lock® Earth Twist Anchors provide the intimate contact needed between the TRM and surface of the slope. Gripple Terra-Lock® Earth Percussion Anchors reach past the failure zone, and the developed frustum cone applies subsurface tension to achieve a dynamic load and compress the soils to achieve the bearing capacities needed to stabilize the slope.



## The Problem EarthStabilizer™ Solves

### Shallow Plane Failures and Transitional Slides



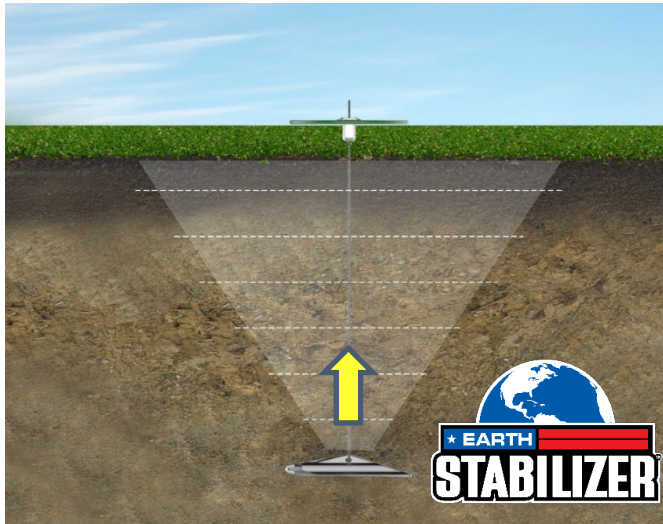


## EarthStabilizer Solution – Gripple Anchor Behavior

### Free Draining Soils

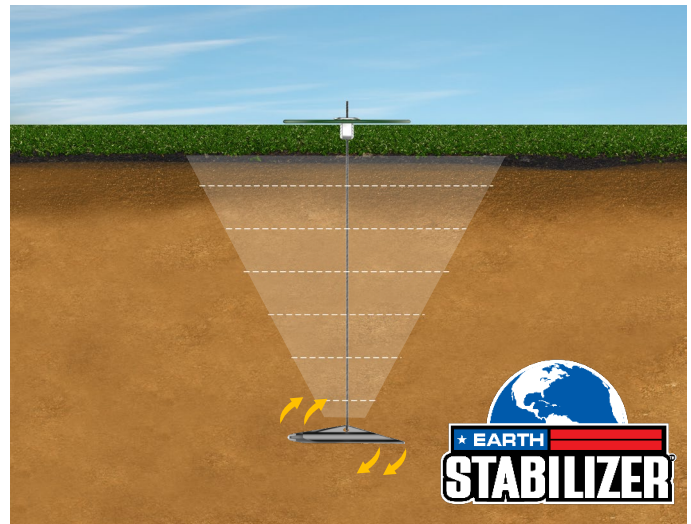
In free draining soils the friction angles of the soils enhances the pullout capabilities of the anchors, and this allows for the expansion of the frustum cone that is formed.

As earth pressures increase, penetrating earth anchors, which are always under tension, effectively transfer these pressures from the surface to the anchor, ensuring their stability.



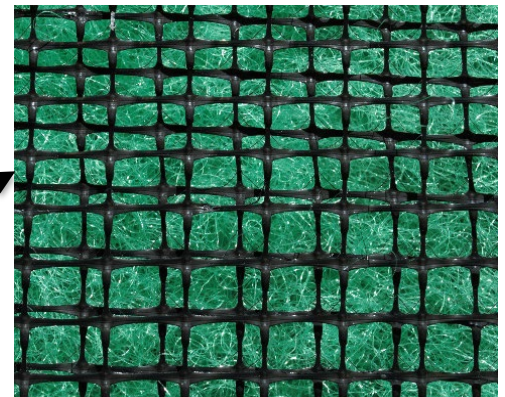
### Cohesive Soils

In Cohesive Soils depths will typically be deeper to compensate for the narrowing of the frustum cone. It is commonplace to upsize to the next larger anchor allowing for a larger surface area.



## TriNet Recyclex TRM

- Typically suitable for slopes up to 0.5H:1V
- Vegetated Shear Stress  $\leq 14 \text{ lb/ft}^2$  (670 Pa)
- Rated for Channel Flows  $\leq 25.0 \text{ ft/s}$  (7.62 m/s)
- Three Ultra Heavy-Duty, UV Stabilized Nets
- Made with Recyclex® Fibers
  - Made from Recycled Bottles (100% recycled materials)
  - Will Not Float
  - 95% Fiber Memory
  - $\geq 80\%$  are  $\geq 5''$  long



## Earth Percussion Anchor Kits

Gripple earth percussion anchor kits offer a variety of combinations that include bearing plates, anchor heads, and cable tendons. These anchor kits provide subsurface stabilization benefits when installed below the failure plane and superior pullout strength for turf reinforcement mats and shoreline stabilizers that encounter high flow/shear stress scenarios.



*TL-100 Bearing Plate*



*TL-304 Bearing Plate*



*TL-A2*



*TL-A3*



*Drive Rod with TL-A3*



*Tensioning Tool*

Both the TL-A2 and TL-A3 anchor heads are available in 3' and 6' cable lengths to secure the TL-100 and TL-304 bearing plates. For easy installation, use a gas-powered post driver and drive rods to install the cable deep into the soil. The tensioning tool locks the anchor head, cable, and bearing plate into place.



Insert drive rod into anchor head to penetrate through TriNet Recyclelex and into soil for maximum holding strength.



TriNet Coconut secured in place with TL-100 Bearing Plate.



American Excelsior Company offers a variety of staples, stakes, and accessories to anchor erosion and sediment control devices. Steel staples, biodegradable staples, and oak wooden stakes are common anchoring devices used to hold erosion control blankets and sediment control products in place. Be sure to follow the manufacturer's staple and staking pattern guidelines for correct placement.

### **E-Staples**

Use the E-staple®, 100% biodegradable anchors (for sensitive areas) to provide exceptional anchoring strength to your installation. For easy application, use the E-Stapler™ installation tool to expedite the insertion of these 4-inch and 6-inch anchors.

*E-Staple – 4"*



*E-Staple – 6"*



*E-Stapler*



### **Steel (Sod) Staples and Oak Wood Stakes**

Use steel staples to anchor erosion control blankets in flat areas that typically encounter low-flow hydrologic events. Oak wood stakes securely anchor sediment control devices such as Curlex® Sediment Log®, Curlex® Bloc, AEC Premier Straw® Wattles, and Curlex® Hi-Vis Excelsior Logs™.

*Steel Staple – 6"*



*Steel Staple – 8"*



*Oak Wood  
Stake – 30"*



*Oak Wood  
Stake – 48"*








## Tree Anchor Kits

Other tools in the toolbox include tree anchoring kits to help fulfill your various landscaping needs.

Gripple Premium Root Ball Kits are designed to stabilize newly planted trees below grade at root ball. Gripple Tree Guying Kits provide an above ground tree anchoring solution to stabilize the tree and promote vertical growth. Gripple Palm Brace Kits provide an efficient solution to the protection of newly planted palms. Palm Bracing Kits provide immediate day one stabilization allowing for proper root establishment.

Root Ball Anchoring Kits	Available Options
	Kit is for 10' Tree (6" Girth); Includes (3) TLA2 anchor heads with 5/64" x 4' cable tendons, (3) small Gripple fasteners, (3) quick links, (1) 2" ratchet with 10' strap.
	Kit is for 15' Tree (10" Girth); Includes (3) TLA3 anchor heads with 1/8" x 5' cable tendons, (3) D3 fasteners, (3) quick links, (1) 2" ratchet with 10' strap.
	Kit is for 25' Tree (18" Girth); Includes (3) TLA4 anchor heads with 5/32" x 5' cable tendons, (3) D4 fasteners, (3) quick links, (1) 2" ratchet with 15' strap.
	Kit is for 40' Tree (30" Girth); Includes (3) TLA4 anchor heads with 1/4" x 6' cable tendons, (3) D6 fasteners, (3) quick links, (1) 2" ratchet with 15' strap.
Tree Guying Anchoring Kit	Available Options
	Kit is for 8' Tree (5" Girth); Includes (3) TLA2 anchor heads & 5/64" x 3' cables with top loops, (3) quick links, (3) 18" orange safety webbings, (6) small Gripple tensioners, (3) 4' above ground cables, (3) 12" rubber sleeves.
	Kit is for 15' Tree (10" Girth); Includes (3) TLA3 anchor heads & 1/8" x 4' cables with top loops, (3) quick links, (3) 18" orange safety webbings, (6) medium Gripple tensioners, (3) 4.67' above ground cables, (3) 12" rubber sleeves.
	Kit is for 25' Tree (30" Girth); Includes (3) TLA4 anchor heads & 5/32" x 4" cables with top loops, (3) quick links, (3) 18" orange safety webbings, (6) large Gripple tensioners, (3) 5.33' above ground cables, (3) 12" rubber sleeves.
Palm Bracing Kit	Available Options
	Palm Bracing Kit for 30' Tree (10" Girth); Includes (3) TLA3 anchor heads & 1/8" x 4' cables with top loops, (3) quick links, (3) 18" orange safety webbings, (3) medium Gripple tensioners, (3) 4.67' above ground cables, (1) ratcheting palm collar.
	Palm Bracing Kit for 40' Tree (18 in. Girth); Includes (3) TLA4 anchor heads & 5/32" x 4' cables with top loops, (3) quick links, (3) 18" orange safety webbings, (3) medium Gripple tensioners, (3) 5.33" above ground cables, (1) ratcheting palm collar.

Additional tools used to aid the installation of anchoring devices are the JackJaw®, tensioning tool, gas post driver, drive rods, and release key. Along with the drive rods, the gas post driver helps efficiently drive anchor heads deep into the soil. Use the JackJaw and tensioning tool to set the anchor heads. The JackJaw also removes difficult drive rods with ease after installation. The release key releases the bearing plate locking mechanism.

*Gas-Powered Driver*



*Drive Rods – 4ft and 6ft*



*JackJaw*



*Release Key*



*Tensioning Tool*

