



# American Earth Anchors

*The best screw you will have in the dirt™*

americaneearthanchors.com

## PENETRATOR™

The time-tested screw – Upscaled!

- Soil
- Sand
- Asphalt
- Underwater
- Commercial
- Residential
- Military
- Permanent
- Temporary



### Reusable

*Screw in, screw out*

### Strong

*Cast aluminum 356 alloy aircraft-quality aluminum heat treated to T6 specification*

### Lightweight

*The ALUMINUM advantage:  
Shipping cost, on-site handling, NO RUST*

### Alternative to concrete footings

*PE36 and PE46 – the “big ones” – no digging, no forms, no pouring, no waiting, easy leveling*



The PENETRATOR is one of our three anchor designs to handle projects large or small, simple or complex

**YOU HAVE IT, WE HOLD IT™**



### PULLOUT STRENGTH

Table on last page



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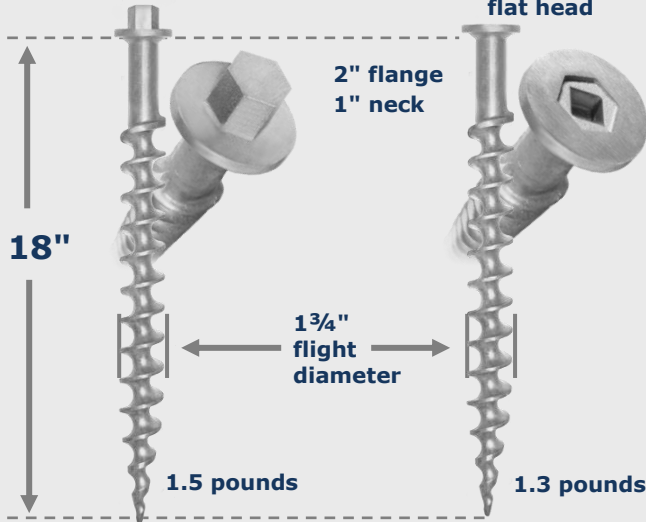
# DIMENSIONS AND ANATOMY

- Aircraft-quality cast aluminum 356 alloy
- Heat-treated to T6 specification

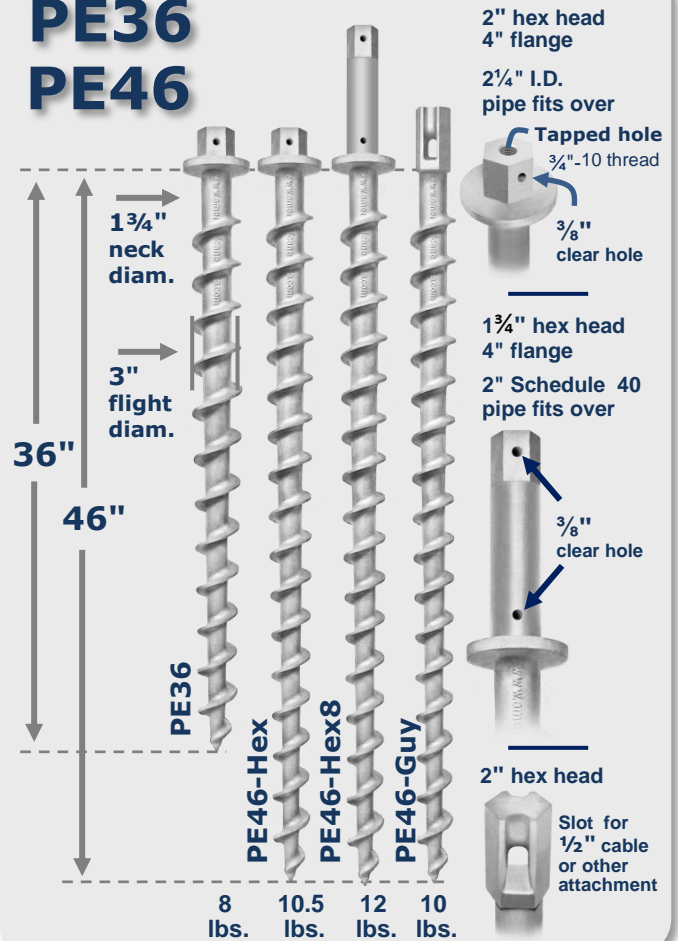
## PE18

**PE18**  
1" hex head

**PE18-SQ**  
1/2" square drive  
flat head



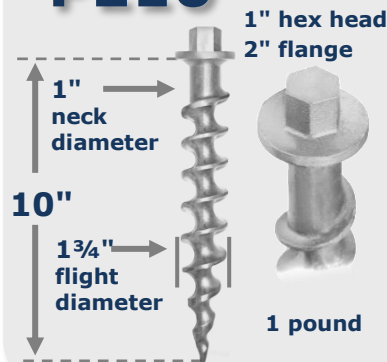
## PE36 PE46



## PE26



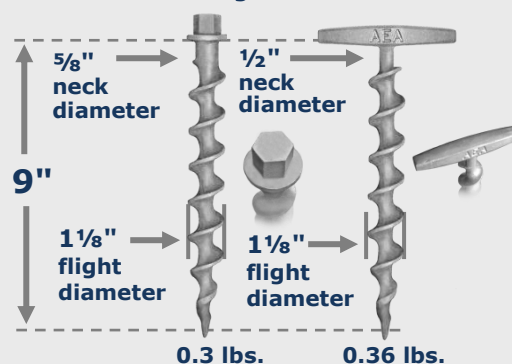
## PE10



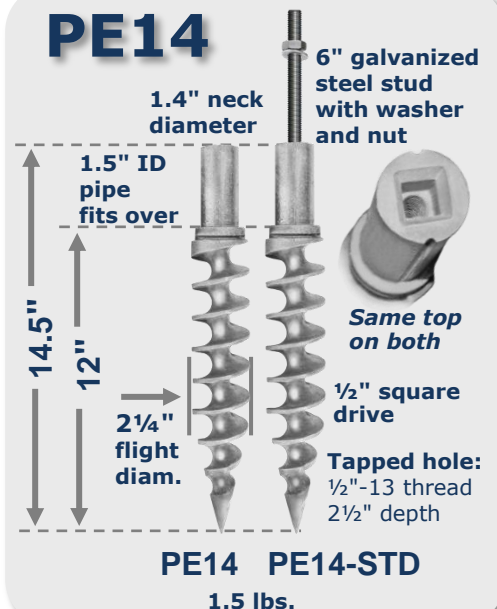
## PE9

**PE9**  
3/4" hex head  
1 1/4" flange

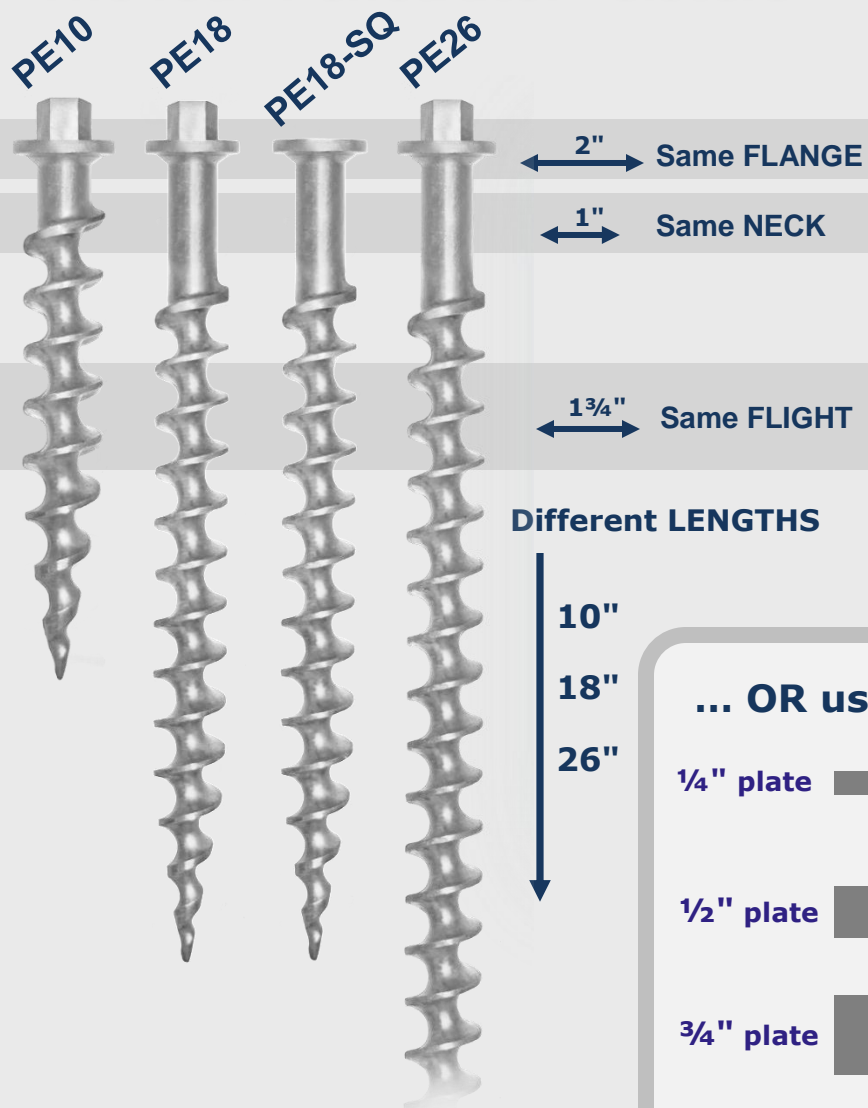
**PE-T9**  
4" handle



## PE14

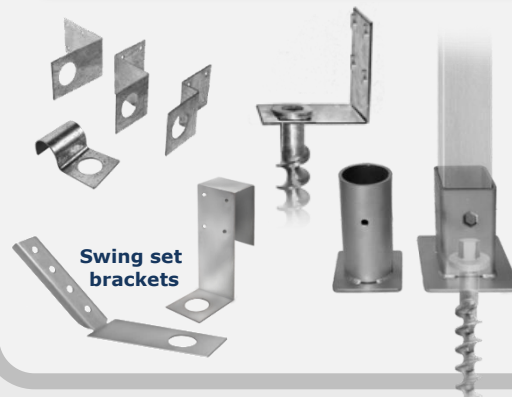


## The four Penetrator "sisters"

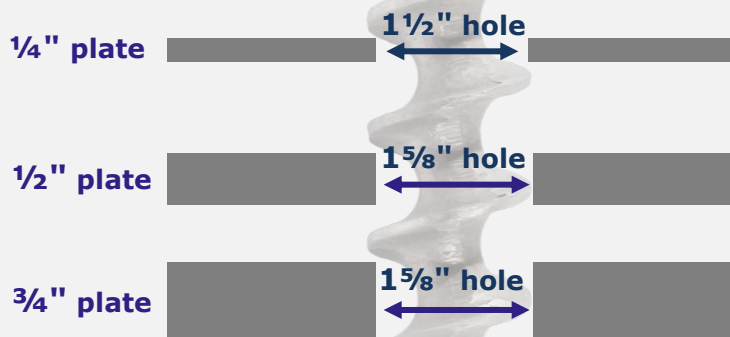


**AEA's BRACKETS and BASES** are designed to fit them

We can make custom brackets to your specification



## ... OR use your own:



## FLANGE top



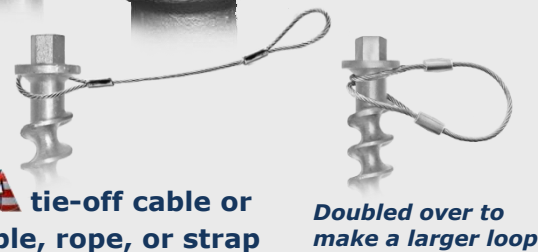
*Can be used in two ways:*

**SCREW DOWN**  
against a bracket,  
plate, or other surface



## TIE OFF

using tie-off cable or  
your own cable, rope, or strap





# Installation: EASY

Getting it into the ground



## Recommendation

6-point socket (instead of 12-point socket) will minimize wear and rounding of hex head for repeated installation/removal

**HAND**  
for the "little one"



PE-T9

## SOCKET

PE9  
PE10  
PE18

PE26  
PE36  
PE46

## SQUARE DRIVE

PE14

PE18-SQ

## IMPACT WRENCH



PE14

Planter



PE9

Erosion mat



Even for the "big ones" if soil conditions allow

PE46



Pneumatic impact wrench

Watch the video at [aeavideo.com](http://aeavideo.com)

## AEA T-HANDLE

- Ratcheting or non-ratcheting
- Socket or square drive



PE26



PE36

## POWER TAKEOFF

rigged with 2" socket for PE36 or PE46

on tractor, skid-steer (Bobcat) or other PTO-equipped machinery

Watch the video at [aeavideo.com](http://aeavideo.com)



PE46-Guy

## ... OR DESIGN YOUR OWN METHOD



2" socket with ratchet and LONG pipe for added leverage

PE46



PE18-SQ

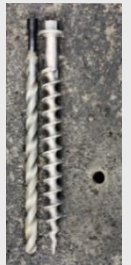
Gas-powered auger with bit modified for square drive or hex head



## PRE-DRILL

in asphalt and hard soils

Drill pilot hole through asphalt – at least 10" deep in hard soil – to reduce stress on the anchor (and on the installer!)



PE10, PE18, PE26	PE14	PE36 PE46
Pilot hole diameter		
1"	1.5"	2"

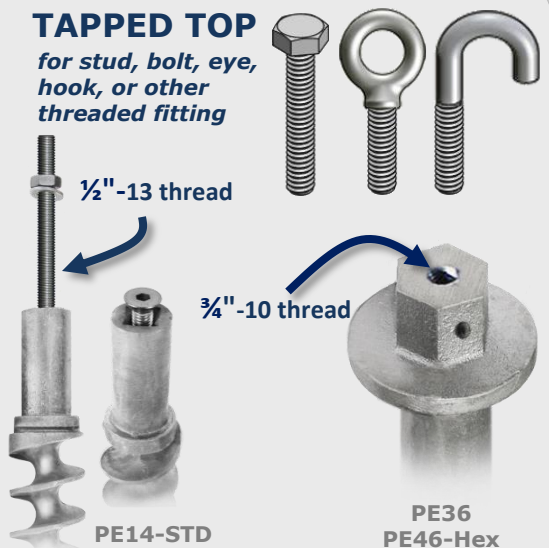


# Attachment: YOUR CHOICE

Connecting to your structure

## TAPPED TOP

for stud, bolt, eye, hook, or other threaded fitting



## FLANGE TOP

- Screw down against a surface or bracket
- Attach to tie-off cable

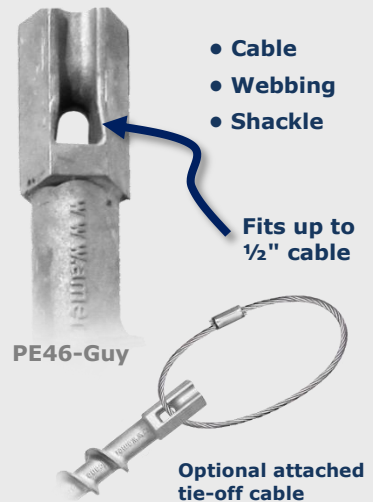
PE10  
PE18  
PE18-SQ  
PE26  
PE36  
PE46-Hex



## GUYING TOP

for attachment to ...

- Cable
- Webbing
- Shackle



## PIPE TOP

for pipe or post fitted over the Penetrator's top

1.5" ID

Pipe could be...

- Part of the structure being anchored
- Installation assist for below-grade depth of tapped-top Penetrator to keep a clear path for threaded rod (see SONAR station on page 9)



See **Footings** on next page for larger pipes



PE14-STD

## CABLE CLAMPS

to make a custom loop



PE46-Guy

## BASES

for pipe or post

For 2.5"-3" round pipe

For 3" square post

Clear-hole for 3/8" bolt

Single-hole base with round or square sleeve

PE10  
PE18  
PE26



See **Footings** on next page for more pipes and posts

## BRACKETS



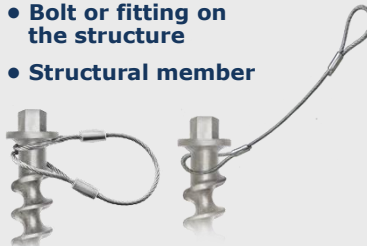
PE10  
PE18  
PE26

Swing set brackets

## TIE-OFF CABLES

for attachment to ...

- Guying cable
- Shackle
- Turnbuckle
- Bolt or fitting on the structure
- Structural member



We can make custom brackets and cables to your specification

## PE36 PE46-Hex

Attachment methods are in the **Footings** section on the next page ...





# ALTERNATIVE TO CONCRETE FOOTINGS

Screw shape provides both upward and **DOWNWARD** grip

**UPWARD**  
pullout strength

**DOWNWARD**  
support strength

*Works  
like an  
ANCHOR*

*Works  
like a  
FOOTING*

PE46 tested to 9,000 lbs  
of downward pressure  
with only 0.119" of  
downward displacement

**PE36**  
**PE46**

The "big ones"

- No digging
- No forms
- No pouring
- No waiting
- Easy leveling



**Weight test**

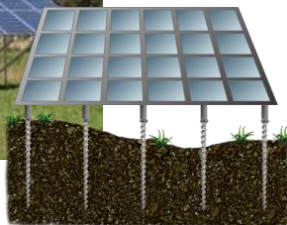


**16,100  
pounds**

**4,025 lbs** on each Penetrator,  
with only 75% of their length in  
the ground supporting the load



**Easy leveling:**  
Screw **DOWN**, screw **UP**



PE36

PE46-Hex

PE46-Hex8

## BRACKETS

 We can make custom brackets  
to your specification



**PE36**  
**PE46-Hex**

**TAPPED TOP**  
 $\frac{3}{4}$ " -10 thread

**2 1/4" I.D.**  
pipe fits over

Clear hole  
for  $\frac{3}{8}$ " bolt

**PE46-Hex8**

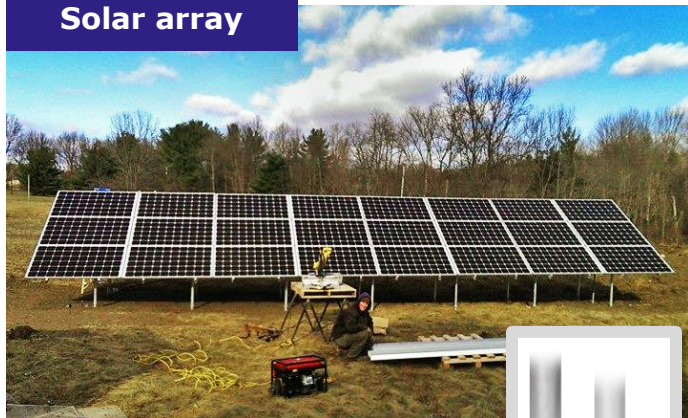
**2" Schedule 40**  
pipe fits over

**Two clear holes**  
for  $\frac{3}{8}$ " bolts



# PENETRATORS AT WORK

Solar array



**PE46-Hex** Double-duty as both  
**ANCHORS** and **FOOTINGS**



Dome



**PE26**

Grain bin



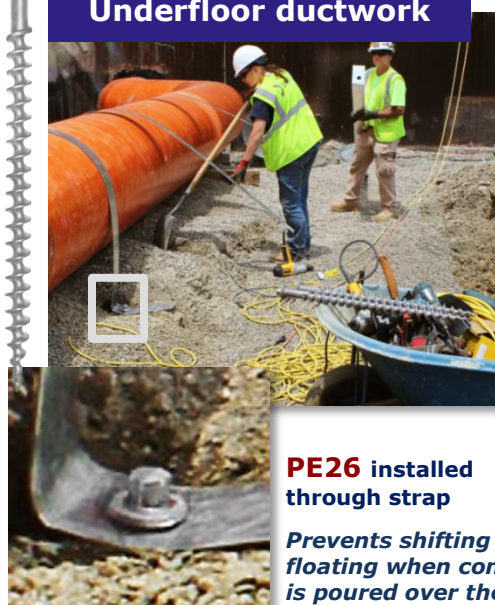
**PE10**

Conveyor ski lift



**PE26**

Underfloor ductwork



**PE26** installed  
through strap

*Prevents shifting or  
floating when concrete  
is poured over the ducts*

Movie screen



**PE18** with tie-off cable

Sheds

Trailers

Fences

Gazebos

Mobile homes

Vineyards

Portable shelters

Hoop houses

Mobile offices

Porta-potties





## PENETRATORS AT WORK *(continued)*

### Pool cover tethers



**PE14** with Allen bolt

*Bolt is screwed down flush when cover is off*

### Channel markers



**PE26** with hole drilled through hex head to bolt on the marker

### Floating islands



**PE46-Guy** in the lake bottom with cable up to the island

*Manmade wetlands for natural water filtration*

### Walkway lights



**PE14-STD**

*Hollow faux rock secured like a planter*

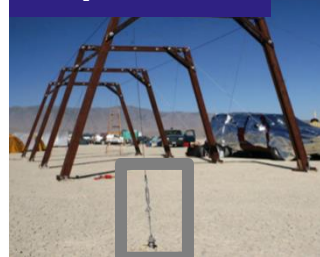
### Fireworks setup

*"Laundry line" string of fireworks*



**PE26** with tie-off cable

### Guyed frame



**PE26** with tie-off cable to turnbuckle

*Temporary fabric structure in the Nevada desert*



**Hardpan technique:**  
Drill 1" x 10" pilot hole

Signs

Trees

Clear-span structures

Archery targets

Dog tie-outs

Bike racks

Retaining walls

Inflatable buildings

Greenhouses

Sports goals





**Hunting blind**



**PE26** attached to legs

**Cantilevered parking canopies**



**PE46-Guy** attached to rebar cage in poured concrete block, for stabilization against tipping

Could also use 8" or 10" arrowheads

**Sports goal**



**PE26** through pipe bracket



To prevent serious tip-over injuries

**Ground mount**



**PE14-STD**

**Tripod**



**PE18** Temporary mount for solar panel to power equipment in the field

**Swing set**



**PE18** and **PE18-SQ** with swing set brackets

Hunting blinds  
Canopies

Tents

Inflatable  
play structures

Large shelters

Tarps

Zip lines

Solar arrays

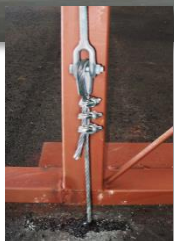
Beach shelters

Temporary  
buildings





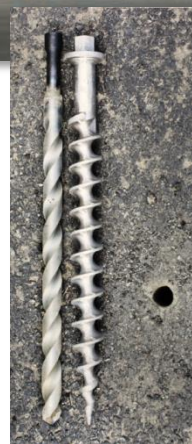
## Hangars on asphalt



Hangar's wall studs also secured directly into the ground with 10" arrowhead anchors



**PE18s** hold the ground framing



Through asphalt:

- PILOT HOLE FIRST – 1" for PE18/PE26
- Extra pullout strength due to asphalt's added grip plus compacted soil below

## The hand-turned "little one"

- Yard
- Vacation
- Backpacking



Camping tents



Landscaping



Beach shelters

- Easy in
- Easy out
- Strong
- No tools



Dog tie-outs



RV awnings



Pop-up tents



Tie-off cable to your structure

Yard decorations

RV/camper awnings

Carports

Shopping cart corrals

Erosion mats

Towers

Planters

Kites

Utility poles



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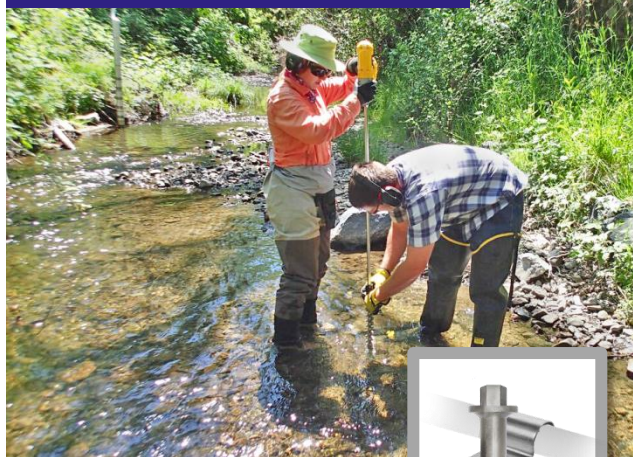
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**Stream instrumentation**



**PE18** with pipe bracket  
Water testing equipment



**Inflatable water slide**



**PE18-SQ**  
through the  
structure's  
loop

**Weather tower**



**PE26**  
for the  
base plate

*Quick setup to measure  
wind speed in approaching  
Hurricane Ivan*



**PE26** for the  
guying cables



**Cable clamps for  
guy-wire's loop  
around PE26**

**Planters**



**PE14-STD**  
Double duty:  
• Hold in place  
• Prevent theft



**Walkway**



**PE46-Hex**  
as ANCHOR and FOOTING



Awnings

Yurts

Sheds

Lifeguard  
stations

Canopies

Outdoor  
sculptures

Playground  
equipment

Antennas



# STRENGTH

*PULLOUT resistance*

## PENETRATORS™

### LOAD CAPACITY Pounds

SOIL CLASS

- 1 Dense sand or gravel
- 2 Medium sandy gravel
- 3 Loose medium-to-fine sand
- 4 Loose fine uncompacted sand

	9"	10"	14"	18"	26"	36"	46"
	PE9 PE-T9	PE10	PE14 PE14-STD	PE18 PE18-SQ	PE26	PE36	PE46-Hex PE46-Hex8 PE46-Guy
Hardpan / asphalt	400	1,000	2,500		4,500	8,400	14,000
1 Dense sand or gravel	200	700	1,700		3,100	6,000	9,500
2 Medium sandy gravel	100	350	600		1,100	2,100	3,300
3 Loose medium-to-fine sand	Less than 100	200	350		630	1,000	2,000
4 Loose fine uncompacted sand	Less than 100	100	200		360	350	1,100

## STRENGTH TESTING

Hydraulic proof tester  
Up to 15,000 lbs.



## BEYOND THE CATALOG ...



### CUSTOM WORK

- Flash cutting — *Fused cable ends, custom length*
- Cable assemblies
- Brackets — *Plasma cutter, press brake (metal bending)*
- Full machine shop — *From CNC to welding*
- Prototypes
- Custom packaging
- Heat-seal bagging
- Bar coding

*Let us help with your designs and ideas*

