

SECTION 03 15 19

PIER ACCESSORIES

PART 1 – GENERAL

1.1 PURPOSE

- A. This guideline is intended to provide useful information to the Professional Service Provider (PSP) to establish a basis of design. PSP is to apply the principles of this section such that the University of Texas at Arlington (UTA) may achieve a level of quality and consistency in the design and construction of their facilities. Deviations from these guidelines must be approved by UTA and may require justification through Life Cycle Cost (LCC) analysis and submitted to UTA for approval.

1.2 LESSONS LEARNED AND DESIGN CONSIDERATIONS

- A. X

1.3 WORK INCLUDED

- A. Pier accessories for attachment to ties of a reinforcing cage for drilled piers.

1.4 RELATED WORK

- A. Section 03 10 00 – Concrete Forming and Accessories
- B. Section 03 20 00 – Concrete Reinforcing and Embedded Metal Assemblies
- C. Section 31 63 29 – Drilled Piers

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.

1.6 SUBMITTALS

- A. See Division 01 for submittal procedures.
- B. Product Data: Submit manufacturer’s data and installation instructions.

PART 2 – PRODUCTS

2.1 ACCEPTABLE MANUFACTURER

- A. PIERRESEARCH, www.pierresearch.com

2.2 HEAVY DUTY PIER WHEEL (QUICK-LOCK HD)

- A. Snap 6 inch wheel for attachment to the ties of a reinforcing cage for drilled piers; wheel rotates against drilled pier sidewalls to maintain proper alignment when reinforcing cages are being lowered; sized to provide 3 inches of concrete cover over reinforcing bars.
- B. Fabricated of non-corrosive plastic and fits No. 3 through No. 7 reinforcing bar ties.
- C. Provide minimum number of wheels per reinforcing cage, uniformly spaced to properly align cage in shaft.

Pier Shaft Depth in Feet	Pier Shaft Diameter in Inches			
	Up to 48	49 to 72	73 to 96	97 to 120
0 to 12	8	12	16	20
13 to 24	12	18	24	30
25 to 36	16	24	32	40
37 to 48	24	36	48	60
49 to 60	28	42	56	70
61 to 72	36	54	72	90
73 to 84	40	60	80	100
85 to 96	48	72	96	120

GUIDE SPECIFICATIONS FOR DESIGN AND CONSTRUCTION DOCUMENTS

97 to 108	52	78	104	130
109 to 120	60	90	120	150
121 to 132	64	96	128	160
133 to 144	72	108	144	180

2.3 PIER WHEEL (QUICK-LOCK)

- A. Snap 6 inch wheel for attachment to the ties of a reinforcing cage for drilled piers; wheel rotates against drilled pier sidewalls to maintain proper alignment when reinforcing cages are being lowered; sized to provide 3 inches of concrete cover over reinforcing bars.
- B. Fabricated of non-corrosive plastic and fits No. 3 through No. 5 reinforcing bar ties.

Pier Shaft Depth in Feet	Pier Shaft Diameter in Inches				
	Under 30	31 to 48	49 to 72	73 to 96	97 to 120
0 to 12	9	12	18	24	30
13 to 24	14	18	27	36	45
25 to 36	18	24	36	48	60
37 to 48	23	30	45	60	75
49 to 60	27	36	54	72	90
61 to 72	32	42	63	84	105
73 to 84	36	48	72	96	120
85 to 96	41	54	81	108	135
97 to 108	45	60	90	120	150
109 to 120	54	72	108	144	180
121 to 132	59	78	117	156	195
133 to 144	63	84	126	168	210

2.4 PIER BOOT

- A. Support devices attached to bottom end of vertical reinforcing in straight shaft drilled piers to prevent bottom of reinforcing bars from making contact with earth at bottom of drilled piers.
- B. Fabricated of non-corrosive plastic.
- C. Nominal 3-3/8 inch (86mm) diameter by 6-1/4 inch (159mm) high.
- D. Quantity Required:
 - 1. One pier bolster on every other vertical bar for piers under 48 inches in diameter.
 - 2. One pier bolster on every vertical bar for piers 48 inches in diameter and over.

2.5 BAR BOOSTER

- A. Support devices attached to bottom end of vertical reinforcing in straight shaft drilled piers to prevent bottom of reinforcing bars from making contact with earth at bottom of drilled piers; with integral zip ties.
- B. Fabricated of non-corrosive plastic.
- C. Nominal 3 inch (75mm) diameter by 3 inch (75mm) high.
- D. Quantity Required:
 - 1. One bar booster on every other vertical bar for piers under 48 inches in diameter.
 - 2. One bar booster on every vertical bar for piers 48 inches in diameter and over.

PART 3 – EXECUTION

3.1 INSTALLATION

- A. Attach devices to reinforcing according to manufacturer’s instructions.
- B. Snap pier wheel (QUICK-LOCK) over horizontal ties.
- C. Snap pier wheel (QUICK-LOCK HD) over horizontal ties.
- D. Install pier bolster (BAR BOOSTER) at bottom of vertical reinforcing bars and tighten zip tie.
- E. Install pier bolster (PIER BOOT) at bottom of vertical reinforcing bars.
- F. Do not use the following:
 - 1. Plastic wheels for stationary/static purposes.

GUIDE SPECIFICATIONS FOR DESIGN AND CONSTRUCTION DOCUMENTS

2. Doble bricks or blocks.
 3. Accessories made of concrete masonry units or cinder blocks.
- 3.2 CLEANUP
- A. Clean up all debris caused by the work of this Section, keeping the area clean and neat at all times.

PART 4 – APPENDIX

- 4.1 PRODUCT DATA
- A. PIERESEARCH, Quick-Lock Pier Wheels
 - B. PIERESEARCH, Quick-Lock HD (Heavy Duty) Pier Wheels
 - C. PIERESEARCH, Quick-Lock Pier Boots
 - D. PIERESEARCH, Quick-Zip Barr Booster
 - E. PIERESEARCH, Quick-Lock Unibar Centralizer
 - F. PIERESEARCH, Placement Detail

END OF SECTION

Quick-Lock HD™ Heavy Duty Pier Wheels



Quick-Lock HD™ installation is a snap and is designed to properly position a reinforcing steel cage in a drilled shaft. Without proper alignment, the rebar cage cannot perform the function for which it was designed.

Quick-Lock HD™ pier wheels are made of durable, noncorrosive plastic and fit numbers 3 through 7 rebar ties. They are also perfect for a variety of other applications where concrete cover must be maintained.



The table below illustrates the recommended number of **Quick-Lock HD™** wheels to be used on a pier shaft basis. The actual number can vary subject to the number of vertical bars of the reinforcing steel cage. The structural engineer is the governing authority. When in doubt, please check with the structural engineer.

RECOMMENDED QUICK-LOCK HD™ WHEELS PER REINFORCING CAGE				
Pier Shaft Depth In Feet	Pier Shaft Diameter In Inches			
	Up to 48"	49" to 72"	73" to 96"	97" to 120"
0' to 12'	8	12	16	20
13' to 24'	12	18	24	30
25' to 36'	16	24	32	40
37' to 48'	24	36	48	60
49' to 60'	28	42	56	70
61' to 72'	36	54	72	90
73' to 84'	40	60	80	100
85' to 96'	48	72	96	120
97' to 108'	52	78	104	130
109' to 120'	60	90	120	150
121' to 132'	64	96	128	160
133' to 144'	72	108	144	180

Part No.	Description
4QLHD	4" Quick-Lock HD™ wheel provides 2 inches of concrete cover* and fits rebar sizes #3 thru #7
6QLHD	6" Quick-Lock HD™ wheel provides 3 inches of concrete cover** and fits rebar sizes #3 thru #7
7QLHD	7" Quick-Lock HD™ wheel provides 3 inches of concrete cover* and fits rebar sizes #3 thru #7
8QLHD	8" Quick-Lock HD™ wheel provides 4 inches of concrete cover** and fits rebar sizes #3 thru #7
12QLHD	12" Quick-Lock HD™ wheel provides 6 inches of concrete cover** and fits rebar sizes #3 thru #7

*Actual Clearance or Concrete Cover is measured from the outside of the circle tie, spiral, etc. of the reinforcing steel cage to the side of the drilled shaft.
 **Nominal Clearance or Concrete Cover is measured from the outside of the vertical bar of the reinforcing steel cage to the side of the drilled shaft.

Quick-Lock™ Pier Wheels

UNIQUE ONE-PIECE DESIGN!



Quick-Lock™ Pier Wheel installation is a snap and is designed to properly position a reinforcing steel cage in a drilled shaft. Without proper alignment, the rebar cage cannot perform the function for which it was designed.

Quick-Lock™ Pier Wheels are made of durable, noncorrosive plastic and fit numbers 3 through 7 rebar ties. They are also perfect for a variety of other applications where concrete cover must be maintained.



The table below illustrates the recommended number of **Quick-Lock™ Pier Wheels** to be used on a per shaft basis. The actual number can vary subject to the number of vertical bars of the reinforcing steel cage. The structural engineer is the governing authority. When in doubt, please check with the structural engineer.

RECOMMENDED QUICK-LOCK™ WHEELS PER REINFORCING CAGE					
Pier Shaft Depth In Feet	Pier Shaft Diameter In Inches				
	Under 30"	31" to 48"	49" to 72"	73" to 96"	97" to 120"
0' to 12'	9	12	18	24	30
13' to 24'	14	18	27	36	45
25' to 36'	18	24	36	48	60
37' to 48'	23	30	45	60	75
49' to 60'	27	36	54	72	90
61' to 72'	32	42	63	84	105
73' to 84'	36	48	72	96	120
85' to 96'	41	54	81	108	135
97' to 108'	45	60	90	120	150
109' to 120'	54	72	108	144	180
121' to 132'	59	78	117	156	195
133' to 144'	63	84	126	168	210

Part No.	Description
4QLPW	4" Quick-Lock™ wheel provides 2 inches of concrete cover and fits rebar sizes #3 thru #7
6QLPW	6" Quick-Lock™ wheel provides 3 inches of concrete cover and fits rebar sizes #3 thru #5
8QLPW	8" Quick-Lock™ wheel provides 4 inches of concrete cover and fits rebar sizes #3 thru #7

All Quick-Lock™ Pier Wheels provide Actual Clearance.
Actual Clearance or Concrete Cover is measured from the outside of the circle tie, spiral, etc. of the reinforcing steel cage to the side of the drilled shaft.

Pier Boots™ & Bar Boosters™

Pier Boots™ are designed to support a reinforcing steel cage within a drilled shaft with a 3" concrete cover requirement, are made of durable, noncorrosive plastic and attach to rebar sizes #5 thru #14.

Pier Boots™ are also great for supporting reinforcing steel over waterproofing, in mat foundations and providing vertical support of slurry walls.

Installation is accomplished in seconds by simply pushing the **Pier Boot™** onto the end of a vertical bar of the rebar cage. The recommended spacing for installation is one **Pier Boot™** on every other vertical bar for piers under 48 inches in diameter or one **Pier Boot™** on every vertical bar for piers 48 inches in diameter and over.



Bar Boosters™ are designed to support a reinforcing steel cage within a drilled shaft with a 3" concrete cover requirement, are made of durable, noncorrosive plastic and attach to rebar of any size. The zip tie used for attachment is made of 170 pound tensile strength resin.

Bar Boosters™ are also great for supporting reinforcing steel over waterproofing, in mat foundations and providing vertical support of slurry wall mats.

Installation is accomplished in seconds by simply positioning the **Bar Booster™** on the end of a vertical bar of the cage and pulling the zip tie taut. The recommended spacing for installation is one **Bar Booster™** on every other vertical bar for piers under 48 inches in diameter or one **Bar Booster™** on every vertical bar for piers 48 inches in diameter and over.



PIERESEARCH™ QUICK-LOCK™ UNIBAR™ CENTRALIZERS

Soil Nailing - Tendon/Rebar Alignment and Support

QUICK-LOCK™ UNIBAR™ CENTRALIZERS

The answer to uniform reinforcement steel spacing requirements in single-bar foundation/tieback elements. To achieve proper design strength in any drilled and grouted/concreted hole, the tendon/rebar or anchor material must be centered in the shaft to allow minimum coverage throughout the length of the element.



Patent Pending

APPLICATION

QUICK-LOCK™ UNIBAR™ CENTRALIZERS are designed to keep the tendon/bar centered in the bore/drill hole to allow for minimum grout/concrete coverage and do not impede flow of grout within bore/drill hole and around tendon. They are made of durable non-corrosive plastic and consisting of two identical halves that are fast and easy to snap together. QUICK-LOCK™ UNIBAR™ CENTRALIZERS will accommodate Single Bar, Multi-Bar/Strand Anchors, Encapsulated (DCP) Anchors, and Steel or Plastic Pipe Applications. They are ideal for Soil Nails, Rock/Soil Anchors, Micro-Piles, and Auger-Cast Piles with single tension bars.

ADVANTAGES

- 2 identical halves
- easy to snap together
- made of durable non-corrosive plastic
- can be attached with zip ties or tie wire
- offset to fit between rebar threads
- keeps single tendon/bar centered within a drill hole
- ideal for soil nail applications
- no nuts or bolts required
- lightweight and economical

ASSEMBLY

Quickly assemble the QUICK-LOCK™ UNIBAR™ CENTRALIZER by easily snapping the two inverted identical halves together over the tendon/rebar and either tying it on with tie wire, or with a zip tie threaded through the end tab slots.

PLACEMENT

The lowest QUICK-LOCK™ UNIBAR™ CENTRALIZER should be installed approximately 1 feet from the end of the tendon/bar material. Each successive QUICK-LOCK™ UNIBAR™ CENTRALIZER should be placed at no greater than 10-foot intervals. The upper QUICK-LOCK™ UNIBAR™ CENTRALIZER should be approximately 1 feet below grout/concrete surface.

Part No.	Description
4-6UBC	4" shafts fits tendon/rebar sizes #5 thru #6
4-8UBC	4" shafts fits tendon/rebar sizes #7 thru #8
6-6UBC	6" shafts fits tendon/rebar sizes #5 thru #6
6-8UBC	6" shafts fits tendon/rebar sizes #7 thru #8

100 parts per bag. Bag weight approx. 22 pounds.
16 bags per pallet.

MANUFACTURER and ORDERING

Piereseach
501 E Main Street
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Customer/Technical Services:
800/342-2409 • 817/265-0980 • Fax 817/275-2335
Website: www.piereseach.com
Email: sales@piereseach.com
Visit our website for for spec kits, how to videos and ordering information.

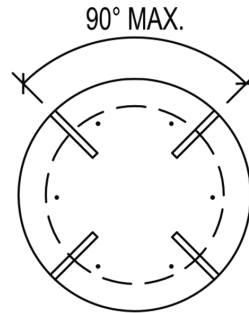
All Piereseach concrete accessories are proudly made in the United States of America.

WARRANTY (ACCESSORIES)

Limited Warranty. Piereseach warrants that Products manufactured by it will be free from defects in material and workmanship for a period of 60 days from the date of shipment. Any claim under this warranty must be made in writing within such warranty period. If any Products covered by a timely claim are found to be defective, Piereseach will, within a reasonable time replace the Products. Unless authorized in advance by Piereseach in writing, Piereseach will not accept any charges for the return of any Products for warranty purposes. This limited warranty will not apply to any Products that have been subjected to misuse, neglect, storage damage, misapplication, accident or any other damage caused by any person other than Piereseach. THIS LIMITED WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES AS TO THE PRODUCTS. PIERESEACH MAKES NO OTHER WARRANTIES OR GUARANTEES, EXPRESS OR IMPLIED, INCLUDING ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE. THE REMEDIES SET FORTH IN THIS SECTION ARE CUSTOMER'S EXCLUSIVE REMEDY FOR BREACH OF WARRANTY.

Placement Detail For QLPW, QLHD, PB and BB Series Rebar Cage Spacers

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