

## Helical Anchors and Accessories



### 1. Scope

This standard covers the requirements for helical anchors and anchor accessories. Helical anchors are also known as *helix* or *screw anchors*. Individual helixes are also known as *flights*.

This standard applies to the following Seattle City Light (SCL) stock numbers:

Stock No.	Description
562028	Anchor, single helix, 12-in diameter
012185	Anchor, double helix, assembly
562043	Anchor, triple helix, assembly
562102	Rod extension, square, 1-1/2 in by 5 ft
562096	Rod extension, round, 1 in by 3-1/2 ft
562090	Rod extension, round, 1 in by 1-1/2 ft, assembly
562110	Coupling, round rod extension
565274	Nut, triple eye

Plate anchors and Manta Ray anchors are outside the scope of this standard.

Standards Coordinator  
John Shipek

Standards Supervisor  
John Shipek

Unit Director  
Darnell Cola



## 2. Application

Helical anchors and accessories are used to create attachment points to the earth, typically for connecting down guys.

The ultimate holding capacity of an anchor is heavily dependent on soil type and condition.

More than 50 years ago, Chance, now a division of Hubbell Power Systems, developed an anchor system called PISA®, which stands for power installed screw anchor. Years later, Earth Contact Products developed an equivalent system called PITA, which stands for power installed torque anchor. PISA® and PITA components should be interchangeable.

Round rod extension coupling, Stock Number 562110, may be used with single helix or Manta Ray anchors.

Double and triple helix anchors, Stock Numbers 012185 and 562043 respectively, are provided with triple eye guy adapters.

Refer to pertinent design standards and manufacturer's literature for more information.

## 3. Industry Standards

Helical anchors and accessories shall meet the applicable requirements of the following industry standards:

**ASTM A153-2005**; "Standard Specification for Zinc Coating (Hot Dip) on Iron and Steel Hardware"

**ASTM A575-96(2007)**; "Standard Specification for Steel Bars, Carbon, Merchant Quality, M-Grades"

**ASTM A576-90b (2006)**; "Standard Specification for Steel Bars, Carbon, Hot-Wrought, Special Quality"

## 4. Attributes

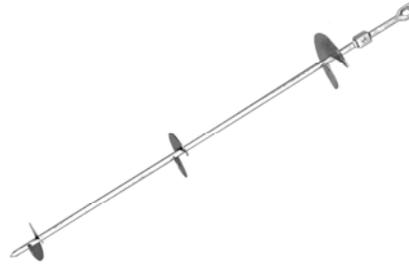
<b>Stock No.</b>	<b>562028</b>
Description	anchor, single helix, 12-inch diameter
Torque Rating, ft lb	15,000
Coating	painted
Weight, nominal, lb	29



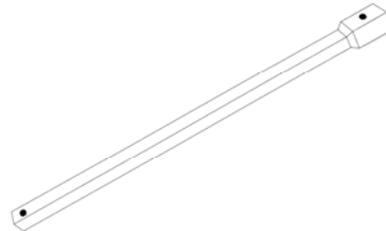
<b>Stock No.</b>	<b>012185</b>
Description	Anchor, double helix, 36-inch lead section with 18-inch, triple eye guy adapter assembly. Helix diameters 8 and 10 inches.
Tensile Strength, lb	70,000
Torque Rating, ft lb	7,000
Coating	Hot-dipped galvanized
Weight, nominal, lb	67



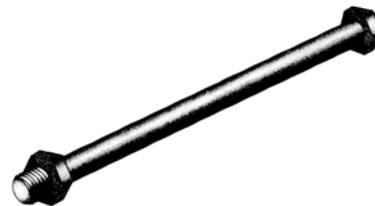
<b>Stock No.</b>	<b>562043</b>
Description	Anchor, triple helix, 84-in lead section with 18-inch, triple eye guy adapter assembly. Helix diameters 10, 12, and 14 inches.
Tensile Strength, lb	70,000
Torque Rating, ft lb	7,000
Coating	Hot-dipped galvanized
Weight, nominal, lb	108



<b>Stock No.</b>	<b>562102</b>
Description	Rod extension, square, 1-1/2-in by 5 ft
Tensile Strength, lb	70,000
Torque Rating, ft lb	7,000
Coating	Hot-dip galvanized
Weight, nominal, lb	42



<b>Stock No.</b>	<b>562096</b>
Description	Rod extension, round, 1 in by 3-1/2 ft
Tensile Strength, lb	36,000
Coating	Hot-dip galvanized
Weight, nominal, lb	9



<b>Stock No.</b>	<b>562090</b>
Description	Rod extension, round, 1 in by 1-1/2 ft, assembly
Tensile Strength, lb	36,000
Coating	Hot-dip galvanized
Weight, nominal, lb	5
Fabrication details	Per latest revision of SCL drawing A-5304



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<b>Stock No.</b>	<b>562110</b>
Description	Coupling, round rod extension, 3/4 in and 1 in
Tensile Strength, lb	23,000 / 36,000
Coating	Hot-dip galvanized
Weight, nominal, lb	0.5



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<b>Stock No.</b>	<b>565274</b>
Description	Nut, triple eye, 3/4 in or 1 in
Tensile Strength, lb	23,000 / 36,000
Coating	Hot-dip galvanized
Weight, nominal, lb	3



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## 5. Marking

Each anchor and rod extension (except shop-made Stock Number 562090) shall be permanently and legibly marked with manufacturer's name or symbol

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## 6. Packaging

Anchors, rod extensions and accessories shall be packaged to prevent damage during shipping, handling, and inside storage.

Individual packages shall be legibly marked with:

- Manufacturer's name
- Manufacturer's catalog number
- Product description
- Quantity contained
- Seattle City Light's Stock Number

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## 7. Issuance

EA

## 8. Approved Manufacturers

Stock No.	Description	Manufacturer and Catalog Number		
		Earth Contact Products	MacLean Power Systems	Hubbell Power Systems/Chance
562028	Anchor, single helix, 12-in diameter	HTAX-250-100(12)	TDH250-114	C102-5002
012185	Anchor, double helix, assembly	TAF-150-363(8,10)	D-6632-TU	12654-3AE
562043	Anchor, triple helix, assembly	TAF-150-843(10,12,14)	D-6637-TU	12654-3EJN
562102	Rod extension, square, 1-1/2 in by 5 ft	TAE-150-60	D-6620-U	12656
562096	Rod extension, round, 1 in by 3-1/2 ft	TAR-100-42	D-1003-1/2	C102-1987 or 12338P
562090	Rod extension, round, 1 in by 1-1/2 ft [see note]	-	-	-
562110	Coupling, round rod extension	TAC-100	D-354	12247P
565274	Nut, triple eye	TAN-100-003	D-6567	12585

Note: Stock Number 562090 is a shop-made assembly. Refer to Section 4 for fabrication details.

## 9. References

**SCL Construction Guideline D6-4;** "Guying and Anchoring"

**Earth Contact Products;** Utility Industry Anchor Design and Maintenance Manual; 2011

**Earth Contact Products;** [www.ecputility.com](http://www.ecputility.com)

**Hubbell Power Systems; Chance;** Product Catalog; Anchors; January 2012

**Hubbell Power Systems;** [www.hubbellpowersystems.com](http://www.hubbellpowersystems.com)

**Ogi, Irv;** SCL Civil Engineer; subject matter expert for SCL Material Standard 5622.33 (Irving.Ogi@Seattle.Gov)

**Shipek, John;** SCL Standards Engineer, subject matter expert and originator of SCL Material Standard 5622.33 (john.shipek@seattle.gov)

**Maclean Power Systems;** [www.maclepower.com](http://www.maclepower.com)

**SCL Drawing A-5304;** Rev.0, dated 3/6/2013, Rod Extension 1"x1'-6"