

MANTA RAY ANCHORS**1. Scope**

This standard covers the requirements for Manta Ray anchors. Manta Ray anchors are also known as driven tipping plate soil anchors.

This standard applies to the following Seattle City Light Stock Number 562050.

Helical and cross-plate anchors and anchor accessories are outside the scope of this standard.

2. Application

Manta Ray anchors 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.

After driving the anchor to the required depth, the driving tool (called drive steel) is removed. The anchor is then tipped and proof tested with a locking kit from its edgewise-driving position to present its bearing area to the soil. This is called "load locking" and provides an immediate proof test of each anchor.

In some applications, Manta Ray anchors are driven into the soil with a 90 lb. pavement breaker and coupled drive steel. Pneumatic or hydraulic breakers are acceptable, but a 90 lb. weight class breaker is necessary.

Use with round rod extension, Stock Number 562096, and triple eye nut, Stock Number 565274.

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

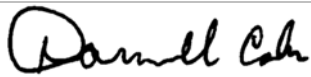
3. Industry Standards

Manta Ray anchors shall meet the applicable requirements of the following industry standard:

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

4. Attributes

Stock Number	562050
Description	Manta Ray anchor
Material	steel
Anchor rod diameter	#6 to 3/4-inch
Coating	hot dip galvanized
Holding capacity, 2:1 safety factor, lbs	
Soil Class 3	20,000
Soil Class 4	18,000 – 20,000
Soil Class 5	15,000 – 20,000
Soil Class 6	10,000 – 15,000
Soil Class 7	8,000 – 12,000
Weight, nominal, lbs	12

standards coordinator	standards supervisor	unit director
 John Shipek	 John Shipek	 Darnell Cola

MATERIAL STANDARD

Manta Ray Anchors

standard number: **5622.24**superseding: new
effective date: May 30, 2012
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5. Marking

Each Manta Ray anchor shall be permanently and legibly marked with manufacturer's name or symbol

6. Packaging

Cross-plate anchors shall be packaged to prevent damage during shipping, handling, and inside storage.

Shipping containers shall be legibly marked with:

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

7. Issuance

EA

8. Approved Manufacturer

Stock Number	Description	Williams Form Engineering Corporation
562050	Manta Ray anchor	MR-1

9. References

SCL D6-4; "Guying and Anchoring"; Construction Standard

SCL 5622.33; "Helical Anchors and Accessories" Material Standard

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Williams Form Engineering Corporation; Catalog No. 111u; www.williamsform.com