



TECHNICAL PRODUCTS, INC.  
50 PRATT'S JUNCTION ROAD, STERLING MA 01564-2340  
VOICE: (978) 422-3400 FAX: (978) 422-3422

27 March, 2018

American Earth Anchors, Inc.  
20 Grove Street, Unit 6  
Franklin, MA 02038

Attn: Mr. Cy Henry

**Subject: Arrowhead Anchor Testing – Pull-Out Resistance**

Dear Mr. Henry;

This is by way of a summary letter report on the recent testing conducted for American Earth Anchors, Inc. (AEA) to determine the capacity of your 'Arrowhead' products to resist a vertical pull-out load when installed in a variety of soils.

Technical Products, Inc. (TPI) conducted instrumented pull tests on all products provided to us in a range of soils covering Classes 1 to 4 and hard-pan. After the anchor was installed as per instructions an increasing load was applied along the long axis of the steel wire tendon as shown in the figure until the anchor failed as demonstrated by a sudden decrease in load bearing capacity. Each size anchor was tested three times and results averaged and rounded down (if > 1,000-lb rounded to lower 100-lb, if < 1,000-lb rounded down to lower 50-lb). The test results are summarized in the table below.

It is important to note that the pull out resistance data provided may NOT be able to be repeated. Load capacity is not just a function of Soil Class but also of real time moisture content, local compaction, vegetation coverage and root penetration, installation method (anchor wobble), load application axis, etc. The ONLY method of accurately determining the local pull-out capacity of any anchor at any specific site is by on-site test of the anchor under local conditions and installed and loaded in the same manner as for the intended application.

Should you have any questions or require any additional information please feel free to contact the undersigned directly.

Yours sincerely;

Paul Chambers  
Vice-President



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**Table 1: Pullout Resistance Of Arrowhead Anchors\***

MAXIMUM RATED HOLDING CAPACITY (LB) FOR ARROWHEAD ANCHORS						
ANCHOR	MINIMUM BURIAL DEPTH (in)	SOIL TYPE				
		Hard Pan Soil	Dense Sand & Gravel (Class 1)	Medium Sandy Gravel (Class 2)	Loose Medium Sand (Class 3)	Loose Fine Sand (Class 4)
3-in Arrowhead	24	2,000	1,800	1,700	600	350
4-in Arrowhead	30	3,500	2,200	1,900	900	450
6-in Arrowhead	42	5,000	3,000	2,000	1,200	600
8-in Arrowhead	48	9,000	6,500	3,500	2,200	1,200
10-in Arrowhead	60	14,000	11,000	7,000	4,000	2,400

NOTES:

1. Load capacity is not just a function of Soil Class but also of real time moisture content, local compaction, vegetation coverage and root penetration, installation method (anchor wobble), load application axis, etc. The ONLY method of accurately determining the local pull-out capacity at any specific site is by on-site test of anchors under local conditions and installed and loaded in the same manner as for the intended application.
2. Maximum rated capacity is offered as a guide only. Actual capacity must be derived from on-site testing and experimental installation of anchors and subsequent load testing of those anchors.
3. Anchor must be installed to full design depth. Anchor must be installed vertically. If anchor is installed at an angle other than vertical then its load capacity will diminish. Actual load capacity when installed at an angle must be derived from on-site testing and experimental installation of anchors and subsequent load testing of those anchors.