



RAM JACK

2016 CASE STUDY

Type: Commercial | Issue: TN201601

**Ram Jack
Stabilizes Full
Weight of Volatile
Chemical Tanks**

RAM JACK LOCATION:

Ram Jack Tennessee

www.ramjacktn.com | 888-264-3121

Milan, TN

BUCKMAN CHEMICAL LAB | NEW CONSTRUCTION

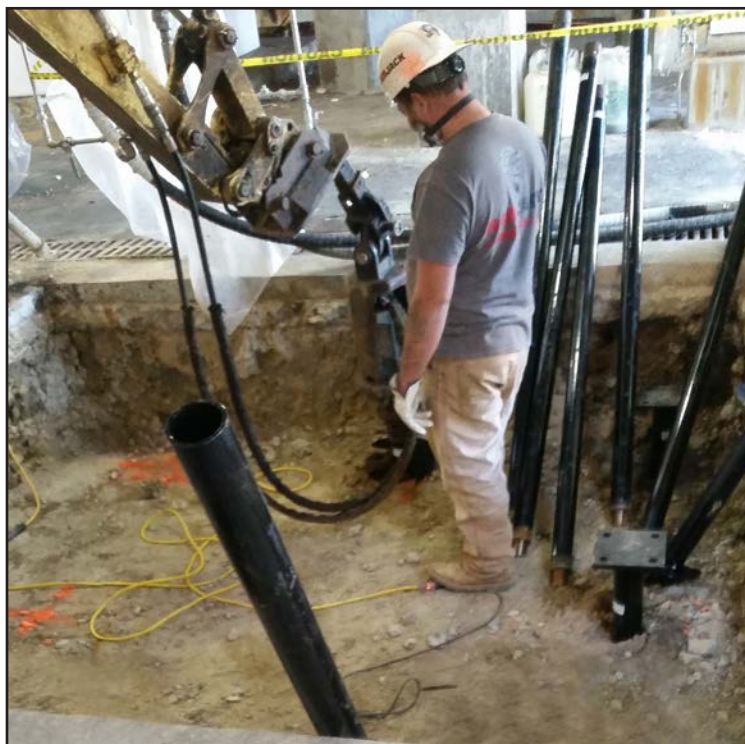
Memphis, TN

CASE STUDY 2016

Specializing in manufacturing chemicals for water treatment, pulp, paper, and leather industries, the Buckman Chemical Lab in Memphis, Tennessee ran into an unforeseen problem when attempting to install two new chemical tanks. The 3500 and 6500 gallon tanks weighed too much for the soil beneath them to provide support, forcing Buckman Chemicals to contact Ram Jack Tennessee to remedy the situation.

SITUATION

The soil beneath the extremely heavy tanks was simply not equipped to adequately stabilize and support their weight. Furthermore, the tanks were designed to store unstable, volatile, and dangerous chemicals, making it vitally important that the tanks rest on a solid, immovable foundation.



PROPOSED SOLUTION

Working with SSR, Inc., a local engineering firm, Ram Jack Tennessee experts determined the loads required to support the tanks and designed an ideal layout for the helical pile installation. The height of the building limited the type of installation equipment that could be used as well as the deep foundation system that could be installed. In order to make up for these limitations, Ram Jack proposed the use of 2 7/8 in. threaded connection helical piles along with 3 1/2 in. diameter, 5 ft. long external sleeves. This combination would resist the 2000 lb. lateral loads on the piles without having to use larger diameter piles or install tieback anchors, saving the client both time and money without compromising the structural integrity needed to support the tanks.

INSTALLATION OVERVIEW

Total # of Piles: 24

Products Used: #4360 2 7/8" dia. Pile;
8"-10"-12" helicals

Proven Engineered Solutions.

Product Type: New Construction - Helical

Typical Applications: Ram Jack's 2 7/8" helical lead sections can be used in either tension or compression due to its unique internal threaded connection. Can be used with all brackets with a 3 1/2" diameter bracket or guide sleeve. Maximum ultimate compression strength is 73.8 kips. Recommended allowable loads should be limited to 36.9 kips for axial load (non-eccentric) pile. Maximum torque is 8,200 ft-lbs.



OUTCOME

Over the course of two days while working in extremely tight areas, Ram Jack Tennessee successfully completed the Buckman Chemical Lab project. The job proved tedious at times due to the proximity of unstable, dangerous chemicals; however, Ram Jack employees remained dedicated to safety while simultaneously ensuring a job well done. When finished, (24) 2 7/8 in. triple 8"-10"-12" helical piles with 5 ft. sleeves and new construction brackets were installed to an average depth of 40 ft., adequately supporting the loads of the massive chemical tanks. After the job was completed, Mr. Kyle Maxwell, an employee of SSR, Inc. stated, "I really appreciate all of the help on designing the piers and for the great, fast job."





- Engineered Foundation Solutions
- Products Manufactured in the USA
- 50+ Locations Nationwide



Recognized as Code Compliant to Meet International Building Codes



HELICAL PILE DESIGN SOFTWARE: FOUNDATION SOLUTIONS™

Create Profiles

- Simulate soil profiles, including peat
- Anchors with varying diameter and helix configurations
- Vertical/battered/tie-back pile design
- Custom pile design

Mobile-friendly

- Web-based software
- Use anywhere, anytime
- Tablet and PC-friendly

Share & Report

- PDF output for submittals
- Share projects with other registered users

Profile	Start Depth (ft)	Layer	N	c	a
1	0	Clay	4	500	0.9
2	2	Peat	3	25	0
3	5	Clay	11	1285.5	0.84
4	8	Sand	4	0	0
5	12	Clay	10	1143	0.9
6	15	Sand	15	0	0
7	20	Sand	20	0	0
8	25	Sand	25	0	0

Parameter	Value	Unit
Allowable Frictional Resistance:	9.08	kip
Allowable End Bearing Capacity:	25.92	kip
Allowable Pile Capacity:	35.0	kip
Appr. Pile Embedment Depth:	42	ft
Required Min. Installation Torque:	7800	ft-lbs

www.ramjack.com/FoundationSolutions
888-332-9909

