



Twining Consulting Inc.
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Listing No.
RAD-1372

Twining Consulting Inc. Listing Report

Issued Date: Jul 2024
Revision Date: N/A
Subjected to Renewal: Feb 2025

Product: Concrete, Rock & Soil Ground Anchors
Report Holder: Oliver Technologies Inc.
467 Swan Avenue
Hohenwald, TN 38462
olivertechnologies.com
1 (800)-284-7437
Plant Location: 467 Swan Avenue
Hohenwald, TN 38462

Compliance with the following codes:

- 2021, 2018, 2015 and 2012 International Building Code (IBC)
- 2021, 2018, 2015 and 2012 International Residential Code (IRC)
- 24 CFR § 3280 and 3285 Subpart E, Manufactured Home Construction and Safety Standards, United States Department of Housing and Urban Development (HUD).

SECTION 1: INTRODUCTION

At the request of Oliver Technologies Inc., Twining Consulting Inc. has examined their Concrete, Rock & Soil Ground Anchors designed to provide support for Code-required Manufactured Homes, Modular Homes, Residential Structures, and Commercial Structures for various classes of soil or concrete.

SECTION 2: DESCRIPTION

The models in Table 1 series for Concrete, Rock & Soil Ground Anchors are designed for use in HUD code manufactured homes, modular homes, residential structures and commercial structures in conjunction with engineered foundation systems to provide structural support and stability.

All Oliver Technologies Inc. anchors are manufactured using steel in conformance with ASTM A-36.

All Oliver Technologies Inc. anchors have a minimum working load of 3,150 lbs. and a minimum ultimate load of 4,725 lbs.

SECTION 3: INSTALLATION

The application of Oliver Technologies Inc.'s Concrete, Rock & Soil Ground Anchors is for use on HUD code manufactured homes, modular homes, residential structures, and commercial structures in conjunction with engineered foundation systems. The system shall be installed in accordance with the manufacturer's installation instructions and the requirements of this listing for soil capacities as required by section 24 CFR § 3285.202 of the HUD Standards for Manufactured Housing, IRC Appendix E, Sections AE502, AE601, AE602, AE604 and AE605, to the IBC 2015,2018 and 2021 for commercial use and section 1806.2 Soil Bearing Values. The product(s) may also be installed in other suitable engineered applications for modular, commercial and residential building systems that comply with product designs and local jurisdiction requirements.

The Installation of the ground anchors is to be in accordance with the Manufacturer's Installation Instructions. In addition, each anchor must be installed as evaluated in accordance with the soil classification listed in Table 1.

SECTION 4: EVIDENCE SUBMITTED

1. Testing has been conducted to verify the compliance of Oliver Technologies Inc. Concrete, Rock & Soil Ground Anchors to the Twining Consulting Inc. Listing Requirements for Ground Anchors.
2. The quality and process control system used in the manufacture has been submitted to Twining Consulting Inc. An adequate method of traceability is maintained by the manufacturer. A follow-up quality assurance audit program is maintained by Twining Consulting Inc.

SECTION 5: MARKINGS / IDENTIFICATION

Oliver Technologies Inc. Concrete, Rock & Soil Ground Anchors are to be Identified with one of the following criteria:

1. Twining Consulting Inc. Conformity Logo: AA-650



2. Listing identification number RAD-1372.

Oliver Technologies Inc. will also put the Twining Consulting logo on their website to show that their quality assurance program is being monitored by an ISO/IEC 17020 inspection agency AA-650.

SECTION 6 - RECOMMENDATIONS

Oliver Technologies, Inc. Concrete, Rock & Soil Ground Anchor systems provide reliable support and stability when installed according to the specified guidelines. Twining Consulting Inc. recommends that the following guidelines be followed for this listing to maintain compliance.

1. The Twining Consulting Inc. plant audit and sample selection testing program be continued at the prescribed listing frequency (4 times a year) to evaluate the ongoing compliance of the product, records keeping, traceability and overall Quality Control adherence to the Quality Control Manual.
2. Ensure all anchorage system components are clearly marked with identification numbers, and other relevant information to facilitate traceability.
3. Update installation manuals and training materials as needed to reflect any changes in standards or best practices.
4. All products are installed per the manufacturer's installation instructions and section 3 of this listing.

SECTION 7: APPROVAL:

This listing is subject to annual re-examination and renewal.

Table 1: Anchor Soil Classification Table

Product	Application	Soil Class	Test Value	Rod Length (in.)	Rod Diameter (in.)	Helix Diameter (in.) & Qty			Finish	Stabilizer
						4"	6"	7"		
OT30CDP	Rock Anchor	1	N/A (Solid Rock)	30	3/4				Painted	OT MSP 2P
OT3044AP	Ground Anchor	2	550 in-lbs. or more	30	5/8	2			Painted	OT MSP 2P
OT3044BP	Ground Anchor	2	550 in-lbs. or more	30	3/4	2			Painted	OT MSP 2P
OT3044BPC	Ground Anchor	2	550 in-lbs. or more	30	3/4	2			Painted	Integrated Cap
OT3646BP	Ground Anchor	3	350-500 in-lbs.	36	3/4	1	1		Galvanized	OT MSP 2P
OT3646BG	Ground Anchor	3	350-500 in-lbs.	36	3/4	1	1		Painted	OT MSP 2P
OT3646BPC	Ground Anchor	3	350-500 in-lbs.	36	3/4	1	1		Painted	Integrated Cap
OT4244BP	Ground Anchor	4a	276-350 in-lbs.	42	3/4	2			Painted	OT MSP 2P
OT486A	Ground Anchor	4a	276-350 in-lbs.	48	5/8		1		Galvanized	OT MSP1 <u>or</u> 1055-19
OT486B	Ground Anchor	4a	276-350 in-lbs.	48	3/4		1		Galvanized	OT MSP1 <u>or</u> 1055-19
OT607B	Ground Anchor	4b	175-275 in-lbs.	60	3/4			1	Galvanized	OT MSP1 <u>or</u> 1055-19
OT CAD	Concrete Anchor	N/A	2,500 psi concrete	3	5/8				Painted	N/A
OT CADG	Concrete Anchor	N/A	2,500 psi concrete	3	5/8				Galvanized	N/A
OT CAWP	Concrete Anchor	N/A	2,500 psi concrete	8	5/8				Painted	N/A
OT CAW-S	Concrete Anchor	N/A	2,500 psi concrete	9	5/8				Painted	N/A