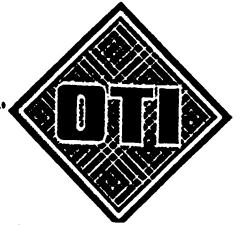


OLIVER TECHNOLOGIES, INC.

Engineered Tie Down System



Manufactured home tie down Calculations and schedules for single, double and triple wides.
ETS 140

30" Auger Can only be used in class 1, 2 & 3 soils



DESIGN LOADS

Wind	15 PSF (70 mph exposure "c")
Wind	25 PSF (85 mph exposure "c")
Wind	35 PSF (100 mph exposure "c")
Soil Bearing	1000 PSF
Seismic Zone	4

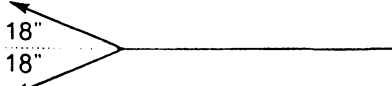
Oliver Technologies tie down straps meet federal specifications QQ-S-781H for Type 1, Class B, Grade 1 strapping and be at least 1-1/4" x .035, zinc plated.

Earth Augers	4725# min. total load capacity
	3150# working load capacity
Cross Dives	4725# min. total load capacity
	3150# working load capacity
Concrete Slab Anchors	4725# min. total load capacity
	3150# working load capacity
Tie Down Straps	4725# min. total load capacity
	3150# working load capacity

Note: Maximum soil pressure is 1000 P.S.F. without soil report.

GENERAL NOTES:

- The charts shown herein are for the required number of tie downs on the sides of the Manufactured Home.
- Tie downs are required at each chassis beam, each end of each transportable section of the Manufactured Home and can be any of the types shown herein.
- Combinations of the different types of tie downs can be used.
- In the event an earth auger cannot be installed due to an obstruction, use of cross drive anchors are permissible, provided 2 cross drive anchors are installed for each earth anchor that cannot be installed.
- For all tie down installations, the Manufactured Home chassis members are shown as "I" beams for illustration purposes only. Chassis can also be "C" shaped or RFC shaped.
- End tie downs can be located within 18" of either side of chassis beam axis as shown.
One end tie down required at each I beam end.
- The sizes, types, lengths, etc. of materials shown herein are minimum. Larger, longer, heavier materials supplied by Oliver Technologies, Inc. may be used at the same spacing and locations shown



8 Alternate devices may be substituted with engineers approvals

9 Equipment listing report See Page(s) 10,11 & 12

Soil Test Probe

A soil test probe is recommended on each project to identify soil classification and a selection of the proper anchor to be used

Engineer Approval

5/22/07

Exp. 3/31/09

State Approval

ENGINEERED TIEDOWN SYSTEM
APPROVED
SUBJECT TO CORRECTIONS NOTED

Approval does not authorize or approve any omission or deviation from requirements of applicable State laws and regulations.

State of California
Department of Housing and Community Development
DIVISION OF CODES AND STANDARDS

By Andrew Date 5/23/07
(Signature)

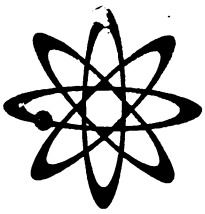
SPA NO ETS 140

This Plan Approval Expires 5/19/09

10 This tie down system meets the requirements of section 13363, subsection (a)



Oliver Technologies, Inc.
467 Swan Ave (P.O. Box 9)
Hohenwald, TN 38462
1-800-284-7437



AMERICAN

INDUSTRIAL TESTING

& ANALYTICAL LABORATORIES

April 13, 2007

LO-FJ90036

Oliver Technologies, Inc.
P.O. Box 9
Hohenwald, TN. 38462
Phone: (931) 796-4555
Fax: (931) 796-8811

Mr. Oliver:

Having completed the in house audit of your quality control, quality assurance, procurement, welding procedure, installation instructions, etc., American Industrial Testing in compliance with the rules and regulations of the State of California Department of Housing and Community Development Division of Codes and Standards lists the following products:

Model #	Description
OT3044AP	30" x 5/8" soil anchor with 2 - 4" helix
OT3044BP	30" x 3/4" soil anchor with 2 - 4" helix
OT3646BP	36" x 3/4" soil anchor with 1 - 4" helix
OT486AP	48" x 5/8" soil anchor with 1 - 6" helix
OT486BP	48" x 3/4" soil anchor with 1 - 6" helix
OTMSP2P	11" Stabilizer Plate
OTCAP1	Stabilizer Device (Cap)
OT36CDP	24" Cross Drive Rock Anchor
OTCADP	Concrete Patio Anchor (Dry Set)
OTCAWP	Concrete Wet Set Anchor
OT Crimp Seal	Crimp Seal
OTST-1	Buckle
OTS/B	Slotted Bolt & Nut (Split Bolt)
OTGALST37	1 1/4" x 37' Galvanized Strap
OTGALST600	1 1/4" x 600' Galvanized Strap
OTFT1-5	1 1/4" x 5' Strapping with J-Hook
OTFT1-7	1 1/4" x 7' Strapping with J-Hook
OTFT1-8	1 1/4" x 8' Strapping with J-Hook
OTFT1-10	1 1/4" x 10' Strapping with J-Hook
OTFT1-12	1 1/4" x 12' Strapping with J-Hook
OTFT1-14	1 1/4" x 14' Strapping with J-Hook

Model #	Description
OTFT1-18	1 1/4" x 18' Strapping with J-Hook
OTST1-5	1 1/4" x 5' Strapping with Buckle
OTST1-7	1 1/4" x 7' Strapping with Buckle
OTST1-8	1 1/4" x 8' Strapping with Buckle
OTST1-10	1 1/4" x 10' Strapping with Buckle
OTST1-12	1 1/4" x 12' Strapping with Buckle
OTQC1-5	1 1/4" x 5' Strapping with Side Wall Quick Connector
OTQC1-7	1 1/4" x 7' Strapping with Side Wall Quick Connector
OTSFT1-5	1 1/4" x 5' Strapping with Swivel Frame Tie
OTSFT1-7	1 1/4" x 7' Strapping with Swivel Frame Tie
OTSFT1-8	1 1/4" x 8' Strapping with Swivel Frame Tie
OTSFT1-10	1 1/4" x 10' Strapping with Swivel Frame Tie
OTSFT1-12	1 1/4" x 12' Strapping with Swivel Frame Tie
OTLT	Longitudinal Tie

If we can answer any questions concerning this report or be any further assistance feel free to let me know.

Respectfully Submitted,
American Industrial Testing

Will Jackson
Assistant Manager