Residential Code, Appendix BA:
BA114 Footings & Foundations

Exception…Where a foundation system is designed by a registered design professional in accordance with the design requirements of the Manufactured Home Standards and the provisions of this code such that it will otherwise be protected from the effects of frost, such foundation system shall not required to extend below the frost line.

All cast-in-place concrete shall be minimum 3,000 psi at 28 day compressive strength

Alternative Foundations
Additional Requirements

Foundation Design

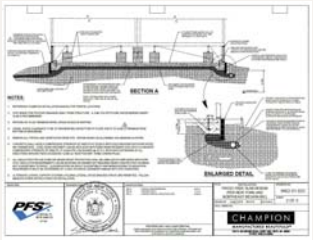
Before installer provides support or anchorage different than specified in the installation instructions …installer must:

Alternative Foundations
Additional Requirements

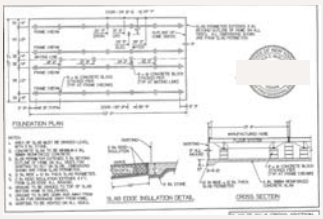
Foundation Design

Before installer provides support or anchorage different than specified in the installation instructions …installer must:

1. **Obtain DAPIA-approved designs and instructions prepared by manufacturer**; or



Alternative Foundations
Additional Requirements



Foundation Design

Before installer provides support or anchorage different than specified in the installation instructions …installer must:

1. Obtain DAPIA-approved designs and instructions prepared by manufacturer; or
2. **Obtain alternative design prepared by licensed design professional indicating support and anchorage consistent with MH design conforms to requirements of HUD Code AND has manufacturer and DAPIA approval.**

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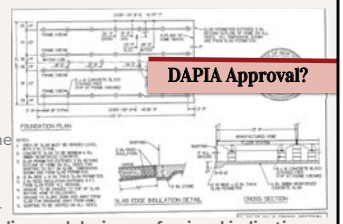
Alternative Foundations
Additional Requirements



DAPIA Approval?

Foundation Design

Before installer provides support or anchorage different than specified in the installation instructions …installer must:

1. Obtain DAPIA-approved designs and instructions prepared by manufacturer; or
2. **Obtain alternative design prepared by licensed design professional indicating support and anchorage consistent with MH design conforms to requirements of HUD Code AND has manufacturer and DAPIA approval.**

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Residential Code, Appendix BA:
BA 118 Exits

Exterior stairways and ramps…shall comply with BA102.2 and all other applicable provisions of this code

BA102.2 Additions.
R318 Means of Egress
Stairways, ramps…shall comply with this section
R321 Guards
Porches, stairways, ramps more than 30" above grade

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Residential Code
R318.5 Attachment

Required exterior stairs shall be positively anchored to the primary structure to resist both vertical and lateral forces **OR shall be designed to be self-supported**

HUD Code requires porches to be?

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Residential Code
R318.3 Landings at doors

- Landing are required ***"on each side of each exterior door"***
- Not less than the width of the door with a depth of 36"

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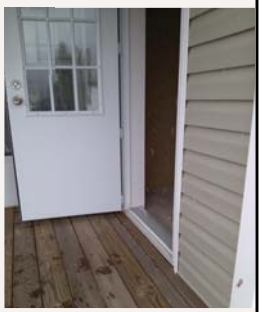
Residential Code
R318.3.1 Landings at doors

- Landing not more than 1 ½ inches lower than the threshold
- Exception: Landing not more than 8 ¼ inches lower than the threshold, provided that the door does not swing over the landing



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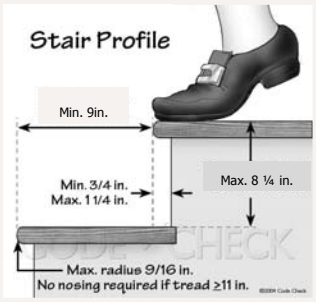
Residential Code
R318.7.1 R318.7.5.1 & R318.7.5.2 Stair measurement

- Minimum stair clear width: 36 inches
- Maximum Riser height: 8 ¼ inches
- Minimum tread depth: 9 inches
- Shall not exceed the smallest by more than: 3/8 inch



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Residential Code
R318.7.6 Landings for stairways

There shall be a floor landing at the top and bottom of each stairway.

Minimum 36” x 36”

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Residential Code
R403.1.4 Minimum [Footing] depth

Unless protected from frost… supports of buildings and structures shall extend below the frost line

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Residential Code
R403.1.4 Minimum [Footing] depth

Unless protected from frost… supports of buildings and structures shall extend below the frost line

Exception: Deck not supported by a dwelling shall have a footing **not less than 12 inches below the undisturbed ground surface.**

manufactured.housing@dos.ny.gov

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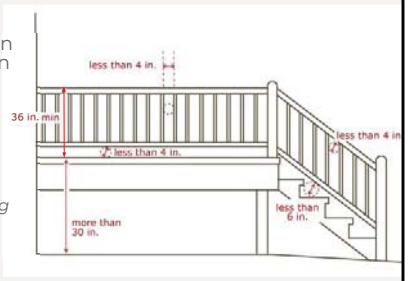
Residential Code
R321 Guards

Decks, landing more than 30" above grade within 36" horizontally to the edge

Open sided walking surfaces

Guards meeting this drawing



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Residential Code, Appendix BA:
BA 102.2 Additions

Additions shall conform to one of the following:

1. Certified under HUD Construction and Safety Standards Act
2. Designed and constructed to conform with HUD Construction…
3. Designed and constructed to conform with new construction requirements this code (RCNY)

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Residential Code, Appendix BA:
BA 102.2 Additions

Building additions and accessory structures shall not be structurally supported by the manufactured home.

Exception. Building additions and accessory structures supported by a MH shall be in accordance with designs provided by the home manufacturer or with designs prepared by a design professional in accordance with acceptable engineering practice.

Residential Code, Appendix BA:
BA 104.2 Alterations and repairs

- Alterations and Repairs allowed without requiring compliance with all the requirements of the Uniform Code
  - Must conform to requirements of Appendix BO
  - Create no hazard to life, health or safety by such addition, alteration or repair
- Alterations and Repairs nonstructural in nature, not affecting structural members or fire protection maybe made with materials similar to original home construction

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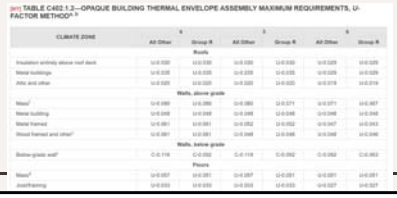
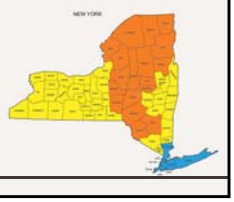
Residential Code, Appendix BA:
BA 104.2 Alterations and repairs

- **Exception** Installation and/or replacement of glass shall be in conformance with the *fenestration* rating requirements for new installations
  - Fenestration: windows, fixed or operable, doors, glass block, skylights





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Residential Code, Appendix BA:
BA 104.2 Alterations and repairs

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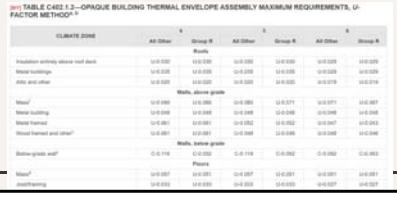

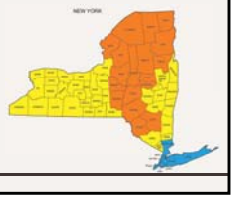

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Residential Code, Appendix BA:
BA 104.2 Alterations and repairs

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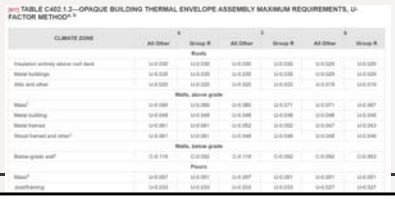

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Residential Code, Ap
BA 104.2 Alterations an

- **Exception** Install nt of glass shall be in conformance wit g requirements for new installations
  - Fenestration: win , glass block, skylights

MHC Consultants LLC

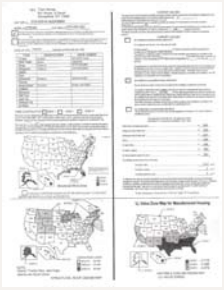
Residential Code, Ap
BA 104.2 Alterations an

- **Exception** Install of glass shall be in conformance wit requirements for new installations
  - Fenestration: wind glass block, skylights

Installation Instructions
Getting Started

Locate the Data Plate

Confirm
- Information
- Equipment Data
- Design Data



HUD Data Plate

Manufacturer Info
HUD Label
Serial Number
Formaldehyde

MFG. Titan Homes
951 Route 12 South
Sanoerfield, NY 13455
UNIT SER. # 019-000-H-A004986A
MODEL # EP8144 HUD SEAL # NTA1931222
DATE OF MFG. 3/2/2020 "DESIGN APPROVED BY PFS"

HUD Data Plate

Manufacturer Info
HUD Label
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DATE OF MFG. 3/2/2020 "DESIGN APPROVED BY PFS"

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CHAMPION HOMES

HUD Data Plate

Confirm Wind Zone

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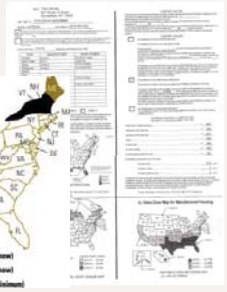
CHAMPION HOMES

HUD Data Plate

Roof Zone



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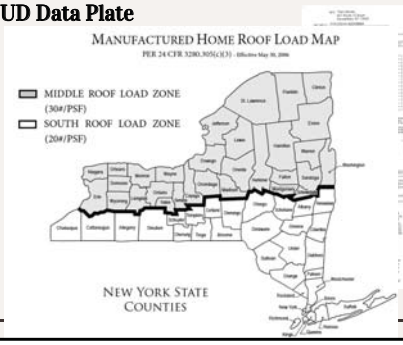
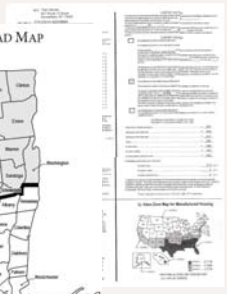
CHAMPION HOMES

HUD Data Plate

Roof Zone





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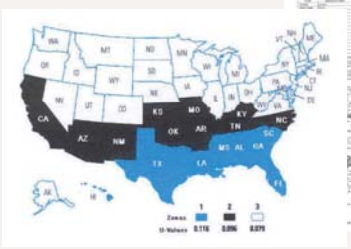
CHAMPION HOMES

HUD Data Plate

Thermal Zone



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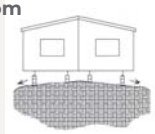
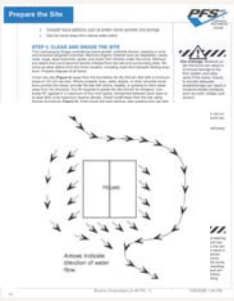
Installation Instructions

Prepare the Site

- Crown site away from foundation
  - minimum slope of ½" per foot for first ten feet
- **Direct runoff away from the home**





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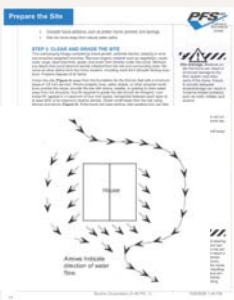
Installation Instructions

Prepare the Site

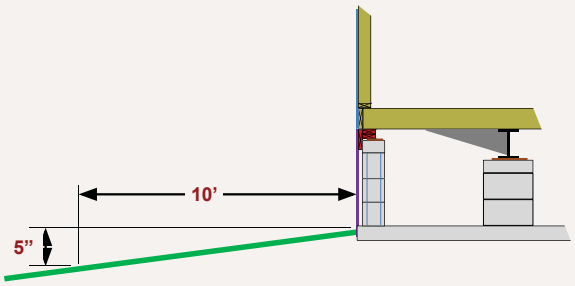
- Crown site away from foundation
  - minimum slope of
    ten feet
- **Direct runoff away**

the home

Site drainage. Moisture under the home can result in structural damage to the floor system and other parts of the home. Failure to provide adequate slope/drainage can result in moisture-related problems such as mold, mildew, and erosion.



...minimum slope of ½" per foot for first ten feet...



Installation Instructions

Determine Soil Conditions

Soil Type

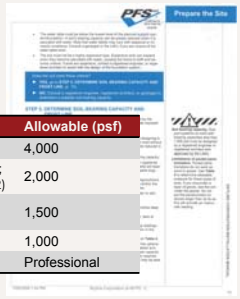
↓

Soil Bearing Capacity

Default capacity: 1500 psf, unless site-specific information requires lower values

Installation Instructions
Determine Soil Conditions

Soil Bearing Capacity



Soil Type (and classification)	Allowable (psf)
Rock or hard pan (class 1)	4,000
Sandy gravel and gravel; very dense and/or cemented sands; coarse gravel/cobbles; preloaded silts, clays and coral (class 2)	2,000
Sand; silty sand; clayey sand; silty gravel; medium dense coarse sands; sandy gravel; very stiff silt, sand clays (class 3)	1,500
Clay sandy clay, silty clay, clayey silt (classes 4A & 4B)	1,000
Uncompacted fill, peat, organic clays (class 5)	Professional

Installation Instructions
Determine Soil Conditions

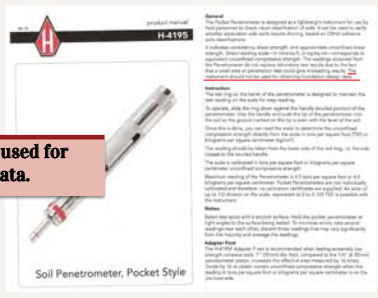
Soil Bearing Capacity

Soil Type (and classification)	able (psf)
Rock or hard pan (class 1)	
Sandy gravel and gravel; very dense an course gravel/cobbles; preloaded silts, c	
Sand; silty sand; clayey sand; silty grave sands; sandy gravel; very stiff silt, sand	
Clay sandy clay, silty clay, clayey silt (cl	
Uncompacted fill, peat, organic clays (cl	sional

Soil. Inadequate soil bearing capacity or a support system mismatched to the soil characteristics can result in excessive or differential settlement of the home, which can cause the home to go out of level, resulting in jammed doors and windows, cracks in finishes and ruptured plumbing connections.

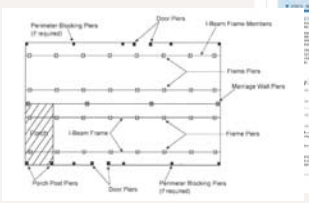
Pocket Penetrometer

The instrument should not be used for obtaining foundation design data.



Installation Instructions
Install Footings

Determine Pier Locations using Instructions



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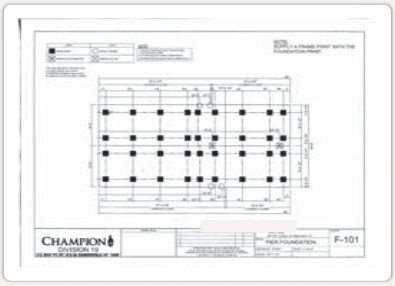
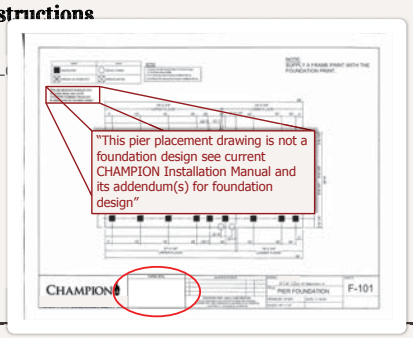
Installation Instructions
Install Footings

Determine Pier Locations using Instructions



Installation Instructions
Install Footings

Determine Pier L



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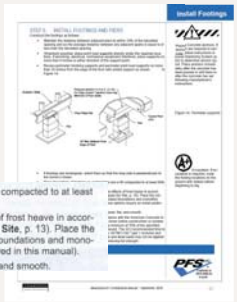
Installation Instructions
Install Footings

Undisturbed soil
At/below Frost Line
Level, flat smooth



- Place the bottom of footings on undisturbed soil or fill compacted to at least 90% of its maximum relative density.
- In freezing climates protect footings from the effects of frost heave in accordance with any LAHJ requirements (see **Prepare the Site**, p. 13). Place the bottom of the footings below the frost line (insulated foundations and monolithic slabs are other frost protection options not covered in this manual).
- Make sure the top surface of the footing is level, flat, and smooth.

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Installation Instructions
Install Footings

Determine Pier Loads (Frame – no perimeter blocking required)

Roof Load zone and max. section widt						
Support Spacing	South (20psf)			Middle (30psf)		
	12ft	14ft	16ft	12ft	14ft	16ft
4ft	2490	2820	3140	2810	3170	3520
6ft	3730	4230	4710	4210	4760	5270
8ft	4980	5640	6270	5610	6340	7030
10ft	6220	7040	7840	7010	7920	8790

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Installation Instructions
Install Footings

6340

Determine Minimum Footer Size for Square & Rectangular Shapes
(Default Soil Capacity)

Soil Bearing Capacity	Min. Footing Area (sq. in.)	Min. Footing Size (in.)	8x16 single stack		16x16 double stack	
			Min. Thickness	Max. Capacity	Min. Thickness	Max. Capacity
1500	256	16x16	6	2660	6	2660
	384	24x16	6	4000	6	4000
	576	24x24	8	6000	6	6000
	1024	32x32	12	8000	8	10660

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Installation Instructions
Install Footings

Footer size 32" x 32" = 1024 in^2

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Installation Instructions
Install Footings

6340

Determine Minimum Footer Size for Circular Shapes
(Default Soil Capacity)

Soil Bearing Capacity	Min. Footing Area (sq. in.)	Min. Footing Dia. (in.)	8x16 single stack		16x16 double stack	
			Min. Thickness	Max. Capacity	Min. Thickness	Max. Capacity
1500	254	18	6	2650	-	-
	452	24	"	4710	6	4710
	615	28	"	6410	"	6410
	800	32	"	8000	"	8370

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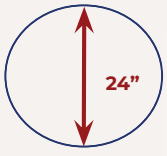
Installation Instructions
Install Footings

Footer size 24" round



24" Diameter equivalent
$3.14*12^2$= 452 sq.in.

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Installation Instructions
Footer Size

452 sqn

Soil Bearing Capacity	Min. Footing Area (sq. in.)	Min. Footing Dia. (in.)	8x16 single stack		16x16 double stack	
			Min. Thickness	Max. Capacity	Min. Thickness	Max. Capacity
1500	254	18	6	2650	-	-
	452	24	"	4710	6	4710
	615	28	"	6410	"	6410
	800	32	"	8000	"	8370

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Installation Instructions
Install Footings

4710

(Frame – no perimeter blocking required) Portion of Table 6 shown.

Roof Load zone and max. section width						
Support Spacing	South (20psf)			Middle (30psf)		
	12ft	14ft	16ft	12ft	14ft	16ft
4ft	2490	2820	3140	2810	3170	3520
5ft	3110	3520	3920	3510	3960	4400
6ft	3730	4230	4710	4210	4760	5270
8ft	4980	5640	6270	5610	6340	7030
10ft	6220	7040	7840	7010	7920	8790

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Re-evaluate Soil Bearing Capacity

6340

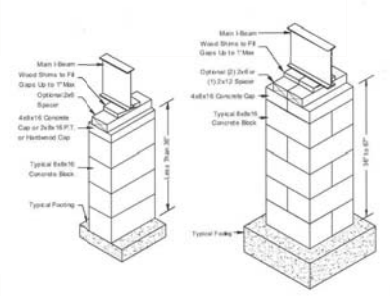
24"

Soil Bearing Capacity	Min. Footing Area (sq. in.)	Min. Footing Dia. (in.)	8x16 single stack		16x16 double stack	
			Min. Thickness	Max. Capacity	Min. Thickness	Max. Capacity
1500	254	18	6	2650	-	-
	452	24	"	4710	6	4710
	615	28	"	6410	"	6410
	800	32	"	8000	"	8370
2500	254	18	6	4410	-	-
	452	24	"	7850	6	7850
	615	28	"	8000	"	10690
	800	32	"	-	"	13960

Installation Instructions
Pier Construction

8x16 Single Stack to 36”

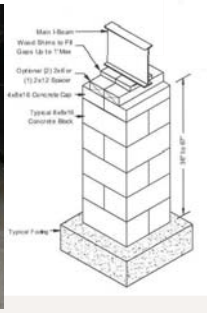
16x16 Double Stack to 67”



Installation Instructi
Pier Construction

8x16 Single Stack to 3

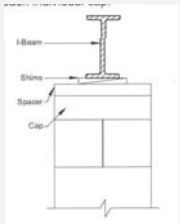
16x16 Double Stack to



Installation Instructions
Pier Construction

Caps

- Cap hollow block piers to distribute load
- Must be same LxW of pier blocks
- Must be perpendicular to both the main beam and blocks below
- Dimensions per Installation Instructions



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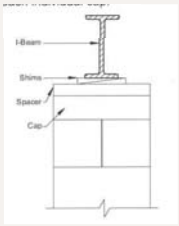
Installation Instructions
Pier Construction

Caps

- Cap hollow block piers to distribute load
- Must be same LxW of pier blocks
- Must be perpendicular to both the main beam and blocks below



Champion Permissible Caps
Solid Masonry 4"x8"x16"
PT Lumber 2"x8"x16"
Corrosion Protected Steel min. ¼" thick

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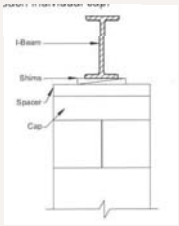
Installation Instructions
Pier Construction

Spacers

- When the space to be shimmed is greater than 1" but less than a solid cap block or pier block, use hardwood dimensional lumber as spacer



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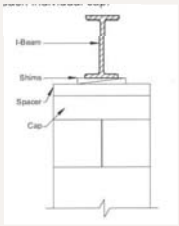
Installation Instructions
Pier Construction

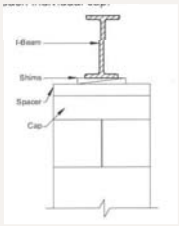
Spacers

- When the space to be shimmed is greater than 1" but less than a solid cap block or pier block, use hardwood dimensional



Champion Permissible Spacers
Nominal 1" or 2" thick lumber
2" or 4" concrete block

Installation Instructions
Pier Construction



Shims
- Always in pairs
- Fill no more than 1" space
- Driven tight
- For split caps, install shims and spacers over EACH individual cap

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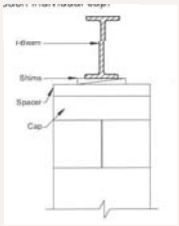
Installation Instructions
Pier Construction



Shims
- Always in pairs
- Fill no more than 1" space
- Driven tight
- For split caps, install shims and spacers over EACH individual cap

Champion Permissible Shims/Wedges
Hardwood min. 4" wide x 6" long x 1" thick.
Plastic must be listed with load capacity

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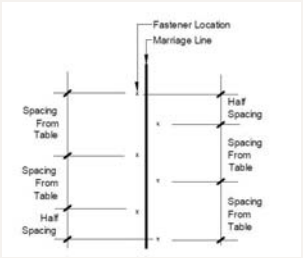
Installation Instructions
Multi-Sectional Fastening

5/16" x 4 ½" lag screw with washer
36" Spacing
Must penetrate the opposite rim joist by a minimum of 1 ½"

Additional fasteners:
each end of home
each side of through-the-rim crossover ducts



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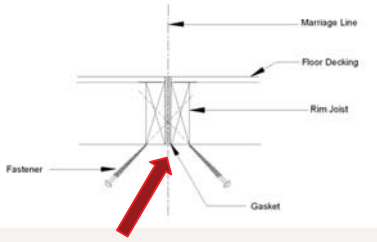
Installation Instructions
Multi-Sectional Fastening

Gaps between structural elements not to exceed 1". Gaps larger than ½" must be filled with plywood or shims. Home sections are to be in contact with each other.



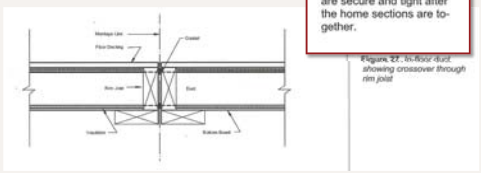
Installation Instructions
Multi-Sectional Fastening

HVAC Crossover Ducts

Installation Instructions
Multi-Sectional Fastening

HVAC Crossover Ducts

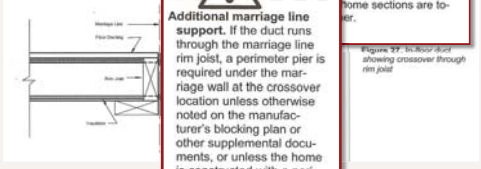
Checking through-the-rim-ducts. Ensure that through-the-rim-duct connections are secure and tight after the home sections are together.

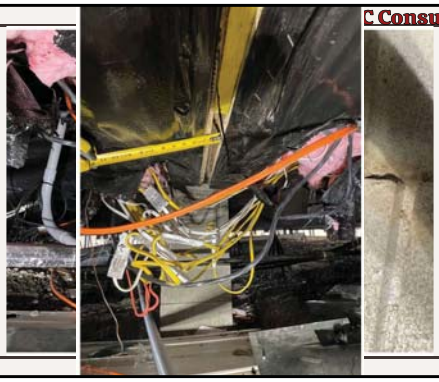


Installation Instructions
Multi-Sectional Fastening

HVAC Crossover Ducts

Additional marriage line support. If the duct runs through the marriage line rim joist, a perimeter pier is required under the marriage wall at the crossover location unless otherwise noted on the manufacturer's blocking plan or other supplemental documents, or unless the home is constructed with a perimeter support system.






AUG 26 2009

Installation Instructions
Plumbing Issues

Sanitary Sewer

- Piping shall be supported so as to ensure alignment and prevent sagging
- Hangers and anchors shall be of sufficient strength to maintain their share of the weight of pipe and its contents
- Hangers and strapping shall be of approved material

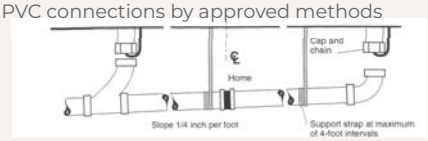
Installation Instructions
Plumbing Issues

Miscellaneous

- Drain, Waste and Vent

Support pipe 48”oc or less by approved method

ABS to PVC connections by approved methods



Installation Instructions
Plumbing Issues

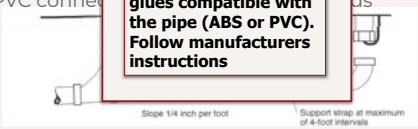
Miscellaneous

· Drain, Waste and

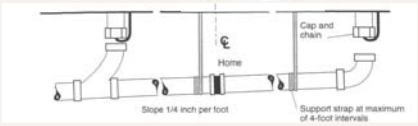
Support pipe 48"
method

ABS to PVC conne ds

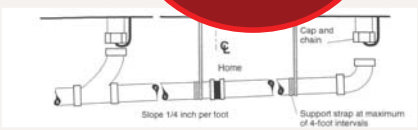
Use only solvents and glues compatible with the pipe (ABS or PVC). Follow manufacturers instructions



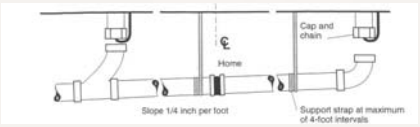
Plumbing Issues



Plumbing Issues



Plumbing Issues

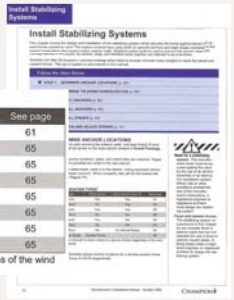


356

358

Installation Instructions
Stabilizing Systems

Determine anchor types / locations


Install Stabilizing Systems

Install Stabilizing Systems

TABLE 21. ANCHOR LOCATION TYPES[1]

Location	Type	Wind Zone I	Wind Zones II and III	See page
Sidewall	Frame	Yes	Yes	61
	Vertical	No	Yes	65
End wall	Frame	Yes	Yes	65
	Vertical	No	Yes	65
Tag Unit	Frame	Yes	NA	65
	Vertical	No	NA	65
Porch Post	Vertical	No	4 Vertical Straps	65
Off Set Unit	Same as Single	Section Home		65

[1] Connect any factory-installed sidewall tie-down straps to a ground anchor regardless of the wind zone in which the home is placed.

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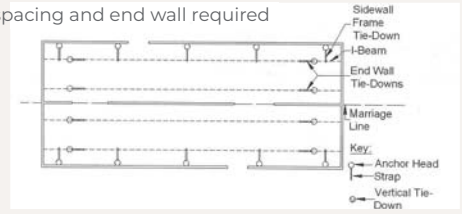
Installation Instructions
Stabilizing Systems

Determine anchor locations

Sidewall max. spacing and end wall required



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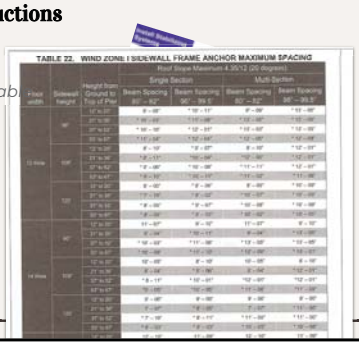
Installation Instructions
Stabilizing Systems

Sidewall spacing

Utilize appropriate table

Installation Instructions
Stabilizing Systems

Sidewall spacing
Utilize appropriate tab



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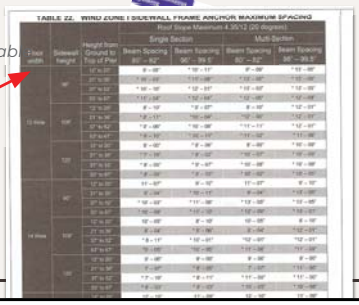
Installation Instructions
Stabilizing Systems

Sidewall spacing
Utilize appropriate tab

Floor Width



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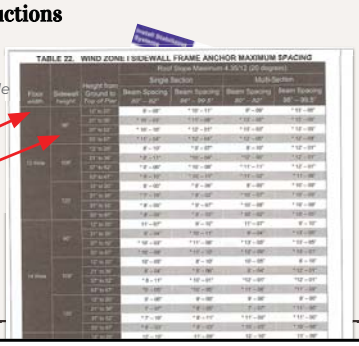
Installation Instructions
Stabilizing Systems

Sidewall spacing
Utilize appropriate table

Floor Width
Sidewall Height



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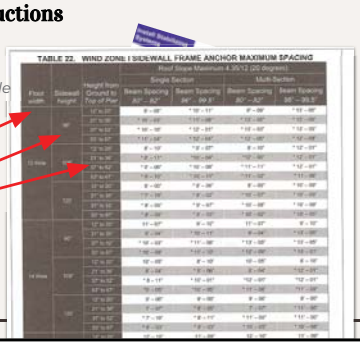
Installation Instructions
Stabilizing Systems

Sidewall spacing
Utilize appropriate table



Floor Width
Sidewall Height
Height of Pier

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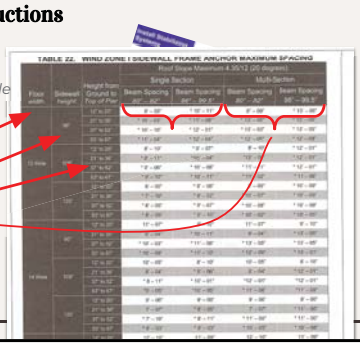
Installation Instructions
Stabilizing Systems

Sidewall spacing
Utilize appropriate table

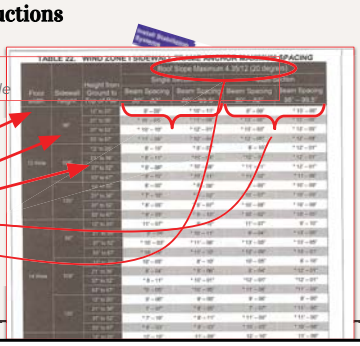


Floor Width
Sidewall Height
Height of Pier
Beam Spacing

MHC Consultants LLC

Installation Instructions
Stabilizing Systems

Sidewall spacing
Utilize appropriate table



Floor Width
Sidewall Height
Height of Pier
Beam Spacing
Roof Pitch

Installation Instructions
Stabilizing Systems

Example:
28' Double Wide
4:12 Roof Pitch

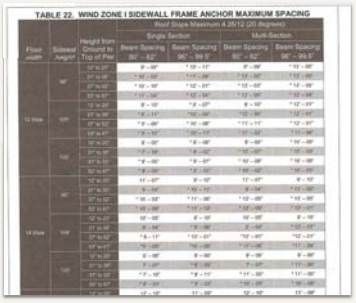


TABLE 22. WIND ZONE I SIDEWALL FRAME ANCHOR MAXIMUM SPACING

MHC Consultants LLC

Installation Instructions
Stabilizing Systems

Example:
28' Double Wide
4:12 Roof Pitch

14' Floor Width

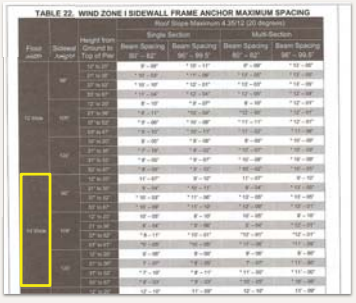


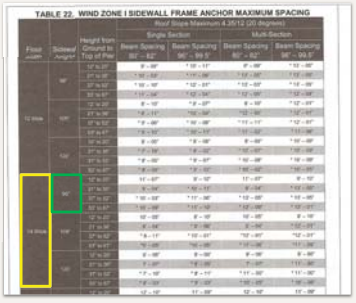
TABLE 22. WIND ZONE I SIDEWALL FRAME ANCHOR MAXIMUM SPACING

MHC Consultants LLC

Installation Instructions
Stabilizing Systems

Example:
28' Double Wide
4:12 Roof Pitch

14' Floor Width
96" Sidewall Height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MHC Consultants LLC

Installation Instructions
Stabilizing Systems

Example:
28' Double Wide
4:12 Roof Pitch

14' Floor Width
96" Sidewall Height
28" Height of Pier

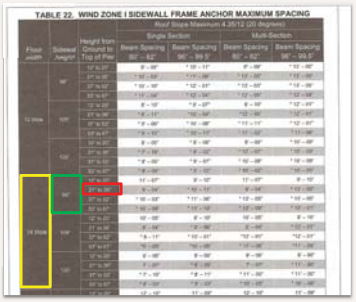


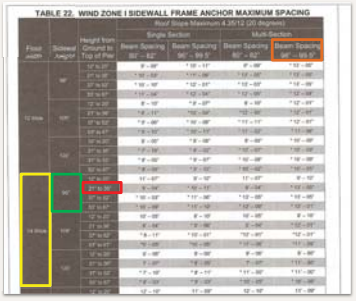
TABLE 22. WIND ZONE I SIDEWALL FRAME ANCHOR MAXIMUM SPACING

MHC Consultants LLC

Installation Instructions
Stabilizing Systems

Example:
28' Double Wide
4:12 Roof Pitch

14' Floor Width
96" Sidewall Height
28" Height of Pier
99.5" Beam Spacing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MHC Consultants LLC

Installation Instructions
Stabilizing Systems

Example:
28' Double Wide
4:12 Roof Pitch

14' Floor Width
96" Sidewall Height
28" Height of Pier
99.5" Beam Spacing

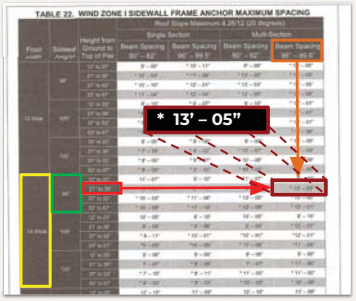


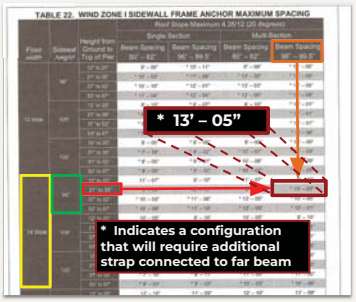
TABLE 22. WIND ZONE I SIDEWALL FRAME ANCHOR MAXIMUM SPACING

MHC Consultants LLC

Installation Instructions
Stabilizing Systems

Example:
28' Double Wide
4:12 Roof Pitch

14' Floor Width
96" Sidewall Height
28" Height of Pier
99.5" Beam Spacing



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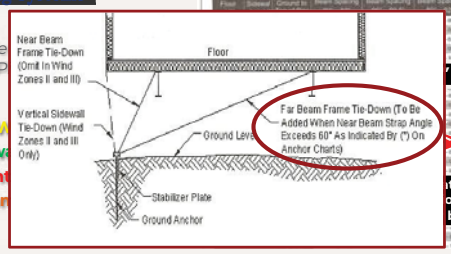
Installation Instructions
Stabilizing Systems

Example:
28' Double
4:12 Roof P

14' Floor W
96" Sidewa
28" Height
99.5" Bean



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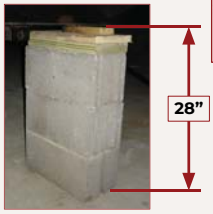
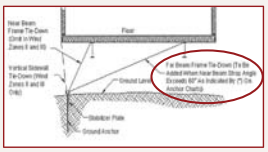
Installation Instructions
Stabilizing Systems

Example:
28' Double Wide
4:12 Roof Pitch

28" Height of Pier





28"

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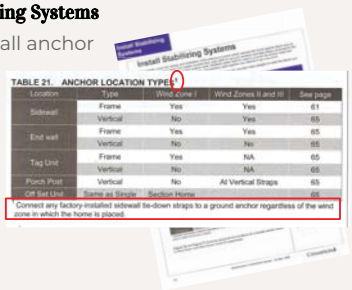
Installation Instructions
Stabilizing Systems

Side wall anchor



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Installation Instructions
Stabilizing Systems

Anchor Depths

- ground anchors “shall extend below the established frost line into undisturbed soil.”

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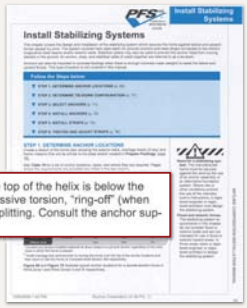
Installation Instructions
Stabilizing Systems

Anchor Depths

- ground anchors “shall extend below the established frost line into undisturbed soil.”

Make sure the anchor is of sufficient length such that the top of the helix is below the frost line. Select a shaft diameter sufficient to resist excessive torsion, “ring-off” (when the helix or anchor head separates from shaft) or shaft splitting. Consult the anchor supplier for guidance.



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Installation Instructions
Stabilizing Systems

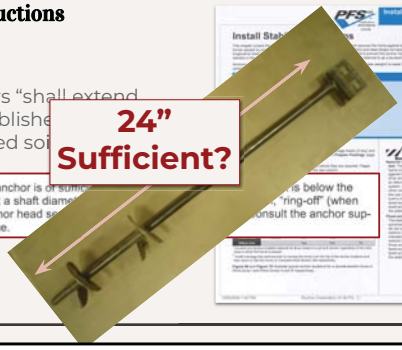
Anchor Depths

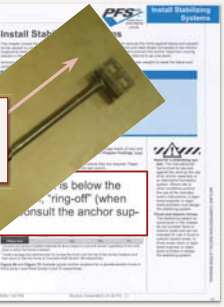
- ground anchors "shall extend below the establishe into undisturbed soi

24" Sufficient?

Make sure the anchor is or sumi frost line. Select a shaft diam the helix or anchor head s plier for guidance.

is below the "ring-off" (when consult the anchor sup-





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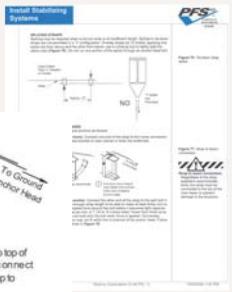
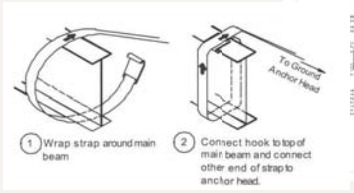
Installation Instructions
Stabilizing Systems

Tie Downs

Install per manufacturer's specifications





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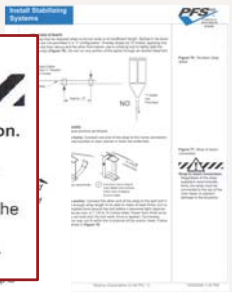
Installation Instructions
Stabilizing Systems

Tie Downs

Install per manufacture

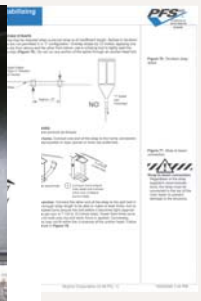
Strap to beam connection. Regardless of the strap supplier's recommendations, the strap must be connected to the top of the main beam to prevent damage to the structure.



Installation Instruc
Stabilizing Systems

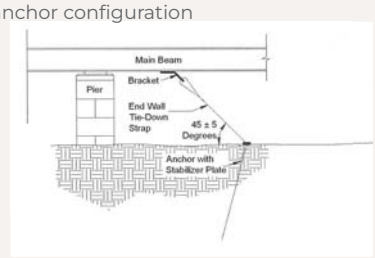
Tie Downs

Install per manufa



Installation Instructions
Stabilizing Systems

End wall anchor configuration

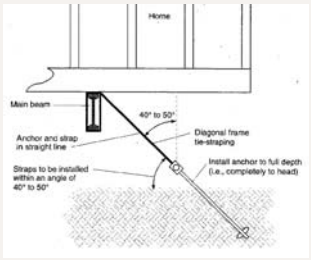


Installation Instructions
Stabilizing Sy

End wall an

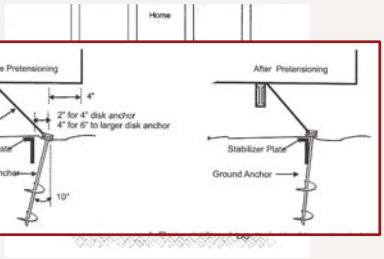
Installation Instructions
Stabilizing Systems

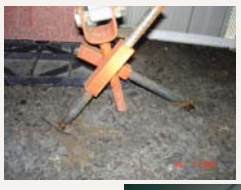
Stabilizer Plates?



Installation Instructions
Stabilizing Systems

Stabilizer Plates?





Installation Instructions
Stabilizing Systems

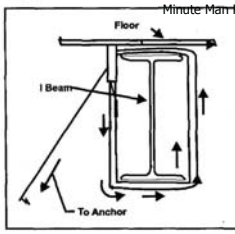
Single Slot Buckle

Installation Instructions
Stabilizing Systems

Single Slot Buckle

Single Slot Buckle With Strap

Minute Man Products



Enlarged View of Frame Beam

Place buckle at top of anchor side of beam, pass strap around beam and through buckle. Pass strap back around beam and through buckle to anchor. Strap will wrap beam twice. Remove all slack from system.

Installation Instructions
Stabilizing Systems

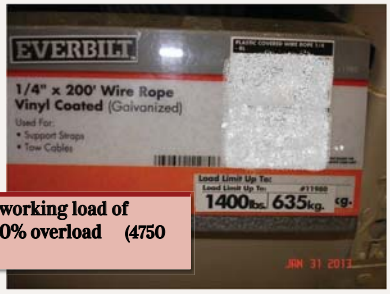
capable of resisting an working load of 3150 lbs and withstand a 50% overload (4750 lbs).

Installation Instructions
Stabilizing Systems

capable of resisting an working load of 3150 lbs and withstand a 50% overload (4750 lbs).

What is the working load of ¼" steel cable?

Working load of ¼" steel cable: 1400 lbs. Code Compliant???



"…capable of resisting an working load of 3150 lbs and withstand a 50% overload (4750 lbs)."

Installation Instructions
Stabilizing Systems

- Manufactured Anchoring Systems

Certified by design prof.

Acceptable to AHJ

Frost protected slab or footing to frost line

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Installation Instructions

Stabilizing Systems

- Manufactured Ancho
- Certified by design pr
- Acceptable to AHJ
- Frost protected slab o

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Installation Instructions

Stabilizing System

- Manufactured
- Certified by des
- Acceptable to A
- Frost protected

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Installation Instru

Stabilizing System

- Manufactured
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Installation Instru
Stabilizing System

- Manufactured
- Certified by des
- Acceptable to A
- Frost protected

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Installation Instructions
Stabilizing Systems

- Manufactured Anchoring Systems
- Installed per manufacturer's installation instructions

Do You Read Them?

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Installation Instructions
Stabilizing Systems

- Manufa
- Installed
  instruc

Installation Instructions
Stabilizing Systems

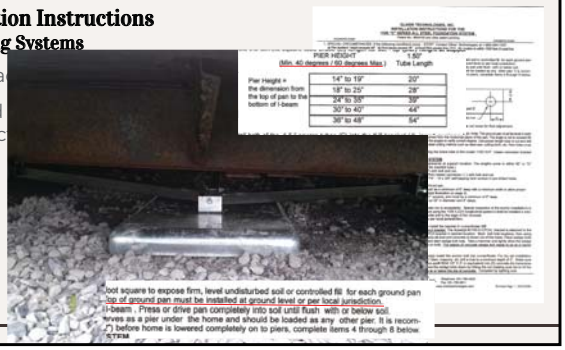
- Manufa

Installed
instruc

Installation Instructions
Stabilizing Systems

- Manufa

Installed
instruc

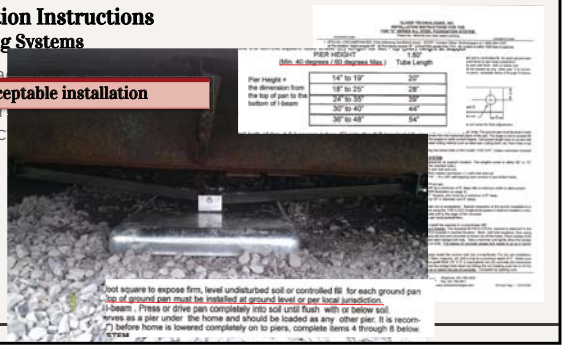


Installation Instructions
Stabilizing Systems

- Manufa

Not an acceptable installation

Installed
instruc



Important Update:

There are new installation instructions for all new alternative anchoring systems that started **November 3rd.**

Important Update:

There are new install native anchoring systems that started

9/5/2025

To Whom It May Concern

Following the recommendation of the Alabama Manufactured Housing Installation Task Force, along with a growing consensus among industry professionals, vertical anchorage for uplift resistance is recognized as a safety enhancement to any home installation.

Effective September 17, 2025, aligning with the updates to the HUD Code and supported by industry professionals, alternative foundation designs will now exceed HUD Code requirements and include specific uplift protection for all homes being placed in Wind Zone I.

To support a smooth transition and allow distributors and installers to familiarize themselves with this change and align inventories of product, we will allow a grace period through November 3, 2025. During this time, both the prior and updated instructions will be accepted.

Installers and inspectors should refer to the updated installation instructions provided by the anchor system manufacturers to ensure full compliance with the revised standards by November 3, 2025.

Contact your local supplier for updated manufacturer's installation instruction updates or questions regarding this change.

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TIE DOWN
MANUFACTURING INGENUITY

Xi2-24 Ground Foundation System Installation Instructions for Wind Zone I, II & III Except Florida and California

Effective November 3, 2025 US Patent No.11,898,318

The Xi2-24 System Instructions use the lateral and longitudinal struts to replace normal lateral frame tie and longitudinal end tie anchorage and stabilizer plates. In addition the system requires a minimum amount of uplift anchors in Zone I for enhanced wind protection. Check anchor charts for details

Installation Requirements

- Install in any type soil, 4B (175-275 lbs.) or better.
- Main rail spacing must be 75.5" – 99.5", 112" exception with proper strut.
- Maximum pier height at system 48", with 6" maximum rise from location of system to end of home. For all other piers use the home manufacturers set up instructions.
- Maximum vertical projection at sidewall is 9' wall and roof rim (9' wall and 12" eave). Higher walls may be used, when possible for design

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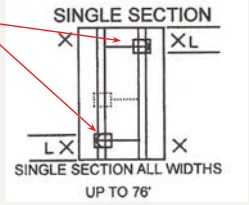
Alt. Tie Downs & End Straps

- 2 Lateral & Longitudinal systems
- At least 2 ft but no more than ¼ the length from the end



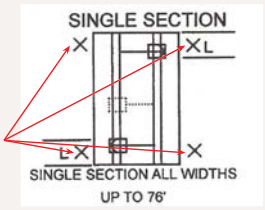
4/12 or 5/12 roof

Oliver 1100 V

MHC Consultants LLC

Alt. Tie Downs & End Straps

- 2 Lateral & Longitudinal systems
- At least 2 ft but no more than ¼ the length from the end
- Single Section REQUIRE 2 anchors per side. Not more than 2ft from end.



4/12 or 5/12 roof

Oliver 1100 V

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Flood Zone Requirements
R306.1.9 Manufactured Homes

- The bottom of the frame of new and replacement… shall be elevated to or above the elevation specified in R322.2 or R322.3
- As built certification is required

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Flood Zone Requirements
R306.1.9 Manufactured Homes

- The bottom of the frame of new and replacement… shall be elevated to or above the elevation specified in R322.2 or R322.3
- As built certification is required

HUD places the burden on the Installer to determine whether a home site is wholly or partly in a flood hazard area and to obtain additional designs, if needed.

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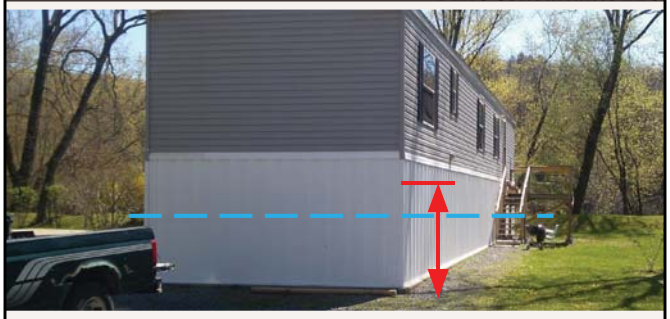

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Exterior Work

Repair and Seal Bottom Board

- Inspect for holes & gaps
- Replace missing insulation
- Patch large openings & tape small openings – per Installation Instructions

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Exterior Work

Repair and Seal Bott

- Inspect for holes &
- Replace missing in
- Patch large openin openings – per In Instructions

A continuous and sealed bottom board is critical for home performance, energy efficiency, protection against moisture problems, prevention of pipe freezing and protection against insects and rodents.

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Exterior Work

Repair and Seal B

- Inspect for holes
- Replace missing
- Patch large oper openings – per Instructions

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Exterior Work

Ground Moisture Retarder

- REQUIRED(by: Manuf & BA402.6)
- Min 6 mil poly
- Joints overlapped 12”
- Seal joints with tape or adhesive
- Weight down with gravel
- Repair voids
- Pre-slab

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Exterior Work

Skirting

- Structural or non-structural perimeter crawl space enclosure
- Extend vents, drains & inlets to outside
- Access (18”x 24” min) near utility connections

Exterior Work

Skirting

- Structural c perimeter enclosure
- Extend ven inlets to o
- Access (18”x utility con

- Follow perimeter of the homes conditioned space.

Decks & Porches when part of home

Fully Vented Panels installed to allow water to drain

Exterior Work

Ventilation

REQUIRED (by: Manufacturer & BA115.1) when skirted

- One square foot of vent per 1,500 square foot of under floor area
- Unless using integral vent skirting vents must be equal size & opposite ends of home
- One ventilation opening within 3 ft of each corner

Exterior Work

Ventilation

REQUIRED (by: Manuf & BA115.1) when skirted

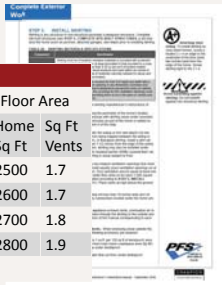
- One squar of under
- Unless usir be equal
- One ventil

Foundation Ventilation

One Sq Ft of ***Free Air Vent*** per ***1500*** Sq Ft of Floor Area

Home Sq Ft	Sq Ft Vents	Home Sq Ft	Sq Ft Vents	Home Sq Ft	Sq Ft Vents	Home Sq Ft	Sq Ft Vents
1000	.7	1500	1.0	2000	1.3	2500	1.7
1100	.7	1600	1.0	2100	1.4	2600	1.7
1200	.8	1700	1.1	2200	1.5	2700	1.8
1300	.9	1800	1.2	2300	1.5	2800	1.9

Reminder: One sq ft = 144 sq inches



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Exterior Work

Ventilation Calculations - Integral Skirting

- 28x56 New Home = 1566 sq ft
- Vapor Barrier REQUIRED
- *1 sq ft of vent per 1500 sq ft floor space*

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Exterior Work

Ventilation Calculations - Integral Skirting

- 28x56 New Home = 1566 sq ft
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- *1 sq ft of vent per 1500 sq ft floor space*
- Need 1 sq ft of free vent (144 sq inches)

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- Use 32” tall center vent (13 sq inches)

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- 28x56 New Home = 1566sqft
- Vapor Barrier REQUIRED
- *1 sq ft of vent per 1500 sq ft floor space*
- Need 1 sq ft of free vent (144 sq inches)
- Use 32" tall center vent (13 sq inches)
- **144 / 13 = 12 panels**

Need 126 panels to skirt whole house

Exterior Work

Exterior Work

Exterior Work

Exterior Work

Vents are required to be equal size and opposite sides of foundation

Amount of venting required: **144 sq in**

Exterior Work

Vents are required to be equal size and opposite sides of foundation

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Amount of venting provided?
Qty:2 - 8”x16” block vents

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Exterior Work

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Amount of venting required: **144 sq in**

Amount of venting provided?
Qty:2 - 8”x16” block vents

(8x16=128)x2=256 sq in

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Amount of venting required: **144 sq in**

Amount of venting provided?
Qty:2 - 8”x16” block vents

(8x16=128)x2=256 sqin
All set, right?

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Amount of venting required: **144 sq in**

Amount of venting provided?
Qty:2 - 8”x16” block vents

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All set, right?

WRONG

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Exterior Work

Vents are required to be equal size and opposite sides of foundation

Amount of venting required: **144 sq in**

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Exterior Work

Vents are required to be equal size and opposite sides of foundation

Amount of venting required: **144 sq in**

144/45=3.2

Min. 4 vents within 3ft of corners

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Accessory Structures

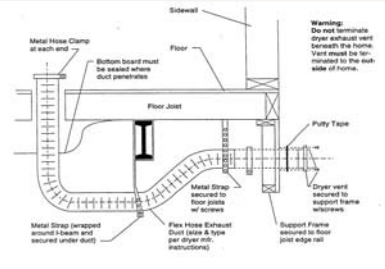
Self supporting unless

DAPIA approved design provided
OR
Designed by a design professional

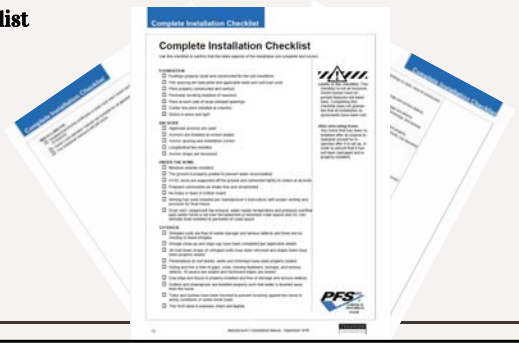
Outside combustion air?

Ventilation and Condensation Control

- Dryer Vents, Condensation Lines, Hot Water Heater Drains, Heat Producing Appliances, etc must extend through skirting to exterior.



Checklist



Checklist

WATER AND DRAIN SYSTEMS

- ☐ Crossover and service connection and splices have been properly made with correct materials
- ☐ Water and drain lines are insulated or otherwise protected from freezing
- ☐ Pipe supports are installed and properly spaced
- ☐ Proper slope has been maintained on all drain lines
- ☐ All necessary inspections and tests have been performed
- ☐ All sinks, tubs, and toilets operate properly
- ☐ All hot and cold water lines are properly connected to fixtures, dispense water as labeled, and operate properly

ELECTRICAL SYSTEMS

- ☐ The panel amperage matches the connection to the home
- ☐ The home has been properly grounded
- ☐ The main power supply has been properly connected and tested by a licensed electrician
- ☐ All electrical crossovers have been connected
- ☐ All receptacles, switches, and light fixtures operate properly
- ☐ Ground fault circuit interrupters operate properly
- ☐ All exterior lights have been properly installed

GAS/FUEL OIL SYSTEMS

- ☐ The gas system pressure test has been conducted
- ☐ Connections between units are properly made with access as required
- ☐ The main fuel line has been properly connected and tested by a qualified technician

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Potable Water Testing
Hydrostatic or Pneumatic:

Hydrostatic method (preferred)

1. Fill all water lines including water heater.
2. Pressurize system.
   Utilize pump, valve and gauge.
   Pressurize to 100psi: isolate w/ shutoff
3. Hold pressure. 15minutes
4. Find and fix leaks
5. **REPEAT until pass**

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Remember the Drain System Testing
2 Part Method

1. Drain Tightness
   1. All Fixtures connected plug main drain line
   2. Fill with water to rim of toilet bowl
   3. Hold 15 minutes
   4. Find and fix leaks
   5. REPEAT until pass
2. Max Flow –after Part 1 success
   1. Plug all fixtures and fill with water
   2. Release simultaneously
   3. Find and fix leaks
   4. REPEAT until pass

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Checklist

Including
1. A continuity test

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Checklist

Including
1. A continuity test
2. Operational test
3. Polarity test

Checklist

WATER AND DRAIN SYSTEMS

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Truss, Engineered Lumber or Timber Construction Placard

"An act to amend the Executive Law, in relation to notice requirements and enforcement for residential buildings with truss type, pre-engineered wood or timber construction."

Addition of Article 18 Executive Law of NY §382-b
Passed by Senate & Assembly 6/20/2014 Signed by Gov. 9/17/2014

19 NYCRR Part 1265 "Residential Structures with Truss Type…Construction"
Adopted 11/18/2014 by Codes Council Effective 1/1/2015

"Each new residential structure and each addition to or rehabilitation of an existing residential structure that utilizes truss type construction, pre-engineered wood construction and/or timber construction shall be identified by a sign or symbol…"

Truss … Placard

§1265.4 "...affixed to e ... of th
residential structure

1. If obscure any me ... h: sha
   affixed to exterior
2. If no electric box ... ated where not
   likely seen by fire ... ation approved
   by LAHJ as a loca ... ters

Affixed prior to issua
Property owner resp ... eplacement if
necessary

Garage Additions/Add-On Structures

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Garage Additions/Add-On Structures

24 CFR 3282.7 "Add-on: any structure (except a structure designed or produced as an integral part of a MH) which, when attached to a MH increases the area, either living or storage…"

Remember- Retailers may not sell MH that has been altered in a way which "causes a failure to conform to" HUD Code

Modifications to MH for purpose of "Add-on" Structures often remove compliance with HUD code

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Garage Additions/Add-On Structures

Alternative Construction Approval **REQUIRED**

Issues addressed

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Garage Additions/Add-On Structures

Alternative Construction Approval **REQUIRED**

Issues addressed

- Garage independence & support

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Garage Additions/Add-On Structures

Alternative Construction Approval **REQUIR**

Issues addressed

- Garage independence & support
- Roof modification & ventilation

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Garage Additions/Add-On Structures

Alternative Construction Approval **REQUIR**

Issues addressed

- Garage independence & support
- Roof modification & ventilation
- Fire Separation

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Garage Additions/Add-On Structures

Alternative Construction Approval **REQUIR**

Issues addressed

- Garage independence & support
- Roof modification & ventilation
- Fire Separation
- Electrical circuits for Lighting, GFCI & smoke detectors

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Garage Additions/Add-On Structures

Alternative Construction Approval **REQUIR**

Issues addressed

- Garage independence & support
- Roof modification & ventilation
- Fire Separation
- Electrical circuits for Lighting, GFCI & smoke detectors
- Egress Compliance

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Garage Additions/Add-On Structures

Alternative Construction Approval **REQUIR**

Issues addressed

- Garage independence & support
- Roof modification & ventilation
- Fire Separation
- Electrical circuits for Lighting, GFCI & smoke detectors
- Egress Compliance
- Light and ventilation

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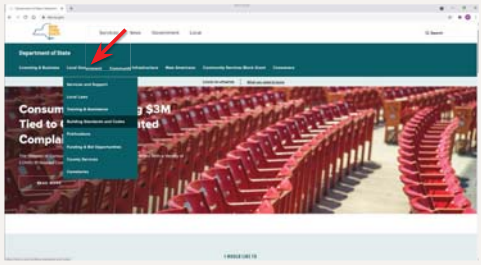
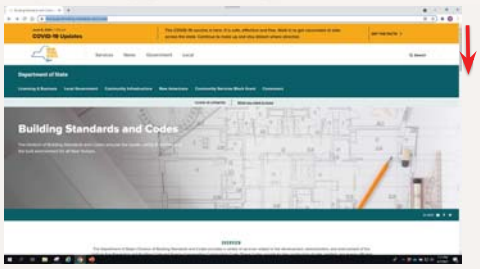
https://dos.ny.gov



https://dos.ny.gov/building-standards-and-codes



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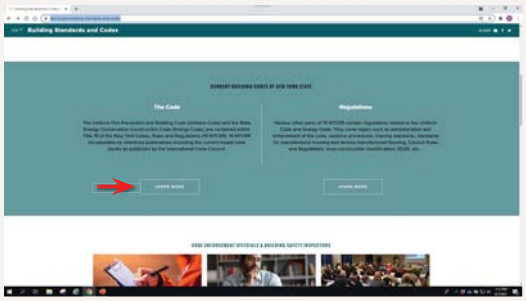

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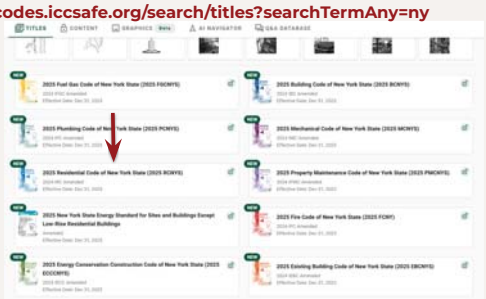

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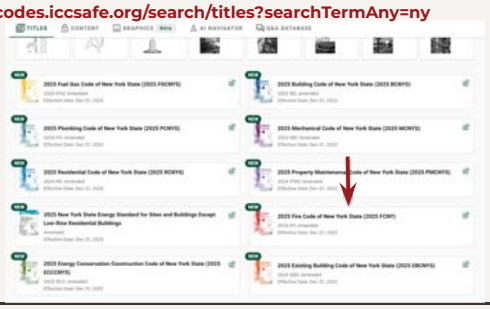

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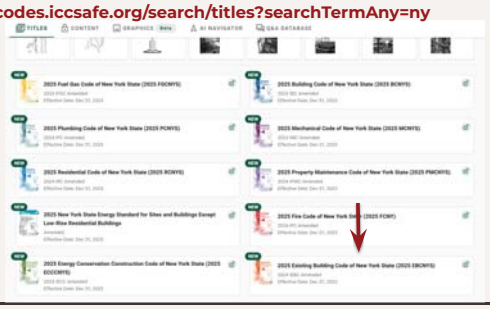
https://codes.iccsafe.org/search/titles?searchTermAny=ny



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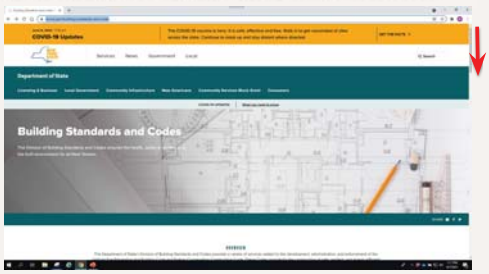
https://dos.ny.gov/building-standards-and-codes



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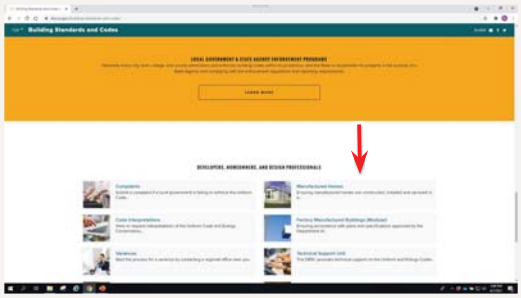

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https://dos.ny.gov/code/manufactured-homes

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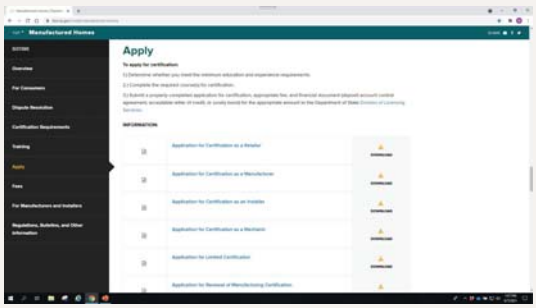


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Joel Harper
CEO
Certification Applications
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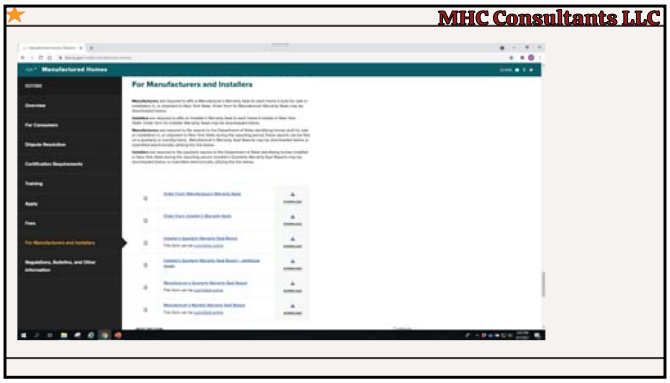
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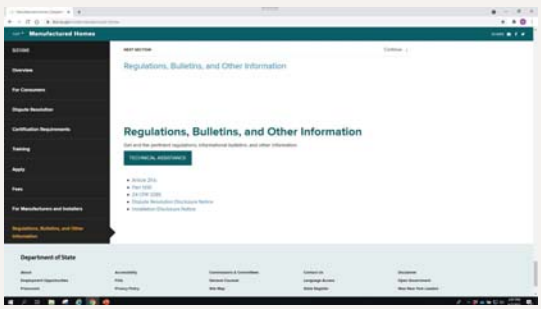
Manufactured Homes
For Manufacturers and Installers



HUD Model Installation Standard (24-CFR-3285)
https://www.govinfo.gov/content/pkg/CFR-2025-title24-vol5/pdf/CFR-2025-title24-vol5-part3285.pdf

NFPA 225 (2021) Manufactured Home Installation © $$$
https://www.nfpa.org/product/nfpa-225-standard/p0225code

Reminders

- Rule #1 Building Permits and C.O.s are required for the installation

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Reminders

- Rule #1 Building Permits and C.O.s are required for the installation
- Rule #2 Follow the Manufacturer's Instructions

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Reminders

- Rule #1 Building Permits and C.O.s are required for the installation
- Rule #2 Follow the Manufacturer's Instructions
- Rule #3 C.O. and A.C. Inspection **PRIOR** to move-in

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For technical assistance c

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Any questions?

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If your name is wrong on your certificate

Add it to your safe senders list

Any questions?