

TITLE 77: PUBLIC HEALTH
CHAPTER I: DEPARTMENT OF PUBLIC HEALTH
SUBCHAPTER q: MOBILE HOMES

PART 870
MANUFACTURED HOME INSTALLATION CODE

SUBPART A: DEFINITIONS AND INCORPORATED MATERIALS

Section	
870.10	Definitions
870.20	Incorporated and Referenced Materials

SUBPART B: MANUFACTURED HOME INSTALLER ACCREDITATION COURSES

Section	
870.30	Accreditation of Manufactured Home Installer Course
870.40	Responsibilities of Entities Offering Accredited Manufactured Home Installer Courses
870.50	Requirements for Accredited Manufactured Home Installer Course Curriculum
870.55	Reciprocity
870.60	Revocation of Accreditation

SUBPART C: MANUFACTURED HOME INSTALLER REQUIREMENTS

Section	
870.65	Requirements for Manufactured Home Installers License
870.70	Continuing Education
870.80	Installation Seals and Compliance Certificates

SUBPART D: REQUIREMENTS FOR THE INSTALLATION
OF MANUFACTURED HOMES

Section	
870.90	Requirements for the Installation of Manufactured Homes
870.100	Site Location
870.110	Support Systems
870.120	Structural Connections, Sealing and Patching
870.130	Electrical Hookup of Manufactured Homes
870.140	Plumbing
870.150	Heating and Air Conditioning
870.160	Natural and Liquefied Petroleum Gas Installation
870.170	Perimeter Enclosures

SUBPART E: MANUFACTURED HOME ANCHORING

Section	
870.190	Tiedown Equipment Approval
870.200	Equipment Specifications
870.210	Compliance
870.220	Tiedown Installation Requirements

SUBPART F: MANUFACTURERS OF MANUFACTURED HOMES

Section	
870.230	Manufacturer's Responsibilities

SUBPART G: ADMINISTRATIVE HEARINGS

Section	
870.240	Penalties
870.250	Injunctive Relief

870.TABLE A	Soil Pressure
870.TABLE B	Footing Areas Required for Soil's Load-Bearing Capacity – Design Roof Load 20 Pounds Per Square Foot
870.TABLE C	Footing Areas Required for Soil's Load-Bearing Capacity – Design n Roof Load 30 Pounds Per Square Foot
870.TABLE D	Footing Areas Required for Soil's Load-Bearing Capacity – Design Roof Load 40 Pounds Per Square Foot
870.TABLE E	Pier Load and Minimum Pier Capacity for 12 Foot Wide Section (Pounds)
870.TABLE F	Pier Load and Minimum Pier Capacity for 14 Foot Wide Section (Pounds)
870.TABLE G	Pier Load and Minimum Pier Capacity for 16 Foot Wide Section (Pounds)
870.TABLE H	Multi-Section Fastening Schedule

AUTHORITY: Implementing and authorized by the Illinois Manufactured Home Installers Act [430 ILCS 120], the Manufactured Home Quality Assurance Act [430 ILCS 117], and the Illinois Mobile Home Tiedown Act [210 ILCS 120].

SOURCE: Adopted at 4 Ill. Reg. 25, p. 148, effective July 1, 1980; codified at 8 Ill. Reg. 17513; amended at 21 Ill. Reg. 9475, effective July 1, 1997; emergency amendment at 22 Ill. Reg. 2626, effective January 14, 1998, for a maximum of 150 days; emergency expired June 13, 1998; amended at 23 Ill. Reg. 5609, effective June 1, 1999; old Part repealed by emergency rulemaking at 29 Ill. Reg. 10371 and new Part adopted by emergency rulemaking at 29 Ill. Reg. 10327, effective July 1, 2005, for a maximum of 150 days; emergency expired November 27, 2005; old Part repealed at 30 Ill. Reg. 13484, and new Part adopted at 30 Ill. Reg. 13441, effective July 28, 2006.

Section 870.10 Definitions

For purposes of this Part, the following terms have the meanings ascribed in this Section.

"Accessory structure" means a structure such as a shed, garage, carport, deck or porch on a manufactured home site.

"Anchor" means any device used for securing the manufactured home to the foundation system or ground.

"Anchoring equipment" means bolts, straps, cables, turnbuckles, and chains, including tensioning devices, that are used with ties to secure a manufactured home to ground anchors or the foundation system.

"Anchoring system" means any method used for securing the manufactured home to a foundation system or the ground.

"Department" means the Illinois Department of Public Health. [430 ILCS 117/10]

"Footing" means that portion of the support system that transmits loads directly to the soil.

"Foundation system" is a support system that transfers design loads into the underlying ground. Examples of acceptable foundation systems include, but are not limited to, a floating support system consisting of concrete runners under each frame I-beam, or a concrete pad that extends beneath the entire home and is at least 3½" thick, or individual footing designed to support the home.

"Frost depth" means the depth of frost penetration into the soil.

"Frost heave" is an uplift of ground or pavement caused by freezing of moist soil.

"Ground anchor" means any device at the manufactured home installation site designed to transfer manufactured home anchoring loads to the ground.

"Independent testing laboratory" is an organization that:

Primarily is interested in testing and evaluating equipment; and

Is qualified and equipped to conduct and evaluate experimental testing in accordance with approved standards; and

Makes available a published report in which specific information is included stating that the equipment and installations have been tested and found safe for use in a specific manner; and

Is not under the jurisdiction or control of any manufacturer or supplier of any industry.

"Installation" means assembly, at the site of occupancy, of all portions of the manufactured home, connection of the manufactured home to utilities, and installation of support and anchoring systems.

"Installation certificate of compliance" means the certificate provided by the Department that is completed by the licensed manufactured home installer, which certifies that the manufactured home installation complies with this Part.

"Installation instructions" means those instructions provided by the manufacturer detailing the manufacturer's requirements for supports, anchoring system attachments and utility connections.

"Installation seal" means a sticker issued by the Department to a licensed manufactured home installer to be displayed on the manufactured home to indicate compliance with the Department's rules pertaining to manufactured home installation.

"Installers Act" means the Illinois Manufactured Home Installers Act [430 ILCS 120].

"Length of manufactured home" is the distance from the exterior of the front wall (nearest to the drawbar and coupling mechanism) to the exterior of the rear wall (at the opposite end of the home) where such walls enclose living or other interior space and such distance includes expandable rooms but not bay windows, porches, drawbars, couplings, hitches, or other attachments.

"Licensed manufactured home installer" means a person who has successfully completed a manufactured home installation course approved by the Illinois Department of Public Health, paid the license fee and been issued a current license. [430 ILCS 117/10]

"Manufactured home" is synonymous with "mobile home" and means a structure that is a factory-assembled, completely integrated structure designed for permanent habitation, with a permanent chassis and so constructed as to permit its transport, on wheels temporarily or permanently attached to its frame, from the place of its construction to the location, or subsequent locations, at which it is placed on a support system for use as a permanent habitation, and designed and situated so as to permit its occupancy as a dwelling place for one or more persons; provided, that any such structure resting wholly on a permanent foundation, as defined in this Part, shall not be construed as a mobile home or manufactured home. The term "manufactured home" includes manufactured homes constructed after June 30, 1976 in accordance with the federal National Manufactured Housing Construction and Safety Standards Act of 1974 and does not include an immobilized mobile home as defined in Section 2.10 of the Mobile Home Park Act. [430 ILCS 117/10]

"Manufacturer" means a manufacturer of a manufactured home whether the manufacturer is located within or outside the State of Illinois. [430 ILCS 117/10]

"Minimum frost depth" means 35 inches, except in those areas where local ordinance establishes a different frost depth.

"On-site" means the physical presence of the licensed manufactured home installer at the installation site of a manufactured home.

"Permanent foundation" is a continuous perimeter foundation of material, such as mortared concrete block, mortared brick, or concrete, that extends into the ground below the established frost depth and to which the home is secured with foundation bolts at least one-half inch in diameter, spaced at intervals of no more than 6 feet and within one foot of the corners, and embedded at least 7 inches into concrete foundations or 15 inches into block foundations. [430 ILCS 117/10]

"Piers" means that portion of the support system between the footing and the manufactured home, exclusive of shims. Types of piers include concrete blocks, manufactured steel stands, and manufactured concrete stands.

"Site" is a parcel of land for the accommodation of a manufactured home.

"Stabilizing device" means a device or provision made to minimize the deflection or slicing through the soil by a ground anchor rod at ground level.

"Support system" means a combination of footings, piers and shims designed to support the home when properly installed.

"Tie" means a strap, cable, or securing device used to connect the manufactured home to the anchors.

"Tiedown Act" means the Illinois Mobile Home Tiedown Act [210 ILCS 120].

"Tiedown manufacturer" is any person or business engaged in the manufacturing of tiedown equipment that is offered for sale or use in this State.

"Training hour" means at least 50 minutes of actual teaching, including time devoted to lecture, learning activities, small group activities, demonstrations, evaluations and/or practical, hands-on instruction.

Section 870.20 Incorporated and Referenced Materials

- a) The following standards and regulations are incorporated in this Part:
 - 1) Regulations of federal agencies:

- A) United States Department of Transportation, Office of Pipeline Safety
400 7th Street, S.W.
Washington, D.C. 20590

Transportation of Natural and Other Gas by Pipeline:
Minimum Federal Safety Standards (49 CFR 192; October 1, 2004)

- B) United States Department of Housing and Urban Development
451 N. 7th Street
Washington, D.C. 20410

Manufactured Home Construction and Safety Standards (24 CFR 3280; April 1, 2004)

2) Standards of a nationally or internationally recognized organization:

- A) National Fire Protection Association
1 Batterymarch Park
P.O. Box 9101
Quincy, Massachusetts 02269-9101

- i) National Electrical Code, 2002 Edition (NFPA 70)
- ii) Standards for the Installation of Oil Burning Equipment, 2001 Edition (NFPA 31)
- iii) National Fuel Gas Code, 1999 Edition (NFPA 54-99)
- iv) Standard for the Storage and Handling of Liquefied Petroleum Gases, 1998 Edition (NFPA 58-98)

- B) American Wood-Preservers' Association
P.O. Box 5690
Granbury, Texas 76049

AWPA C22-03 Standard: Lumber and Plywood for
Permanent Wood Foundations – Preservative Treatment by
Pressure Processes (2003)

- C) American Society for Testing and Materials
100 Barr Harbor Drive
West Conshohocken, Pennsylvania 19428

- i) ASTM A 254-97 Standard Specification for Copper-Braized Steel Tubing (2002)
 - ii) ASTM C 90-03 Standard Specification for Load-Bearing Concrete Masonry Units (2003)
 - iii) ASTM D 2513-04A Standard Specification for Thermoplastic Gas Pressure Pipe, Tubing and Fittings (2003)
 - iv) ASTM D 3953-91 Standard Specification for Strapping, Flat Steel and Seals (2003)
- b) All incorporations by reference of federal regulations and the standards of nationally recognized organizations refer to the regulations and standards on the date specified and do not include any additions or deletions subsequent to the date specified.
- c) The following standards, regulations and laws are referenced in this Part:
 - 1) Rules of the Illinois Department of Public Health:
 - A) Manufactured Home Community Code (77 Ill. Adm. Code 860)
 - B) Illinois Plumbing Code (77 Ill. Adm. Code 890)
 - C) Plumbers Licensing Code (68 Ill. Adm. Code 750)
 - 2) State of Illinois statutes:
 - A) Illinois Mobile Home Park Act [210 ILCS 115]
 - B) Illinois Mobile Home Tiedown Act [210 ILCS 120]
 - C) Illinois Plumbing License Law [225 ILCS 320]
 - D) Manufactured Home Quality Assurance Act [430 ILCS 117]
 - E) Illinois Manufactured Home Installers Act [430 ILCS 120]

Section 870.30 Accreditation of Manufactured Home Installer Course

- a) An entity that offers or plans to offer a manufactured home installer course shall obtain Department accreditation for the course by submitting to the Department in writing the following information at least 60 days before the beginning of the course:

- 1) The name, address and telephone number, and the name of a contact person, for the entity providing the course.
 - 2) The course location and written documentation that the course provides facilities of sufficient size to accommodate the maximum enrollment of the course for classroom and hands-on field training.
 - 3) Beginning and ending dates for the course.
 - 4) A course schedule and syllabus.
 - 5) Student and instructor manuals for the course.
 - 6) Documentation of a principal instructor who shall be responsible for the organization of the course and oversight of the teaching of all course material. Guest instructors may be utilized as needed to provide instruction specific to the lecture, hands-on activities, or work practice components of a course. The principal instructor shall have the following qualifications:
 - A) at least two years of post high school education in building construction technology; or
 - B) two years of experience in managing a training program specializing in the installation of manufactured homes.
 - 7) A final examination for the course that includes criteria for pass/fail. The course must require at least 70% correct on the final examination as a passing score.
 - 8) An example of the certificate of course completion that includes the following information:
 - A) the name, address, and telephone number of the entity providing the course;
 - B) the name, dates of attendance at course, and indication of pass/fail for the student to whom the certificate is issued.
- b) The Department shall provide written notice via certified mail to the course sponsor whether the request for accreditation has been approved.
- c) For requests that are not approved, the Department's notification will include the reason for disapproval and notice that the course sponsor shall have 10 days to submit a written request for an administrative hearing to contest the Department's

decision. In lieu of a request for hearing, the course sponsor may submit a revised request for accreditation in which items noted to be incomplete in the initial request are completed.

- d) The Department shall maintain and make available to the public a list of approved course sponsors.

Section 870.40 Responsibilities of Entities Offering Accredited Manufactured Home Installer Courses

- a) The entity offering an accredited training course shall be responsible for maintaining training course records and making such records available to the Department as necessary.
 - 1) Course records shall be retained at the address specified on the approved training program accreditation application for a minimum of 3 years.
 - 2) The entity shall notify the Department in writing within 30 days after changing the address specified on the training course accreditation application or transferring records to a new address.
 - 3) The Department shall have the authority to enter, inspect and audit training facilities and to examine records to determine compliance with the Act and this Part.
- b) Training course records that shall be maintained include the following:
 - 1) All documents that demonstrate the qualifications of the principal instructor, as specified in Section 870.30(a)(6).
 - 2) Current curriculum/course materials and documents reflecting any changes made to these materials.
 - 3) A copy of the course final examination.
 - 4) Results of the course final examination and a record of each certified installer's course completion.
 - 5) Any other materials specified in Section 870.30 that have been submitted to the Department as part of the program approval.
- c) Entities offering accredited courses shall submit to the Department a list of installers completing a course within 30 days after course completion.

Section 870.50 Requirements for Accredited Manufactured Home Installer Course Curriculum

Each accredited manufactured home installer course shall provide instruction on how to install a manufactured home to the specifications of the manufacturer, review Subpart D of this Part for homes without manufacturer specifications, and test the written and practical installation skills of the individual installer (Section 15 of the Installers Act). Each course shall consist of at least 10 training hours that include the following topics:

- a) The installer's responsibility to obtain a copy of the home manufacturer's setup manual to ensure proper setup of the home in accordance with the home's warranty.
- b) The inspection of the proposed site of the home prior to setup to ensure proper location.
- c) Ensuring that the proposed site has drainage away from the home, vegetation cleared from under the home, and vapor barriers provided.
- d) Support of the home by a foundation system in accordance with the design loads of the home, the existing soil load bearing capacity of the home location, the Illinois Mobile Home Park Act [210 ILCS 115], the Manufactured Home Community Code (77 Ill. Adm. Code 860), and local authority requirements.
- e) Safety considerations for the setup of a home.
- f) Proper leveling of the home and placement of piers or foundation walls in accordance with the home manufacturer's specifications.
- g) Proper anchoring in accordance with the Tiedown Act and Subpart E of this Part.
- h) The installation of the plumbing for the home in accordance with the Illinois Plumbing License Law and the Illinois Plumbing Code.
- i) The installation of the electrical system for the home in compliance with the National Electrical Code.
- j) The installation of the gas or oil utilities for the home in compliance with the requirements of the Installation of Oil Burning Equipment, National Fuel Gas Code Standard for the Storage and Handling of Liquefied Petroleum Gas Code, and the Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards.

Section 870.55 Reciprocity

The Department may grant approval of a training program of another state that is determined to be equivalent to the requirements of Subpart B of this Part. Individuals must obtain an Illinois

license. Installers who have completed a training course that has reciprocity with Illinois must also obtain an Illinois license, but need not complete an examination.

Section 870.60 Revocation of Accreditation

The Department shall provide written notice via certified mail to the course sponsor of its decision to revoke, for a period not exceeding 6 months, the course sponsor's accreditation. The course sponsor shall have 10 days to submit a written request for an administrative hearing to contest the Department's decision. The Department's decision to revoke a course sponsor's accreditation shall be based upon a course sponsor's violation of the Manufactured Home Quality Assurance Act [430 ILCS 117] or this Part. Notice and opportunity for an administrative hearing shall conform to the provisions of Section 870.240 of this Part.

Section 870.65 Requirements for Manufactured Home Installers License

- a) To qualify for a license as a manufactured home installer, an applicant shall meet the following requirements:
 - 1) Be at least 18 years of age;
 - 2) Complete a Department-approved manufactured home installer course and pass the examination administered at the conclusion of the course, or complete a course offered by another state that has been granted reciprocal approval in accordance with Section 870.55;
 - 3) Submit the completed application form provided by the Department;
 - 4) Submit a 1 inch by 1 inch head and shoulder current photo of the license applicant;
 - 5) Submit the required license application fee of \$150.
- b) A licensed manufactured home installer must provide proof of licensure at the installation site when requested by a Department representative.
- c) A licensed manufactured home installer is not exempt from the requirements of the Illinois Plumbing License Law.

Section 870.70 Continuing Education

Licensed manufactured home installers must accumulate 4 hours of training approved by the Department every 2 years to be eligible for license renewal. Continuing education training must comply with Sections 870.30 and 870.40 with the exception that an exam is not required.

Section 870.80 Installation Seals and Compliance Certificates

- a) The licensed installer who installs the support system for each home must purchase from the Department installation seals and installation compliance certificates for all homes to be installed in Illinois after December 31, 2001. A \$25 check or money order payable to the Illinois Department of Public Health shall be submitted to the Illinois Department of Public Health, Division of Environmental Health, 525 West Jefferson, Springfield, Illinois 62761. Multiple seals and certificates of compliance may be purchased. The seals and compliance certificates may be purchased only by a licensed installer.
- b) Location of Seal. The installation seal must be placed directly above the HUD label upon completion of the installation of the home by the installer responsible for the support system for the home. In the event there is no HUD label on the home, the seal shall be placed where the HUD label would normally be. When a home with an installation seal is relocated, the original installation seal shall be removed or covered with the new installation seal.
- c) Installation Compliance Certificate
 - 1) The licensed manufactured home installer shall complete the installation compliance certificate within 30 days after the date of the installation. The installer shall mail copies of the completed certificate, via certified mail, to: the Department, the dealer, the homeowner, and the owner/operator of the licensed manufactured home community, if the home is installed in a community.
 - 2) The installation compliance certificate shall contain the following information:
 - A) Name and address of the licensed installer.
 - B) Installer's license number.
 - C) Name of manufacturer.
 - D) Manufacturer's serial number.
 - E) Home owner's name and address, if available.
 - F) Installation date.
 - G) Number of the installation seal that was affixed to the home.
- d) Lost or Damaged Installation Seals or Compliance Certificates. If a seal or compliance certificate becomes lost or damaged, the Department shall immediately be notified in writing by the installer. If possible, the assigned number shall be indicated. All damaged seals or compliance certificates or those

unused from an installer who ceases business in Illinois shall be returned to the Department. No refund will be granted.

- e) Partially Completed Compliance Certificates. The licensed installer shall be responsible for completing as much information on the compliance certificates as is known prior to submitting the form to the Department, dealer and homeowner.

Section 870.90 Requirements for the Installation of Manufactured Homes

- a) *All manufactured homes installed after December 31, 2001 shall be installed under the on-site supervision of a licensed manufactured home installer.* [430 ILCS 117/25] The licensed installer shall provide sufficient on-site supervision to ensure quality installation as required by the manufacturer's specifications or, in the absence of the instructions provided by the manufacturer, this Part.
- b) Homes installed on a permanent foundation are not required to be installed by a licensed manufactured home installer.
- c) All homes shall comply with the anchoring requirements contained in Subpart E of this Part.
- d) The requirements of Sections 870.110 through 870.170 shall apply to homes installed where the instructions are not available.
- e) Nothing in this Part shall preclude local ordinances, including but not limited to zoning, building codes, or other ordinances not affecting installation standards or other exclusive State powers or functions under Section 60 of the Manufactured Home Quality Assurance Act.
- f) The home manufacturer data plate specifies the design criteria of the homes. For homes that do not have a data plate, the installation shall be designed for a roof live load design of 20 pounds per square foot.

Section 870.100 Site Location

- a) The portion of the lot used for the placement of the manufactured home must be firm, undisturbed soil or compacted fill. The soil must be tested for its load-bearing capacity and graded to prevent surface water or drainage from accumulating under the home. For sites constructed after July 1, 2005, the ground must be sloped a minimum of ½ inch per foot for at least 6 feet from the perimeter of the home. Impervious surfaces such as concrete and asphalt in this area shall be sloped away from the home at least one inch per 6 feet.
- b) All decayable material, such as grass, twigs, and wood scraps, shall be removed from under the home. Shrubs and overhanging branches that will impede installation in accordance with this Part shall be removed.

- c) A minimum 6-mil visqueen vapor barrier, secured and extending to the dimensions of the home, must be placed on the ground underneath the manufactured home before the perimeter enclosure is installed, unless the home is placed on a poured concrete slab.
- d) When gutters and downspouts are installed, the discharge shall be directed away from the home.

Section 870.110 Support Systems

Each manufactured home shall be installed on a support system capable of supporting a total of 80 pounds per square foot.

- a) Footings. Footings must be placed on level, firm, undisturbed soil or compacted or controlled fill that is free of grass and organic materials, compacted to a minimum load bearing capacity of 2,000 pounds per square foot. Pre-owned homes for which the manufacturer of the home is no longer in business or for which the installation instructions are not available may be placed on an existing footing system if the system meets the requirements of this Section.
 - 1) Area. The area in square inches of the footings is based on the width of the home, the roof design loads, the soil load-bearing capacity and the intended spacing of the piers. (See 870.Tables A-G.)
 - 2) Types. Footings may consist of the following:
 - A) Individual pier footings consisting of precast or poured-in-place individual pier footing concrete at least 3½ inches thick with a 28-day compressive strength of 3,000 pounds per square inch.
 - B) Concrete runners a minimum of 3½ inches thick under each I-beam or perpendicular to the I-beams at no more than 8 foot intervals.
 - C) Concrete pads a minimum of 3½ inches thick the approximate dimension of the home.
 - D) Pressure treated wood having a 0.60 retention in accordance with the AWPA C22-03 Standard.
 - E) Acrylonitrile butadiene styrene (ABS) footing pads in accordance with pad manufacturer installation instructions and listed for the required load capacity and type of installation. Support devices and piers must not overlap the footings.

- F) A support system approved by a licensed professional engineer.
- b) Piers. Piers or load-bearing supports or devices shall be designed and constructed to transmit the vertical live and dead loads to the foundation below. In order to properly support the home, the piers must be of the proper type, size, location and spacing. Piers shall be installed directly under the main frames of the home. Piers shall be no more than two feet from each end of the frame and adequately spaced. (See 870.Tables A-G.) Piers may be concrete blocks or adjustable metal or concrete devices approved and listed for the required load capacities. Load bearing supports or devices shall be listed and labeled, or shall be designed by a licensed professional engineer in Illinois, and shall be approved for the use intended, prior to installation.
- 1) Types. Non-mortared concrete blocks conforming to ASTM C 90-96 Type N with a nominal size of 8 inches by 8 inches by 16 inches shall be installed with the 16 inch dimension perpendicular to the main frame (I-beam), the open cells vertical, stacked level. A 2 or 4 inch thick 8 inch by 16 inch solid concrete cap block that conforms to ASTM C 90-96 Type N shall be placed on the top of each stack. The vertical load shall not exceed 8,000 pounds per single stack and 14,000 pounds for a double stack. The blocks must be stacked on a solid base pad in accordance with the soil bearing capacity. As many as 2 wood plates not exceeding 3 inches in combined thickness and 2 shims not exceeding 1 inch total thickness must be used to fill any gap between the concrete cap and main frame. Hardwood shims must be a minimum of 3 inches wide and 6 inches long fitted tight between cap or wood plate and main frame.
 - 2) Clearance and Height. A minimum clearance of 12 inches must be provided between the ground and the bottom of the frame. If piers exceed 36 inches in height, they shall be double blocked. If the height exceeds 80 inches, the pier must be double blocked and mortared with rebar. If the home is placed in an area subject to flooding, a licensed professional engineer in Illinois shall design a support and anchoring system that will resist flood forces. The Federal Emergency Management Agency has information that may assist in the design.
 - 3) Load-Bearing Openings. In addition to the piers under the main I-beams of the home, piers must be placed under openings in the perimeter walls and center-mating wall openings greater than 4 feet. (See 870.Tables E-G.)
 - 4) Elevated Manufactured Homes. When more than $\frac{1}{4}$ of the area of a home is installed so that the bottom of the main frame is more than 7 feet above ground level, the home support system shall be designed by a licensed professional engineer in Illinois and installation shall be approved by the Department prior to the installation.

Section 870.120 Structural Connections, Sealing and Patching

- a) **Structural Connections.** Multi-section manufactured homes must be secured to immobilize each section, allow for the transfer of required loads, and protect interior and enclosed spaces. (See 870.Table H, Multi-Section Fastening Schedule.)
- b) **Sealing.** During installation, joints between all multi-section homes must be cleaned and shimmed where the gap exceeds ½ inch top or bottom, then sealed with a weather-stripping gasket material to limit heat loss and prevent air, moisture and other damaging infiltration. The gasket material must be durable, non-porous caulking, closed cell foam, urethane or sill seal. Caulking, if used, must be capable of compressing and stretching. Sill seal, if used, must be a minimum of 5½ inches wide and attached with fasteners staggered at 6 inches on center.
- c) **Patching.** All cuts, holes or tears in the bottom board or floor insulation, including areas around structural connections and plumbing, mechanical and heating equipment penetrations, must be adequately repaired to help prevent the entrance of rodents, to limit heat loss and to prevent air, moisture and other damaging infiltration.

Section 870.130 Electrical Hookup of Manufactured Homes

All electrical distribution and services must comply with the National Electrical Code in existence at the time of the installation of the electrical service. The electrical service site supply must be a minimum of 100 amperes and rated for the capacity of the home.

Section 870.140 Plumbing

As specified by the Illinois Plumbing License Law [225 ILCS 320], all plumbing installed in Illinois shall be done by an Illinois licensed plumber or the owner and occupant of the home and shall comply with the Illinois Plumbing Code. A person who installs plumbing and is not a licensed Illinois plumber or is not the owner and occupant of the home can be fined up to \$5,000 in accordance with the provisions of Illinois Plumbing License Law and Plumbers Licensing Code.

Section 870.150 Heating and Air Conditioning

All on-site installations of heating and air conditioning systems shall meet the equipment manufacturer's specifications, comply with local code, and be performed by qualified personnel approved or licensed by the local jurisdiction for this work, a licensed manufactured home installer or the homeowner.

- a) Heating Equipment. The heating systems for most homes are provided with the duct systems installed. On-site installation consists of connecting the crossover duct for multi-section homes. Crossover ducts for multi-section homes must be supported aboveground, sealed to prevent air leaks and cut to length to avoid kinks.
- b) Air Conditioning Equipment. Air conditioning equipment must be installed in accordance with the manufacturer's specifications and comply with local codes. The maximum electrical full load ampere draw for the desired air conditioning unit must not exceed the home manufacturer's circuit rating. Any field-installed wiring beyond the junction box must include a fused disconnect located within sight of the condensing unit. The maximum fuse size is marked on the condenser data plate. Charging of the air conditioning equipment must be performed by qualified personnel. Condensation from the air conditioning equipment must not drain underneath the home.
- c) Clothes dryer vents must exhaust outside the exterior of the home, or any perimeter foundation or skirting. The exhaust duct must be adequately supported and sealed. The installation of the duct must be in accordance with the manufacturer's instructions.

Section 870.160 Natural and Liquefied Petroleum Gas Installation

- a) Natural Gas. There are three codes affecting the operation of natural gas facilities in manufactured homes: the Pipeline Safety Regulations administered by the U.S. Department of Transportation for the pipeline to the meter; the National Fuel Gas Code written by the National Fire Protection Association for the piping from the meter to underneath the home, and the Manufactured Home Construction and Safety Standards, administered by the Department of Housing and Urban Development for the appliance installation, operation and venting in the home.
 - 1) Piping. Natural gas piping must be of approved materials.
 - A) Plastic piping approved for natural gas, ASTM 2513, must be installed below ground level, except that it may terminate aboveground if:
 - i) The aboveground part of the plastic service line is protected against deterioration and external damage; and
 - ii) The plastic service line is not used to support external loads. Plastic pipe, tubing and fittings shall be joined in accordance with manufacturer's instructions. An electrically continuous corrosion resistant tracer wire (Minimum 14 AWG (American wire gauge)) or tape shall be buried with the plastic pipe to facilitate locating.

- B) Metallic pipe shall be at least standard weight, Schedule 40. Copper and brass pipe shall not be used if the gas contains more than an average of 0.3 grains of hydrogen sulfide per 100 standard cubic feet of gas. Metallic tubing such as seamless copper (ASTM A254) shall be permitted to be used with gas not corrosive to such material.
- 2) Support. All piping under the home must be supported with appropriate hangers spaced at no more than 6 foot intervals for 1 inch diameter or less pipe and no more than 10 foot intervals for piping 1¼ inch in diameter or more.
- 3) Defects and Corrosion. Defects in pipe, tubing or fittings shall not be repaired. When defective pipe, tubing or fittings are located in a system, the defective material shall be replaced. Gas piping in contact with earth or other material that could corrode the piping shall be protected against corrosion in an approved manner.
- 4) Meters, Valves and Regulators. Meters and regulators must be installed in a readily accessible location and be protected from corrosion and other damage. Each service line must have a service line valve located upstream of the regulator or meter.
- 5) Location and Testing. Each buried main must be installed with at least 24 inches of cover and service lines with at least 18 inches of cover. The service line cover can be reduced to 12 inches if external damage to the pipe is not likely to result. The gas piping system must be tested for leaks prior to occupancy of the home.
- b) Liquefied Petroleum Gas (LP). LP gas containers must be approved for the intended use and properly located in accordance with the Standard for the Storage and Handling of Liquefied Petroleum Gases (NFPA 58-98) (Table 9 – Proper Location of Liquefied Petroleum Gas Containers).
- c) Oil Burning Equipment. Fuel oil burning equipment must be installed in accordance with the Standards for the Installation of Oil Burning Equipment (NFPA 31).

Section 870.170 Perimeter Enclosures

- a) Material and Ventilation. The perimeter enclosure material shall be of material manufactured for this purpose. The material must be installed in a manner that will not allow water to be trapped between the perimeter material and the siding or trim to which it is attached. The perimeter enclosure material is to be vented according to the manufacturer's recommendation to prevent moisture buildup. If

the manufacturer's specifications are not available, to assure proper ventilation, the open area of the vents must be equal to at least 1/300 of the floor area of the home.

- b) Installation. Perimeter enclosure material must be installed to accept possible frost heave. The perimeter enclosure must be installed to the manufacturer's specifications.
- c) Access. A utility inspection panel that can be opened without the use of tools and that is a minimum of 24 inches by 18 inches must be provided.

Section 870.190 Tiedown Equipment Approval

- a) Manufacturer's Approval. Each tiedown manufacturer shall file with the Department a written request for approval to sell tiedown equipment in Illinois. In order to obtain approval, each tiedown manufacturer must submit the following:
 - 1) Detailed plans and specifications of all tiedown equipment, showing model identification number, pertinent dimensions, materials, and method of securing ties. Each drawing shall bear the seal of a licensed professional engineer in Illinois.
 - 2) Test data regarding the strength of all equipment, which has been prepared and certified by a recognized independent testing laboratory, demonstrating that the anchor and all tiedown equipment meet the requirements of this Section. Each piece of equipment must be tested a minimum of three times and be shown to meet the requirements of Section 870.200. The tests must be conducted with the equipment installed according to the installation instructions.
 - 3) A copy of the installation instructions for each anchor must accompany all anchors when sold. For ground anchors, the instructions shall include information as to the holding capability of the soils in which the anchor is certified to be installed, the method of installation, the type and size of stabilization devices required, the amount of pre-loading, and the method of tension adjustment after installation. The instructions for installation must be consistent with the testing of the equipment, especially with regard to the angle and depth of installation of ground anchors. The instructions for concrete anchors shall specify the minimum amount of concrete required, the distance from the edge of the concrete to the anchor and the compressive strength of the concrete. A copy of all instructions, including any revisions, must be submitted prior to the issuance of approval.

- 4) Each anchor shall be permanently marked with an identification number that is visible when the equipment is installed.
 - 5) If the design, construction or installation instructions of any approved equipment are changed, approval must be obtained from the Department.
- b) **Alternative Approval.** A home owner, dealer, or installer who wishes to tie down a manufactured home with a unique system or materials different from one approved under subsection (a) must submit all information on material specifications, strength of equipment, and system design to the Department for approval. The approval will be based upon the criteria specified in Sections 870.200 and 870.220.
 - c) **Evidence of Approval.** The tiedown manufacturer shall present evidence of Department approval to any homeowner or installer upon request. Approval shall be evidenced by the letter of approval from the Department for the specific equipment.
 - d) **Previous Approvals.** All previous approvals issued by the Department for tiedown equipment shall become void January 1, 2006. New approval will be granted for the tiedown equipment previously approved with the exception that the ground anchor equipment will be rated at the soil holding capability of tests on file and not soil class ratings.

Section 870.200 Equipment Specifications

- a) Tie materials shall be capable of resisting a force of 3,150 pounds with no more than 2 percent elongation and shall withstand at least 4,725 pounds without failure. Strapping must meet the requirements of ASTM D 3953-91, and cable must be a minimum of ¼ inch diameter galvanized 7 by 19 strand cable.
- b) Anchor equipment and ties shall be weather resistant. Each anchor, when installed, shall be capable of resisting a working load at least equal to 3,150 pounds in the direction of the tie plus 50 percent overload (4,725 pounds) without failure. Double headed anchors must resist vertical and horizontal loads. Failure shall be considered to have occurred when the point of connection between the tie and the anchor moves more than 2 inches at 4,725 pounds in the vertical direction. Anchors designed to be installed so that the loads on the anchor are other than direct withdrawal shall be designed and installed to resist an applied design load of 4,725 pounds at 45 degrees from horizontal without displacing the anchor more than 3 inches horizontally at the point where the tie attaches to the anchor.

Section 870.210 Compliance

- a) All manufactured homes and manufactured accessory structures installed after July 1, 2005 must be tied down in accordance with this Part, the home

manufacturer's instructions and the tiedown manufacturer's instructions within 30 days after the home is installed on the site. All manufactured accessory structures shall be secured in accordance with the manufacturer's instructions.

- b) If frozen soil or wet soil prevents the installation of ground anchors, the 30 day deadline shall not apply. The home must, in this case, be anchored at the earliest possible date after the soil thaws or dries.

Section 870.220 Tiedown Installation Requirements

- a) **Equipment.** All manufactured homes installed after July 1, 2005 must be installed with equipment approved by the Department.
- b) **Ties**
 - 1) Cable, strapping or other approved material shall be used for ties.
 - 2) The ties shall connect from an anchor to the closest I-beam beneath the home. Ties shall not connect to steel outriggers, unless specifically stated in the home manufacturer's installation instructions. The angle formed between the tie and the ground shall be between 40 and 50 degrees. If this angle exceeds 50 degrees when the tie is connected to the nearest I-beam, a tie shall connect from an anchor to both I-beams of the unit.
 - 3) Ties shall be evenly spaced on each side of the length of the home with a maximum separation of 12 feet and with the end ties within 2 feet of each end.
 - 4) If steel strapping is used, it must be secured around the I-beam using an approved connecting device. Straps shall go from the anchor to the top of I-beam unless the home manufacturer's instructions indicate otherwise. Care shall be exercised to ensure that minimum bending radius is adhered to, so that the breaking strength of the strapping is not reduced.
 - 5) The ties shall be secured to the I-beam of the home so that they will not become disconnected if the tension is loosened.
 - 6) Ties must terminate with a D-ring, bolt or other tensioning device that will not lower the material strength below that stated in Section 870.200(a).
 - 7) All cable ends shall be secured with at least two utility bolt type clamps or other fastening device.
- c) **Anchors**

- 1) All anchors must be installed to full depth as specified in the anchor manufacturer's installation instructions.
 - 2) Stabilizing devices must be utilized when the load on the ground anchor is not applied in line with the anchor. Provisions shall be made to minimize the deflection or slicing through the soil by the anchor rod at ground level. The method of restricting deflection may be the encasement of the top portion of the anchor in a concrete collar or by the use of a stabilizer plate.
 - 3) Ground anchors installed in line with the load of the anchor must be a minimum of 48 inches in length.
- d) Frost Heave. The following measures shall be taken for the specific type of installation in order to prevent frost heave, which can cause damage to a home:
- 1) If the support system for the home does not extend below the frost depth but the anchors do, the ties shall be adjusted (loosened slightly in the fall and tightened in the spring) to compensate for the tension caused by the earth movement.
 - 2) If the support system for the home extends below the frost depth but the anchoring system does not, the ties shall be tightened in the fall and loosened slightly in the spring.
 - 3) If the anchoring system and the support system for the home both extend below the frost depth or neither extends below the frost depth, no provisions for frost heave are necessary.
- e) Permanent Foundation. Homes installed on a permanent foundation as defined in Section 870.10 are exempted from this Part.

Section 870.230 Manufacturer's Responsibilities

- a) Manufacturers shall include a copy of their installation requirements with each home located in Illinois.
- b) Upon request from the Department, manufacturers shall provide the Department with a copy of the installation requirements for a specific home.
- c) If a manufacturer will honor its home warranty for an installation system that is different than that specified in the installation instructions, such information shall be provided to the Department in writing.

Section 870.240 Penalties

The Department may revoke a license issued under the Manufactured Home Quality Assurance Act for a period not to exceed 6 months for a violation under the Act. A licensee is entitled to a hearing in accordance with the Illinois Administrative Procedure Act (IAPA). [430 ILCS 117/45]

- a) The Director, after notice and opportunity for hearing to the license holder, may revoke, for cause, a license issued under the Act for a period not to exceed 6 months.
- b) For purposes of this Section, "cause" means a violation of any provision of the Act or any rule adopted pursuant to the Act.
- c) The Department shall serve on the license holder a Notice of Opportunity for an Administrative Hearing, which shall contain:
 - 1) a statement of the nature of the action;
 - 2) a statement of the legal authority and jurisdiction under which the action is being initiated;
 - 3) a reference to the particular Sections of the statutes and rules involved;
 - 4) allegations of noncompliance;
 - 5) a statement of the procedure for requesting an administrative hearing (Section 10-25 of the IAPA).
- d) Notice shall be provided by certified mail or by personal service setting forth the particular reasons for the proposed action and fixing a date, not less than 10 days from the date of the mailing or service, within which time the license holder must request, in writing, a hearing. Failure to serve upon the Department a written request for hearing within the time provided in the notice shall constitute a waiver of the person's right to an administrative hearing.
- e) Upon receipt of a timely request for hearing, the Department shall issue a Notice of Hearing or Pre-hearing Conference. The notice shall contain:
 - 1) a statement of the nature of the hearing;
 - 2) a statement of the time and place that the hearing or pre-hearing conference will be held;
 - 3) a statement of the legal authority and jurisdiction under which the hearing is to be held; and

- 4) the names and mailing addresses of the administrative law judge, all parties, and all other persons to whom the agency gives notice of the hearing, unless otherwise confidential by law.
- f) The license holder shall file a written Answer to the Allegations of Noncompliance. The answer must be served on all parties within 20 days after receipt of the notice alleging noncompliance. If a license holder fails to file an answer, each alleged violation of a statute or Department rule by the license holder shall be deemed to have been admitted. If the license holder has insufficient knowledge of the facts to form a belief as to the truth of the allegation, the license holder may so state with an affidavit of insufficient knowledge.
- g) The hearing shall be conducted by the Director or by an individual designated by the Director as an Administrative Law Judge to conduct the hearing. The Director, or Administrative Law Judge, shall give written notice of the time and place of the hearing, by certified mail or personal service, to the applicant or license holder at least 10 days prior to the hearing. On the basis of the hearing, or upon default of the applicant or license holder, the Director shall make a determination specifying his or her findings and conclusions. A copy of the determination shall be sent by certified mail or served personally upon the applicant, license holder, or registrant. The decision of the Director shall be final on issues of fact and final in all respects unless judicial review is sought as provided in this Act.
- h) The procedure governing hearings authorized by this Section shall be in accordance with rules promulgated by the Department Rules of Practice and Procedure in Administrative Hearings (77 Ill. Adm. Code 100).
- i) A full and complete record shall be kept of all proceedings, including the notice of hearing, complaint, and all other documents in the nature of pleadings, written motions filed in the proceedings, and the report and orders of the Director and hearing officer.
- j) The Department, at its expense, shall provide a court reporter to take testimony. Technical error in the proceedings before the Director or Administrative Law Judge or their failure to observe the technical rules of evidence shall not be grounds for the reversal of any administrative decision unless it appears to the Court that such error or failure materially affects the rights of any party and results in substantial injustice to any party.
- k) The Director or Administrative Law Judge may compel the attendance of witnesses and the production of books, papers, records, or memoranda.

Section 870.250 Injunctive Relief

If the Department finds that any installer or manufacturer is operating without a valid license, the Director of the Department may request that the Attorney General file a complaint in circuit court in the name of the People of the State of Illinois to enjoin that installer or manufacturer from engaging in unlicensed activities. [430 ILCS 117/50]

Section 870. TABLE A Soil Pressure

<u>Soil Type</u>	<u>Allowable Pressure (lbs/sq. ft.)</u>
Hard Pan or Rock	4,000 and up
Gravel or Sandy Gravel	2,000
Sandy or Silty Sand	1,500
Clay or Silty Clay	1,000
Peat or Uncompacted Fill	Special Analysis Required

Section 870.TABLE B Footing Areas Required for Soil's Load-Bearing Capacity – Design Roof Load 20 Pounds Per Square Foot

Section Width (feet)									
	12	14	16	12	14	16	12	14	16
Support Spacing (feet)									
	6	6	6	8	8	8	10	10	10
Support Loading (pounds per pier)									
	3200	3700	4250	4250	4950	5650	5300	6150	7050
Soil's Load-Bearing Capacity (lbs/ft ²)	Footing Area (square inches)								
1000	461	533	612	612	713	814	763	886	1015
1500	307	355	408	408	475	542	509	590	677
2000	230	266	306	306	356	407	382	443	508
3000	154	178	204	204	238	271	254	295	338
4000	144	144	153	153	178	203	191	221	254

Section 870.TABLE C Footing Areas Required for Soil's Load-Bearing Capacity – Design Roof Load 30 Pounds Per Square Foot

Section Width (feet)									
	12	14	16	12	14	16	12	14	16
Support Spacing (feet)									
	6	6	6	8	8	8	10	10	10
Support Loading (pounds per pier)									
	3550	4150	4750	4750	5550	6350	5950	6950	7950
Soil's Load-Bearing Capacity (lbs/ft ²)	Footing Area (square inches)								
1000	511	598	684	684	799	914	857	1001	1145
1500	341	398	456	456	533	610	571	667	763
2000	256	299	342	342	400	457	428	500	572
3000	170	199	228	228	266	305	286	334	382
4000	144	148	171	171	200	229	214	250	286

Section 870.TABLE D Footing Areas Required for Soil's Load-Bearing Capacity – Design Roof Load 40 Pounds Per Square Foot

Section Width (feet)									
	12	14	16	12	14	16	12	14	16
Support Spacing (feet)									
	6	6	6	8	8	8	10	10	10
Support Loading (pounds per pier)									
	3950	4650	5300	5300	6150	7050	6600	7700	8800*
Soil's Load-Bearing Capacity (lbs/ft ²)	Footing Area (square inches)								
1000	569	670	763	763	886	1015	950	1109	1267
1500	379	446	509	509	590	677	634	739	845
2000	284	335	382	382	443	508	475	554	634
3000	190	223	254	254	295	338	317	370	422
4000	144	167	191	191	221	254	238	277	317

- a) First footing centered within 2 feet from end of home.
- b)* Individual supports, concrete 8"x8"x16" blocks, shall NOT support loads greater than 8,000 pounds for a single stack and 14,000 pounds for a double stack pier.

Section 870. TABLE E Pier Load and Minimum Pier Capacity for 12 Foot Wide Section (Pounds)

	Roof Live Load (psf)	Mating/Perimeter Wall Opening (feet)						
		5	10	15	20	25	30	35
	20	900	1800	2600	3500	4400	5300	6100
	30	1200	2300	3500	4700	5800	7000	8200
	40	1500	2900	4400	5800	7300	8800*	10200*
Soil's Load-Bearing Capacity (psf)	Footing Area (square inches)							
1000	20	144	259	374	504	634	763	878
	30	173	331	504	677	835	1008	1181
	40	216	417	634	835	1051	1267	1469
1500	20	144	173	250	336	422	509	586
	30	144	221	336	451	557	672	787
	40	144	278	422	557	701	845	979
2000	20	144	144	187	252	317	382	439
	30	144	166	252	338	418	504	590
	40	144	209	317	418	526	634	734
3000	20	144	144	144	168	211	254	293
	30	144	144	168	226	278	336	394
	40	144	144	211	278	350	422	490
4000	20	144	144	144	144	191	191	220
	30	144	144	144	169	209	252	295
	40	144	144	158	209	263	317	367

* Individual supports shall NOT support loads greater than 8000 pounds for a single stack of 8"x8"x16" stack of blocks, 14000 pounds for a double stack.

Section 870.TABLE F Pier Load and Minimum Pier Capacity for 14 Foot Wide Section (Pounds)

	Roof Live Load (psf)	Mating/Perimeter Wall Opening (feet)						
		5	10	15	20	25	30	35
	20	1000	2000	3000	4100	5100	6100	7100
	30	1400	2700	4100	5400	6800	8100*	9500*
	40	1700	3400	5100	6800	8400*	10100*	11800*
Soil's Load-Bearing Capacity (psf)	Footing Area (square inches)							
1000	20	144	288	432	590	734	878	1022
	30	202	389	590	778	979	1166	1368
	40	245	490	734	979	1210	1454	1699
1500	20	144	192	288	394	490	586	682
	30	144	259	394	518	653	778	912
	40	163	326	490	653	806	970	1133
2000	20	144	144	216	295	367	439	511
	30	144	194	295	389	490	583	684
	40	144	245	367	490	605	727	850
3000	20	144	144	144	197	245	293	341
	30	144	144	197	260	326	389	456
	40	144	163	245	326	403	485	566
4000	20	144	144	144	148	184	220	256
	30	144	144	148	194	245	292	342
	40	144	144	184	245	302	364	425

* Individual supports shall NOT support loads greater than 8000 pounds for a single stack of 8"x8"x16" stack of blocks, 14000 pounds for a double stack.

Section 870.TABLE G Pier Load and Minimum Pier Capacity for 16 Foot Wide Section (Pounds)

	Roof Live Load (psf)	Mating/Perimeter Wall Opening (feet)						
		5	10	15	20	25	30	35
	20	1200	2300	3500	4700	5800	7000	8100*
	30	1600	3100	4700	6200	7800	9300*	10900*
	40	1900	3800	5800	7500	9700*	11600*	13600*
Soil's Load-Bearing Capacity (psf)	Footing Area (square inches)							
1000	20	173	331	504	677	835	1008	1166
	30	230	446	677	893	1123	1339	1570
	40	274	547	835	1080	1397	1670	1958
1500	20	144	221	336	451	557	672	778
	30	154	298	451	595	749	893	1046
	40	182	365	557	720	931	1114	1306
2000	20	144	165	252	338	418	504	583
	30	144	223	338	446	562	670	785
	40	144	144	418	540	698	835	979
3000	20	144	144	168	226	278	336	389
	30	144	149	226	298	374	446	523
	40	144	182	278	360	466	557	653
4000	20	144	144	144	169	209	252	292
	30	144	144	169	223	281	335	392
	40	144	144	209	270	349	418	490

* Individual supports shall NOT support loads greater than 8000 pounds for a single stack of 8"x8"x16" stack of blocks, 14000 pounds for a double stack.

Section 870.TABLE H Multi-Section Fastening Schedule

CONNECTOR LOCATION	FASTENER SIZE	FASTENER ANGLE	FASTENER SPACING
Roof ridge beam connection	½ inch carriage bolts	90 degrees	48 inches on center
Roof ridge beam connection	¾ inch lag screws with washers	45 degrees or less	24 inches on center
Roof rafter connection	4 inch by 10 inch 18 gauge straps with 10-10d nails	90 degrees	48 inches on center
Floor rim joist connection	¾ inch lag screws with washers	45 degrees or less	32 inches on center
Floor connection	Marriage clips	90 degrees	Where installed