

**APPENDIX 120.K**  
**MANUFACTURED HOUSING USED AS DWELLINGS**  
**SECTION 120.K.101**  
**SCOPE**

**120.K.101.1 General, one- and two-family dwellings. Provisions 120.K.101.1, Items 1. – 3.** shall be applicable only to a manufactured home used as a single *or two-family* dwelling unit and shall apply to the following:

1. Construction, alteration and repair of any foundation system which is necessary to provide for the installation of a manufactured home unit.
2. Construction, installation, addition, alteration, repair or maintenance of the building service equipment which is necessary for connecting manufactured homes to water, fuel, or power supplies and sewage systems (*refer to requirements of the Specialized Codes*).
3. Alterations, additions or repairs to existing manufactured homes. The construction, alteration, moving, demolition, repair and use of accessory buildings and structures and their building service equipment shall comply with the requirements of the codes adopted by this jurisdiction (*also refer to requirements of the Specialized Code*).

These provisions shall not be applicable to the design and construction of manufactured homes and shall not be deemed to authorize either modifications or additions to manufactured homes where otherwise prohibited.

**Exception:** In addition to these provisions, new and replacement manufactured homes to be located in flood hazard areas as established in **780 CMR Table 5301.2(1)** shall meet the applicable requirements of **780 CMR 5323** and **780 CMR Appendix 120.G**.

**SECTION 120.K.102**  
**APPLICATION TO EXISTING MANUFACTURED HOMES AND BUILDING**  
**SERVICE EQUIPMENT**

**120.K.102.1 General.** Manufactured homes and their building service equipment to which additions, alterations or repairs are made shall comply with all the requirements of these provisions for new facilities, except as specifically provided in this section.

**120.K.102.2 Additions, alterations or repairs.** *Additions made to a manufactured home shall be in accordance with the applicable requirements of 780 CMR and of the Specialized Codes.*

**Building permissible alterations or repairs** to an existing manufactured home which are nonstructural and do not adversely affect any structural member or any part of the building or structure *and are in compliance with* required fire protection *and in compliance with energy conservation requirements* may be made with materials equivalent to those of which the manufactured home structure is constructed, subject to approval by the building official.

**Exception:** The installation or replacement of glass shall be required for new installations *in conformance with all energy related and safety glazing related requirements of 780 CMR*.

**120.K.102.3 Existing installations.** Building service equipment lawfully in existence at the

time of the adoption of the applicable codes - *see requirements of the Specialized Codes*

**120.K.102.4 Existing occupancy.** Manufactured homes which are in existence at the time of the adoption of these provisions may have their existing use or occupancy continued if such use or occupancy was legal at the time of the adoption of these provisions, provided such continued use is not dangerous to life, health and safety.

The use or occupancy of any existing manufactured home shall not be changed unless evidence satisfactory to the building official is provided to show compliance with all applicable provisions of the codes adopted by this jurisdiction. Upon any change in use or occupancy, the manufactured home shall cease to be classified as such within the intent of these provisions.

**120.K.102.5 Maintenance.** All manufactured homes and their building service equipment, existing and new, and all parts thereof shall be maintained in a safe and sanitary condition. All *devices* or safeguards which are required by applicable codes or by the Manufactured Home Standards shall be maintained in conformance with the code or standard under which it was installed. The owner or the owner's designated agent shall be responsible for the maintenance of manufactured homes, accessory buildings, structures and their building service equipment. To determine compliance with this subsection, the building official may cause any manufactured home, accessory building or structure to be reinspected.

**120.K.102.6 Relocation.** Manufactured homes which are to be relocated shall comply with the *applicable provisions of 780 CMR Appendix 120.K.*

**120.K.201.1 General.** For the purpose of these provisions, certain abbreviations, terms, phrases, words and their derivatives shall be construed as defined or specified herein.

**ACCESSORY BUILDING.** Any building or structure, or portion thereto, located on the same property as a manufactured home which does not qualify as a manufactured home as defined herein.

**BUILDING SERVICE EQUIPMENT.** Refers to the plumbing, mechanical and electrical equipment including piping, wiring, fixtures and other accessories which provide sanitation, lighting, heating ventilation, cooling, fire protection and facilities essential for the habitable occupancy of a manufactured home or accessory building or structure for its designated use and occupancy. *(refer also to the definitions and requirements of the Specialized Codes).*

**MANUFACTURED HOME.** A structure transportable in one or more sections which, in the traveling mode, is 8 body feet (2438 body mm) or more in width or 40 body feet (12 192 body mm) or more in length or, when erected on site, is 320 or more square feet (30 m<sup>2</sup>), and which is built on a permanent chassis and designed to be used as a dwelling with or without a permanent foundation when connected to the required utilities, and includes the plumbing, heating, air-conditioning and electrical systems contained therein; except that such term shall include any structure which meets all the requirements of this paragraph except the size requirements and with respect to which the manufacturer voluntarily files a certification required by the secretary (HUD) and complies with the standards established under this title. For mobile homes built prior to June 15, 1976, a label certifying compliance to the Standard for Mobile Homes, NFPA 501, ANSI 119.1, in effect at the time of manufacture is required.

For the purpose of these provisions, a mobile home shall be considered a manufactured home.

**MANUFACTURED HOME INSTALLATION.** Construction which is required for the installation of a manufactured home, including the construction of the foundation system, required structural connections thereto and the installation of on-site water, gas, electrical and sewer systems and connections thereto which are necessary for the normal operation of the manufactured home.

**MANUFACTURED HOME STANDARDS.** The Manufactured Home Construction and Safety Standards as promulgated by the United States Department of Housing and Urban Development.

## **SECTION 120.K.301**

### **PERMITS**

**120.K.301.1 Initial installation.** A manufactured home shall not be installed on a foundation system reinstalled or altered without first obtaining a permit from the building official. A separate permit shall be required for each manufactured home installation. When approved by the building official, such permit may include accessory buildings and structures and their building service *equipment (when applicable, refer to the Specialized Codes for building service equipment requirements)* when the accessory buildings or structures will be constructed in conjunction with the manufactured home installation.

**120.K.301.2 Additions, alterations and repairs to a manufactured home.** A permit shall be obtained to alter, remodel, repair or add accessory buildings or structures to a manufactured home subsequent to its initial installation. Permit issuance and fees therefore shall be in conformance with the codes applicable to the type of work involved. An addition made to a manufactured home as defined in these provisions shall comply with these provisions.

**120.K.301.3 Accessory buildings.** Except as provided in *Section 120.K.301.1*, permits shall be required for all accessory buildings and structures and their building service equipment. Permit issuance and fees therefore shall be in conformance with the codes applicable to the types of work involved.

**120.K.301.4 Exempted work.** A permit shall not be required for the types of work specifically exempted by the applicable codes. Exemption from the permit requirements of any of said codes shall not be deemed to grant authorization for any work to be done in violation of the provisions of said codes or any other laws or ordinances of this jurisdiction.

## **SECTION 120.K.302 APPLICATION FOR PERMIT**

**120.K.302.1 Application.** To obtain a manufactured home installation permit, the applicant shall first file an application in writing on a building permit form furnished by the building official for that purpose. *Every* such application shall:

1. Identify and describe the work to be covered by the permit for which application is made.
2. Describe the land on which the proposed work is to be done by legal description, street

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address or similar description that will readily identify and definitely locate the proposed building or work.

3. Indicate the use or occupancy for which the proposed work is intended.
4. Be accompanied by plans, diagrams, computations and specifications and other data as required in Section **5110 and 5111, as applicable**.
5. Be accompanied by a soil investigation when required by **this code**.
6. State the valuation of any new building or structure or any addition, remodeling or alteration to an existing building.
7. Be signed by permittee, or permittee's authorized agent, who may be required to submit evidence to indicate such authority.
8. Give such other data and information as may be required by the building official.

**120.K.302.2 Plans and specifications. See Sections 5110 and 5111, inclusive.**

***Exception: Where precast, interlocking panelized foundation wall systems are utilized, engineering calculations are required.***

**120.K.302.3 Information on plans and specifications. See 780 CMR generally and Sections 5110 and 5111, inclusive.**

## **SECTION 120.K.303**

### **PERMITS ISSUANCE**

**120.K.303.1 Issuance. See Sections 5110 and 5111, inclusive.**

**120.K.303.2 Retention of plans. See Section 5111, inclusive.**

**120.K.303.3 Validity of permit. See Section 5111, inclusive.**

**120.K.303.4 Expiration. See Section 5111.8**

**120.K.303.5 Suspension or revocation. See Section 5111.12.**

## **SECTION 120.K.304**

### **FEES**

**120.K.304.1 Permit fees. See Section 5114, inclusive.**

## **SECTION 120.K.305**

### **INSPECTIONS**

**120.K.305.1 General. See Section 5115, inclusive.**

**120.K.305.2 Required inspections.**

**120.K.302.5.1 Structural inspections for the manufactured home installation. See Section 5115.2 inclusive.**

## **SECTION 120.K.303**

### **MANUFACTURER'S INSTALLATION REQUIREMENTS**

**120.K.307.1 Manufacturer's installation instructions.** The installation instructions as provided by the manufacturer of the manufactured home shall be used to determine permissible points of support for vertical loads and points of attachment for anchorage systems used to resist horizontal and uplift forces.

## **SECTION 120.K.304 FOUNDATION SYSTEMS**

**120.K.304.1 General.** Foundation systems designed and constructed *for Manufactured Housing used as residential dwellings must be* considered as a permanent *foundations designed and placed to address frost conditions.*

**120.K.304.2 Foundation design.** *See 780 CMR generally and Chapter 54 specifically.*

## **SECTION 120.K.305 SKIRTING AND PERIMETER ENCLOSURES**

**120.K.305.1 Skirting and permanent perimeter enclosures.** Skirting and permanent perimeter enclosures shall be installed only where specifically required by other laws or ordinances. Skirting, when installed, shall be of material suitable for exterior exposure and contact with the ground. Permanent perimeter enclosures shall be constructed of materials as required by this code for regular foundation construction.

Skirting shall be installed in accordance with the skirting manufacturer's installation instructions. Skirting shall be adequately secured to assure stability, to minimize vibration and susceptibility to wind damage, and to compensate for possible frost heave.

**120.K.305.2 Retaining walls.** Where retaining walls are used as a permanent perimeter enclosure, they shall resist the lateral displacements of soil or other materials and shall conform to this code as specified for foundation walls. Retaining walls and foundation walls shall be constructed of approved treated wood, concrete, masonry or other approved materials or combination of materials as for foundations as specified in this code. Siding materials shall extend below the top of the exterior of the retaining or foundation wall or the joint between siding and enclosure wall shall be flashed in accordance with this code.

## **SECTION 120.K.306 STRUCTURAL ADDITIONS**

**120.K.306.1 General.** Accessory buildings shall not be structurally supported by or attached to a manufactured home unless engineering calculations are submitted to substantiate any proposed structural connection.

**Exception:** The building official may waive the submission of engineering calculations if it is found that the nature of the work applied for is such that engineering calculations are not necessary to show conformance to these provisions.

## **SECTION 120.K.307 BUILDING SERVICE EQUIPMENT**

**120.K.307.1 General.** *The installation, alteration, repair, replacement, addition to or*

*maintenance of the building service equipment within the manufactured home shall conform to regulations set forth in the applicable Specialized Codes and otherwise in accordance with the requirements of the Manufacturer of the Manufactured Home. All such work which is located outside the manufactured home shall comply with the applicable Specialized Codes.*

## **SECTION 120.K.308**

### **EXITS**

**120.K.308.1 Site development.** Exterior stairways and ramps which provide egress to the public way shall comply with applicable provisions of this code.

**120.K.308.2 Accessory buildings.** Every accessory building or portion thereof shall be provided with exits as required by this code.

## **SECTION 120.K.309**

### **OCCUPANCY, FIRE SAFETY AND ENERGY CONSERVATION STANDARDS**

**120.K.309.1 General.** Alterations made to a manufactured home subsequent to its initial installation shall conform to the occupancy, fire-safety and energy conservation requirements set forth in the Manufactured Home Standards *or this code when applicable*.

## **SECTION 120.K.310**

### **SPECIAL REQUIREMENTS FOR FOUNDATION SYSTEMS**

**120.K.310.1 General.** *Section 120.K.310 is applicable only when specifically authorized by the building official and the building official is provided appropriate engineering support of intended foundation design.*

## **SECTION 120.K.311**

### **FOOTINGS AND FOUNDATIONS**

**AE601.1 General.** The capacity of individual load-bearing piers and their footings shall be sufficient to sustain all loads specified in this code within the stress limitations specified in this code. Footings, unless otherwise approved by the building official, shall be placed level on firm, undisturbed soil or an engineered fill which is free of organic material, such as weeds and grasses. Where used, an engineered fill shall provide a minimum load-bearing capacity of not less than 1,000 psf (48 kN/m<sup>2</sup>). Continuous footings shall conform to the requirements of this code. **Section 120.K.304** of these provisions shall apply to footings and foundations constructed under the provisions of this section.

## **SECTION 120.K.312**

### **PIER CONSTRUCTION**

**120.K.312.1 General.** Piers shall be designed and constructed to distribute loads evenly. Multiple section homes may have concentrated roof loads which will require special consideration. Load-bearing piers may be constructed utilizing one of the methods listed below. Such piers shall be considered to resist only vertical forces acting in a downward direction. They shall not be considered as providing any resistance to horizontal loads induced

by wind or earthquake forces.

1. A prefabricated load-bearing device that is listed and labeled for the intended use.
2. Mortar shall comply with ASTM C 270 Type M, S or N; this may consist of one part portland cement, one-half part hydrated lime and four parts sand by volume. Lime shall not be used with plastic or waterproof cement.
3. A cast-in-place concrete pier with concrete having specified compressive strength at 28 days of 2,500 psi (17 225 kPa).

Alternate materials and methods of construction may be used for piers which have been designed by an engineer or architect licensed by the state to practice as such.

Caps and leveling spacers may be used for leveling of the manufactured home. Spacing of piers shall be as specified in the manufacturer's installation instructions, if available, or by an approved designer.

## **SECTION AE313**

### **HEIGHT OF PIERS**

**120.K.313.1 General.** Piers constructed as indicated in **780 CMR 120.K.312** may have heights as follows:

1. Except for corner piers, piers 36 inches (914 mm) or less in height may be constructed of masonry units, placed with cores or cells vertically. Piers shall be installed with their long dimension at right angles to the main frame member they support and shall have a minimum cross-sectional area of 128 square inches (82 560 mm<sup>2</sup>). Piers shall be capped with minimum 4-inch (102 mm) solid masonry units or equivalent.
2. Piers between 36 and 80 inches (914 mm and 2032 mm) in height and all corner piers over 24 inches (610 mm) in height shall be at least 16 inches by 16 inches (406 mm by 406 mm) consisting of interlocking masonry units and shall be fully capped with minimum 4-inch (102 mm) solid masonry units or equivalent.
3. Piers over 80 inches (2032 mm) in height may be constructed in accordance with the provisions of Item 2 above, provided the piers shall be filled solid with grout and reinforced with four continuous No. 5 bars. One bar shall be placed in each corner cell of hollow masonry unit piers or in each corner of the grouted space of piers constructed of solid masonry units.
4. Cast-in-place concrete piers meeting the same size and height limitations of Items 1, 2 and 3 above may be substituted for piers constructed of masonry units.

## **SECTION 120.K.314**

### **ANCHORAGE INSTALLATIONS**

**120.K.314.1 Ground anchors.** Ground anchors shall be designed and installed to transfer the anchoring loads to the ground. The load-carrying portion of the ground anchors shall be installed to the full depth called for by the manufacturer's installation directions and shall extend below the established frost line into undisturbed soil.

Manufactured ground anchors shall be listed and installed in accordance with the terms of their listing and the anchor manufacturer's instructions and shall include means of attachment of ties meeting the requirements of Section **120.K.311**. Ground anchor manufacturer's installation instructions shall include the amount of preload required and load capacity in various types of soil. These instructions shall include tensioning adjustments which may be needed to prevent damage to the manufactured home, particularly damage that can be caused by frost heave.

Each ground anchor shall be marked with the manufacturer's identification and listed model identification number which shall be visible after installation. Instructions shall accompany each listed ground anchor specifying the types of soil for which the anchor is suitable under the requirements of this section.

Each approved ground anchor, when installed, shall be capable of resisting an allowable working load at least equal to 3,150 pounds (14 kN) in the direction of the tie plus a 50 percent overload [4,725 pounds (21 kN) total] without failure. Failure shall be considered to have occurred when the anchor moves more than 2 inches (51 mm) at a load of 4,725 pounds (21 kN) in the direction of the tie installation. Those ground anchors which are designed to be installed so that loads on the anchor are other than direct withdrawal shall be designed and installed to resist an applied design load of 3,150 pounds (14 kN) at 40 to 50 degrees from vertical or within the angle limitations specified by the home manufacturer without displacing the tie end of the anchor more than 4 inches (102 mm) horizontally. Anchors designed for connection of multiple ties shall be capable of resisting the combined working load and overload consistent with the intent expressed herein.

When it is proposed to use ground anchors and the building official has reason to believe that the soil characteristics at a given site are such as to render the use of ground anchors advisable, or when there is doubt regarding the ability of the ground anchors to obtain their listed capacity, the building official may require that a representative field installation be made at the site in question and tested to demonstrate ground anchor capacity. The building official shall approve the test procedures.

**120.K.314.2 Anchoring equipment.** Anchoring equipment, when installed as a permanent installation, shall be capable of resisting all loads as specified within these provisions. When the stabilizing system is designed by an engineer or architect licensed by the state to practice as such, alternative designs may be used, providing the anchoring equipment to be used is capable of withstanding a load equal to 1.5 times the calculated load. All anchoring equipment shall be listed and labeled as being capable of meeting the requirements of these provisions. Anchors as specified in this code may be attached to the main frame of the manufactured home by an approved  $\frac{3}{16}$ -inch-thick (4.76 mm) slotted steel plate anchoring device. Other anchoring devices or methods meeting the requirements of these provisions may be permitted when approved by the building official.

Anchoring systems shall be so installed as to be permanent. Anchoring equipment shall be so designed to prevent self-disconnection with no hook ends used.

**120.K.314.3 Resistance to weather deterioration.** All anchoring equipment, tension devices and ties shall have a resistance to deterioration as required by this code.

**120.K.314.4 Tensioning devices.** Tensioning devices, such as turnbuckles or yoke-type fasteners, shall be ended with clevis or welded eyes.

## **SECTION 120.K.315**

### **TIES, MATERIALS AND INSTALLATION**

**120.K.315.1 General.** Steel strapping, cable, chain or other approved materials shall be used for ties. All ties shall be fastened to ground anchors and drawn tight with turnbuckles or other adjustable tensioning devices or devices supplied with the ground anchor. Tie materials shall



be capable of resisting an allowable working load of 3,150 pounds (14 kN) with no more than 2 percent elongation and shall withstand a 50 percent overload [4,750 pounds (21 kN)]. Ties shall comply with the weathering requirements of Section 120.K.604.3. Ties shall connect the ground anchor and the main structural frame. Ties shall not connect to steel outrigger beams which fasten to and intersect the main structural frame unless specifically stated in the manufacturer's installation instructions. Connection of cable ties to main frame members shall be  $\frac{5}{8}$ -inch (15.9 mm) closed-eye bolts affixed to the frame member in an approved manner. Cable ends shall be secured with at least two U-bolt cable clamps with the "U" portion of the clamp installed on the short (dead) end of the cable to assure strength equal to that required by this section.

Wood floor support systems shall be fixed to perimeter foundation walls in accordance with provisions of this code. The minimum number of ties required per side shall be sufficient to resist the wind load stated in this code. Ties shall be evenly spaced as practicable along the length of the manufactured home with the distance from each end of the home and the tie nearest that end not exceeding 8 feet (2438 mm). When continuous straps are provided as vertical ties, such ties shall be positioned at rafters and studs. Where a vertical tie and diagonal tie are located at the same place, both ties may be connected to a single anchor, provided the anchor used is capable of carrying both loadings. Multisection manufactured homes require diagonal ties only. Diagonal ties shall be installed on the exterior main frame and slope to the exterior at an angle of 40 to 50 degrees from the vertical or within the angle limitations specified by the home manufacturer. Vertical ties which are not continuous over the top of the manufactured home shall be attached to the main frame.

## **SECTION 120.K.316**

### **REFERENCED STANDARDS**

ASTMC 270-01a Specification for Mortar for Unit  
Masonry.....120.K.313

NFP 501-99 STANDARD ON MANUFACTURED  
HOUSING.....120.K201



