540.21 Marking. Projectors and other equipment shall be marked with the manufacturer's name or trademark and with the voltage and current for which they are designed in accordance with 110.21.

Part III. Nonprofessional Projectors

540.31 Motion Picture Projection Room Not Required. Projectors of the nonprofessional or miniature type, where employing cellulose acetate (safety) film, shall be permitted to be operated without a projection room.

540.32 Listing Requirements. Projection equipment shall be listed.

ARTICLE 545

Manufactured Buildings and Relocatable Structures

Part I. General

545.1 Scope. This article covers requirements for manufactured buildings, building components, relocatable structures, and the conductors that connect relocatable structures to a supply of electricity.

The term *building, manufactured (manufactured building)* is defined in Article 100. The distinction between manufactured buildings covered in Article 545 and manufactured homes covered Article 550 and defined in Article 100 is important. The most distinguishing feature between the two types of structures is how they are placed on the building site. Manufactured homes are built on a chassis and installed on site with or without a permanent foundation. Manufactured buildings are generally constructed within a factory or assembly plant and then transported to the building site. They are not built on a chassis and are designed to be installed on a permanent foundation. Mobile homes that are used as other than dwelling units have been incorporated into Article 545.

In addition, the organizations responsible for construction standards for these units differ. In the case of manufactured homes, the U.S. Department of Housing and Urban Development, 24 CFR 3280, "Manufactured Home Construction and Safety Standards," contains construction requirements for manufactured homes. Manufactured homes bear a nameplate documenting that the unit was constructed in accordance with the federal standard in force at the time of manufacture. In accordance with federal law, this nameplate is an identifying mark that is universally recognized throughout the United States.

Manufactured building construction standards generally are promulgated through state or local units of government. Manufactured building construction can be affected by differences in building construction regulations among the jurisdictions where the buildings will be delivered. The building typically will have an information sheet (often inside the cabinet below the kitchen sink or on a closet wall) indicating the applicable building, electrical, plumbing, and mechanical codes to which the building was constructed.

545.4 Wiring Methods.

(A) Methods Permitted. All raceway and cable wiring methods included in this *Code* and other wiring systems specifically intended and listed for use in manufactured buildings shall be permitted with listed fittings and with fittings listed and identified for manufactured buildings.

(B) Securing Cables. In closed construction, cables shall be permitted to be secured only at cabinets, boxes, or fittings where 10 AWG or smaller conductors are used and protection against physical damage is provided.

545.5 Supply Conductors. Provisions shall be made to route the service-entrance conductors, underground service conductors, service-lateral, feeder, or branch-circuit supply to the service or building disconnecting means conductors.

545.6 Installation of Service-Entrance Conductors. Service-entrance conductors shall be installed after erection at the building site.

Exception: The service-entrance conductors shall be permitted to be installed prior to the erection at the building site where the point of attachment is known prior to manufacture.

545.7 Service Equipment. Service equipment shall be installed in accordance with 230.70.

545.8 Protection of Conductors and Equipment. Protection shall be provided for exposed conductors and equipment during processes of manufacturing, packaging, in transit, and erection at the building site.

545.9 Boxes.

(A) Other Dimensions. Boxes of dimensions other than those required in Table 314.16(A) shall be permitted to be installed where tested, identified, and listed to applicable standards.

(B) Not Over 1650 cm³ (100 in.³). Any box not over 1650 cm³ (100 in.³) in size, intended for mounting in closed construction, shall be affixed with anchors or clamps so as to provide a rigid and secure installation.

545.10 Receptacle or Switch with Integral Enclosure. A receptacle or switch with integral enclosure and mounting means, where tested, identified, and listed to applicable standards, shall be permitted to be installed.

See also

300.15(E) and its commentary for more information about wiring devices with integral enclosures

545.11 Bonding and Grounding. Prewired panels and building components shall provide for the bonding, or bonding and grounding, of all exposed metals likely to become energized, in accordance with Article 250, Parts V, VI, and VII.

545.12 Grounding Electrode Conductor. Provisions shall be made to route a grounding electrode conductor from the service, feeder, or branch-circuit supply to the point of attachment to the grounding electrode.

545.13 Component Interconnections. Fittings and connectors that are intended to be concealed at the time of on-site assembly, where tested, identified, and listed to applicable standards, shall be permitted for on-site interconnection of modules or other building components. Such fittings and connectors shall be equal to the wiring method employed in insulation, temperature rise, and fault-current withstand and shall be capable of enduring the vibration and minor relative motions occurring in the components of manufactured buildings.

The structural components or modules usually are constructed in manufacturing facilities and then transported over the road to a building site for complete assembly of the structure, such as a dwelling unit, motel, or office building. Each module may be prewired at the factory and supplied with fittings and connectors. At the on-site location, the connectors are used to interconnect two or more modules.

Part II. Relocatable Structures

545.20 Application Provisions. Relocatable structures shall comply with Part II of this article and the applicable sections of Part I.

545.22 Power Supply.

Δ **(A) Feeder.** A relocatable structure shall be supplied by a feeder. The feeder shall include insulated color-coded conductors, one of which shall be an equipment grounding conductor. The equipment grounding conductor shall be permitted to be uninsulated if part of a listed cable assembly.

Informational Note: See 590.4(B) for temporary installation of feeder conductors.

(B) Number of Supplies. Where two or more relocatable structures are structurally connected to form a single unit and there is a factory-installed panelboard in each relocatable structure, each panelboard shall be permitted to be supplied by a separate feeder.

(C) Identification. The identification requirements in 225.37 shall not apply to relocatable structures structurally connected provided the following conditions are met:

(1) The relocatable structures are located on an industrial or commercial establishment where the conditions of maintenance and supervision ensure qualified individuals will service the installation.
(2) The individual panelboard enclosures or covers have been marked to indicate to location of their supply disconnecting means. The marking shall be visible without removing the cover and shall be of sufficient durability to withstand the environment involved.

Δ **(D) Grounding.**

N **(1) Feeders.** The feeder(s) shall be grounded in accordance with Parts I, II, and III of Article 250.

N **(2) Two or More Relocatable Structures.** Where two or more relocatable structures are structurally connected to form a single unit, and a common grounding electrode conductor and tap arrangement as specified in 250.64(D)(1) is utilized, it shall be permitted to use the chassis bonding conductor specified in 545.26 as the tap conductor.

545.24 Disconnecting Means and Branch-Circuit Overcurrent Protection.

(A) Disconnecting Means. A single disconnecting means consisting of a circuit breaker, or a switch and fuses and its accessories, shall be provided in a readily accessible location for each relocatable structure.

(B) Branch-Circuit Protective Equipment and Panelboards. Branch-circuit distribution equipment shall be installed in each relocatable structure and shall include overcurrent protection for each branch circuit consisting of either circuit breakers or fuses.

Panelboards shall be installed in a readily accessible location.

545.26 Bonding of Exposed Non–Current-Carrying Metal Parts. All exposed non–current-carrying metal parts that are likely to become energized shall be effectively bonded to the grounding terminal or enclosure of the panelboard. A bonding conductor shall be connected between the panelboard and an accessible terminal on the chassis.

545.27 Intersystem Bonding. Where two or more relocatable structures are structurally connected to form a single unit, it shall be permissible to install one communication system bonding termination in accordance with 250.94 provided all the following conditions are met:

(1) There is a factory-installed panelboard in each relocatable structure.
(2) There is a bonding conductor between the grounding terminal in each panelboard and chassis in accordance with 545.26.
(3) There is a minimum 6 AWG copper conductor that extends from the communication system bonding termination that is connected to each chassis bonding conductor required by 545.26.