

1996 NEC Outlines Large Appliance Grounding Changes

Revised text in the 1996 *National Electrical Code*, NFPA 70, may catch some electricians and code officials by surprise considering that the change is a departure from a long-standing practice. Appliances listed in Section 250-60, other than existing installations, are now treated no differently than any other appliance regarding the grounding of noncurrent-carrying metal parts. Existing installations will be permitted to continue with the practice that's been in use for several decades.

Section 250-60 has been altered significantly since the 1993 edition of the *National Electrical Code*. This section now only applies to existing branch circuits installed in existing buildings. This means that the allowance for grounding the frames of clothes dryers, ranges, wall-mounted ovens and counter-mounted cooking units by connecting to the grounded conductor (neutral) is no longer permitted for new installations. For all new construction installations and for the addition of branch circuits in existing buildings, the grounding of appliances, outlet boxes and junction boxes to the grounded conductor (neutral) is prohibited by the 1996 *National Electrical Code*.

For example, this means that a newly installed branch circuit for an electric clothes dryer must include 4 conductors (i.e., 2 ungrounded conductors, 1 grounded (neutral) conductor and 1 grounding conductor). The receptacle outlet for a clothes dryer must be a 3-pole with ground-type and the flexible cord and plug set must be 4-wire with a 3-pole with ground type plug. Also, metal junction and outlet boxes associated with such branch circuits must be grounded by connecting to the grounding conductor of the branch circuit. Any connections or jumpers internal to an appliance must be checked to make sure that the neutral is electrically isolated from the appliance frame. It is important to check this as some appliances could be shipped with

the neutral bonded to the frame internally.

Ranges and clothes dryers typically have a flexible supply cord and are often moved from one dwelling unit to another. When such appliances are reinstalled, the 1996 NEC would require a 4-wire supply cord, receptacle and branch circuit. This means that in the majority of cases, the existing branch circuit wiring and the appliance supply cord will have to be replaced. Reinstallation of a used appliance is treated no differently than the initial installation of a new appliance.

This significant change to the NEC echoes the intent of Section 250-61, that is, grounded circuit conductors shall not be used for the grounding of appliances on the load side of the service equipment.

