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Office of the State Fire Marshal - Engineering Division
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Number of Outlets on Circuits in Dwellings

Code: 2017 Electrical Code **Date:** June 12, 2018
Section: 210.11

Question:
How many receptacles are allowed on a branch circuit in a single family dwelling?

Answer:

There is no specific limit to number of receptacles installed on each of the branch circuits required by Section 210.11.

The requirement for number of branch circuits in a dwelling is found in Section 210.11, which references the power calculations required by Section 220.10. These calculations provide the minimum number of branch circuits for the dwelling. There is no requirement that each general lighting and receptacle outlet be considered in determining that number.

The general lighting load (includes general purpose receptacles) considered for the dwelling is based on the number of square feet of the dwelling multiplied by 3 volt-amperes (or watts in a single-family dwelling) per square foot. This total is then evenly divided among branch circuits, meaning at least two.

For general lighting and receptacle outlets, the total number of volt-amperes for any dwelling is determined by multiplying the dwelling area in square feet by 3 volt-amperes (watts) per square foot (Table 220.12). To determine the number of general lighting load branch- circuits, the load in volt-amperes is then divided by the volt-amps per circuit.

For 20-amp general lighting load circuits:
(dwelling area in sq ft X 3 volt-amperes per sq ft) / (20 amps X 120 volts per circuit) = number of circuits. Round up to the next whole number.

For 15-amp general lighting load circuits:
(dwelling area in sq ft X 3 volt-amperes per sq ft) / (15 amps X 120 volts per circuit) = number of circuits. Round up to the next whole number.

There are five additional 20-amp branch circuits required in 210.11(C); they are two for the small-appliances, one for the laundry receptacle outlet(s), one for the bathroom receptacle outlet(s), and one for the garage if a garage exists.

Keywords:
Dwelling calculations