



## White Paper: Installation Guidelines for Receptacles on Small Appliance Branch Circuits

Section 210.52(B) of the 2011 National Electrical Code (NEC) requires that two or more 20-ampere small appliance branch circuits be provided to serve the receptacle outlets in the kitchen, pantry, breakfast room, dining room or similar area of a dwelling unit. These receptacles can be provided using either NEMA style receptacles or multioutlet assemblies.

The specific type of NEMA receptacle required depends on how many receptacles will be installed on the particular small appliance branch circuit. This requires that we now look at the definition of a Receptacle in the NEC. "Receptacle" is defined as follows in Article 100:

"A receptacle is a contact device installed at the outlet for the connection of an attachment plug. A single receptacle is a single contact device with no other contact device on the same yoke. A multiple receptacle is two or more contact devices on the same yoke."

Here is an example of a single receptacle:



Here is an example of a multiple receptacle:



In accordance with Section 210.21(B)(1), If a single receptacle is installed on a branch circuit, it shall have an ampere rating of not less than that of the branch circuit. Also , Section 210.21(B)(3) states that a branch circuit supplying two or more receptacles or outlets shall use receptacles that are rated in accordance with Table 210.21(B)(3), shown below. For a 20-ampere circuit, this table allows either a 15-ampere or a 20-ampere receptacle to be used.

TABLE 210.21(b)(3). Receptacle Ratings for Various Size Circuits.	
Circuit Rating (Amperes)	Receptacle Rating (Amperes)
15	Not over 15
20	15 or 20
30	30
40	40 or 50
50	50

Based on these requirements, we can now determine the ratings of the receptacles used on the 20-ampere small appliance branch circuits:

One single receptacle: A branch circuit with one single receptacle and no other receptacles must use a NEMA 5-20R receptacle.

More than one single receptacle: A branch circuit with more than one single receptacle can use either NEMA 5-15R receptacles or NEMA 5-20R receptacles.

One multiple receptacle: A branch circuit with one multiple receptacle can use either a NEMA 5-15R or NEMA 5-20R receptacle.

More than one multiple receptacle: A branch circuit with more than one multiple receptacle can use either NEMA 5-15R or NEMA 5-20R receptacles.

Single and multiple receptacles: A branch circuit with any combination of single and multiple receptacles can use either NEMA 5-15R or NEMA 5-20R receptacles.

Please note that GFCI protection must be provided for the 20-ampere small appliance branch circuits in accordance with Section 210.8 of the NEC.

As stated above, the receptacles for the 20-ampere small appliance branch circuit can be provided either using Listed Receptacles or Listed Multioutlet Assemblies. Here are some examples of each type and the receptacle ratings required:

Listed 5-15R Single Receptacle:



This receptacle can be used on the small appliance branch circuit as long as there is more than one receptacle on the circuit.

Listed 5-20R Single Receptacle:



This receptacle can be used on the small appliance branch circuit with more than one receptacle and MUST be used if it is the only receptacle on the circuit.

Listed 5-15R Multiple Receptacle:



This receptacle can be used on the small appliance branch circuit, even if it is the only receptacle on the circuit.

Listed 5-20R Multiple Receptacle:



This receptacle can be used on the small appliance branch circuit.

Listed Multioutlet Assembly using 15A single receptacles:



This multioutlet assembly can be used on the small appliance branch circuit as long as the assembly is rated 20A feed-through, in other words it uses minimum 12AWG wiring.

Listed Multioutlet Assembly using 15A Multiple Receptacles:



This multioutlet assembly can be used on the small appliance branch circuit as long as the assembly is rated 20A feed-through, in other words it uses minimum 12AWG wiring.

Listed Multioutlet Assembly using 20A Single Receptacles:



This multoutlet assembly can be used on the small appliance branch circuit.

Listed Multioutlet Assembly using 20A Multiple Receptacles:



This multoutlet assembly can be used on the small appliance branch circuit.

### **Conclusion:**

In accordance with the requirements of 2011 National Electrical Code, both 15A and 20A receptacles can be used on the 20-ampere small appliance branch circuit as outlined above.

If you have any additional questions please contact your local electrical inspector.

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