

**NC Department of Insurance
Office of the State Fire Marshal - Engineering Division
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Exhaust Hoods for Domestic Cooking Equipment

Code: 2012 Mechanical Code
Section: 505.1

Date: 6/21/2017

Question:

Do listed domestic ranges¹--gas or electric--require a hood by NCMC 505.1¹?

Answer:

No.

Section 505.1 and subsequent subsections are minimum requirements that must be followed **if** a hood is installed, but does not mandate that one be installed. NCMC 917.2ⁱⁱ, and 917.3ⁱⁱⁱ and NC FGC 623.2^{iv} and 623.3^v clearly require the use of only house-hold type appliances for domestic use. Then, NCMC 304.1^{vi} and NCFGC 305.1^{vii} requires installation be in accordance with the listing and installation instructions. Therefore, unless the installation instructions require a hood, none is required by minimum code. Also, see NCFGC 501.8^{viii} for specific appliance that do not require venting. See Figure 1 and Figure 2 for examples.

Please do not misunderstand this interpretation to mean a hood is **never** required, only that NCMC 505.1 does not mandate one. We have seen manufacturer's instructions for larger domestic ranges that require ventilating hoods in order to meet a reduced clearance to combustibles or some other reason. If that is the case, NCMC 304.1 is requiring the hood.

Follow up Question #1:

Do open-top fuel gas broiler units require a hood?

Answer:

Yes. See NC Fuel Gas Code Section 623.5^{ix}.

Unless otherwise allowed in section 623.5, a ventilating hood is required for an open-top fuel gas broiler unit. See Figure 3 for example of an appliance that has an open-top fuel-gas broiler section. Remember, a griddle is not a broiler. Many ranges have griddle sections, but unless the manufacturer's installation instructions require a hood, minimum code does not require the appliance with a griddle to have a hood.

¹ Ranges, cooktops, and island cooktops in general are all listed to the same standard, so the code treats them the same. For broilers, the reader can do an Internet search on "underfired broiler, char broilers, infrared". Virtually all the images will be of commercial appliances. There really are not that many open-top domestic broilers for domestic use. If there are any doubts as to the proper classification of an appliance, review the manufacturer's detailed installation instructions and not the marketing literature.

Follow-up Question #2

Do open-top electric broiler units require a hood?

Answer:

Not enough information. Indoor open-top electric broilers are not very common, and the Mechanical Code does not address them. Most available on the market are designed for outdoor use only. Indoor units do exist, but there is inadequate information to make a general code statement. One model researched required it to be used under a hood, the other did not mention it. At this point in time, if they are installed, the code would at a minimum require the installer to follow NC Mechanical Code 304.1^x, "...install per manufacturer's installation instructions..".



Figure 1: Domestic ranges, electric and gas. Hood not required by NCMC 505.1. Always refer to manufacturer's installation instructions. (www.whirlpool.com, 2017)



Figure 2: Domestic ranges (cooktops, island drop-ins), electric and gas. Hood not required by NCMC 505.1. Always refer to manufacturer's installation instructions. (www.whirlpool.com, 2017)



Figure 3: Domestic appliance with open-top, under-fired gas broiler. It also has a griddle. This appliance **does** require a means of exhaust due to the presence of the open-top under-fired gas broiler, per NCFGC 623.5. (Wolf-SubZero, 2017)

Keywords:

ⁱ **NCMC 505.1 Domestic systems.** Where domestic range hoods and domestic appliances equipped with downdraft exhaust are located within dwelling units, such hoods and appliances shall discharge to the outdoors through sheet metal ducts constructed of galvanized steel, stainless steel, aluminum or copper. Such ducts shall have smooth inner walls and shall be air tight and equipped with a backdraft damper.

ⁱⁱ **NCMC 917.2 Prohibited location.** Cooking appliances designed, tested, *listed* and *labeled* for use in commercial occupancies shall not be installed within *dwelling units* or within any area where domestic cooking operations occur.

ⁱⁱⁱ **NCMC 917.3 Domestic appliances.** Cooking appliances installed within dwelling units and within areas where domestic cooking operations occur shall be listed and labeled as household-type appliances for domestic use.

^{iv} **NCFGC 623.2 Prohibited location.** Cooking appliances designed, tested, listed and labeled for use in commercial occupancies shall not be installed within dwelling units or within any area where domestic cooking operations occur.

^v **NCFGC 623.3 Domestic appliances.** Cooking appliances installed within dwelling units and within areas where domestic cooking operations occur shall be listed and labeled as household-type appliances for domestic use.

^{vi} **NCMC 304.1 General.** *Equipment* and appliances shall be installed as required by the terms of their approval, in accordance with the conditions of the listing, the manufacturer's installation instructions and this code. Manufacturer's installation instructions shall be available on the job site at the time of inspection.

^{vii} **NCFGC 305.1 General.** Equipment and appliances shall be installed as required by the terms of their approval, in accordance with the conditions of listing, the manufacturer's instructions and this code. Manufacturers' installation instructions shall be available on the job site at the time of inspection. Where a code provision is less restrictive than

the conditions of the listing of the equipment or appliance or the manufacturer's installation instructions, the conditions of the listing and the manufacturer's installation instructions shall apply.

^{viii} **NCFGC 501.8 Appliances not required to be vented.** The following appliances shall not be required to be vented. 1. Ranges. 2. Built-in domestic cooking units listed and marked for optional venting....see Code for limitations when multiple units are installed or spaces are inadequate

^{ix} **NCFGC 623.5 Open-top broiler unit hoods.** A ventilating hood shall be provided above a domestic open-top boiler unit, unless otherwise listed for forced down draft ventilation.

^x **NCMC 304.1 General.** Equipment and appliances shall be installed as required by the terms of their approval, in accordance with the conditions of the listing, the manufacturer's installation instructions and this code. Manufacturer's installation instructions shall be available on the job site at the time of inspection.