

2018 NC State Mechanical Code Amendments

(adopted December 2017 through December 2024)

(Note: includes identified NC Errata)

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The following pages represent a summary of the Building Code Council adopted amendments that have been approved by the Rules Review Commission or by legislative review pursuant to N.C.G.S. 150B-21.3.

2018 NC Mechanical Code (based on the 2015 International Mechanical Code) effective 1/1/2019

These amendments revise, delete or add to the adopted NC Mechanical Code.

2018 NC Mechanical Code
Chapter 2 Definitions. (200714 Item B-8)

CARBON MONOXIDE ALARM. A single- or multiple-station alarm intended to detect carbon monoxide gas and alert occupants by a distinct audible signal. It incorporates a sensor, control components and an alarm notification appliance in a single unit.

CARBON MONOXIDE DETECTOR. A device with an integral sensor to detect carbon monoxide gas and transmit an alarm signal to a connected alarm control unit.

The delayed effective date of this Rule is January 1, 2022.
The Statutory authority for Rule-making is G. S. 143-136; 143-138.

2018 NC Mechanical Code
202 Definitions. (190611 Item B-1)

EXTRA-HEAVY-DUTY COOKING APPLIANCE. Extra-heavy-duty cooking appliances are those utilizing open flame combustion of solid fuel at any time.

~~These appliances shall not use solid fuel to provide a source of heat for cooking. Pellets and chips if used as flavoring shall not be in a state of open flame combustion at any time. Smoldering chambers shall not introduce embers into the flue at any time.~~

HEAVY-DUTY COOKING APPLIANCE. Heavy-duty cooking *appliances* include electric under-fired broilers, electric chain (conveyor) broilers, gas under-fired broilers, gas chain (conveyor) broilers, gas open-burner ranges (with or without oven), electric and gas wok ranges, smokers, smoker ovens, and electric and gas over-fired (upright) broilers and salamanders.

~~Such an *appliance* shall not use solid fuel to provide a source of heat for cooking. Pellets and chips if used as flavoring shall not be in a state of open flame combustion at any time. Smoldering chambers shall not introduce embers into the flue at any time.~~

The delayed effective date of this Rule is January 1, 2021.
The Statutory authority for Rule-making is G. S. 143-136; 143-138.

2018 NC Mechanical Code

306.5 Equipment and appliances on roofs or elevated structures. (171212 Item B-5)

306.5 Equipment and appliances on roofs or elevated structures. Where *equipment* or appliances requiring periodic maintenance are installed on, located on, or suspended from an elevated structure or the roof of a building such that personnel will have to climb higher than 16 feet (4877 mm) above grade or finished floor to access such equipment or appliances, an interior or exterior means of access shall be provided. Such access shall not require climbing over obstructions greater than 30 inches (762 mm) in height or walking on roofs having a slope greater than 4 units vertical in 12 units horizontal (33-percent slope). Such access shall not require the use of portable ladders. Where access involves climbing over parapet walls, the height shall be measured to the top of the parapet wall.

Exception: Where permanent means of access is technically infeasible, wall-mounted equipment and appliance maintenance, replacement and repairs that are over 16 feet can be serviced by motorized equipment *upon approval*. The owner/tenant shall provide a maintenance service and cleaning schedule contract that shall be renewed annually.

Permanent ladders installed to provide the required access shall comply with the following.....

The delayed effective date of this Rule is January 1, 2019.

The Statutory authority for Rule-making is G. S. 143-136; 143-138.

2018 NC Mechanical Code

313 Carbon Monoxide Alarms. (180612 Item B-6)

313.4.1.2 Fuel-burning appliances and fuel-burning fireplaces. Carbon monoxide shall be provided in Group A-2 occupancies, dwelling units, sleeping units and classrooms that contain a fuel-burning appliance or a fuel-burning fireplace.

313.4.1.3 Forced air furnaces. Carbon monoxide detection shall be provided in Group A-2 occupancies, dwelling units, sleeping units and classrooms served by a fuel-burning, forced air furnace.

313.4.1.1 Where required. Carbon monoxide detection shall be provided in Group A-2, I-1, I-2, I-4 and R occupancies and in classrooms in Group E occupancies in the locations specified in Section 313.4.2 where any of the conditions in Sections 313.4.1.2 through 313.4.1.6 exist.

313.4.4.1 Power source. Carbon monoxide alarms shall receive their primary power from the building wiring where such wiring is served from a commercial source, and when primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than that required for overcurrent protection.

Exceptions:

1. Where installed in buildings without commercial power, battery-powered carbon monoxide alarms shall be an acceptable alternative.
2. In A-2 occupancies the carbon monoxide detector shall be permitted to be battery-powered.

The delayed effective date of this Rule is January 1, 2020.

The Statutory authority for Rule-making is G. S. 143-136; 143-138.

January 7, 2026

**TABLE 403.3.1.1
 MINIMUM VENTILATION RATES**

| OCCUPANCY CLASSIFICATION | OCCUPANT DENSITY #/1000 FT^{2 a} | PEOPLE OUTDOOR AIRFLOW RATE IN BREATHING ZONE, R_p CFM/PERSON | AREA OUTDOOR AIRFLOW RATE IN BREATHING ZONE, R_a CFM/FT^{2 a} | EXHAUST AIRFLOW RATE CFM/FT^{2 a} |
|---|---|--|--|--|
| Correctional facilities | | | | |
| Booking/waiting | 50 | 7.5 | 0.06 | — |
| Cells | | | | |
| without plumbing fixtures | 25 | 5 | 0.12 | — |
| with plumbing fixtures ^g | 25 | 5 | 0.12 | 1.0 |
| Day room | 30 | 5 | 0.06 | — |
| Dining halls (see food and beverage service) | — | — | — | — |
| Guard stations | 15 | 5 | 0.06 | — |
| Dry cleaners, laundries | | | | |
| Coin-operated dry cleaner | 20 | 15 | — | — |
| Coin-operated laundries | 20 | 7.5 | 0.06 | — |
| Commercial dry cleaner | 30 | 30 | — | — |
| Commercial laundry | 10 | 25 | — | — |
| Storage, pick up | 30 | 7.5 | 0.12 | — |
| Education | | | | |
| Art classroom | 20 | 10 | 0.18 | 0.7 |
| Auditoriums | 150 | 5 | 0.06 | — |
| Classrooms (ages 5-8) | 25 | 7.5 | — | — |
| Classrooms (age 9 plus) | 35 | 7.5 | — | — |
| Computer lab | 25 | 10 | 0.12 | — |
| Corridors (see public spaces) | — | — | — | — |
| Day care (through age 4) | 25 | 10 | 0.18 | — |
| Lecture classroom | 65 | 7.5 | 0.06 | — |
| Lecture hall (fixed seats) | 150 | 7.5 | 0.06 | — |
| Locker/dressing rooms ^g | — | — | — | 0.25 |
| Media center | 25 | 10 | 0.12 | — |
| Multiuse assembly | 100 | 7.5 | 0.06 | — |
| Music/theater/dance | 35 | 10 | 0.06 | — |
| Science laboratories | 25 | 10 | 0.18 | — |
| Smoking lounges ^b | 70 | 60 | — | — |
| Sports locker rooms ^g | — | — | — | 0.5 |
| Wood/metal shops ^g | 20 | 10 | 0.18 | 0.5 |
| Food and beverage service | | | | |
| Bars, cocktail lounges | 100 | 7.5 | 0.18 | — |
| Cafeteria, fast food | 100 | 7.5 | 0.18 | — |
| Dining rooms | 70 | 7.5 | 0.18 | — |
| Kitchens (cooking) ^b | — | — | — | 0.7 |

| | | | | |
|--|---|--|------|---------------------|
| Hotels, motels, resorts and dormitories | | | | |
| Bathrooms/toilet—private ^g | | — | — | 25/50 ^f |
| Bedroom/living room | | 5 | 0.06 | — |
| Conference/meeting | | 5 | 0.06 | — |
| Dormitory sleeping areas | | 5 | 0.06 | — |
| Gambling casinos | | 7.5 | 0.18 | — |
| Lobbies/prefunction | | 7.5 | 0.06 | — |
| Multipurpose assembly | | 5 | 0.06 | — |
| Offices | | | | |
| Conference rooms | 50 | 5 | 0.06 | — |
| Main entry lobbies | 10 | 5 | 0.06 | — |
| Office spaces | 5 | 5 | 0.06 | — |
| Reception areas | 30 | 5 | 0.06 | — |
| Telephone/data entry | 60 | 5 | 0.06 | — |
| Private dwellings, single and multiple | | | | |
| Garages, common for multiple units ^b | — | — | — | 0.75 |
| Garages, below dwelling units ^d | — | — | — | 100 cfm per car |
| Kitchens ^b | — | — | — | 25/100 ^f |
| Living areas ^c | Based upon number of bedrooms. First bedroom, 2; each additional bedroom, 1 | 0.35 ACH but not less than 15 cfm/person | — | — |
| Toilet rooms and bathrooms ^g | — | — | — | 25/50 ^f |
| Public spaces | | | | |
| Corridors | — | — | 0.06 | — |
| Courtrooms | 70 | 5 | 0.06 | — |
| Elevator car | — | — | — | 1.0 |
| Legislative chambers | 50 | 5 | 0.06 | — |
| Libraries | 10 | 5 | 0.12 | — |
| Museums (children's) | 40 | 7.5 | 0.12 | — |
| Museums/galleries | 40 | 7.5 | 0.06 | — |
| Places of religious worship | 120 | 5 | 0.06 | — |
| Shower room (per shower head) ^g | — | — | — | 50/20 ^f |
| Smoking lounges ^b | 70 | 60 | — | — |
| Toilet rooms — public ^g | — | — | — | 50/70 ^e |
| Retail stores, sales floors and showroom floors | | | | |
| Dressing rooms | — | — | — | 0.25 |
| Mall common areas | 40 | 7.5 | 0.06 | — |
| Sales | 15 | 7.5 | 0.12 | — |
| Shipping and receiving | — | — | 0.12 | — |
| Smoking lounges ^b | 70 | 60 | — | — |
| Storage rooms | — | — | 0.12 | — |
| Warehouses (see | — | — | — | — |

| | | | | |
|---|-----|-----|------|------|
| storage) | | | | |
| Specialty shops | | | | |
| Automotive motor-fuel dispensing stations ^b | — | — | — | 1.5 |
| Barber | 25 | 7.5 | 0.06 | 0.5 |
| Beauty salons ^b | 25 | 20 | 0.12 | 0.6 |
| Nail salons ^{b,h} | 25 | 20 | 0.12 | 0.6 |
| Embalming room ^b | — | — | — | 2.0 |
| Pet shops (animal areas) ^b | 10 | 7.5 | 0.18 | 0.9 |
| Supermarkets | 8 | 7.5 | 0.06 | — |
| Sports and amusement | | | | |
| Bowling alleys (seating areas) | 40 | 10 | 0.12 | — |
| Disco/dance floors | 100 | 20 | 0.06 | — |
| Game arcades | 20 | 7.5 | 0.18 | — |
| Gym, stadium, arena (play area) | — | — | 0.30 | — |
| Health club/aerobics room | 40 | 20 | 0.06 | — |
| Health club/weight room | 10 | 20 | 0.06 | — |
| Ice arenas without combustion engines | — | — | 0.30 | 0.5 |
| Spectator areas | 150 | 7.5 | 0.06 | — |
| Swimming pools (pool and deck area) | — | — | 0.48 | — |
| Storage | | | | |
| Repair garages, enclosed parking garages ^{b,d} | — | — | — | 0.75 |
| Warehouses | — | — | 0.06 | — |
| Theaters | | | | |
| Auditoriums (see education) | — | — | — | — |
| Lobbies | 150 | | 0.06 | — |
| Stages, studios | 70 | | 0.06 | — |
| Ticket booths | 60 | 5 | 0.06 | — |
| Transportation | | | | |
| Platforms | 100 | 7.5 | 0.06 | — |
| Transportation waiting | 100 | 7.5 | 0.06 | — |
| Workrooms | | | | |
| Bank vaults/safe deposit | 5 | 5 | 0.06 | — |
| Computer (without printing) | 4 | 5 | 0.06 | — |
| Copy, printing rooms | 4 | 5 | 0.06 | 0.5 |
| Darkrooms | — | — | — | 1.0 |
| Meat processing ^c | 10 | 15 | — | — |
| Pharmacy (prep. area) | 10 | 5 | 0.18 | — |
| Photo studios | 10 | 5 | 0.12 | — |

For SI: 1 cubic foot per minute = 0.0004719 m³/s, 1 ton = 908 kg, 1 cubic foot per minute per square foot = 0.00508 m³/(s • m²), °C = [(°F)-32]/1.8, 1 square foot = 0.0929 m².

- Based upon *net occupiable floor area*.
- Mechanical exhaust required and the recirculation of air from such spaces to other spaces is prohibited. Recirculation of air that is contained completely within such spaces shall not be prohibited (see Section 403.2.1, Item 3).
- Spaces unheated or maintained below 50°F are not covered by these requirements unless the occupancy is continuous.
- Ventilation systems in enclosed parking garages shall comply with Section 404.

- e. Rates are per water closet or urinal. The higher rate shall be provided where the exhaust system is designed to operate intermittently. The lower rate shall be permitted only where the exhaust system is designed to operate continuously while occupied.
- f. Rates are per room unless otherwise indicated. The higher rate shall be provided where the exhaust system is designed to operate intermittently. The lower rate shall be permitted only where the exhaust system is designed to operate continuously while occupied.
- g. Mechanical exhaust is required and recirculation to other spaces is prohibited except that recirculation shall be permitted where the resulting supply airstream consists of not more than 10 percent air recirculated from these spaces. Recirculation of air that is contained completely within such spaces shall not be prohibited (see Section 403.2.1, Items 2 and 4).
- h. For nail salons, each manicure and pedicure station shall be provided with a *source capture system* capable of exhausting not less than 50 cfm per station. Exhaust inlets shall be located in accordance with Section 502.20. Where one or more required source capture systems operate continuously during occupancy, the exhaust rate from such systems shall be permitted to be applied to the exhaust flow rate required by Table 403.3.1.1 for the nail salon.
- i. *Commentary: Refer to design guidelines, NC Department of Public Instruction School Planning, Z9.5 American National Standard for Laboratory Ventilation.*
- j. If the tenants of the dwelling have exclusive use of the garage below, no exhaust is required.

The delayed effective date of this Rule is January 1, 2021.

The Statutory authority for Rule-making is G. S. 143-136; 143-138.

2018 NC Mechanical Code
908.1 General. (200901 Item B-12)

908.1 General. A cooling tower used in conjunction with an air-conditioning appliance shall be installed in accordance with the manufacturer's instructions. Factory-built cooling towers shall be listed in accordance with UL 1995 or UL/CSA 60335-2-40.

The delayed effective date of this Rule is January 1, 2022.
The Statutory authority for Rule-making is G. S. 143-136; 143-138.

2018 NC Mechanical Code
918.1 Forced-Air Furnaces & 918.2 Heat Pumps. (200901 Item B-13)

918.1 Forced-air furnaces. Oil-fired furnaces shall be tested in accordance with UL 727. Electric furnaces shall be tested in accordance with UL 1995 or UL/CSA 60335-2-40. Solid fuel furnaces shall be tested in accordance with UL 391. Forced-air furnaces shall be installed in accordance with the listings and the manufacturer's instructions.

918.2 Heat pumps. Electric heat pumps shall be tested in accordance with UL 1995 or UL/CSA 60335-2-40.

The delayed effective date of this Rule is January 1, 2022.
The Statutory authority for Rule-making is G. S. 143-136; 143-138.

2018 NC Mechanical Code
1101.2 Factory-built equipment and appliances. (200901 Item B-14)

1101.2 Factory-built equipment and appliances. Listed and labeled self-contained, factory-built equipment and appliances shall be tested in accordance with UL 207, 412, 471, ~~or~~ 1995 or UL/CSA 60335-2-40. Such equipment and appliances are deemed to meet the design, manufacture and factory test requirements of this code if installed in accordance with their listing and the manufacturer's instructions.

The delayed effective date of this Rule is January 1, 2022.
The Statutory authority for Rule-making is G. S. 143-136; 143-138.

2018 NC Mechanical Code
Chapter 15 References UL/CSA 60335-2-40 & ASHRAE 15 & 34. (200901 Item B-11)

ASHRAE

ASHRAE
1791 Tullie Circle, NE
Atlanta, GA 30329

15—~~2013~~2019

Safety Standard for Refrigeration Systems
1101.6, 1105.8, 1108.1

34—~~2013~~2019

Designation and Safety Classification of Refrigerants
202, 1102.2.1, 1103.1

CSA

CSA Group
8501 East Pleasant Valley Road
Cleveland, OH 44131-5516

CSA-C22.2 No. 60335-2-40-2019

Household And Similar Electrical Appliances -
Safety – Part
2-40: Particular Requirements for Electrical Heat
Pumps, Air-Conditioners and Dehumidifiers – 3rd
Edition
908.1, 918.1, 918.2, 1101.2

UL

UL LLC
333 Pfingsten Road
Northbrook, IL 60062-2096

1995—~~2011~~2015

Heating and Cooling Equipment
908.1, 911.1, 918.1, 918.2, 1101.2

UL 60335-2-40-2019

Household And Similar Electrical Appliances -
Safety – Part
2-40: Particular Requirements for Electrical Heat
Pumps, Air-Conditioners and Dehumidifiers – 3rd
Edition
908.1, 918.1, 918.2, 1101.2

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January 7, 2026