III. FMO Guidelines

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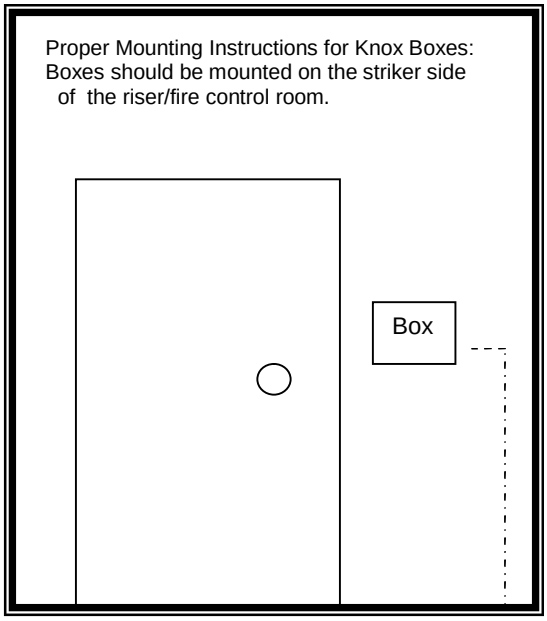
Knox Box Guideline 03.01

The Knox Box system used by the City of Concord Fire & Life Safety Department is a program designed to expedite entry and eliminate property damage caused by the forcible entry required for evaluation of an emergency situation, and allows the Fire Department to secure the building when leaving.



A Knox Box is a highly secure, UL listed, nearly impenetrable steel vault used for the storage of entry keys, and alarm panel or mechanical system keys, for use by the Fire Department. The keys to access the Knox Boxes are located in locked boxes inside of the emergency response apparatus and cannot be duplicated.

The Concord Fire & Life Safety Department has used the Knox Box system since 1987. To-date, there has never been a box stolen, broken or accessed illegally.

The enforcement of use of the Knox Boxes is the City of Concord Ordinance Section 34-3 (Lock Boxes). Section 506.1 of the I.F.C. reads, "When access to or within a structure or an area is restricted because of secured openings or where immediate access is necessary for life-saving or fire-fighting purposes, the code official is authorized to require a key box to be installed in an accessible location. The key shall be of an approved type and shall contain keys to gain access as required by the code official".

The determination of the code official is that all buildings, which contain automatic fire alarm systems or fire suppression sprinkler systems, shall provide a box and the required keys for access to the building. An important reason for this is the real possibility of an alarm occurring when the business is locked and vacant. The availability of a key allows firefighters to safely enter the building, without causing any damage, evaluate the conditions present and secure the premises.

Please contact the Concord Fire & Life Safety Fire Marshal's Office at (704) 920-5517 to purchase a Knox Box. A Fire Department authorized signature on the filled out order form will be required before Knox will process the order.

IMPORTANT

YOUR KNOX BOX SHALL BE INSTALLED AS DESIGNATED ON YOUR FIRE DEPARTMENT APPROVED PLANS. IF THE LOCATION OF THE KNOX BOX IS NOT INDICATED ON THE APPROVED PLANS, HAVE THE FIRE INSPECTOR APPROVE THE LOCATION PRIOR TO INSTALLATION.

THE KNOX BOX SHALL BE INSTALLED BETWEEN 4 to 5 FEET FROM THE GROUND UNLESS OTHERWISE APPROVED BY THE FIRE INSPECTOR. THE KNOX BOX SHALL NOT BE BLOCKED FROM PLAIN VIEW BY ANY OBSTRUCTIONS (LANDSCAPING, ETC.).

IF YOU ARE UNSURE OR HAVE QUESTIONS, CALL THE FIRE INSPECTOR PRIOR TO INSTALLING THIS KNOX BOX!
THANK YOU!

KNOX BOX KEY REQUIREMENT LETTER

To Whom It May Concern:

The City of Concord Fire & Life Safety has required Knox Box Key Security Boxes to be installed on the building that your business presently occupies.

This requirement was imposed due to a North Carolina Fire Prevention Code Section 506.1 and Concord City Ordinance Section 34-3(a).

NC Fire Code **Section 506.1** states:

> *"The Fire Official shall have the authority to require a key box to be installed in an accessible location where access to or within a structure or where an area is difficult because of security."*

City Ordinance **Section 34-3(a)** states:

> **Sec. 34-3. Lock boxes.**
> Required.
> All commercial enterprises or industries in the city which use, store or manufacture on-site hazardous materials that must be reported under state right-to-know laws, G.S. 95-173, et seq., or under Title III of the Federal Superfund Amendments and Reauthorization Act and the regulations promulgated thereunder, must have an approved on-site hazardous materials data storage box at each facility where hazardous materials may be found.
> All facilities which have a system which transmits off-site alarms for fire detection or suppression systems must have an approved on-site lock box which contains keys to provide fire department access in an emergency or alarm activation.
> Keys in boxes must be kept up-to-date. When locks are changed the risk management bureau must be notified and new keys provided for the box.

In the event of a fire alarm or water flow conditions after normal business hours, having a key in the Knox Box allows the fire department to make prompt entry into the building without doing damage to the building's security system and mitigate the emergency condition. Furthermore, if water were flowing from the sprinkler system because of a system malfunction, prompt entry would allow for the quick shut down of the system and limit water damage to the building and its contents. In both instances, the fire department would not have to wait on business personnel to arrive with keys to unlock the building or remove locks to access sprinkler valves to shutdown the system.

To comply with the Fire Code and City Ordinance requirements the Concord Fire & Life Safety Department requires that you provide a key that is capable of fitting all doors of your business to the Fire Department. A Fire Department representative will place the key into the box.

The Knox Box is designed to function as a steel reinforced key vault. The construction of the box prevents tampering and entry due to malicious damage. Furthermore, the City of Concord does not release or advertise the Fire Department utilization of this type of entry security system to the press, media or any other agency.

The Concord Fire & Life Safety Department retains all keys to the Knox Boxes and has tight security over the keys and their locations. All keys are inventoried and accounted for daily. No other fire, EMS or law enforcement agency has access to the keys. The Fire Department would **ONLY** enter the structure when an emergency situation exists or a fire alarm has been transmitted by the building's fire alarm system. No access would be permitted for inspection purposes or non-emergency situations without the Business or Building Owner's consent.

Your prompt attention to this matter will ensure Fire Code compliance and proper non-damaging entry efforts by the Concord Fire & Life Safety Department.

If you have any further questions or need any additional information please give the Fire Marshal's Office a call Monday through Friday during the hours of 8 AM to 5 PM at (704) 920-5517.

Thank you,

Mark A. Brown, Bureau Chief
City of Concord Department of Fire & Life Safety

Hydrant Obstruction Letter 03.02

Date: _____

Address: _____

Re: Fire Hydrant Obstruction

To Whom It May Concern:

The Department of Fire and Life Safety conducts annual fire hydrant inspections and maintenance throughout the City Limits. During a recent inspection of a hydrant located at your address, a fire hydrant was found to be obstructed by _____.

Fire hydrants being obstructed are a violation of the following North Carolina Fire Prevention Code Sections:

> **508.5.4 Obstruction.**
> Posts, fences, vehicles, growth, trash, storage and other materials or objects shall not be placed or kept near fire hydrants, fire department inlet connections or fire protection system control valves in a manner that would prevent such equipment or fire hydrants from being immediately discernible. The fire department shall not be deterred or hindered from gaining immediate access to fire protection equipment or fire hydrants.
>
> **508.5.5 Clear space around hydrants.**
> A 3-foot (914 mm) clear space shall be maintained around the circumference of fire hydrants except as otherwise required or approved.

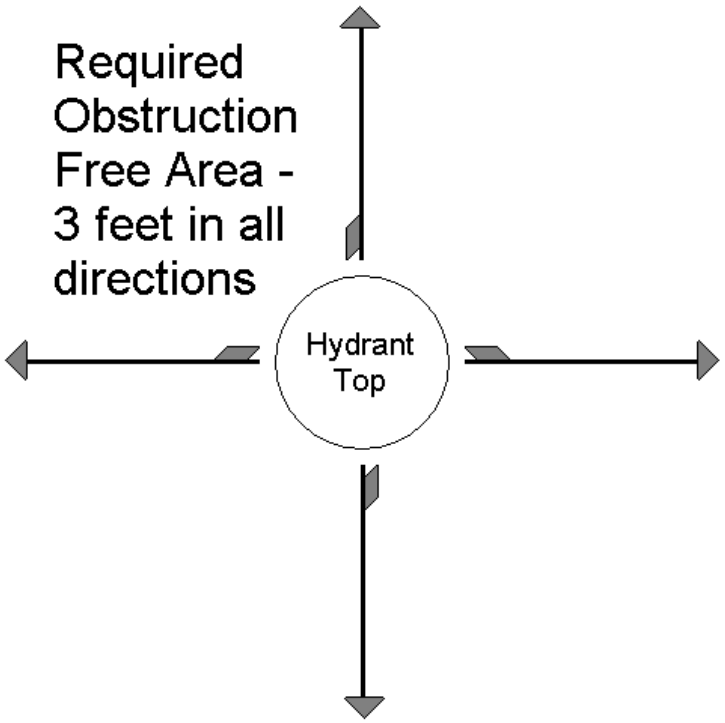
Please remove, cut all obstructions from in and around the fire hydrant 3-feet in all directions. Failure to remove obstructions may impede fire department emergency operations and will result in a fine being issued in the amount of one hundred ($100) dollars.

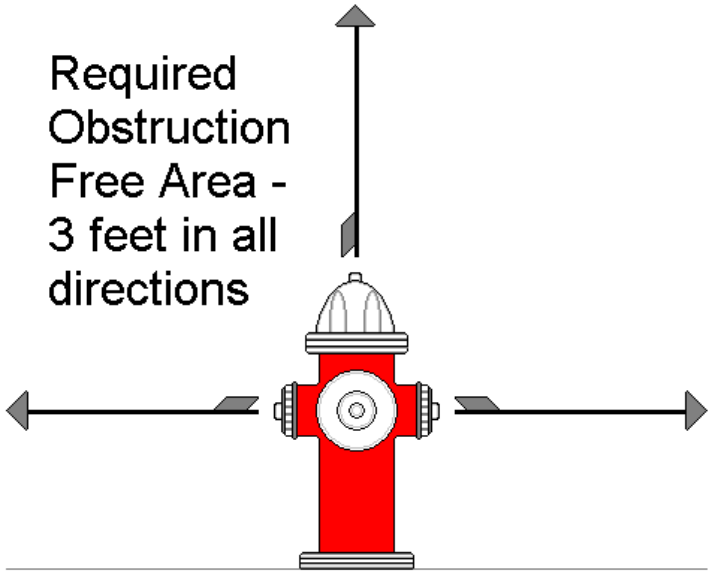
A period of thirty (30) days is given from the above date to comply with the above requirements. A re-inspection will be conducted at that time. Please see the attached diagram referencing the required distances.

Thank you for your prompt attention to this matter.

Enclosure

Hydrant Clearance Specification





Approved Containers with Self Closing Lids 03.03

The purpose of this guideline is to provide clarification for a recent Code interpretation by Chris Noles with the North Carolina Office of the State Fire Marsh'al regarding when the requirements of North Carolina Fire Code Sections 304.3.1 (Materials Susceptible to Spontaneous Ignition) and 2210.2.3 (Drainage and Disposal of Liquids and Oil Soaked Waste) apply.

> 304,3.1 Spontaneous ignition.
> Materials susceptible to spontaneous ignition, such as oily rags, shall be stored in a listed disposal container.
>
> 2210.2.3 Drainage and disposal of liquids and oil-soaked waste.
> Garage floor drains, where provided, shall drain to approved oil separators or traps discharging to a sewer in accordance with the International Plumbing Code. Contents of oil separators, traps and floor drainage systems shall be collected at sufficiently frequent intervals and removed from the premises to prevent oil from being carried into the sewers.

Crankcase drainings and liquids shall not be dumped into sewers, streams or upon the ground, but shall be stored in approved tanks or containers in accordance with Chapter 34 until removed from the premises.

Self-closing metal cans shall be used for oily waste.

The following is an excerpt from an email from Chris Noles concerning the interpretation. The reference to "Chris" in the email refers ICC Fire Protection Engineer Chris Reeves. Chris Noles email is in response to a letter received by Archie Coble regarding Wal-Mart's request for an interpretation by ICC on NC Code Section 304.3.1. The interpretation by ICC did not take into account the requirements of 2210.2.3.

Chris Noles email agrees with ICC interpretation for section 304.3.1 but he further offers a NCOSFM interpretation on when the requirements of 2210.2.3 would apply for "Repair Garages".

Subject: RE: Trash Cans
Creation Date: 10/19/05 11: 18PM
From: "Chris Noles" <Cnoles@ncdoi.net>
Created By: "Cnoles@ncdoi.net".GWIA.ch_dom
Recipients
COC FIRE PO.COC FIRE
---
brownma CC (Mark Brown)
AbernatC CC (Cindy Abernathy)
coblea (Archie Coble)

Archie,

I agree with Chris regarding the "spontaneous ignition" hazard in reference to Section 304.3.1 of the 2002 North Carolina Fire Prevention Code. He is stating that the rags coated with only oil represents a material that has a flash point over 200 degrees F. and would not be expected to spontaneously combust. There is also a presumption that the

rags will not be used for other materials such as brake fluid, transmission fluid or windshield washer fluid (yes -the fluid can be a Class 1 B liquid when it is blended with methanol).

Since the automatic-closing lid is hidden in Section 2210.2.3, Chris may have accidentally overlooked it. Since Chris and I worked together for so long, I am sure he would amend his letter to include the auto-closing can if asked.

Your Wal-Mart contact may not be aware that there is a difference between a simple self- closing metal can and a listed can attached to this e-mail.
To answer your question, the code requires a self-closing can for the class IIIB liquid, but not a listed can. My personal opinion is since Wal-Mart would not be able to limit the rags to oil only, I would be inclined to still require the listed can.

Therefore any occupancies who by the nature of their I business, have the potential for "Oil Soaked Rags" that may have other materials (brake fluid, transmission fluid
or windshield washer fluid) soaked Into the rags shall have an approved listed metal container with a self closing lid (See Photo).

Occupancies that have "Oil Soaked Rags" with motor oil only shall have an approved metal container with a self closing lid. The container does not need to be a listed container and the approval to use the container comes from the Fire Official.

This interpretation applies to ALL occupancies that would meet the criteria of Fire Code Chapter 22. This requirement applies to new and existing occupancies.

Pricing for the cans range from $52.00 for a 6 Gallon can, $60.00 for a 10 Gallon container and can be purchased up to 21 gallons in size. The predominant manufacturer of the cans Is "Justrite Safety Products". The containers can be found and purchased online at any safety vender website by entering the keyword "Justrite".

Please see the following page for ICC’s Letter.

INTERNATIONAL CODE COUNCIL®

Setting the Standard for Building Safety™

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Fire Chief
Las Cruces, New Mexico

CHIEF EXECUTIVE OFFICER
JAMES LEE WITT

December 16, 2003

Mr. Wayne Doherty
Wal Mart Stores, Inc.
Risk Control Team
702 S.W. 8th Street
Bentonville, AR 72716-0300

RE: Section 304.3.1 of the 2003 International Fire Code

Dear Mr. Doherty:

This letter is in response to your facsimile of December 3, 2003 regarding the storage and disposal of "oily rags" in an express oil/lube service facility.

Section 304.3.1 was not, in my opinion, intended to apply to "oily rags" in a typical oil change facility. Motor oils, which are considered a Class IIIB liquid, have flash points in excess of 200°F. As such, oily rags of motor oil do not pose the spontaneous ignition hazard anticipated by Section 304.3.1. The term "oily rags" was intended to refer to rags soaked in oils such as drying oils like linseed oil or tung oil.

Therefore, while all "oily rags" need to be disposed of in an approved manner, the requirements of Section 304.3.1, including the daily removal of the contents in the containers, are not, in my opinion, applicable to an express oil/lube service facility.

This opinion is based on the information which you have provided. We have made no independent effort to verify the accuracy of your submitted information nor have we conducted a review beyond the scope of your question. As this interpretation is only advisory, please consult with the authority having jurisdiction, the code official.

Sincerely,

Christopher R. Reeves

Christopher R. Reeves, P.E.
Manager, Plan Review Services

CRR/rt

Headquarters: 5203 Leesburg Pike, Suite 600 ▪ Falls Church, VA 22041-3405 U.S.A.
Tel: +1 (703) 931-4533 ▪ Fax: +1 (703) 379-1546

Aisle Width in B and M Occupancies 03.04

The purpose of this guideline is to clarify the Code requirements concerning these areas. North Carolina Fire Code section 1004.3.1.1 places the following requirements for aisle spacing in Business and Mercantile Occupancies:

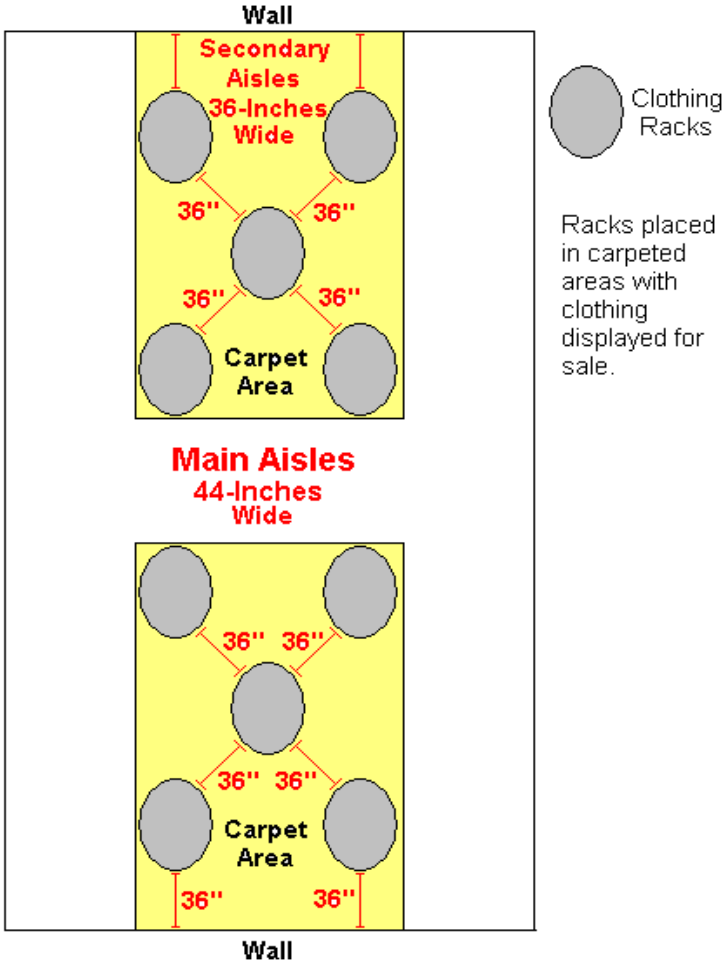
1004.3.1.1 Public areas in Groups B and M.
In public areas of Group B and M occupancies, the minimum clear aisle width shall be 36 inches (914 mm) where seats, tables, furnishings, displays and similar fixtures or equipment are placed on only one side of the aisle and 44 inches (1118 mm) where such fixtures or equipment are placed on both sides of the aisle.

1004.3.1.2 Nonpublic areas (in Groups B and M).
In nonpublic areas, aisle widths shall be a minimum of 36 inches (914 mm).

> Exception:
>
> Nonpublic aisles serving less than 50 people, and not required to be accessible by Chapter 11 of the International Building Code need not exceed 28 inches (71 mm) in width.

Please see the following example:

Public areas in Groups B and M



Aisle spacing issues will be handled on a complaint basis and/or normal periodic inspection only.

UL300 Extinguishing Systems 03.05

The purpose of this policy is to set forth requirements for when restaurant occupancies located within the City Limits of Concord shall retrofit to meet the UL300 Standard (Published November 21, 1994).

Over the past few years the food preparation industry has been converting materials used in cooking operations from lard based cooking oils to vegetable based cooking oils or similar products. This change along with the production of high efficiency cooking equipment has increased the fire potential and created additional fire hazards in food and drink establishments.

To combat these additional hazards the Concord Department of Fire and Life Safety is requiring all new and existing kitchen fire suppression systems to be installed and/or retrofitted to the UL300 Standard.

The requirements listed below dictate when a system shall be retrofitted;

1. All new construction shall be installed to the requirements of UL300,
2. Whenever an existing system needs any modification to supply additional coverage due to kitchen remodeling or insufficient fire suppression system coverage is found,
3. Whenever the system has reached the twelve (12) year maintenance period requiring the hydrostatic testing of fire suppression system cylinders,
4. Whenever systems cannot be serviced or repaired due to system parts or components are unavailable or discontinued,
5. Whenever systems have been discharged and the manufacturers recommended extinguishing powder is unavailable or discontinued.

When an existing occupancy has been required to retrofit to UL300, all cooking operations shall cease and the occupancy shall be closed. In cases where cooking operations are a secondary part of the business, the occupancy may remain open at the discretion of the Fire Marshal's Office and/or Cabarrus County Building Inspections Department.

Installation plans and specifications meeting City of Concord requirements shall be submitted, reviewed and approved. A construction permit shall be purchased and issued prior to the system being installed. All subsequent test and inspections shall be conducted and a COC issued prior to the restaurant recommencing cooking operations.

Any occupancy failing to obtain a COC shall remain closed until all items found during the COC inspection have been corrected.

See following pages for additional information.

National Association of Fire Equipment Distributions

UL-300 Standard Update

UL-300

On November 21, 1994, a new Underwriters Laboratories test standard entitled UL 300, Fire Testing of Fire Extinguishing Systems for Protection of Restaurant Cooking Areas went into effect. This new standard is the result of changes in fire hazards involving commercial cooking equipment.

Pre-engineered chemical suppression systems were developed in the 1960's for the protection of commercial cooking equipment, plenums and ducts. Underwriter's Laboratories (UL) developed a series of fire tests for these systems designed to duplicate the potential fire hazard found in the work place. These tests established specific requirements (and limitations) affecting extinguishing agent, fire detection, piping limitations, nozzle coverage, etc., for each manufacturer who submitted its system for UL testing. Following successful completion of such tests, this data created the installation and maintenance manual for that specific manufacturer.

Fats and Temperature

At the time that these tests were developed, rendered animal fat (lard) was typically used in commercial kitchens to fry various foods. Commercial cooking operations, appliances and supplies have changed greatly since the 1960's. Health concerns have reduced the use of lard. Efforts to cook faster have caused the use of insulated "high efficiency " fryers that heat faster and cool slower. Restaurant suppliers estimate that 70-75% of commercial kitchens use vegetable oils for frying in high-efficiency fryers.

These changes have significantly altered the fire hazard in cooking areas. Lard has a large percentage of saturated fat whereas vegetable oils have a very low percent of such fatty acids. The auto-ignition temperature of most animal fats in the 550-600 degree F. range compared to the auto-ignition temperature of most vegetable oils which is at 685 degree F. and higher.

The extinguishing agent employed in pre-engineered restaurant systems is an alkaline base. Fatty acids combine with alkalines to produce a soapy solution in process known as saponification. Thus, when a suppression system is discharged on a burning deep fat fryer containing rendered animal fat, a soap blanket is formed cutting off the oxygen supply and containing the fire until the fuel (animal fat) is cooled below its auto-ignition temperature.

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A similar fire involving vegetable oils creates a different set of circumstances. With only a limited amount of fatty acids saponification is greatly reduced and the higher temperature of such fires, enhanced by the insulation in a high efficiency fryer, causes the soap blanket to break down. Thus the extinguishing capability of the fire suppression system is reduced.

Time for Change

UL recognized the need for a new set of standards for pre-engineered systems and developed its new UL 300 standard. As might be anticipated, many changes were made in the testing program. A chart comparing former tests with the new requirements is printed on the reverse of this page.

Unfortunately, UL did not require a model number change for those manufacturers who will be modifying existing system designs to comply with the new UL 300 test standard. The only requirement is the issuance of a new installation and maintenance manual containing whatever changes and modifications found necessary for the compliance with the new standard plus the effective date of the revised publication. This could lead to some confusion because of similarities between the old and new system components.

Buyer Beware

We must assume that there will be a small number of sellers/installers who will attempt to furnish either new or used systems that were tested to the former standard. Such fire suppression systems would be inadequate to deliver the additional coverage found to be necessary for today's fire hazards.

UL-300 and the Fire Service

How can a local authority determine if the system complies with the new UL 300 standard? It is suggested that the contractor be required to include with his submittal package a copy of the manufacturer's installation and maintenance manual that would specifically indicate it is in compliance with the new standard and dated November 1994 or later.

The new UL 300 standard assures fire protection for a hazard that has gone through many changes. It presents the most significant advancements in testing of pre-engineered restaurant fire suppression systems in the past 20 years. Without careful scrutiny by local authorities such changes would have little effect if fire suppression systems are allowed to be installed under the old listings and manuals.

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Final Remarks

The new UL Standard 300 addresses the problems in fire protection for commercial cooking environments which reflect changes in our diet and the way we prepare food. All of these changes have resulted in fires which are hot, stubborn and difficult to extinguish. Nozzle coverages and placement options are likely to decrease while extinguishing agent amounts increase.

Pre-engineered systems for commercial cooking operations will become more detailed, more technical, and more expensive. They will also be safer, more reliable and perform their primary function better than ever before.

Source: National Association of Fire Equipment Distributors
104 S. Michigan Ave., Suite 300
Chicago, IL 60603
Tel (312) 263-8100
Fax (312) 263-8111

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Backflow Prevention Devices and Underground Sprinkler/Standpipe Installation Inspection/Testing Procedures. 03.06

The purpose of this guideline is to implement a standard for the protection of backflow prevention devices installed on sprinkler systems and underground sprinkler/standpipe testing and inspection.

From this date forward, all backflow protection devices installed in aboveground vaults shall be inspected in the following manner:

1. Existing construction:
    A. During inspections on existing sprinkler systems with backflow prevention installed in aboveground vaults, all OS&Y valve assemblies shall be chained to prevent tampering of the valves. This shall be accomplished by the method of running one (1) continuous chain through both valve handles and securing the ends of the chain with one (1) keyed padlock. A key to the padlock shall be secured in the Knox Box for the facility. Any other valve types utilized in lieu of OS&Y valves shall be secured in a similar manner.
    B. Heating devices found in valve boxes shall be inspected. Any defective heating devices found shall be repaired/replaced. Valve boxes without heating devices shall be inspected and evaluated for their ability to prevent freezing of the valves in the box. Any boxes found to be substandard shall be repaired/insulated.
    C. Any existing construction suffering frozen aboveground valves shall be repaired with an approved heating device installed.

2. New Construction:
    A. All aboveground valves shall have tamper switches installed on the valves. All tamper switches shall be supervised by the fire alarm in the building to which the valves serve. The use of a chain to prevent tampering with the valves is optional.
    B. Approved heating devices shall be installed in all aboveground vault boxes.
    C. The installation of these devices shall be required during plan review for the installation and if necessary, at the time of COC.
    D. All underground wiring shall be installed and protected as to the National Electrical Code (NEC) and NFPA 72.

From this date forward, all underground piping shall be tested and inspected prior to the piping being buried. The pipe shall be installed as to NFPA 13/24/25 and all other applicable codes and standards. The testing and Inspection process shall be conducted in the following manner:

1. It shall be the responsibility of the underground installation contractor to request the inspection and testing of all underground sprinkler and standpipe pipe installations.
2. Upon being contacted the inspector shall:
    A. Observe all underground piping to insure items such as Thrust Blocks, Restraint Collars and any other installation items have been properly installed. It shall be the responsibility of the inspector to permit the bury-

of piping. Any piping found to be buried shall be excavated and inspected. Any piping found to be buried shall be excavated and inspected.

B. All underground piping between the OS&Y valve at the backflow prevention devices and the base of the sprinkler/standpipe riser(s) shall be pressure tested to a minimum pressure of 150 psi. This pressure shall be maintained for at least two (2) hours. The inspector shall witness the initial pressure. At the end of the test, the inspector shall witness the ending pressure. In order for a test to be successful there shall be no pressure drop between the initial and ending pressure. Any underground piping failing the above test criteria shall be repaired and retested.

C. An inspection report shall be filled out and submitted after the inspection.

Inspection of Apartments, Condominiums and Town-homes 03.06

The purpose of this guideline is to provide some guidelines for the inspection of these types of premises.

Inspection of Apartments

The following guidelines are to be used when inspecting apartment complexes:

1. A. Inspections should only be conducted on exterior areas and common spaces of the building.
2. Items to be inspected are not limited to but include the following are:
   A. Building/unit numbers present,
   B. Apartment office areas,
   C. Maintenance/storage areas,
   D. Pool equipment/chemical storage areas and NFPA Signs,
   E. Laundry Rooms, clothes dryers and washing machines (lint, electrical hazards),
   F. Storage or outdoor patio furniture being placed in exit access areas/exit discharge areas,
   G. HVAC compressor wiring and electrical boxes/meter bases,
   H. Exterior building electrical lights, plugs and switches in working order, electrical panels
   I. Labeled with the appropriate unit letter/number,
   J. Scuttle and roof access areas accessible,
   K. The condition of interior separation walls in the attic areas of the building (holes),
   L. Combustible storage under exit steps,
   M. Holes in soffits or walls that could lead to fire extension trough these areas,
   N. Stability and construction of balconies and porches. (Building Inspector Referral),
   O. Fire Extinguishers placed on 75-foor travel distance and in cabinets if environmental conditions warrant,
   P. If possible an interior inspection should be made on several unoccupied/un-rented apartment units,
   Q. Verify through documentation of individual unit smoke detectors and emergency lights being serviced and/or replaced,
   R. Verify through documentation of sprinkler and fire alarm systems being tested, serviced
   S. and/or repaired,
   T. Fire hydrants unobstructed and in proper working order,
   U. Fire lane striping and signs present (repaint/replace),
   V. Knox Box Keys updated (if Knox Box on site),
   W. Any other hazards/Code violations found during the inspection.
3. While conducting the inspection please check all emergency contact information and update as necessary. Any fire alarm and/or sprinkler contractor/service agreements/contracts should be documented as well.

Inspection of Town Homes and Condominiums

In the International Fire Code, the fire inspector does not have the jurisdiction to inspect Townhomes. The inspector does have the authority to inspect Condominiums. Unfortunately, the term "Condo and Townhouse" get used inappropriately in the naming of buildings and complexes.

I spoke to the Office of the State Fire Marshal via telephone on this issue. OSFM's interpretation of this issue is a follows:

The difference between a Condo and a Town home is the construction of the building and the Deeding of the property.

Construction differences between a Condo and Town Home are as follows:

1. Fire Separation;
    A. Condos are treated by the Code as a R-2 and Town homes are treated as a R-3 occupancy,
    B. Condos have 1-hour fire rated walls, floors and ceilings,
    C. Town homes have 2-hour fire rated walls that begin from the foundation and protrude through the roof.
2. Common Areas;
    A. Town Homes do not have any common areas due to the individual units being separated by a "Firewall". This 2-hour firewall in the Code makes the unit a "separate but attached" unit. Furthermore Town homes can be 2-story individual units.
    B. Condos have common areas and are predominantly multi-story buildings with adjoining separation walls that do not meet a 2-hour rated "firewall". Furthermore most condos are single floor units that are attached.
    C. A condominium complex should be inspected using the same items that are inspected at apartment buildings. The "Common" Areas of complex are owned by an association, thisis a "Business" entity and should be inspected appropriately.

Deeding of property issues:

1. In a town home the owner of the unit owns the entire building between the "firewalls"
2. In a condo the owner of the unit owns only the interior space of the unit and not the exterior walls.

If a determination of whether or not a complex should be treated, as a Town Home or Condominium cannot be made, please call me for assistance with the determination.

Use and storage of Electrical and LP Gas Grills on Apartment Exterior Balconies 03.07

The purpose of this guideline is to provide information concerning the use and storage of exterior residential cooking devices (grills, smokers, etc.) on, under and in exterior balconies of residential apartment building and town homes. The provisions listed in this document do not apply to single family dwellings and duplex apartment/town homes.

North Carolina Fire Code Regulations

The North Carolina Fire Code prohibits the use of open flame cooking devices in the following sections:

> 307.5 Open-flame cooking devices.
>
> Charcoal burners and other open-flame cooking devices shall not be operated on combustible balconies or within 10 feet (3048 mm) of combustible construction.

Balconies made of wood and other natural products are defined as combustible construction. Vinyl Siding and other flammable coverings also meet this criteria. All wall surfaces including wood overhangs and doors are covered by these regulations.

The Code does provide guidelines for the storage of LP Gas grills in the following section.

> 307.5.1 Liquefied-petroleum-gas-fueled cooking devices.
> LP-gas burners having a LP-gas container with a water capacity greater than 2.5 pounds (1.14 kg) [nominal 1 pound (0.454 kg) LP-gas capacity] shall not be located on combustible balconies or within 10 feet (3048 mm) of combustible construction.

This requirement pertains to the cylinder size of the grill. An average LP Gas grill has a cylinder size of 20lbs. Storage of grills with this size of cylinder would prohibited on combustible balconies.

Violations of these Fire Code regulations are punishable by the issuance of a $100 dollar fine per occurrence.

Electric Grill Regulations

The Fire Code does not prohibit the use and/or storage of electric grills on balconies. However, due to the potential loss of life and extreme structural damage caused by improper cooking operations, the Department of Fire and Life Safety sets forth the following requirements concerning cooking operations utilizing electric grills:

1. All grills must be UL Listed and used in accordance with its listing. This includes the appropriate clearance to combustible materials and power supply.
2. The grill must be kept clean and maintained for safe operation.
3. A fire extinguishing device such as an ABC fire extinguisher approved for use around electricity shall be maintained at the grill while in use.
4. All electrical cords shall be maintained, plugged into an approved grounded electrical receptacle and rated for the portable grill.

5. Extension cords shall be listed for outdoor use and unplugged after use.
6. All cords shall not pass through walls, doorways, windows or other types of pass-through and be unplugged after each use.

Violations of these requirements are a violation of Fire Code Section 112 and are punishable by a fine of $100 dollars per occurrence.

112.1 Fire Hazard.
No person shall knowingly maintain a fire hazard.

Inspection of Existing Fueling Stations 03.08

This purpose of this guideline is to provide some guidelines for the inspection of these premises.

Building Services and Systems: Section 605

1. Working Spaces of 30 inches in width, 36 inches in depth and 78 inches in height shall be provided around electrical panels and service equipment (section 605.3),
2. Doors into electrical panel rooms shall be marked with a plainly visible and legible sign with the wording “Electrical Room” (Section 605.3.1),
3. Un-fused Multi-plug adapters are prohibited (Section 605.4),
4. Surge Protectors shall be approved and listed (Section 605.4.1),
5. Surge protectors shall be plugged directly into a permanently installed receptacle – not piggy backed (Section 605.4.2),
6. Extension cords shall not be used, as a substitute for permanent wiring, affixed to a structure, extended through walls or floors, shall not be subject to environmental damage or physical impact, and only used with portable appliances (Section 605.5).

Means Of Egress: Chapter 10

1. All existing flush mounted non-lighted exit signs shall be properly maintained. (Section 1003.2.10),
2. Any lighted exit signs with burned out bulbs shall be repaired or replaced with a new approved fixture. (Section 1003.2.10),
3. All exit doors shall be in accordance with Code section 1003.3.1
    A. Doors in occupancies with an occupant load of 50 or more people shall swing in the direction of exit travel.
4. Does the occupancy have the correct number of exit doors?
    A. Refer to Table 1005.2.1 for minimum number of exit required for occupant load.
5. Door knobs and locks shall be easily openable without the use of a key or special knowledge Code Section 1003.3.1.8 (Please note there are some exceptions to this paragraph),
6. Manual operated bolt latches and surface bolts are not permitted. (Section 1003.3.1.8.1).
7. All spaces of the interior of the building shall be provided with adequate aisle spaces. In public and non-public areas of Business and Mercantile occupancies aisle spaces shall be 36”.
8. Existing emergency lighting fixtures not in proper working condition shall be repaired or replaced with an approved fixture (Section 1003.2.11).

Attended Self Service Stations: Chapter 22, sections 2203 & 2204

1. A qualified attendant is on duty at all times,
2. If the station has pumps capable of taking credit cards, the pumps are turned off when the station is closed,
3. Each Pump has operating instructions conspicuously posted,
4. The pumps are in clear view of the attendant at all times. Not obstructed by signs or other promotional items,
5. The attendant shall be able to communicate with people at the pump island. Verbal or electrically.
6. An emergency disconnect switch shall be clearly identified and readily accessible at all times. The switch shall be located within 100 feet of, but no closer than 20 feet from the pumps. If the switch is behind the counter, clearly labeled and the clerk is familiar with the

7. Each nozzle, with the hose fully extended, shall not be able to reach within 5 feet of a building opening.
8. All flammable/combustible liquids are being dispensed into approved containers and portable containers are being filled on the ground and not inside a vehicle passenger compartment, trunk or truck bed.

Operational Requirements: Chapter 22, Section 2205

1. Verify that all tank filling devices and delivery vehicle locations have not been changed or altered since the station began operating. If this has changed the matter needs to be referred the Fire Marshal's Office,
2. All fuel dispensing equipment on the site has been properly maintained and inspected and, if required by the Code, tested within the last year. This can be answered by asking the clerk and/or manager to supply documentation that all items within the dispensing device system have been inspected and tested. If the answer is "no" or "I don't know", then the requirements for inspection and testing listed in 2205.2.2 and 2205.2.3 apply,
3. Ensure that the driveway or building has not been modified in a manner that would allow a major spill of liquids to run into or under the building,
4. Sources of ignition and other electrical fire hazards are not present in areas where fuel is being dispensed,
5. Verify that "It is illegal and dangerous to fill unapproved containers with fuel", "No Smoking" and "Vehicles Shut Down During Fueling" warning signs are conspicuously posted,
6. Approved properly maintained fire extinguishers with a minimum rating of 2-A: 20B:C are provided within 75 feet of pumps, dispensers and tank fill openings,
7. Weeds, grass, brush and other combustible materials shall be kept not less than 10 feet from fuel handling equipment.

Flammable & Combustible Liquids: Chapter 22, Section 2206

1. Flammable and Liquids are being stored in approved methods throughout the station facility,
2. An approved inventory control system either manual sticking of the tanks or automatic means shall be provided. Ask the clerk or manager to see documentation of these measurements,
3. Above ground tanks are properly installed with secondary containment systems, listed for the product contained, maintained in working order and labeled with 704 signage with the name of the materials that are being stored in the tank,
4. All above ground tanks (LP Gas Tanks, Kerosene, or other liquids) are properly protected with vehicle impact protection as specified in Chapter 3, Section 312,
5. Above and below ground tank fill connections are properly secured to prevent unauthorized entry, tampering and vandalism,
6. All above ground piping to tanks or dispensers is properly protected to prevent damage and maintained in working order,
7. Fuel Pumps shall be listed, fixed and mounted on a concrete island 6 inches or more above grade and impact protected in accordance with Chapter 3, Section 312,
8. Dispenser hoses shall be a maximum of 18 feet long and equipped with a listed emergency break-away device,
9. All hoses shall be self-storing in a manner that will prevent damage to the hose,

10. All fuel delivery nozzles are listed, approved and in proper working order. If the nozzle is equipped with a hold-open device, the device is present and in proper working order. If the nozzle was designed and listed without a hold-open device, than a hold open device id not required.
11. Verify that any fuel delivery systems equipped with leak detection system have been properly installed and maintained in proper working order.

Flammable Liquids: Chapter 34, Section 3404.2.7.3.3

1. Vent pipe outlets shall be located such that the vapors are released at a safe point outside of buildings not less than 12 feet above ground. Vent pipe opening shall be located such that flammable vapors will not be trapped by building eaves or other obstructions and shall be at least 5 feet from other properties. Class IIIB (Motor Oil) liquids are allowed to discharge inside buildings provided the vent is a normally closed vent.

If the premises being inspected includes a repair garage the following inspection items should be applied:

1. The storage and use of flammable and combustible liquids shall be in accordance with Chapter 34, Sections:
    A. 3404.3 Container and portable tank storage,
    B. 3404.3.2.1 Liquid storage cabinets,
    C. 3404.3.3 Indoor Storage
    D. 3404.3.4.2 Occupancy Quantity Limits
    E. 3404.3.4.4 Liquids for maintenance and operation of equipment
        i. In all occupancies quantities in excess of 10 gallons shall be stored in storage cabinets.
    F. See Table 3404.3.4.1 for Storage of Flammable/Combustible in Wholesale and Retail Sales Uses per Control Area.
        i. Control Area is defined in Chapter 27 (Haz-Mats) page 218.
2. Cleaning of parts shall be performed in an approved parts washing machine in accordance with Chapter 34, Section 3405.3.6.1
3. Any spray finishing operations shall be conducted in accordance with Chapter 15.
4. Welding and cutting operations shall be in accordance with Chapter 26.
5. Materials susceptible of spontaneous ignition, such as oily rags, shall be stored in a listed container (Chapter 3, Section 304.3.1).
6. Sources of ignition shall not be located within 18 inches of the floor and shall comply with Chapter 3, section 305, 307 & 308 and Chapter 26.
7. The area of the shop were vehicles are being repaired shall have adequate ventilation (natural or powered).
8. Fire extinguishers shall be provided in accordance with Chapter 9, Section 906 – Table 906.3.3(2), Ordinary (Moderate) Hazard.
9. Smoking shall be prohibited in the vehicle repair area in accordance with Chapter 3, section 310. “No Smoking” signs shall be conspicuously located throughout designated No Smoking areas.

This document should be used only as a guide. Each individual occupancy has its own unique set of hazards that must be evaluated by the inspector conducting the inspection. Additional violations of the Fire Code not listed in this guideline may be present. Any additional violations found shall be noted and enforced.

Self Storage Occupancy Inspections 03.09

This memo is to provide a guideline for the inspection of self-storage occupancies and related premises.

The following items are to be used when inspecting self-storage occupancies:

1. Inspections should only be conducted on exterior areas and common spaces of the building. Items to be inspected are not limited to but include the following are:
   A. Business office areas;
   B. Facility maintenance storage/office areas;
   C. Facility gate locking arrangements (to ensure proper fire department access);
   D. (5) lbs. ABC Type Fire Extinguishers shall be installed in all weather protective cabinets at 75-foot travel distances;
   E. Existing Fire Lanes shall be maintained. Pavement markings and signs should be evaluated. Markings or signs needing repainting shall be repaired to Fire Lane Specifications;
   F. Existing facilities shall be evaluated for Fire Lane requirements. Installation of Fire Lanes in existing facilities shall be referred to the Bureau Chief for approval. If required, Fire Lanes shall be installed inside the driveway main access aisles and at fire hydrants. In new construction, fire lanes shall be evaluated and if necessary required at the time of Plan Review. Fire Lane width requirements will be evaluated per facility;
   G. If the facility has fire hydrants, the hydrants shall be maintained and clear of obstructions;
   H. A Knox Box Key Vault shall be installed on the premises to ensure fire department site access. The box shall contain a card, key or keys capable of fitting all locks on the premises;
   I. HVAC compressor wiring and electrical boxes/meter bases;
   J. Exterior building electrical boxes, lights, plugs and switches;
   K. Scuttle and roof access areas;
   L. Combustible storage under exit steps;
   M. Holes in soffits or walls that could lead to fire extension, through these areas;
   N. Exterior walls and roofs should be evaluated for soundness. Any questionable items found should be referred to County Inspections for evaluation;
   O. Interior exit and emergency lighting fixtures if present, shall be checked for proper working order. Existing occupancies without fixtures shall be evaluated for issues that *may* require fixture installation. Fixture installation shall be referred to the Bureau Chief for approval;
   P. Any other hazards found during the inspection.

The individual storage spaces are considered to be private and the Fire Department does not have the authority to inspect these areas. Consult with the site representative or owner to find vacant/un-rented storage units to inspect. A good representative sample of vacant/un-rented units should be inspected to ensure Code compliance.

This document should be used only as a guide. Each individual occupancy has its own unique set of hazards that must be evaluated by the inspector conducting the inspection. Additional violations of the Fire Code not listed in this guideline may be present. Any additional violations found shall be noted and enforced.

Abandoned Commercial Structure Inspections 03.10

The purpose of this guideline is to provide direction on fire inspections in abandoned commercial structures. The following section of the NC Fire Prevention Code shall apply:

> **Chapter 1, Section 106 - Inspection Schedules**
>
> On unattended or abandoned structures, the Fire Official shall affix a letter on the premises in a conspicuous place at or near the entrance to such premises requesting an inspection in accordance with Section 107 of this Code. This order of notice shall also be mailed by registered or certified mail, with return receipt requested, to the last known address of the owner, occupant, or both. If the owner, occupant or both shall fail to respond to said notice within ten (10) calendar days, these actions by the Fire Official shall be deemed to constitute an inspection in accordance with this section.

Personnel conducting the inspection shall place an “Inspection Tag” on the vacant structure and forward an inspection form with the notation “Vacant Structure - Tagged” in the comments section of the form to the Fire Marshal’s Office Master Files.

Personnel conducting the inspection shall attempt to notify the last known owner of the structure by certified mail. Please use the attached letter for correspondence with the property owner. All certified mail shall be coordinated through the Fire Marshal’s Office. A copy of this letter and property map shall be placed in the occupancy inspection file.

To determine Property ownership, copy and paste the following Internet address into your Internet browser:

> http://166.82.128.222/parcelinfo.html

This link takes you to the Public Applications – Parcel Information web page. Select the County Wide Map button. This will take you to the Parcel Information Map page.

Once at the Parcel Information Map page, select the “Zoom In” button on the tool bar at the top of the page to zoom into the property searched for on the map. Once the property has been located, select the “identify” button. This will list the owner of the property below the map. Print a copy of this page for the inspection file.

If contact is made with the property owner, personnel conducting the inspection shall arrange an inspection appointment with the owner of the vacant property. Inspections should follow the normal procedures for a Commercial Inspection with associated time periods.

If no contact is made with the last known owner of the structure within ten days of the mailing, the inspection will be deemed completed. The Firehouse Occupancy file will be updated to show completed and a future inspection date will be assigned.

If a building has severe structural defects, unsafe wiring or systems or is deemed as an “Unsafe Building or Structure” by City Ordinance; the No Interior Fire Attack Guideline should be implemented to begin possible condemnation procedures against the property.

Abandoned Commercial Structure Letter

Date>>

Notification by Certified Mail # _____

<<Tenant Name>>
<<Address1>>
<<City, State, Zip>>

To Whom It May Concern:

The 2002 North Carolina Fire Prevention Code requires a fire inspection of this occupancy.

On _____, the City of Concord Fire Marshal's Office attempted to contact you on the property and left a notice advising you to contact their office. To-date, our records indicate no contact has been made.

> *Per Section 106 (copy enclosed). On unattended or abandoned structures, the Fire Official shall affix a letter on the premises in a conspicuous place at or near the entrance to such premises requesting an inspection in accordance with Section 106 of this Code. This order of notice shall be mailed by registered or certified mail, with return receipt requested, to the last known address of the owner, occupant, or both. If the owner, occupant or both shall fail to respond to said notice within ten (10) calendar days, these actions by the Fire Official shall be deemed to constitute an inspection in accordance with this section.*

Therefore, this certified letter is to acknowledge and serve as that official inspection of your business at the above-mentioned address.

Failure to comply with the 2002 North Carolina Fire Prevention Code may result in civil penalties. Please contact the Fire Prevention Bureau at (704) 920-5517.

Respectfully submitted,

City of Concord Fire Marshal's Office
100 Warren C. Coleman Blvd. N.
Concord NC 28026

Required Clearances Around Building Service Equipment 03.11

This guideline is to provide some guidelines on required clearances of combustibles around Electric/Gas Hot Water Heaters and Electric/Gas/Oil HVAC units.

Unfortunately, the answer is not as simple as a set number of feet.

First of all in **Section 305 Ignition Sources** the Code states:

> **Section 305.1 Clearance from ignition sources**. Clearance between ignition sources, such as light fixtures, heaters and flame-producing devices and combustible materials shall be maintained in an approved manner.

This section of the Code essentially leaves the issue to the discretion of the inspector. A common sense decision should be made as to what a "reasonable person" would perceive to be a hazard.

On Gas/Oil Fired Equipment the Code states in **Section 603 Fuel-Fired Appliances:**

> **Section 603.1.1 Manufacturer's Instructions**. The installation shall be made in accordance with the manufacturer's instructions and applicable federal, state and local rules and regulations.

This section would include the clearances between the units and combustible materials like wall and other structural materials. Unfortunately this information is not available to the inspector when he/she is making an inspection.

> **Section 603.1.5 Access**. The installation shall be readily accessible for cleaning hot surfaces; removing burners; replacing motors, controls, air filters, chimney connectors, draft regulators, and other working parts; and for adjusting, cleaning and lubricating parts.

This section gives the inspector the ability to enforce the storage of combustibles around the appliance that would inhibit a repair from being made.

Remember, these items only pertain to Fuel-Fire Appliances and **NOT** electrical appliances.

On Electrical Equipment the Code states in **Section 605 Electrical Equipment, Wiring and Hazards:**

> **Section 605.7 Appliances**. Electrical appliances and fixtures shall be tested and listed in published reports of inspected electrical equipment by an approved agency and installed in accordance with all instructions included as part of such listing.

This section would include the clearances between the units and combustible materials like wall and other structural materials. Unfortunately this information is not available to the inspector when he/she is making an inspection.

Section 605.8 Electrical Motors. Electrical motors shall be maintained free from excessive accumulations of oil, dirt, waste and debris.

This section would give the inspector the ability to require that all combustibles be removed from an area around an exposed electrical motor.

The Code does not make any other references toward access for maintenance of electrical equipment.

So in an effort to put together a “Uniform” way of looking at this problem, the following guidelines shall be used:

1. See if any of the above Code sections apply to the situation found.
2. Examine the appliance. Some appliances have the required clearances listed on labels on the unit.
3. Look and see if the manufacturer’s instructions are placed on or near the appliance.
4. Some appliances are manufactured as “Zero Clearance” installations however, this does not mean buried with no access.
5. Make sure there is adequate access to the appliance. This insures that the device can be accessed by the Fire Department if it malfunctions. If the occupant questions this ideology tell them “If we can’t get to it, the repairman can’t either”.
6. If the Manufacturer’s Instructions are not available or unattainable, adequate clearance is a judgment call by the Inspector using the “Reasonable Person” standard. Clearance requirements shall be based upon appliance size & type, fuel type, room size and other observable factors. For enforcement purposes, “Reasonable Clearances” start at a minimum of 12 inches and may be increased to a maximum of 36-inches.

Please keep in mind that the intent of this guideline is to apply toward storage of combustible materials on and around interior HVAC units and hot water heaters. The Code has not changed its requirements in **Section 605.3 Working space and clearance** of 30 inches in width, 36 inches in depth and 78 inches in height on Electrical Service Equipment (Panels, Switch Gear and Transformers, etc.). No storage is permitted within the designated working space.

Fire Protection Equipment & Room Identification Signs 03.12

The owner or person in charge of the building shall ensure that all required labels and room identification signs are installed and visible for fire and other emergencies that could impact the operations of his/her building/business. The following items should be designed and installed in compliance with the following.

Fire Code - Interior Signs

In existing construction, the following signs if required, shall be installed in accordance with the appropriate Code sections.

310.3 "NO SMOKING" Signs. The Code Official is authorized to order the posting of "NO SMOKING" signs in a conspicuous location in each structure or location in which smoking is prohibited. The content, lettering, size, color and locations of "NO SMOKING" signs shall be approved.

507 HAZARDS TO FIREFIGHTERS. Interior and Exterior access to shaftways – Doors, windows and other devices that open into a shaftway communicating between 2 or more floors shall be plainly marked with the words SHAFTWAY red letters in at least 6" high on a white background.

510.1 Fire Protection Equipment Rooms. Interior Rooms that house Fire Protection Equipment including but not limited to the following: Fire Alarm Control Panel, Sprinkler System, Riser Room, Fire Command Center and Emergency Generators. These rooms shall have approved signs required to identify fire protection equipment and their location, and shall be constructed of durable materials, permanently installed and readily visible. These signs shall state the specific equipment inside as listed above. "FACP" for fire alarm control room. "RISER ROOM" for sprinkler riser rooms. "FIRE COMMAND CENTER" for rooms containing Fire Command Center telephones and associated equipment. "EMERGENCY GENERATOR" for rooms containing emergency generators and associated equipment. Rooms with multiple fire protection equipment installed shall be identified by "FIRE PROTECTION EQUIPMENT".

All rooms shall be identified by a sign located on the exterior side of the room. It shall be installed with its horizontal centerline 5' (above the finished floor) a.f.f. on the strike jamb/latch side of the door. If no wall space is available, then it shall be placed on the nearest wall adjacent to it or centered on the door face at 5' a.f.f. Signs shall be red in color and have white 3-inch letters.

605.3.1 ELECTRICAL ROOMS. Rooms that contain any electrical equipment include but not limited to the following: electrical control panels, disconnects, transformers, feeder/branch circuit switchboards, electrical panel boards and troughs or other electrical control equipment. These rooms shall be marked with a plainly visible and legible sign stating "ELECTRICAL ROOM".

606.9.3.4 MECHANICAL REFRIGERATION. Emergency control boxes shall be provided with a permanent label on the outside cover reading: FIRE DEPARTMENT USE ONLY-REFRIGERANT CONTROL BOX, and including the name of the refrigerant in the system.

607.2 ELEVATOR RECALL. Emergency signs shall have a pictorial sign of a standardized design posted adjacent to each elevator call station on all floors instructing occupants to use the exit stairways and not to use the elevators in case of fire. The sign shall read: IN FIRE EMERGENCY, DO NOT USE ELEVATOR. USE EXIT STAIRS.

608.6 STATIONARY LEAD-ACID BATTERY SYSTEMS. Doors into rooms containing these battery systems shall be provided with signs that state the room contains lead -acid battery systems, that the battery room contains energized electrical circuits and that the battery electrolyte solutions are corrosive liquids.

703.2.1 FIRE DOORS. If necessary, rated fire doors that are designed to be kept normally open shall read: FIRE DOOR-DO NOT BLOCK

If necessary, rated fire doors that are designed to be kept normally closed shall read: FIRE DOOR-KEEP CLOSED

907.4.4 MANUAL FIRE ALARM BOXES. Where fire alarm systems are not monitored by a supervising station, an approved permanent sign that reads: WHEN ALARM SOUNDS-CALL FIRE DEPARTMENT. Such signs shall be installed adjacent to each manual fire alarm box.

In addition to FIRE CODE requirements the N.C. ACCESSIBILTY CODE requires the following signs be installed. For purposes of enforcement, these signs will only be enforced in new construction.

All interior rooms shall be identified by a minimum size 6” x 9” sign located on the exterior side of the room. It shall be installed with its horizontal centerline 5’ (above the finished floor) a.f.f. on the strike jamb/latch side of the door. If no wall space is available, then it shall be placed on the nearest wall adjacent to it or centered on the door face at 5’ a.f.f.

Letters shall be of contrasting color 1” high to 2” maximum with Grade 2 Braille underneath. All lettering on signs shall be capitalized. Letters and numbers shall be raised 1/32 inch from the background on which they are mounted. Letters and numerals shall have sharply defined edges and may be either sans serif or simple serif. All signs shall have letters, numerals and characters and the background on which they are located in an eggshell (semi-matte), matte (flat) or other non-glare finish only. Stroke-width-to-height ratio shall be between 1:5 and 1:10. Letters and numbers on signs shall have a width-to-height ratio between 3:5 and 1:1.

All signs shall be installed in accordance with the N.C. Accessibility Code, formerly known as the handicap code or N.C. Building Code, Volume I-C.

Safety devices designed and intended for public use (i.e. fire alarm pull stations, manual mechanisms activating emergency signaling devices, fire extinguishers, etc.) shall be identified with signage in accordance with the above criteria.

In addition to FIRE CODE requirements the MECHANICAL CODE requires the following signs be installed. For purposes of enforcement, these signs will only be enforced in new construction.

BOILER ROOM. A room that is primarily utilized for the installation of a boiler.

FURNACE ROOM. A room primarily utilized for the installation of fuel-burning space-heating and water-heating appliances other than boilers. (oil, wood, coal, kerosene)

MACHINERY ROOM. A room meeting prescribed safety requirements in which refrigeration systems or components thereof are located.

MECHANICAL EQUIPMENT/APPLIANCE ROOM. A room or space in which non fuel-fired mechanical equipment and appliances are located. (natural and liquefied petroleum gas)

FIRE CODE - Exterior Signs

505.1 ADDRESS. Numbers 6" minimum height in reflective lettering shall also be required on the front of the building mounted high enough to not be blocked by normal delivery traffic. If multiple suites exist, a reflective suite number shall be required over or on the front and rear doors.

510.1 Fire Protection Equipment Rooms. Exterior Rooms that house Fire Protection Equipment including but not limited to the following: Fire Alarm Control Panel, Sprinkler System, Riser Room, Fire Command Center and Emergency Generators. These rooms shall have approved signs required to identify fire protection equipment and their location, and shall be constructed of durable materials, permanently installed and readily visible. These signs shall state the specific equipment inside as listed above. "FACP" for fire alarm control rooms. "RISER ROOM" for sprinkler riser rooms. "FIRE COMMAND CENTER" for rooms containing Fire Command Center telephones and associated equipment. "EMERGENCY GENERATOR" for rooms containing emergency generators and associated equipment. Rooms with multiple fire protection equipment installed shall be identified by "FIRE PROTECTION EQUIPMENT".

All rooms shall be identified by a sign located on the exterior side of the room. It shall be installed with its horizontal centerline 5' (above the finished floor) a.f.f. on the strike jamb/latch side of the door. If no wall space is available, then it shall be placed on the nearest wall adjacent to it or centered on the door face at 5' a.f.f. Signs shall be red in color and have white 3-inch letters.

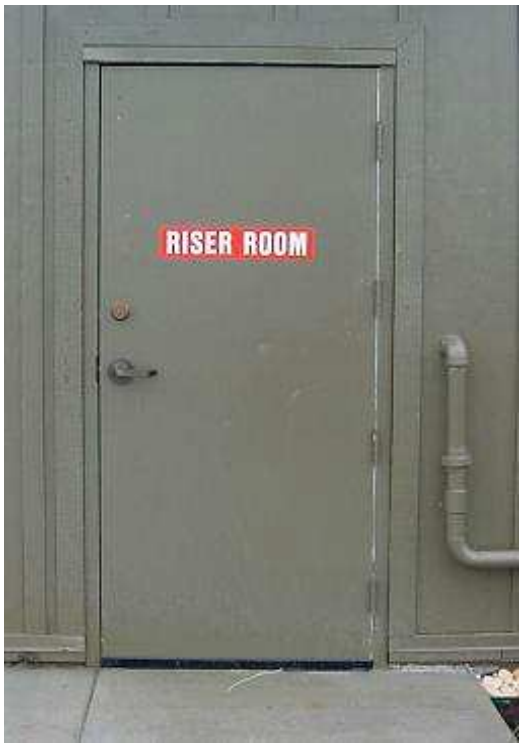
912.2.2 FIRE DEPARTMENT CONNECTION. On existing buildings, wherever the fire department connection is not visible, the fire department connection shall be indicated by an approved sign mounted on the street front or on the side of the building. All signs shall be red in color and have 6-inch white letters reading "FDC".

Fire Department Connection Sign (FDC)

Sign to be 7x14 inches in size red in color with white 6-inch reflective letters.

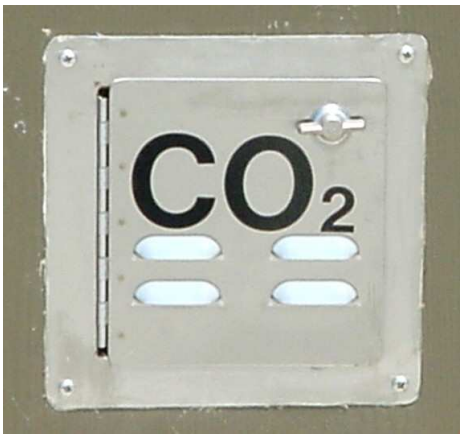
Fire Sprinkler Riser Room Sign.

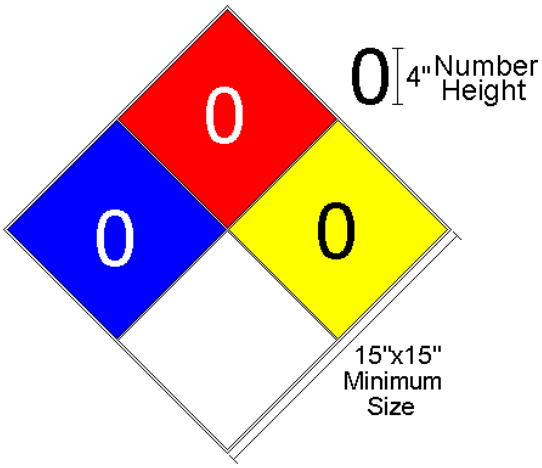
Sign to be 4x20 inches in size and red in color with white reflective 3-inch letters.



Carbon Dioxide Drink System Exterior Signs

Exterior signs to be located adjacent to rear/side maintenance door.





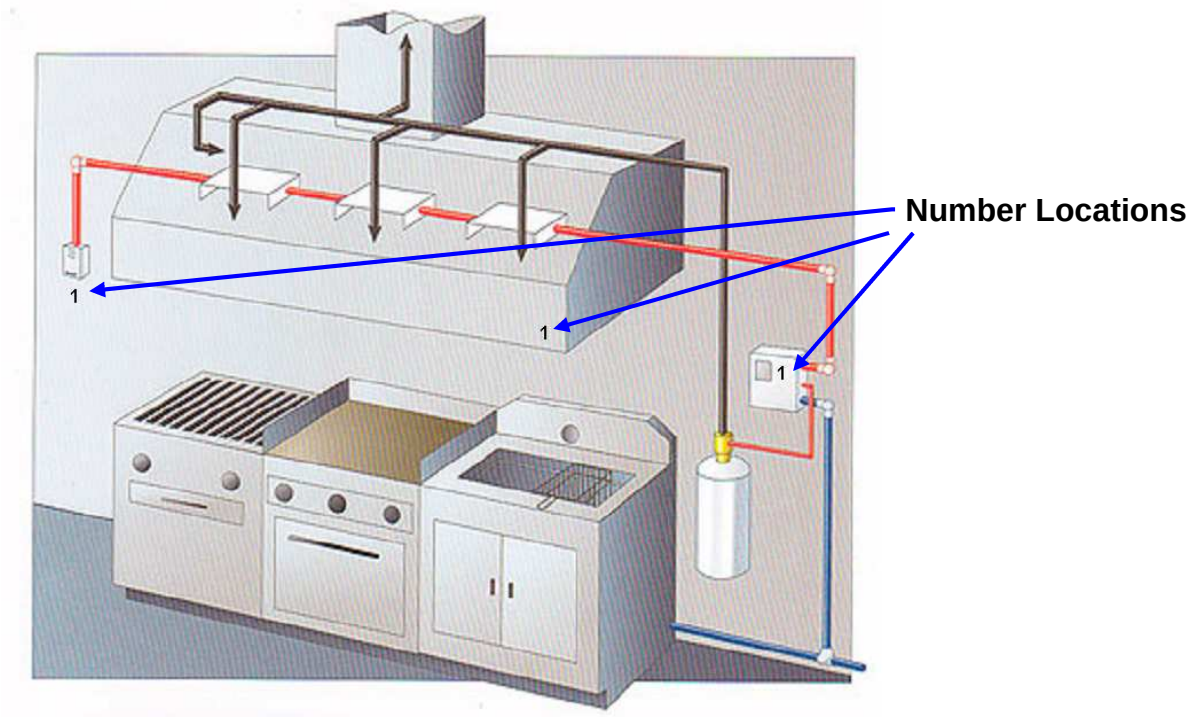
NFPA 704 Sign to be 15x15 inches minimum with 4-inch numbers and/or symbols. Numbers on sign will be determined by the FMO.

CO2 letters to be mounted on exterior tank fill connection protective door.
CO2 Letters to be 3-inches in size (Subscript size for number 2 is optional).
Letters shall contrast with background.

Fire Alarm Control Panel Room Sign

Sign to be 4” in height, red in color with white reflective 3-inch letters.

Fire Suppression System Component Numbers



Numbers to be 3-inches in height, contrasting in color and be placed on firing cabinet, hood (paint booth, etc…) and at pull station(s). Each system shall be numbered separately.

Inspection of Kitchen Hood Exhaust Systems. 03.14

The purpose of this guideline is to provide guidelines for the installation of Commercial Kitchen Exhaust Hoods within commercial occupancies conducting cooking and/or baking operations.

The information below is an excerpt from a Mechanical Code Interpretation originally published by the North Carolina Office of the State Fire Marshal (NCOSFM) on December 18, 2002. The author of the interpretation is Henry Webster and is a Mechanical Code Engineer with NCOSFM.

MECHANICAL CODE INTERPRETATION
(Revised December 18, 2002)
(Revised May 30, 2003)
(Revised September 17, 2003) Revised 2-2-04

2002 North Carolina Mechanical Code

Section 507 Commercial Kitchen Hoods

Department of Insurance interpretation for hood requirements is as follows:

Type I Hood - Commercial food heat-processing appliances that produce grease vapors or smoke (includes pizza restaurants).

Type II Hood - (produce little if any grease-laden vapor) Examples:

- Pastry
- Bread
- Cookies
- Cakes
- Convection or small conveyor type pizza ovens (convenience stores, etc. but does not include pizza restaurants)
- Steam cooker (does not include steam warmers)
- Dish washing machine
- (Note: Hoods are not required for coffee makers and/or toasters.

Hoods are not required for mobile food holding cabinets (max 3000 watts)

This interpretation outlines the specific instances when the criteria contained in Section 507.2.1 of the North Carolina Mechanical Code - Commercial Kitchen Hoods requires the installation of a Type I or II Commercial Kitchen Exhaust Hoods.

507.2.1 Type I and Type II hoods.
A Type I hood shall be installed at or above all commercial food heat-processing appliances that produce grease vapors or smoke. A Type I or Type II hood shall be installed at or above all commercial food heat-processing appliances that produce fumes, steam, odor or heat.

Section 609.1 of the North Carolina Fire Prevention Code requires the installation of a Type I Hood where cooking operations produce grease vapors or smoke. If a Type I Hood is installed, the criteria listed in Section 904.2.1 of the North Carolina Fire Prevention Code requiring the installation of an approved automatic fire extinguishing system is applies. Furthermore, Section 609.1.1 of the Code requires that all hoods be installed in accordance with the North Carolina Mechanical Code.

> **609.1 General.**
> Commercial kitchen exhaust hoods shall comply with the requirements of this section. Hoods shall be Type I and shall be designed to capture and confine cooking vapors and residues.
>
> Exception:
> Factory-built commercial exhaust hoods which are tested in accordance with UL 710 shall comply with the International Mechanical Code.
>
> **609.1.1 Design and installation.**
> The design and installation of commercial kitchen exhaust hoods shall be in accordance with the International Mechanical Code.
>
> **904.2.1 Hood system suppression.**
> Each required commercial kitchen exhaust hood and duct system required by Section 609 to have a Type I hood shall be protected with an approved automatic fire-extinguishing system installed in accordance with this code

When encountering a cooking operation in any type of occupancy regulated by the Fire Prevention Code, personnel are directed to consult the Mechanical Code Interpretation and apply the appropriate sections of the Fire Prevention Code.

- Cooking/Baking Operations requiring the installation of a Type I Hood are required to install an approved automatic fire extinguishing system.
- Cooking/Baking Operations involving the installation of a Type II Hood are **not** required to install a fire extinguishing system.

Cooking/Baking Operations not having a hood system installed are to be referred to the Cabarrus County Inspections Department for permitting and inspection.

Due to the hazardous nature of cooking operations and the original publishing date of the Mechanical Code Interpretation (December 18, 2002), this regulation applies equally to existing and new construction.

Anyone having any further questions or needing additional information, please give me a call.

Paint Spray Booth Enforcement 03.15

The purpose of this guideline is to provide a method of enforcement for existing spray finishing operations being conducted within the city limits of Concord.

I have had extensive correspondence with Chris Noles from NCOSFM on this issue and I requested for him to give an opinion on existing spray finishing operations. The following is his answer to my request:

> Mark,
>
> This is a difficult question, but based on our telephone conversation, I am under the impression that it may have been constructed in the 1950's.
>
> If I understand correctly, your question is if this spraying operation is required to be retro-actively modified to comply with the current code.
>
> The answer is not a simple yes/no. First, Section 102 of the fire code allows a building constructed before the adoption of the current code to be "grandfathered" in, provided it complied with the code under which it was constructed under. Section 1504 of the 1953 and 1958 codes identified that NFPA 33 was an acceptable standard to use, provided that it did not conflict with another state law or BCC ruling. While the provision of the code was permissive, compliance with the code at the time of construction did not require compliance with NFPA 33. It is for this reason that we cannot require retro-active compliance for building constructed before 1978 with the current code.
>
> However, under the current code, it reflects the learning curve from accidents involving spraying operations. For example, we know that spraying a flammable material around an ignition source such as a fireplace or an unclassified electrical device can produce a dangerous condition. We also know that without proper ventilation, the accumulation of flammable vapors can also create a dangerous condition. Unfortunately, it was not until 1978 that the state recognized the need to protect citizens that would put themselves in these dangerous situations.
>
> Section 102 of the fire code allow us to require that conditions representing an imminent life safety to be abated. For example, if the owner is spraying a Class IB flammable liquid in a sealed area with an open fireplace, it would be my opinion that this would represent a life safety hazard. In this situation, it would be within the responsibility of the code official to ask the owner to stop spraying or remove the fireplace from the room.
>
> To answer your question, Section 102 of the fire code is written subjectively, allowing the code official to make the call. If you feel that the unclassified electrical devices are close enough to the spraying operation and the concentration of the vapors can reach the lower explosive limits, you can ask that the owner take action to abate the hazards. It is my recommendation that if you cite the violations that have been in operation for over 45 years, be sure to document everything you can (i.e. code commentary identifying the hazard, accidents, etc...)
>
> Let me know if I can be of further assistance.
>
> ---
>
> Christian Noles, P.E.
> Chief Fire Protection Engineer
> Office of State Fire Marshal
> 322 Chapanoke Road
> Raleigh, NC 27603

In response to NCOSFM's opinion on this matter it shall be the policy of the Fire Prevention Division to enforce existing spray operations conforming to the standard set forth in this opinion.

First of all the age of the spray operation shall be determined. Operations in existence since 1992 shall conform to the provisions set forth in the Code edition in effect at the time of the commencement of spray operations.

Spray operations in existence prior to 1992 shall be enforced with "Imminent Hazards" being abated. Examples of these are: non-approved electrical devices and or systems, heating devices, ventilation devices and any other items that would lead to a situation that would lead to a fire occurring. Abatement procedures would include the installation of "Intrinsic Devices" (lights, fans and switches) to prevent the ignition of vapors, additional portable fire extinguishers being installed in the spray area, proper storage and disposal of materials and implementing "Safe Practices" during the spraying operations. This does not include the installation of a booth and/or extinguishing system.

Secondly, existing operations will be required to meet the current Code if a "History" of fire, spill or other incidents warrants the enforcement of Section 102 of the Code. The decision to implement Section 102 will be made only by the Chief of Fire Prevention. Abatement issues to correct this situation shall include but not limited to; Installation of a fire protection system into an existing spray booth, installation of a spray booth in an existing "Spray Room" or discontinuing an existing spray operation.

Existing spray finishing operations shall be enforced in this manner until such time that a new Certificate of Compliance is issued for the occupancy in question. Once a new "COC" is issued for occupancy, the spray finishing operation shall comply with the current edition of the Code in effect at the time of "COC" issuance.

Spraying of Flammable and Combustible Liquids 03.15

The purpose of this guideline is to clarify the position of Concord Fire and Life Safety regarding the spraying of flammable and combustible liquids within the City Limits.

This memo shall provide guidelines for the utilization of three spray areas recognized by the 2002 and 2006 NC Fire Prevention Code; “Spray Booth”, “Spray Room” and “Limited Spraying Spaces”. These guidelines are contained within Chapter 15 of the Fire Prevention Code and reference NFPA 33 for the protection of occupants. It should be noted where variations exist between NFPA 33 and the Fire Code, the provisions in the Fire Code are enforced.

1502 Definitions:
LIMITED SPRAYING SPACE - An area in which spraying operations for touch-up or spot painting of a surface area of 9 square feet (0.84 m^2) or less are conducted.

SPRAY BOOTH - A mechanically ventilated appliance of varying dimensions and construction provided to enclose or accommodate a spraying operation and to confine and limit the escape of spray vapor and residue and to exhaust it safely.

SPRAY ROOM - A room designed to accommodate spraying operations constructed in accordance with the International Building Code and separated from the remainder of the building by a minimum 1-hour fire barrier.

Section 1504 Spray Finishing:
1504.1.3 Spraying spaces.
Spraying spaces shall be designed and constructed in accordance with the International Building Code and Sections 1504.1.3.1, 1504.2, 1504.3, 1504.4, 1504.5 and 1504.6 of this code.

> **1504.1.3.1 Floor.**
> Combustible floor construction in spraying spaces shall be covered by approved, non combustible, non-sparking material, except where combustible coverings, such as thin paper or plastic and strippable coatings are utilized over noncombustible materials to facilitate cleaning operations in spraying spaces.

1504.1.4 Limited spraying spaces.
Limited spraying spaces shall comply with Sections 1504.1.4.1 through 1504.1.4.4.

> **1504.1.4.1 Job size.**
> The aggregate surface area to be sprayed shall not exceed 9 square feet (0.84 m^2).

> **1504.1.4.2 Frequency.**
> Spraying operations shall not be of a continuous nature.

1504.1.4.3 Ventilation.
Positive mechanical ventilation providing a minimum of six complete air changes per hour shall be installed. Such system shall meet the requirements of this code for handling flammable vapors. Explosion venting is not required.

1504.1.4.4 Electrical wiring.
Electrical wiring within 10 feet (3048 mm) of the floor and 20 feet (6096 mm) horizontally of the limited spraying space shall be designed for Class I, Division 2 locations in accordance with the ICC Electrical Code.

When conducting fire inspections in occupancies containing spray operations using flammable and combustible materials (excluding undercoating operations per Code Section 1508) the age of the operation shall be considered. The guideline titled "Spraying Operations" shall be utilized. This document provides guidelines from the North Carolina Office of the State Fire Marshal (NCOSFM) ruling on the application of the Code toward operations in relation to the age of the business. Operations that were in existence prior to 1992 shall be enforced with "Imminent Hazards" being addressed. Consideration also needs to be given to the location of fuel (spray) and potential ignition sources (i.e. fireplaces). Operations in existence from 1992 to present shall be enforced to the Code.
This scope of this memo shall pertain to when and if a spray operation shall be conducted in an approved "Spray Room", "Spray Booth" or fall within the Code provisions of a "Limited Spraying Space".

To promote fire and life safety, the department would prefer that **ALL** flammable and combustible liquid spraying be conducted in an approved spray booth. However, in those situations were it is economically unfeasible for a business to purchase a spray booth; a spray room is acceptable provided that it meets the following criteria:

1. Spraying spaces shall be designed and constructed in accordance with the International Building Code and Sections 1504.1.3.1, 1504.2, 1504.3, 1504.4, 1504.5 and 1504.6 of the North Carolina Fire Prevention Code.
2. The above mentioned sections include provisions for:
    a. Floors – Non-combustible protection provided.
    b. Walls – Non-combustible and limited combustible per NFPA 33.
    c. Ventilation – Properly installed and approved.
    d. Filters – Properly installed and maintained.
    e. Illumination – Approved wiring and fixtures.
    f. Fire Protection – Automatic fire protection system installed.
    g. Residue Collection – More subjective, but cannot allow paint to accumulate on horizontal areas other than the floor per Section 1503.2.1.4 and NFPA 33.
3. The room shall be separated from other areas of the building by a minimum 1-hour fire barrier.

Occupancies electing to install a Spray Room shall submit and have plans approved for the installation of such room. Plans shall contain the following:

1. Building information including:
    a. A scale drawing indicating the portion of the building being proposed for the installation (including a plot plan for compliance with Section 1504.2.6),
    b. Wall construction – Interior elements and exterior noncombustible coverings,
    c. Floor construction and/or proposed non-combustible covering.
2. Mechanical/Ventilation information including:
    a. Fan construction and motor elements (Class/Division designation),
    b. Exhaust rate (CFM) including velocity (lf/pm),
    c. Exhaust duct penetrations,
    d. Filter types and construction.
3. Electrical information including:
    a. Fixture types including Class/Division information,
    b. Conduit type and connectors,
    c. Electrical interconnection to mechanical and pneumatic shut down systems,
    d. Fire protection system interconnection and activation sequence.
4. Fire protection system information including:
    a. System design and extinguishing agent,
    b. Audible alarm type,
    c. Nozzle types and coverage patterns,
    d. Piping diagrams and flow point information,
    e. Mechanical, electrical and pneumatic interlock information,
    f. System protection elements.
5. Any other information required at the time of permit application submittal.

If plans are approved, a permit shall be granted for the construction of a “Spray Room”. Progress inspections shall be made during said construction. Any items not meeting approval or any deviations from the approved plans shall be grounds for permit revocation. Any occupancy having a permit revoked shall have the electrical utility service disconnected immediately.

Once a Certificate of Occupancy and/or Certificate Of Compliance is obtained, the spray room shall be maintained to the terms set forth in the plans and specifications submitted at the time of permit issuance.

Any occupancies failing to properly maintain a “Spray Room” shall have the electrical utility disconnected to the occupancy. Utilities shall remain disconnected until ALL necessary repairs to the “Spray Room” have been made.

For occupancies conducting spraying operations for touch-up or spot painting the following guidelines shall be utilized:

1. An operational permit as outlined in Code Section 105.6.41 “Spraying of Dipping” shall be obtained.
2. Spraying operations shall be limited to the provisions outlined in Code Section 1504.1.4 “Limited spraying spaces”.
   A. Examples of operations meeting this criteria would include spray finishing of:
      i. Car fenders,
      ii. Restoration of paint blemishes and imperfections
      iii. Items not having a surface area not exceeding 9 square feet.
   B. Examples of operations NOT meeting this criteria are:
      i. The painting of surfaces exceeding 9 square feet in area,
      ii. The painting of an entire vehicle.
3. All electrical fixtures and appliances shall meet the criteria outlined in Code Section 1504.1.4 “Limited spraying spaces”.
4. Fire extinguisher(s) shall be installed in the vicinity of all “Limited Spraying Spaces” in accordance with Table 906.3(1) for High Hazard Occupancy.
5. Provisions shall be made for guarding against over spray to other areas of the building. Coverings shall be of non-combustible/non-flammable materials. Roll Plastic and similar materials are NOT acceptable and shall NOT be utilized.
6. Sources of ignition within the “Limited Spraying Space” shall be identified and removed.

Any operation found to be in violation of these provisions, shall have the operational permit revoked and the electrical service shut down to the structure. The revoking of a permit shall constitute a requirement of the installation of a “Spray Room” or “Spray Booth” in the structure prior to the commencement of further spraying operations.

The operator of an occupancy conducting “Limited Spraying Space” operations shall provide a written affidavit consenting to the terms outlined in the above sections.

Cylinder Exchange Cabinets 03.16

The purpose of this guideline is to provide guidelines for the inspection of LP-Gas Cylinder exchange cabinets.

In North Carolina the installation of LP-Gas Tanks and associated equipment is governed by the North Carolina Department of Agriculture (NCDOA). The fire inspector's jurisdiction begins at the first stage regulator and follows to the downstream piping and devices. This same regulation applies to the installation of LP-Gas cylinder exchange cabinets being installed at Mercantile occupancies.

I spoke with Chris Noles (NCOSFM Fire Protection Engineer) on the telephone about the above issue and the fire inspector's authority to require that crash protection in accordance with Section 312 of the Fire Prevention Code. Chris replied that the State Legislators had given NCDOA the authority to enforce where cylinder exchange cabinets were installed and if crash protection was installed. He stated that the fire inspector had no jurisdiction in this case. Any cabinets found not in compliance with NCDOA regulations are to be referred to NCDOA for enforcement.

Chris provided me with the attached documents and directed me to look at the memorandum written by Richard Fredenburg. Mr. Fredenburg is a LP-Gas Engineer with NCDOA and is responsible for overseeing LP-Gas tank installations in the State of North Carolina. This document outlines the requirements of Vehicle Impact Protection on cabinets (See attachments).

Highlights of the document require the installation of Curbing <u>or</u> Steel Post for vehicle impact protection. Curbing shall be at least 6-inches high and cabinets shall be located at least 3-feet from the edge of the curbing. If curbing does not protect cabinets, steel post shall be installed and be located no closer than 2-feet away from the cabinet. The document also states the construction specifications of the post.

For this installation, Section 312 of the Fire Code does not apply. Please note this document pertains to <u>stationary bulk tank and cabinet</u> installations. It does NOT apply to the amounts stored in <u>portable cylinders</u> within a structure or any of the other items regulated by NFPA 58.

When inspecting occupancies with cylinder exchange cabinets, the installation of the cabinet shall be inspected in accordance with NCDOA Standards. Cabinets failing to meet NCDOA standards shall be referred to NCDOA for enforcement. This should be listed as a referral and NOT a violation on the inspection form. It is the responsibility of NCDOA to determine if the installation is a violation and conduct any subsequent enforcement.

The referral shall either be emailed to NCDOA or use the inspection form .Any forms or other documentation shall be faxed to NCDOA. It is the responsibility of the inspector conducting the inspection to refer the cabinet to NCDOA. The referral form shall be placed in the occupancy file in the Fire Marshal's Office.

This memo does NOT prohibit the fire inspector from recommending the installation of crash protection. Nor, does it prohibit a mercantile business from voluntarily installing crash protection. If protection is installed it shall be installed to NCDOA requirements.

Date: _____

NC Department of Agriculture
Attention: Richard Fredenburg, LP-Gas Engineer
1050 Mail Service Center,
Raleigh, NC 27699-1050
919-733-3313 Office
919-715-0524 Fax

RE: Cylinder Exchange Cabinets

Mr. Fredenburg,

This letter is to notify the Department of Agriculture of a LP-Gas Cylinder Exchange cabinet needing to be inspected by your office.

The cabinet is located at _____ and is out of compliance with NCDOA Standards in the following areas:

_____

_____

_____

The Concord Department of Fire & Life Safety appreciates your efforts regarding our request. Please give us a call if you have any questions or need further information.

Thank you,

[Inspector Signature]

[Inspector Name], [Inspector Rank]
Concord Fire Marshal's Office

National Fire Protection Association Pamphlet 704 03.17
Identification Of Hazardous Materials For Emergency Response

This guideline is to provide guidelines as established by the Emergency Management Division of the department, for the marking of buildings and stationary tanks with NFPA 704 Signs. The enforcement of this standard is in conjunction with Section 2703.5 (Hazard Identification Signs) of the North Carolina Fire Code.

CONCORD DEPARTMENT OF FIRE & LIFE SAFETY
DIVISION OF EMERGENCY MANAGEMENT
"STANDARDS FOR INTERPRETATIONS"

NATIONAL FIRE CODES AND THE INTERNATIONAL FIRE CODE

DEPARTMENTAL OPERATIONAL POLICY

NATIONAL FIRE PROTECTION ASSOCIATION PAMPHLET 704
IDENTIFICATION OF HAZARDOUS MATERIALS FOR EMERGENCY RESPONSE

I. SCOPE:

This standard, in conjunction with NFPA Pamphlet 704 latest edition, shall address the health, flammability, instability, and related hazards that are presented by short term, acute exposure to a material under conditions of fire, spill, or similar emergencies.

II. PURPOSE:

The purpose of this standard is to provide identification of fire hazard and to placard all businesses that have storage were certain minimum quantity of hazard material exists.

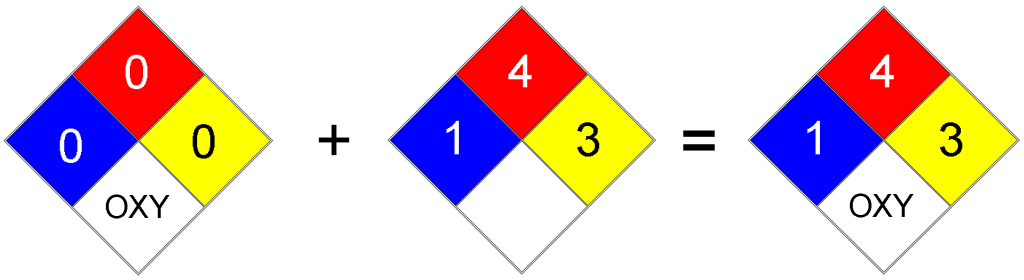
III. LOCATION:

1. The identification placard shall be located on the outside of buildings and/or storage tanks in locations deemed appropriate by fire department staff. Inside placarding shall be required when chemicals are segregated into separate areas.

2. The material safety data sheet (MSDS) should have the information on hazard ratings to be used for each material. Emergency Management staff shall approve the placard numbering.

3. The acceptable sizes of NFP A 704 signs are:
   a.12 inches on each side with 6-inch symbol (interior posting)
   b.24 inches on each side with 12-inch symbols for exterior postings

4. Letters shall be a minimum of four (4) inches high by three (3) inches wide by 5/8-inch stroke (exterior postings). Numbers placed within the blue and red areas shall be white in color. Numbers/Letters placed in the yellow and white areas shall be black in color.
5. The number or symbol indication in each colored category shall reflect the most severe hazard associated with any hazardous materials at the business or in the area indicated by the posting.



Oxygen (Vapor) **Acetylene** **Final Posting**

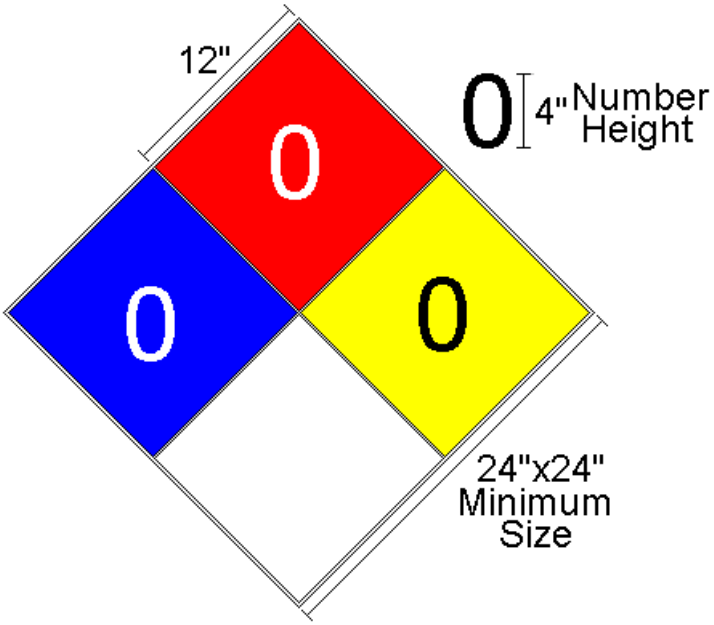
6. If the property is fenced, all access points must be posted immediately adjacent to the gate. Posting on fences shall be plainly visible and readable from the nearest public access point.
7. Gasoline stations that handle only motor vehicle fuels stored in underground storage tanks are exempt from posting.
8. Businesses that contain Bulk Liquefied Carbon Dioxide tanks for soda fountains shall be enforced by this guideline. Businesses that contain Vaporous Carbon Dioxide gas and no other hazardous materials are exempt from posting signs.
9. Any business with a NFPA 704 rating of 2-3-3 or above will be required to install an approved key box vault on the premises, which would contain business keys and a business plan. (If you feel that we would be placarding too many businesses this is recommended (If not see Item 10).
10. Any business that store chemicals sufficient enough to require a placard is required to install an approved key box vault on the premises, which would contain business keys and emergency operations plan.

IV. QUANTITIES:

Placarding shall be required when the following quantities on site, at anyone time, equal or exceed the following.

55 gallons of hazardous material
500 pounds of a hazardous material
200 cubic feet of flammable gases
25 pounds of cellulose nitrate
10 gallons of organic peroxides
All class I and class II explosives (Law enforcement exempt)
Threshold planning Quantities for extremely hazardous substances

NFPA 704 Sign Specification



Vehicles Displayed In a Building 03.18

The purpose of this guideline is to clarify the requirements of Section 314 of the Fire Prevention Code concerning the indoor display of vehicles in a building within the City Limits of Concord.

The following requirements are to be applied for **vehicles being used as a static indoor display** (Concord Mills Mall, Carolina Mall, etc):

1. An Operational Permit IS required for this type of display. Permits are to be reviewed and issued prior to the vehicle(s) being displayed.
2. All access doors are to be secured and/or locked.
3. The Fuel tank/cell level shall be at 1/4 or lower.
4. The Fuel cap secured with a locking gas cap (Vehicles equipped with a locking gas door are acceptable and in this case would not need a locking fuel cap).
5. All Batteries are to be disconnected (Special exceptions will be considered – Such as vehicles with computer programming issues).
6. Any vehicles found to be leaking fluids are to be removed from the display area. All spills and/or leaks of fluids are to be immediately removed.

These requirements should be viewed more as preventing a fire from occurring from tampering and/or damage to the vehicle rather than the vehicle causing a fire.

Vehicles being displayed in a dealership

Displays of this type are for sales purposes. These vehicles are expected to crank and run as a part of the normal business of the occupancy. Applying the same requirements as above would hinder the businesses ability to effectively demonstrate and sell the vehicle.
The following requirements are to be applied when inspecting businesses of this type:

1. An Operational Permit is NOT required for occupancies of this type. However, regular inspections will be conducted through the periodic inspection process, complaint and special investigation basis.
2. The exempt amounts of Flammable and Combustible Liquids stated in the Chapter 27 of the Fire Prevention Code are to be applied for the amounts of fuel in vehicle tanks This is an aggregate amount for all vehicles within the (control area) sales floor,
3. The vehicle shall be in running order with all items, devices, covers, caps and other components present or securely in place,
4. Any vehicles found to be leaking fluids are to be repaired and/or removed from the sales area. All spills and/or leaks of fluids are to be immediately removed,
5. The amount of time the vehicle is run shall be limited in order to keep Carbon Monoxide levels down within the building and engine/coolant temperatures to a minimum,

6. The vehicle shall be safeguarded to prevent movement during display and operation (parking brake engaged, transmission in park position, hand brake applied, etc…).
7. Any other safeguards necessary to ensure public safety is maintained.

The same requirements as above would apply to motorcycle, boat and other powered vehicle dealerships (Harley Davidson, Bass Pro, John Deere, etc...).

Display's such as RV's & campers, race cars, drag motorcycles and other types of specialty vehicles are to be submitted through the permitting process. The particular set up of the display and vehicle type will be reviewed and a decision of specific requirements will be implemented on a case-by-case basis. Items to be considered in the review process are factors such as the occupancy type, building occupant load, vehicle type, and the vehicle's computer programming (transmission, etc.) and any other items relevant to the display. A permit shall be issued stating the specific requirements.

ALL vehicle displays are to be inspected in accordance with this clarification.

Fire Inspections of A-2 Occupancies 03.19

This guideline is to provide some guidelines on the inspection occupancies classified as A-2. These provisions have been adapted from an IFC document received at an ICC Nightclub Fire Prevention Workshop conducted in 2004. North Carolina Fire Code amendments and deletions have been applied.

Inspection Item	NC Fire Code Section
A-2: Assembly uses intended for food and/or drink consumption including, but not limited to: banquet halls, night clubs, restaurants, taverns and bars.	202
PERMITS	
Check if operational and/or construction permits are required.	105
EXITS	
Minimum of four approved exits for more than 1000 occupant load.	Tbl. 1005.2.1
Minimum of three exits re aired for 501-1000 occupant load.	Tbl. 1005.2.1
Minimum of two exits required for 51-500	Tbl.1005.2.1
One exit required for 1–50.	Tbl. 1004.2.1
Verify maximum travel distances to exits for sprinklred and unsprinklered buildings.	Tbl. 1004.2.4
Doors shall swing in direction of egress travel where serving an occupant load of 50 or more.	1003.3.1.2
Exit doors shall be openable from the egress side without the use of a key or special knowledge or effort (Determine if the hardware present is consistent with one motion or action causing the door to release and open).	1003.3.1.8
In Group A & E occupancies with an occupant load of 100 or more, doors in the means of egress shall NOT be provided with a lock or latch unless it is panic hardware or fire exit hardware.	1003.3.1.9
The means of egress, including the exit discharge, shall be illuminated at all times the building space served by the means of egress is occupied.	1003.2.11
Exit sign placement shall be such that no point in an exit access corridor is more than 100 feet from the nearest visible exit sign .	1003.2.10.1
Exit signs shall be internally or externally illuminated at all times (For purposes of enforcement, internally illuminated signs are preferred over externally illuminated. In an emergency situation, the lighting of a sign is accomplished by one device instead of two devices).	1003.2.10.4
Main exterior exit doors or gates which obviously and clearly are identifiable as an (obvious) exit need not have exit signs.	1003.2.10.1 (2)
Obstructions to exits shall not be placed in the required width and exits shall not be obstructed in any manner .	1003.2.8

The required capacity of means of egress shall not be diminished reduced along the path of egress travel.	1003.2.8
Doorways shall not be less than 32" in clear width.	1003.3.1.1
The width of exit corridors shall not be less than 44-inches.	1004.3.2.2
The width of exit passageways shall not be less than 44-inches except that exit passageways serving an occupant load of less than 50 shall not be less than 36-inches in width.	1005.3.3.1
The opening force for interior side-swinging doors without closers shall not exceed a 5-pound (22N) Force.	1003.3.1.2
For other side-swinging doors, sliding and folding doors the door latch shall release when subjected to a 15-pound force. The door shall be set in motion when subjected to a 30-pound force. The door shall swing to a full-open position when subjected to a 15-pound force. Forces shall be applied to the latch side.	1003.3.1.2
It shall be unlawful to alter a building or structure in a manner that will reduce the number of exits or the capacity of the means of egress to less than required by the code.	1001.2
Minimum clear aisle width shall be 44" for level or ramped aisles having seating on both sides, 36" where aisle does not serve more than 50 seats or when aisle seating is on one side on .	1003.3.4.4.1
Manually operated flush bolts or surface bolts on exit doors are not permitted.	1003.3.1.8.1
In the event of a power failure, an emergency system shall automatically illuminate an exit access corridors, passageways, exit stairways, rooms, exit discharge areas if 2 or more exits are required.	1003.2.11.2
Egress doors shall be readily openable from the egress side without the use of a key or special knowledge or effort.	1003.3.1.8
Access-controlled entrance egress doors are permitted in nightclubs. The system must be approved. The doors shall be arranged to unlock by a signal from or loss of power to the sensor . There shall be a manual unlocking device (button) located 40-48 inches above the floor within 5 feet of the secured doors. There shall be a sign that reads: PUSH TO EXIT .Activation of the fire alarm system or the automatic sprinkler shall unlock the door. Entrance doors in nightclubs shall not be secured from the egress side when the building is open to the general public.	1003.3.1.3.4

FIRE PROTECTION SYSTEMS

NEW CONSTRUCTION -Automatic fire sprinklers shall be provided when the fire area exceeds 5,000 sq. ft. or the occupant load exceeds 300 or if the nightclub is located above or below the level of exit discharge	903.2.1.2
NEW CONSTRUCTION -Manual fire alarm required when occupant load exceeds 300.	907.2.1
NEW CONSTRUCTION -When occupant load exceeds 1000, voice evacuation with emergency power is required.	907.2.1.1

Fire protection systems shall be maintained in accordance with the original installation standards for that system. Required systems shall be extended, altered, or augmented as necessary to maintain and continue protection whenever the building is altered, remodeled or added to. Alterations to fire protection systems shall be: done in accordance with appliance standards.	901.4
One 2A fire extinguisher per 3000 sq. ft. in low hazard areas (offices) and one 2A per 1500 sq. ft. in moderate hazard areas. If quick response sprinklers are used fire extinguishers are required only in special hazard areas. (Must show proof of quick response heads.	906.1
Maximum travel distance to a fire extinguisher is 75 feet.	Tbl. 906.3 1
Fire extinguisher shall be located in conspicuous location where they will be readily accessible and immediate available for use.	906.5
Fire extinguishers shall not be obstructed or obscured from view.	906.6
Hand-held portable fire extinguishers, not housed in cabinets, shall be installed on hangers or brackets supplied.	906.7
Portable fire extinguishers shall be installed to that its top is not more than 5 feet above the floor if less than 40 lbs. Fire extinguishers exceeding 40 lbs. shall be installed so that its top is not more than 3.5 feet above the floor.	906.9
Cooking equipment involving vegetable or animal oils and fats shall be protected by a Class K rated portable rare extinguisher provided within 30 feet travel distance of commercial cooking equipment.	904.11.5
Fire extinguishers shall be serviced annually and shall have a current service tag attached.	901.6
A manual actuation device shall be located at or near a means of egress from the cooking area, 4-5 feet above floor, 10-20 feet away from kitchen exhaust system.	904.11.1
The actuation of commercial cooking equipment fire suppression systems shall automatically shut down the fuel or electrical power supply to the cooking equipment, shut down makeup air to the exhaust hood and shut down HVAC units in the affected area. Reset shall be manual.	904.11.2
Commercial cooking equipment fusible links and automatic sprinkler heads shall be replaced at least annually with show of proof.	904.11.6.5
All valves controlling the water supply for automatic sprinkler systems, pumps, tanks, water levels and temperatures, critical air pressures, and water-flow switches on an sprinkler systems shall be electrically supervised when system has 20 or more sprinkler heads.	903.4

NEW CONSTRUCTION -a manual fire alarm shall be installed in Nightclubs with an occupant load of 300 or more.	907.2.1
NEW CONSTRUCTION -when the occupancy load exceeds 1000 the alarm shall be b emergency voice/alarm communications.	907.2.1.1
EXISTING NIGHTCLUBS -fire alarms currently installed in existing nightclubs shall be maintained and modified to comply with the NC Accessibility Code (NCAC).	**NCAC** Chp17 17.1.1
Fire detection, alarm and extinguishing systems shall be maintained in an operative condition at all times.	901.6
Records of an system inspections, tests and maintenance shall be maintained on the premises for a minimum of 1 year and made available to the Code Official upon request.	901.6.2
Painted sprinkler heads or cover plates are prohibited unless painted at factory .They cannot be cleaned of paint and must be replaced.	901.8

HOUSEKEEPING

Combustible waste materials creating a fire hazard shall not be allowed to accumulate in buildings or structures or upon premises.	304.1
Storage of combustible materials in buildings shall be maintained in a neat orderly manner .	315.2
Storage shall be separated from heaters or heating devices by distance or shielding so that ignition cannot occur.	315.2
Storage shall be maintained at least 2 feet below the ceilings in non-sprinklered areas and a minimum of 18" below sprinkler head deflectors in sprinkled areas.	315.2.1
Combustible materials shall not be stored in exits or exit enclosures.	315.2.2
Combustible materials shall not be stored in boiler rooms, mechanical rooms or electrical equipment rooms.	315.2.3
Attic, under-floor and concealed spaces used for storage of combustible materials shall be protected on the storage with 1- hour fire-resistive construction or sprinkled.	315.2.4
Outside storage of combustible materials shall not be located within 10 feet of a property line (See exceptions).	315.3
Combustible waste containers larger than 40 gal shall have lids and must be made of metal or a roved combustible material	304.3.2
Dumpsters and containers with an individual capacity of 1.5 cu. yds. or more shall not be stored in buildings or placed within 5 feet of combustible walls, openings or under roof eave lines.	304.3.3
Materials susceptible to spontaneous ignition, such as oily rags, shall be stored in a listed disposal container (Self-closing lids). Contents of such containers shall be removed and disposed of daily.	304.3

Liquid or gas fueled vehicles or boats shall not be located indoors except: batteries disconnected, fuel in tank not to exceed ¼ tank or 5 gal. whichever is least. Fuel tanks and fill openings are closed and sealed to prevent tampering.	314.4
The use of portable un-vented fuel-fired heating equipment is prohibited.	603.4
A Type I hood shall be installed at or above all commercial food cooking appliances and domestic cooking appliances used for commercial uses that produce grease laden vapors.	609.2.1

ELECTRICAL

Relocatable power taps shall be of the polarized or grounded type, equipped with over-current protection, and shall be listed.	605.4.1
Relocatable power taps shall be directly connected to a permanent installed receptacle.	605.4.2
Relocatable power taps shall not extend through walls, ceilings, floors under doors or floor coverings or be subject to damage	605.4.3
Extension cords shall not be a substitute for permanent wiring.	605.5
Extension cords and flexible cords shall not be affixed to structures extended through walls, ceilings or floors.	605.5
Extension cords shall be plugged directly into an approved receptacle, power tap or multi-plug adapter .	605.5.1
Except for approved multi-plug extension cords, each extension cord shall serve only one portable appliance.	605.5.1
Extension cords shall not Contain splices or damage	605.5.3
Extension cords shall be grounded when serving grounded portable appliances.	605.5.4
The ampacity of the extension cords shall Dot be less than the rated capacity. of the portable appliance supplied by the cord.	605.5.2
A working space and clearance of not less than 30" in width, 36" in depth and 78" in height shall be provided in front of electrical service equipment (panel). Where electrical service equipment is wider than 30", the working space shall not be less than the width of the equipment.	605.3
Open junction boxes and open wiring splices shall be prohibited. Approved covers shall be provided for all switch and outlet boxes.	605.6
Electrical motors shall be maintained free from excessive accumulations of oil, dirt, waste and debris.	605.8
Temporary wiring for electrical power and lighting installations is allowed for a period not to exceed 90 days. Exceptions: Longer for Construction remodeling repair or demolition of buildings .	605.9
Temporary wiring attached to a structure shall be attached in an approved manner.	605.9.1

Multi-plug adapters, such as cube adapters, un-fused plug strips or any other device not complying with the ICC Electrical Code shall be prohibited.	605.4
Doors into electrical control panel rooms shall be marked with a plainly visible and legible sign stating "ELECTRICAL ROOM. "	605.3.1
Portable electric lamps shall not be used in spraying areas during spraying operations unless approved for hazardous locations.	1504.5.4

MISCELLANEOUS

New and existing buildings shall have approved address numbers plainly legible and visible from the street fronting the property . These numbers shall contrast with their background.	505.1
A key box may be required where access to or within a structure is unduly difficult because of secured openings or where immediate access is aired.	506.1
Fire apparatus access roads shall not be obstructed in any manner, including the parking of vehicles.	503.4
Fire apparatus access roads shall have an unobstructed width of not less than 20 feet minimum height is 13' 6".	503.2.1
Every room or space that is an assembly occupancy shall have the occupant load of the room or space posted in a conspicuous place and maintained by the owner .	1003.2.2.5
Candles and other open flame decorative devices shall not be in places of assembly (Exceptions Apply)	308.3.6
The building owner shall be responsible for ensuring that the fire and life safety systems are maintained in an operable condition at all times.	907.20.5
An approved fire safety and evacuation plan shall be prepared and maintained.	404.2
Emergency evacuation drills shall be conducted in nightclubs quarterly by employees and records must be maintained.	405.2
Nightclubs with atriums must have an approved fire and safety evacuation plan and it must be maintained.	404.2

FIRE PROTECTION

Fire doors and smoke barrier doors shall not be blocked or obstructed or otherwise made inoperable.	703.2
Fire door assemblies shall not be modified.	703.2
Swinging fire doors shall close from the full open position and latch automatically. The door closer shall exert enough force to close and latch the door from any partially open position.	703.2.3
Horizontal and vertical sliding and rolling fire doors shall be inspected and tested annually to confirm proper operation and full closure. A written record shall be maintained and available.	703.4
Magnetic hold-open devices and automatic door closers, where provided, shall be maintained. If fire doors are out of service the door shall remain in the closed position.	703.2.2

Curtains, draperies, hangings and other decorative materials suspended from walls or ceilings shall be flame resistant.	805.1
Natural cut trees shall be prohibited in nightclubs unless protected by an automatic sprinkler system.	804.1.1
Openings through fire -resistance-rated assemblies shall be protected by sell-closing or automatic-closing doors of approved construction meeting the fire protection requirements for the assembly (No door wedges or fold down hold-open feet) .	703.1
An openings through fire-resistance rated assemblies made for pipes, electrical conduit, wires, ducts, air transfer openings, etc. shall be protected by an approved method capable of resisting the passage of smoke and fire.	703.1

PYROTECTICS

An operational permit is required for indoor pyrotechnics in nightclubs.	105.6.36
Applications for proximate audience displays shall include plans indicating the required clearances for spectators for spectators and combustibles, crowd control measures, smoke control measures, and requirements for standby personnel and equipment when provision of personnel or equipment is required by the fire code official.	3308.2.2

This document should be used only as a guide. Each individual occupancy has its own unique set of hazards that must be evaluated by the inspector conducting the inspection. Additional violations of the Fire Code not listed in this guideline may be present. Any additional violations found shall be noted and enforced.

Gates and Courtyards. 03.20

The purpose of this guideline is to provide some guidelines concerning the exit and fence gate hardware required for Bars and Nightclubs that utilize an outdoor patio or courtyard as a part of a required exit discharge.

In reference to the question of gates and egress courtyards, the following information in the Fire Code shall apply:

1003.3.2 Gates.
Gates serving the means of egress system shall comply with the requirements of this section. Gates used as a component in a means of egress shall conform to the applicable requirements for doors.

> **Exception:**
> Horizontal sliding or swinging gates exceeding the 4-foot maximum (1219 mm) leaf width limitation are permitted in fences and walls surrounding a stadium.

> **1003.3.2.1 Stadiums**
> Panic hardware is not required on gates surrounding stadiums where such gates are under constant immediate supervision while the public is present, and further provided that safe dispersal areas based on 3 square feet (0.28 m^2) per occupant are located between the fence and enclosed space. Such required safe dispersal areas shall not be located less than 50 feet (15 240 mm) from the enclosed space. See Fire Code Section 1005 for means of egress from safe dispersal areas.

> **1003.3.2.2 Educational uses**
> School grounds are permitted to be fenced and gates therein are permitted to be equipped with locks, provided that safe dispersal areas based on 3 square feet (0.28 m^2) per occupant are located between the school and the fence. Such required safe dispersal areas shall not be located less than 50 feet (15 240 mm) from school buildings. See Fire Code Section 1005 for means of egress from safe dispersal areas.

This area of the Code would apply to a gate being used in an enclosed courtyard that building exits empty into. The gates latching hardware would be required to conform to the following:

1003.3.1.8 Locks and latches
Egress doors shall be readily openable from the egress side without the use of a key or special knowledge or effort.

Exceptions:

1. Places of detention or restraint.
2. In buildings in occupancy Group A having an occupant load of 300 or less, Groups B, F, M and S, and in churches, the main exterior door or doors is permitted to be equipped with key-operated locking devices from the egress side provided:
   - 2.1. The locking device is readily distinguishable as locked.
   - 2.2. A readily visible durable sign is posted on the egress side on or adjacent to the door stating: THIS DOOR TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED. The sign shall be in letters 1 inch (25 mm) high on a contrasting background.
   - 2.3. The use of the key-locking device is revokable by the code official for due cause.
3. Where egress doors are used in pairs, approved automatic flush bolts shall be permitted to be used, provided that the door leaf having the automatic flush bolts has no doorknob or surface-mounted hardware. The unlatching of any leaf shall not require more than one operation.
4. Doors from individual dwelling units and guestrooms of Group R occupancies having an occupant load of 10 or less are permitted to be equipped with a night latch, dead bolt or security chain, provided such devices are openable from the inside without the use of a key or tool.

Door-locking arrangements shall be permitted in Group I-2 where the clinical or security needs of the patients require specilized locking measures for their safety or the safety of others, provided keys are carried at all times by all staff that are responsible for the evacuation of the occupants within the locked building or locked unit(s).

1003.3.1.8.1 Bolt locks

Manually operated flush bolts or surface bolts are not permitted.

Exceptions:

1. On doors not required for egress in individual dwelling units.
2. Where a pair of doors serves a storage or equipment room, manually operated edge- or surface-mounted bolts are permitted on the inactive leaf.

Latching devices being used on the gates would need to being inspected and approved by the Fire Official conducting the Inspection. The use of barrel bolt is prohibited by 1003.3.1.8.1.

Furthermore the use of a Courtyard an Exit Discharge Area is regulated by the Code in the following sections:

1006.3.1 Egress courts.

Egress courts serving as a portion of the exit discharge in the means of egress system shall comply with the requirements of Section 1006.

1006.3.1.1 Width

The width of egress courts shall be determined as specified in Section 1003.2.3.1, but such width shall not be less than 44 inches (1118 mm), except

as specified herein. Egress courts serving occupancies in Groups R-3 and U shall not be less than 36 inches (914 mm) in width.

The required width of egress courts shall be unobstructed to a height of 7 feet (2134 mm).

Exception:

Doors, when fully opened, and handrails shall not reduce the required width by more than 7 inches (178 mm). Doors in any position shall not reduce the required width by more than one-half. Other nonstructural projections such as trim and similar decorative features are permitted to project into the required width 1.5 inches (38 mm) from each side.

Where an egress court exceeds the minimum required width and the width of such egress court is then reduced along the path of exit travel, the reduction in width shall be gradual. The transition in width shall be affected by a guard not less than 36 inches (914 mm) in height and shall not create an angle of more than 30 degrees (0.52 rad) with respect to the axis of the egress court along the path of egress travel. In no case shall the width of the egress court be less than the required minimum.

1006.3.1.2 Construction and openings

Where an egress court serving a building or portion thereof is less than 10 feet (3048 mm) in width, the egress court walls shall be not less than 1-hour fire-resistance-rated exterior walls complying with the International Building Code for a distance of 10 feet (3048 mm) above the floor of the court, and openings therein shall be equipped with fixed or self-closing, ¾-hour opening protective assemblies.

Exceptions:

1. Egress courts serving an occupant load of less than 10.
2. Egress courts serving Group R-3.

The area of the courtyard or fenced area would have to meet the above information. The occupant load of the exits that are emptying into the courtyard area would determine the occupant load of the courtyard.

Fire/Life Safety Inspections 03.21

Members of the Concord Fire & Life Safety Fire Marshal's Office use the following minimum guidelines when conducting inspections of occupied structures in the district. The District has adopted the 2006 revision of the Building Officials (IBC) and Fire Prevention Code (IFC).

This document should be used only as a guide. Each individual occupancy has its own unique set of hazards that must be evaluated by the inspector conducting the inspection. Additional violations of the Fire Code not listed in this guideline may be present. Any additional violations found shall be noted and enforced.

Exterior of Building

1. Address
    a. Is it correct & visible?
    b. Are Suite numbers posted?
    c. If required, is NFPA 704 sign present and visible?
2. Fire Lanes (if present)
    a. Are they marked adequately?
    b. Are signs properly displayed?
    c. Are they free from obstructions (vehicles, dumpsters)?
3. Fire Department Connections
    a. Fire Department Connections (FDC) free from obstructions and marked.
    b. Caps in place.
    c. Female fitting operates.
    d. National Standard Fire Hose Threads installed.
4. Post Indicator Valve
    a. Valve shows "open" in view window.
    b. Handles padlocked in place or monitored with a tamper switch.
    c. Valve not damaged and free from obstructions.
5. Sprinkler System – Main Valve in Pit
    a. O.S. and Y valve in the stem out position.
    b. Control valves chained and locked or monitored with a tamper switch.
    c. Valve pit heater installed (If Applicable).
    d. Pit free from trash and debris
6. Water Motor Gong or Electric Bell
    a. Is it there?
    b. Condition – no birds nest
7. Location of Utilities
    a. Gas
    b. Electric
8. Outside Storage of Compressed Gas Cylinder
    a. Clearance
    b. Security

9. Knox Rapid Entry System
   a. Is device in good working order?
   b. Does it contain correct key and current information?
   c. If none exist, tell owner of benefits of system
10. Parking Lot
   a. Turning radius maintained on all lot striping and curbs.
   b. All weather driving surfaces properly maintained.
   c. Shrubbery, trees and vegetation not obstructing fire hydrants.
   d. Exterior storage not obstructing driving lanes.

Interior of Building

Means of Egress

1. Exit door
   a. Unlocked and properly marked if necessary, with fire door signs.
   b. Operate properly
   c. Proper hardware
   d. No double cylinder dead bolts

   Exit Access/Exit Discharge
   a. Free from obstructions
   b. Stairways
   c. No storage of any kind in stairways
   d. Exit doors unlocked
   Floors numbered in building greater than three stores

   Exit and Emergency Lighting
   a. Exit lights illuminated
   b. Emergency lights and battery backup working
   c. Lights and signs unobstructed

Fire Protection

2. Extinguishers present.
   a. Proper type Installed (5lb. ABC minimum or K-Class for cooking applications)
   b. Current service tag
   c. Properly installed max height 5 feet above floor
   d. Proper number of travel distance (75 feet, Class A or 50 feet, Class B)

3. Sprinkler System
   a. Visual check of riser and gauges
   b. Risers marked with system numbers and system maps posted at riser.
   c. Valves opened and monitored with tamper switches and/or chain locked.
   d. Check documentation of last maintenance, due annually
   e. Does a Central Station monitor system.
   f. Replacement heads and tools in cabinet
   g. Proper 18 inch clearance below heads
   h. Heads free from paint, dirt, etc.
   i. Dry system: check gauges, compressor, etc.
   j. Is the door to room marked “Riser Room”?
   k. Storage of materials and/or building architectural elements does not obstruct sprinkler head locations and do not exceed NFPA 13 4-foot obstruction require ments.

4. Commercial Hood System
   a. Current service tag, due every 6-months
   b. Filters and hoods clean of excessive grease.
   c. Check fusible link, should be clean
   d. Nozzles in proper position, no obstructions
   e. Check access of manual pull station
   f. K-class fire extinguisher installed within 30 feet of units
   g. All Pull Stations, Hoods and Firing Cabinets marked with system numbers.
5. Halon and Special Agent Systems
   a. Current service tag, due every 6-months
   b. Proper employee training
   c. Visual inspection of system
   d. Abort switch marked and accessible
   e. All Pull Stations, Hoods and Firing Cabinets marked with system numbers.
6. Fire Doors
   a. Free to operate, no obstructions, etc.
   b. Good maintenance, no damage, links, clean, no paint
   c. Marked with Fire Door signs, if necessary.
7. Roof Vents
   a. Free to operate, unlocked and no obstructions
   b. Fusible link clean and unpainted
8. Fire Alarm Equipment
   a. Visually check detectors for damage and dirt
   b. Verify location and operation of annunciator panel
   c. Check documentation of last alarm test, due annually
   d. Zone maps posted at panel and remote annunciator locations.
   e. Devices marked with device numbers or Zone indicators.

General Precautions Against Fire

1. Electrical
   a. Check for improper use of extension cords.
   b. Check for missing blank covers in distribution panel in electrical room.
   c. Check for excessive heat that might indicate a overload or other electrical problem.
   d. Proper clearance of 30 inches on electrical panels.
   e. No storage of combustibles in electrical room.
   f. Check for missing junction box covers, etc.
   g. Check for improper wiring.

2. Flammable/Combustible liquid storage
   a. All containers closed and properly marked with contents.
   b. Liquids stored at, below or above exempt amounts.
   c. Liquids stored in proper containers.
   d. Flammable Liquid storage cabinets in good condition

3. Hazardous Material Storage
    a. Proper storage for type of hazardous materials.
    b. MSDS sheets available on site and accessible.
    c. 704 Signs posted, if necessary.
    d. All containers closed and properly marked with contents.
    e. Materials stored at, below or above exempt amounts.
    f. Solids, Liquids, Gases stored in proper containers.
    g. Liquid/Gas storage cabinets in good condition and not overloaded.
4. Furnace Room
    a. Proper clearance from furnace to combustibles.
    b. No combustible material in gas furnace room.
5. Storage
    a. Storage in closets and rooms located 18-inches below ceiling in sprinklered occupancies and 24-inches below ceiling in unsprinklered occupancies.
    b. Height of storage does not exceed 12-feet. If more than 12-feet, does the occupancy meet the requirements for High Piled Combustible Storage?
    c. Does storage in attic spaces meet Code?

Temporary Power Requirements 03.22

Purpose

The purpose of this guideline is to provide requirements for the installation of Temporary Power to commercial structures located within the City Limits of Concord.

Temporary Power

A request for temporary power shall be made by and in the name of, the "responsible agent" of the property. Upon submittal, the following requirements shall be considered when a request for "Temporary Power" has been made:

Existing Building – Upfit, Employee Training, Load Merchandise, Etc.

Temporary Power is issued by the City; when power to an existing structure has been turned off by the prior occupant and interior remodeling or an "Upfit", Employee Training or Load Merchandise permit has been purchased. This type of Temporary Power is restricted to only those functions or appliances necessary to complete the provisions of the permit. Upon issuance of a Certificate of Compliance, the Temporary Power will be considered to be Permanent Power.

1. The request shall be filled out using a City Temporary Power Form;
2. A fire inspection is required prior to approval being given;
3. All items noted during the inspection shall be corrected prior to power being connected to the building;
4. A permit fee shall be accessed and collected with COC fee at final inspection;
5. The request shall be added in the Firehouse Occupancy Module to COC Fees.

Existing Building - Certificate of Compliance (COC)

Temporary Power is issued by the City and County; when power to a structure has been turned off by the prior occupant and a new tenant wishes to occupy a building or tenant space. Upon the approval of Temporary Power, the building or tenant space will be energized. Upon issuance of a Certificate of Compliance, the Temporary Power will be considered to be Permanent Power.

1. The request shall be filled out using a City and County Temporary Power Form;
2. A fire inspection is required prior to approval being given;
3. All items noted during the inspection shall be corrected prior to power being connected to the building;
4. A permit fee shall be accessed and collected with COC fee at final inspection;
5. The request shall be added in the Firehouse Occupancy Module to COC Fees.

New Building - Certificate of Compliance (COC)

Temporary Power is issued by the City and County; when power to a new structure is initially constructed. This type of Temporary Power is restricted to only those functions required to test equipment and/or appliances and any other items necessary to complete the Certificate of Compliance (COC). Upon issuance of a Certificate of Compliance the Temporary Power will be considered to be Permanent Power.

1.The request shall be filled out using City and County Temporary Power Forms;
2.A fire inspection is required prior to approval being given;
3.All items noted during the inspection shall be corrected prior to power being connected to the building;
4.A permit fee shall be accessed and collected with COC fee at final inspection;
5.The request shall be added in the Firehouse Occupancy Module to COC Fees.

Temporary Power Inspection Procedure

1. A request for temporary power inspection shall be made by and in the name of the “responsible agent” of the property. The “responsible agent” of the property is responsible for scheduling the time, date, and location for the inspection;
2. The “responsible agent” of the property shall be responsible for providing the Cabarrus County Temporary Power form at the time of inspection;
3. Upon his/her arrival, the “Fire Official” shall initiate an inspection of the building with the “responsible agent” of the property and begin documentation of the inspection on a Concord Department of Fire and Life Safety Fire Inspection form;
4. If any hazards or code violations of the Fire Code are observed during the inspection, the “Fire Official” shall document all hazards, code violations and any other items on a Concord Department of Fire and Life Safety Fire Inspection form. All hazards and code violations observed shall be thoroughly explained and detailed to the “responsible agent” at the time of inspection;
5. All hazards and code violations shall corrected and/or repaired by the “responsible agent” prior to temporary power being approved;
6. If no hazards and code violations are observed, the “Fire Official” shall sign any appropriate forms as necessary for approval;
7. The “responsible agent” shall provide documentation that the property has been inspected by a licensed electrician and approved by the Cabarrus County Electrical Inspector. Failure to provide adequate documentation constitutes denial of the Temporary Power request;
8. The “Fire Official” shall document the fee for the inspection on the Concord Department of Fire and Life Safety Fire Inspection form;
9. The “Fire Official” shall request the “responsible agent” of the property to sign the Concord Department of Fire and Life Safety Fire Inspection form. A copy of the Concord Department of Fire and Life Safety Fire Inspection form shall be given to the “responsible agent” of the property;

10. The “responsible agent” of the property shall be responsible for returning the Cabarrus County Temporary Power form and any other documents to the Cabarrus County Building Inspection Department at 65 Church Street South,
11. The “Fire Official” shall submit the Concord Department of Fire and Life Safety Fire Inspection form to the Permit Technician upon returning to the station. The form shall be filed in the Occupancy File.

Required Items For Temp Power Approval.

The following items indicated are the minimum requirements for Temporary Power approval:

1. If applicable, all required fire hydrants must be in their approved locations as indicated on the Site Plan for the facility. All hydrants shall be in-service, tested and approved by the Water Resources Department;
2. Adequate access must be provided and maintained to the site. All turning radiuses shall be inspected, maintained and approved;
3. All required “Life Safety” systems including, but not limited too: fire alarms, emergency lights, sprinkler systems, standpipe systems, hood systems and/or other fire detection/suppression systems must be reviewed, permitted and approved. These systems shall also be in the process of being installed at the time of Temporary Power request;
4. All hand-held temporary fire suppression devices including fire extinguishers, hose carts, wheel fire extinguishing units and other types of devices shall be in place.

The Fire Marshal’s Office reserves the right to implement additional safe guards and requirements on an “as needed” basis. Occupancy types, construction features, site hazards, topographical concerns, and other items shall be employed in the decision to implement additional safe guards and requirements. Justification for additional safeguards shall be documented and filed.

Disconnection of Service Utilities

Violations of this guideline constitute Section 308.2 (Authority to Disconnect Service Utilities) of the NC Administrative Code being invoked against the “responsible agent” of the property in question.

Upon inspection, any violations of this guideline, or unsafe conditions are observed; the “Fire Official” shall notify the Bureau Chief of the conditions. The Cabarrus County Electrical Inspector shall be notified of the violations and/or unsafe conditions.

The decision to disconnect service utilities to a building shall be jointly made by the Bureau Chief and the Cabarrus County Electrical Inspector. The criteria set forth in Section 308.2 (Authority to Disconnect Service Utilities) of the NC Administrative Code shall be instituted in the notification of the “responsible agent” of the decision to disconnect power to the structure or building.

The “responsible agent” shall be notified in writing within the time periods set forth in the Administrative Code of the violations of this guideline or unsafe conditions and the methods, devices or items needed to correct the violations or unsafe conditions.

At the time of electrical power disconnection, all permits for the property in question shall be revoked. The “responsible agent” shall resubmit all permits and additional fee charges shall be applied.

Upon the reissuance of permits, the “Fire Official” shall dictate what requirements shall be followed for the reconnection if warranted, of Temporary Power to the property in question. After all requirements have been met, it shall be at the discretion of the “Fire Official” and the Cabarrus County Electrical Inspector as to when the power shall be reconnected to the property.

The connection of Temporary Power to a structure is considered to be a privilege and is not guaranteed. Continued abuse of this policy by the “responsible agent” constitutes possible denial of Temporary Power for future projects that involve the “responsible agent”.

NC Administrative Code

Authority for the installation and disconnection of electrical power is outlined in the following sections of the North Carolina Administrative Code:

308 SERVICE UTILITIES

308.1 Connection of Service Utilities. No person shall make connections from a utility, source of energy, fuel or power to any building or system which is regulated by the technical codes until approved by the Inspection Department and a Certificate of Compliance is issued (General Statute 143-143.2).

308.2 Authority to Disconnect Service Utilities. The Inspection Department shall have the authority to require disconnecting a utility service to the building, structure or system regulated by the technical codes, in case of emergency or where necessary to eliminate an imminent hazard to life or property. The Inspection Department shall have the authority to disconnect a utility service when a building has been illegally occupied and entry into the building for purposes of making inspections cannot be readily granted. The Inspection Department shall notify the serving utility, and whenever possible the owner and/or occupant of the building, structure or service system of the decision to disconnect prior to taking such action. If not notified prior to disconnecting, the owner or occupant shall be notified in writing within eight (8) working hours (General Statutes 143-143.2, 153A-365, 153A-366, 160A-425 and 160A-426).

308.3 Temporary Connection. The Inspection Department may authorize the temporary connection of the building or system to the utility source of energy, fuel or power for the purpose of testing building service systems (General Statutes 153A-363 and 160A-423).

308.4 Temporary Electrical Power

308.4.1 Scope. The provisions of this section apply to the utilization of portions of the permanent wiring system with a building to facilitate construction.

308.4.2 Definition. Responsible Agent-for the purpose of this section, the responsible agent shall be the entity(s) who, in fulfillment of contractual obligation or otherwise, is empowered to control and supervise all construction activities. The suitability of the responsible agent shall be at the sole discretion of the authority having jurisdiction.

308.4.3 Other Articles. Except as modified in this section, all other Articles of the North Carolina Electrical Code shall apply.

308.4.4 Uses Permitted. Utilization of portions of the permanent wiring system to facilitate construction shall be permitted and limited to those instances in which the use is deemed to be of reasonable necessity. Reasonable necessity shall include any of the following:

1. The utilization of permanently installed HVAC equipment to maintain environmental conditions necessary to facilitate the installation of environmentally sensitive materials, or finishes in accordance with the manufacturer's instructions;
2. Where the distance between the construction site electrical service and any interior point at floor level is in excess of 200 feet following the most direct route that an extension cord could reasonably be routed;
3. Testing of building service systems; or
4. Other situations as allowed by special permission

.

308.4.5 Uses Prohibited. Utilization of portions of the permanent wiring system during construction for any purpose other than testing and verification shall not be permitted where the use is solely for convenience. In no case shall any portions of the permanent wiring be energized for construction purposes until the portions have been inspected and released by the electrical Code Enforcement Official.

308.4.6 Application for Power. Application for power shall be made by and in the name of the responsible agent. The application shall explicitly state the portions of the electrical system for which application is made, its intended use and duration. ..
The applicant shall receive written permission from the electrical contractor stating the portions and suitability of those portions of the electrical system
to be energized. The applicant shall also receive written permission from the mechanical and/or plumbing contractor if their respective systems are
to be operated, stating which systems and the suitability of such systems to be operated.

308.4.7 Ground Fault Circuit Interruption Protection. All l25-volt single-phase branch circuits authorized for use shall have ground-fault interrupter protection for personnel from its point of origin. Exception: Branch circuits used exclusively for lighting and routed in metallic raceways, or otherwise protected by location so as to exclude the potential for mechanical damage.

308.4.8 Security and Notification. The responsible agent shall maintain the energized electrical system or that portion of the building containing the system in a secured and locked manner or under constant supervision to exclude unauthorized personnel. The responsible agent shall assume the responsibility to alert personnel working in the vicinity of the energized electrical system to its presence.

308.4.9 Inspections. Adequate inspections as deemed necessary by the Code Enforcement Official shall be made prior to energization to assure
that the usage complies with the requirements of Section 308 of this code.

308.4.10 Consent of Responsible Agent. The responsible agent shall consent to all provisions of this section. Additionally, consent shall be extended to remove or allow to be removed all power supplied to a building or structure under these
provisions when in the sole discretion of the Code Enforcement Official, such service is no longer consistent with the provisions of this section. Such consent shall be in writing as prescribed by the authority having jurisdiction.

308.4.11 Unauthorized Energization. Unauthorized energization or use of the permanent wiring system or any portion thereof shall be prima facia evidence of a
hazard, which at the sole discretion of the Code Enforcement Official may result in disconnection of power, revocation of permit, and/or refusal to consider future requests for temporary power as prescribed in Section 308.4 of this code.

Fire Alarm Monitoring Requirements 03.23

Purpose

The purpose of this memorandum is to clarify a recent decision by the North Carolina Office of the State Fire Marshal (OSFM) regarding the requirement for the monitoring of Fire Alarm Systems and to provide a guideline for Fire Prevention Division Personnel on this issue.

An email received on August 11, 2009 by the Fire Prevention Division from Richard Strickland of OSFM states the following regarding the monitoring of fire alarm and sprinkler systems:

> "Fire alarm systems were not required to be monitored prior to the 2002 NC State Fire Code.
>
> Sprinkler systems have been required to be monitored since the 1978 Building Code. The 1967 Building Code stated "whenever possible" but didn't mandate it."

In response to this interpretation the Fire Prevention Division Implements the following guidelines:

New Fire Alarm Systems Installed on or After January 1, 2006

All new installations, upfits, modifications and retrofits to existing fire alarm systems installed on or after January 1, 2006 shall be monitored by a approved Central Station Monitoring Company in accordance with Section 907.15 (2009 Version) and Section 907.14 (2006 Version) of the North Carolina Fire Code (NCIFC).

Section 907.15 of the 2009 NCIFC states:

> ***907.15 Monitoring****. Fire alarm systems required by this chapter or by the International Building Code shall be monitored by an approved supervising station in accordance with NFPA 72.*

Fire Alarm Systems Installed On or After January 1, 2002 to December 31, 2005

All fire alarm systems installed on or after January 1, 2002 to December 31, 2005 shall be monitored in accordance with Section 901.6.2 of the 2002 North Carolina Building Code (NCIBC). Section 901.6.2 of the 2002 NCIBC states:

> ***901.6.2 Monitoring.*** *Fire alarm system shall be monitored by an approved supervising station.*

While this requirement resides in the NCIBC it is enforceable by the Fire Official through the NCIBC requirement of Section 901.2.

Section 901.2 of the 2002 NCIBC states:

> ***901.2 Fire Protection Systems****. Fire Protection Systems shall be installed, repaired, operated and maintained in accordance with this code and the International Fire Code.*

Fire Alarm Systems Installed Prior to January 1, 2002

Fire alarm systems installed prior to January 1, 2002 were not required by the Building and Fire Codes to be monitored by a Central Station Monitoring Company.

In buildings with a fire alarm system meeting this criteria an approved sign meeting the specifications stated in Section 907.4.4 of the North Carolina Fire Code (2009 NCIFC) shall be installed at each manual fire alarm (i.e. Pull Station) location.

Section 907.4.4 of the 2009 NCIFC states:

> ***907.4.4 Signs****. Where fire alarm systems are not monitored by a supervising station, an approved permanent sign shall be installed adjacent to each manual fire alarm box that reads: WHEN ALARM SOUNDS-CALL FIRE DEPARTMENT.*

The location, mounting height and design of the sign(s) shall be approved by the Fire Official prior to the installation of the sign(s).

Monitoring of Fire Sprinkler Systems Installed on or After January 1, 1978

Fire sprinkler systems shall be monitored by an approved Central Station Fire Alarm Monitoring Company in accordance Section 903.4 and 903.4.1 of the North Carolina Fire Code (2009 NCIFC). Furthermore as per the email sent by NCOSFM "Sprinkler systems have been required to be monitored since the 1978 Building Code".

Section 903.4 of the 2009 NCIFC states:

> ***903.4 Sprinkler system monitoring and alarms****. All valves controlling the water supply for automatic sprinkler systems, pumps, tanks, water levels and temperatures, critical air pressures, and water flow switches on all sprinkler systems shall be electrically supervised.*
>
> ***903.4.1 Signals****. Alarm, supervisory and trouble signals shall be distinctly different and shall be automatically transmitted to an approved central station, remote supervising station or proprietary supervising station as defined in NFPA 72 or, when approved by the fire code official, shall sound an audible signal at a constantly attended location.*

Furthermore, any and all appeals to this requirement should be referred to the North Carolina Office of the State Fire Marshal for decisions which NC Building Code is applicable to the building and/or structure prior to January 1, 1988.

Monitoring of Fire Sprinkler Systems installed prior to January 1, 1978

As per the email from NCOSFM the monitoring of sprinkler systems installed prior to January 1, 1978 is not required. The Fire Prevention Division strongly recommends that all systems meeting the criteria referenced in this section be electrically monitored by an approved Central Station Fire Alarm Monitoring Company to ensure the life safety of building occupants and for the protection of the building and its contents.

However while monitoring is not required the Fire Codes, the Concord Department of Fire Life Safety, Fire Prevention Divisions requires that a sign meeting the standards listed in Section A.8.17.1 of NFPA 13 (2010 Edition) be installed on the exterior of the building at or near the exterior audible warning device (bell, motor-gong or horn/strobe) as required by Section 903.4.2 of the North Carolina Fire Code (NCIFC 2009)

Section 903.4.2 of the 2009 NCIFC states:

> ***903.4.2 Alarms****. Approved audible devices shall be connected to every automatic sprinkler system. Such sprinkler water-flow alarm devices shall be activated by water flow equivalent to the flow of a single sprinkler of the smallest orifice size installed in the system. Alarm devices shall be provided on the exterior of the building in an approved location. Where a fire alarm system is installed, actuation of the automatic sprinkler system shall actuate the building fire alarm system.*

Section A.8.17.1 of NFPA 13 (2010 Edition) states:

> ***A.8.17.1*** *Central station, auxiliary, remote station, or proprietary protective signaling systems are a highly desirable supplement to local alarms, especially from a safety to life standpoint. (See 8.17.1.6.)*
>
> *Approved identification signs, as shown in Figure A.8.17.1, should be provided for outside alarm devices. The sign should be located near the device in a conspicuous position and should be worded as follows: SPRINKLER FIRE ALARM — WHEN BELL RINGS CALL FIRE DEPARTMENT OR POLICE.*

The sign shall be red in color with white letters. The sign design, installation location and mounting height shall be approved by the Fire Official prior to installation.

Monitoring of Fire Alarm & Sprinkler Systems Utilizing Managed Facilities Based Voice Network Facilities (MFVN).

The monitoring of fire alarm and sprinkler systems using MFVN (i.e. Voice Over IP, Digital and other types of computer/internet based telephone systems) based systems to transmit alarm signals to a Central Station Company is permitted providing the telephone carrier meets the criteria specified in **NFPA 72 2013 Edition, Annex A Section A.3.3.152.**

Each individual request to utilize a MFVN provider shall be evaluated and approved by the FPD. The following guide shall be referenced to evaluate the request:

Voice Provider Type	***Telco***			***Cable***	***Internet***
Product Examples	*Verizon, AT&T Landline, CenturyLink*	*Verizon, AT&T Landline*	*Verizon FiOS, AT&T UVerse*	*Comcast, TWC, Cox Cable Digital Voice*	*Vonage, MagicJack, Google Voice*
Voice Equipment Location	*Central Office*	Remote Terminal	*Customer Premises*	*Customer Premises*	*Customer Premises*
Technology Used	*Analog*	*Digital*	*VOIP*	*VOIP*	*VOIP*
NFPA 72 MFVN Requirements					
Managed Facilities-based	***X***	***X***	***X***	***X***	***NO***
Functional equivalence to traditional PSTN line	***X***	***X***	***X***	***X***	***NO***
Proactive management	***X***	***X***	***X***	***X***	***NO***
Loop start telephone circuit	***X***	***X***	***X***	***X***	***X***
8 hour standby power for voice equipment providing dialtone	***X***	***X***	***O***	***X***	***NO***
24 hours standby power at the "central office"	***X***	***X***	***X***	***X***	***NO***
Safeguards to protect from unauthorized access	***X***	***X***	***O***	***X***	***NO***
Notification to have alarm system re-tested	***O***	***O***	***O***	***X***	***NO***
Professional installation ensuring line seizure	***X***	***X***	***X***	***X***	***NO***
Disaster recovery plans	***X***	***X***	***X***	***X***	***NO***

Source www.cablelabs.com

X Indicates conformance to NFPA requirements
O Indicates needs AHJ verification

Type I Cooking Hoods & Appliance Type Categories 3.24

The purpose of this memorandum is to provide guidance on the North Carolina Fire and Mechanical Code requirements on the installation of Type I Cooking Hoods (with grease filters and fire suppression systems) and define the types of cooking appliances that are listed in the Mechanical Code as approved devices.

First, the following Code requirements for Type I Hoods are found in the 2012 North Carolina Mechanical Code and are as follows:

> ***2012 NORTH CAROLINA MECHANICAL CODE***
>
> ***507.2 Where required.*** *A Type I or Type II hood shall be installed at or above all commercial cooking appliances in accordance with Sections 507.2.1 and 507.2.2. Where any cooking appliance under a single hood requires a Type I hood, a Type I hood shall be installed. Where a Type H hood is required, a Type I or Type II hood shall be installed.*
>
> ***507.2.1 Type I hoods.*** *Type I hoods shall be installed where cooking appliances produce grease or smoke. Type I hoods shall be installed over heavy-duty and extra-heavy-duty cooking appliances. Type I hoods shall be installed over light-duty cooking appliances and medium-duty cooking appliances that produce grease or smoke.*

The last sentence of Item 507.2.1 states *"Type I hoods shall be installed over light-duty cooking appliances and medium-duty cooking appliances that produce grease or smoke"*. This is a vague sentence that leaves an interpretation up to the AHJ as to what point an appliance would require a Type I hood. Assistance with this decision can be obtained from the appliance specification sheet and/or manufacturer to find out what the "expected" products of combustion and vapors are to be given off by the appliance during the cooking process.

Second, in the first sentence of Item 507.2.1 of the Mechanical Code the types of appliances are categorized as light, medium, heavy and extra heavy duty. While there are examples of appliances listed under each type in the definition section, the Mechanical Code does not give any information as to what cooking device specifications should meet in order to fall into the individual categories.

The following information should be consulted in order to classify the category of appliance type a device would fall under:

> Cooking appliances are categorized as light, medium, heavy and extra heavy duty, depending on the strength of the thermal plume and the quantity of grease, heat and smoke produced. Underwriters Laboratories refers to cooking equipment classifications in terms of cooking temperatures, 200°F, 450°F, 600°F and 700°F representing light, medium, heavy duty and extra heavy duty.

Definitions:

"Extra-heavy duty cooking appliance" – Extra-heavy-duty cooking appliance include appliances utilizing solid fuels such as wood, charcoal, briquettes, and mesquite to provide all or part of the heat source for cooking. Typical temperature ranges up to 700°F.

"Heavy duty cooking appliance" – Heavy duty cooking appliances include electric under-fire broilers, electric chain (conveyor) broilers, gas under-fire broilers, gas chain (conveyor) broilers, gas open burner ranges (with or without an oven), electric and gas wok ranges, and electric and gas over-fired (upright broilers and salamanders. Typical temperature ranges up to 600°F.

"Medium duty cooking appliance" – Medium duty cooking appliances include electric discrete element ranges (with or without oven), electric and gas hot-top ranges, electric and gas double sided griddles, electric and gas fryers (including open deep fat fryers, donut fryers, kettle fryers, and pressure fryers) electric and gas tilting skillets (braising pans) and electric and gas rotisseries. Typical temperature ranges up to 450°F.

"Light-duty cooking appliance" - Light-duty cooking appliances include gas and electric ovens (including standard, bake, roasting, revolving, retherm, convection, combination convection/steamer, countertop conveyorized baking/finishing, deck and pastry), electric and gas steam jacketed kettles, electric and gas pasta cookers, electric and gas compartment steamers (both pressure and atmospheric), and gas and electric cheese-melters. Typical temperature ranges are from 200°F to 400°F.

Along with looking at the temperature ranges on the device the specifications sheets and manufacture should be consulted if further information on the category type is needed.

Lastly, there has been some issues discovered during special events (Hotels, Churches Speedway) occurring in the City of Concord involving the use of "Light Duty Cooktop" appliances and food preparation. The following device is an example of the appliance:

Burton Induction Cooktop: Induction cooking is extremely fast and is safe even for children since there is no open flame. Because induction cooking works electromagnetically, heat is generated only in the cookware that it comes into contact with. Your food is cooked to perfection and the cook top stays cool. With 9 temperature settings, 10 power levels and a 180-minute timer, it's at home in a restaurant kitchen as well as your own. Can be used with cast-iron, carbon steel, enamel steel or magnetic stainless-steel cookware. Black with gray accents. Product Features Ceramic cook top with sturdy plastic housing Fast and safe cooking with no open flame Instant temperature change with the push of a button Power levels 1-10 with 9 temperature settings from 150 F to 390 F, including a keep-warm setting Programmable 150-minute timer with alarm and auto shutoff Twice the energy-efficiency of gas cooking ETL-approved to UL standard 1026 Perfect for buffets, catering, outside by the grill or in homes with children.

After discussion of this issue with NCOSFM it was determined that this food preparation method is acceptable due to it being temporary in nature. The following guidelines should be used when encountering this method of food preparation:

1. The operation must be temporary in nature for a time period determined as appropriate by the Fire Official.
2. The cooking appliance shall be a “Light Duty” Appliance and be limited to one cooking surface only.
3. A minimum 5-pound ABC Multi-purpose extinguisher must be present during the operation.
4. If the cooking appliance is being powered by an extension cord, the cord shall be of an approved type and wire size for the device.
5. All other possible fire hazards shall be identified and minimized in and around the operation to insure life safety.