

# Technical Code Enforcement and the Weaver Fertilizer Fire

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# Weaver Fertilizer from the perspective of the technical codes:

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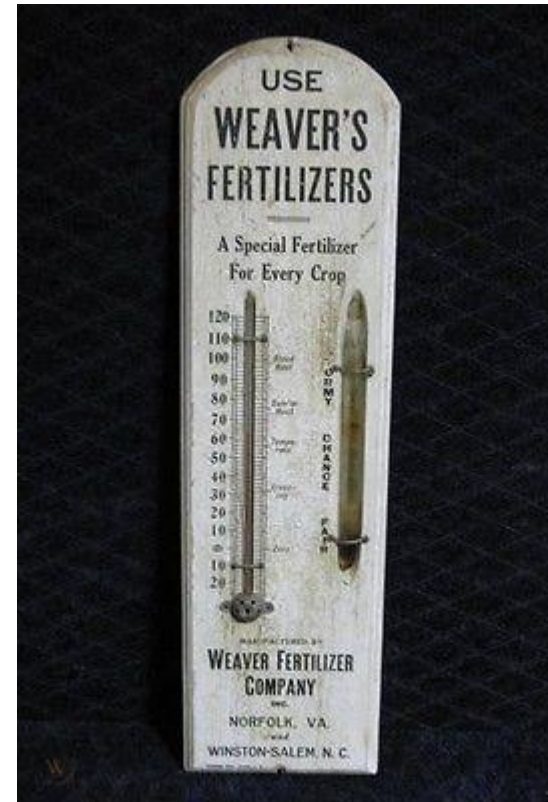
Records indicate first buildings constructed on site in 1939

Applicable building code at the time: 1936 edition

- No requirement for sprinkler systems
- No specific stipulations regarding hazardous materials

Building construction and design are not governed retroactively by any of the technical codes

General safety and operations are governed by current fire code



# Recent Permit and Inspection History for Weaver Fertilizer facility

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- History of permitted projects since 2008:
  - Electrical and mechanical permits for HVAC system modifications
  - Electrical permits for electrical service panel modifications
  - Plumbing permit for sewer tie-in
  - Code compliance inspections were completed and approved for these projects
- Seventeen fire code compliance inspections carried out by WSFD personnel between 2005 and 2022

# Non-Compliant Conditions Found During Fire Inspections: Weaver Fertilizer (2016 to 2021)

Inspection Date	Areas of Concern	Resolution
December 27, 2021	No violations noted.	N/A
December 29, 2020	No violations noted.	N/A
November 27, 2019	Fire extinguisher placement/maintenance.	Corrected while on site.
October 31, 2018	Electrical hazards. Exit signs. Oil storage. Fire extinguisher placement/maintenance.	All corrected as of December 21, 2018.
October 16, 2017	Fire extinguisher placement/maintenance. Missing signage. Cleaning solvent requirements. Storage of combustible rubbish. Electrical hazards.	All corrected as of January 5, 2018.
May 20, 2016	Overgrowth of combustible vegetation. Fire extinguisher placement/maintenance. Electrical hazards.	All corrected as of June 23, 2016.

# North Carolina's Current Technical Codes



2018 NC Administrative Code and Policies

2018 NC Building Code

2020 NC Electrical Code

2018 NC Energy Conservation Code

2018 NC Existing Building Code

2018 NC Fire Code

2018 NC Fuel Gas Code

2018 NC Mechanical Code

2018 NC Plumbing Code

2018 NC Residential Code

Technical codes are adopted by the State's Building Code Council. Most codes undergo a six-year revision cycle.

# “What can they build at \_\_\_\_\_?”

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The State’s technical codes are **prescriptive codes**

These codes place no restrictions on what may be built on a parcel

These codes instead restrict how buildings and systems are designed and built, based upon factors including –

- OCCUPANCY CLASSIFICATION
- BUILDING AREA AND HEIGHT
- LOCATIONS OF FIRE-RATED SEPARATIONS
- CALCULATED OCCUPANT LOADS
- SPECIFIC PROCESSES, MATERIALS, AND OPERATIONS

# These questions help us identify which code requirements apply...

**How will the building be used?**

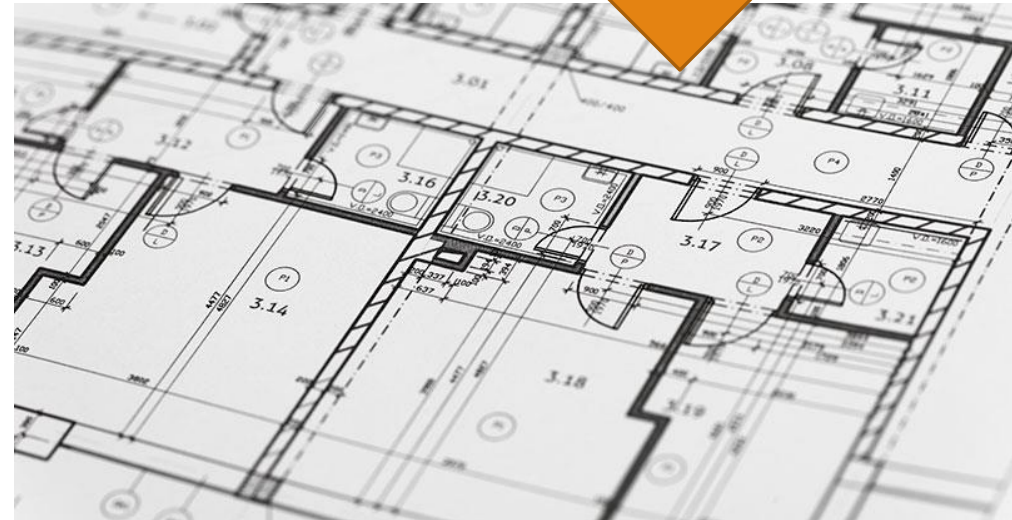
**How large is the building in area and height?**

**Is the building divided into separate fire areas?**

**How many people is the building designed to hold?**

**What systems, processes, and operations will occur in the building?**

Answers to these questions are provided in the plans submitted for review.



# Code Compliance Process for New Construction

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Once a permit is issued, the codes in force at that time become the applicable requirements for the construction and design of that building for its entire lifespan, unless:

- The building undergoes a change of use
- The building undergoes renovation
- The building receives an addition



# Post-Construction Code Enforcement

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Fire code officials periodically visit to ensure:

- Fire-rated separations are maintained
- Life safety systems are in working order
- Occupants can still exit the building safely and promptly
- Ongoing operations comply with applicable code requirements

Frequency of periodic fire inspections is determined by occupancy classification

Building, electrical, mechanical, and plumbing code officials do not conduct follow-up inspections after the certificate of occupancy is issued



# “What about...”

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- *Adding additional requirements to the technical codes?*
  - *Amending the current codes through the Building Code Council; or*
  - *Adopting more stringent requirements via ordinance*
- *Making the construction and design requirements of the codes retroactive?*
- *Materials stored in areas other than buildings (such as in railcars or vehicles)?*
- *Code requirements for specific materials?*

TABLE 5003.1.1(1)  
 MAXIMUM ALLOWABLE QUANTITY PER CONTROL AREA OF HAZARDOUS MATERIALS POSING A PHYSICAL HAZARD<sup>d, i, m, n, p</sup>

MATERIAL	CLASS	GROUP WHEN THE MAXIMUM ALLOWABLE QUANTITY IS EXCEEDED	STORAGE <sup>b</sup>			USE-CLOSED SYSTEMS <sup>b</sup>			USE-OPEN SYSTEMS <sup>b</sup>	
			Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas (cubic feet at NTP)	Solid pounds (cubic feet)	Liquid gallons (pounds)	Gas (cubic feet at NTP)	Solid pounds (cubic feet)	Liquid gallons (pounds)
Combustible dust	NA	H-2	See Note q	NA	NA	See Note q	NA	NA	See Note q	NA
Combustible fibers <sup>d</sup>	Loose Baled <sup>d</sup>	H-3	(100) (1,000)	NA	NA	(100) (1,000)	NA	NA	(20) (200)	NA
Combustible liquid <sup>e, i</sup>	II IIIA IIIB	H-2 or H-3 H-2 or H-3 NA	NA	120 <sup>d, e</sup> 330 <sup>d, e</sup> 13,200 <sup>e, f</sup>	NA	NA	120 <sup>d</sup> 330 <sup>d</sup> 13,200 <sup>f</sup>	NA	NA	30 <sup>d</sup> 80 <sup>d</sup> 3,300 <sup>f</sup>
Consumer fireworks	1.4G	H-3	125 <sup>e, l</sup>	NA	NA	NA	NA	NA	NA	NA
Cryogenic Flammable	NA	H-2	NA	45 <sup>d</sup>	NA	NA	45 <sup>d</sup>	NA	NA	10 <sup>d</sup>
Cryogenic Inert	NA	NA	NA	NA	NL	NA	NA	NL	NA	NA
Cryogenic Oxidizing	NA	H-3	NA	45 <sup>d</sup>	NA	NA	45 <sup>d</sup>	NA	NA	10 <sup>d</sup>
Explosives	Division 1.1	H-1	1 <sup>e, g</sup>	(1) <sup>e, g</sup>	NA	0.25 <sup>g</sup>	(0.25) <sup>g</sup>	NA	0.25 <sup>g</sup>	(0.25) <sup>g</sup>
	Division 1.2	H-1	1 <sup>e, g</sup>	(1) <sup>e, g</sup>		0.25 <sup>g</sup>	(0.25) <sup>g</sup>		0.25 <sup>g</sup>	(0.25) <sup>g</sup>
	Division 1.3	H-1 or H-2	5 <sup>e, g</sup>	(5) <sup>e, g</sup>		1 <sup>g</sup>	(1) <sup>g</sup>		1 <sup>g</sup>	(1) <sup>g</sup>
	Division 1.4	H-3	50 <sup>e, g</sup>	(50) <sup>e, g</sup>		50 <sup>g</sup>	(50) <sup>g</sup>		NA	NA
	Division 1.4G	H-3	125 <sup>d, e, l</sup>	NA		NA	NA		NA	NA
	Division 1.5	H-1	1 <sup>e, g</sup>	(1) <sup>e, g</sup>		0.25 <sup>g</sup>	(0.25) <sup>g</sup>		0.25 <sup>g</sup>	(0.25) <sup>g</sup>
Division 1.6	H-1	1 <sup>e, g</sup>	NA	NA	NA	NA	NA			
Flammable gas	Gaseous	H-2	NA	NA	1,000 <sup>d, e</sup>	NA	NA	1,000 <sup>d, e</sup>	NA	NA
	Liquefied			(150) <sup>g, e</sup>	NA		(150) <sup>g, e</sup>			
Flammable liquid <sup>f</sup>	IA	H-2	NA	30 <sup>d, e</sup>	NA	NA	30 <sup>d</sup>	NA	NA	10 <sup>d</sup>
	IB and IC	or H-3	NA	120 <sup>d, e</sup>		NA	120 <sup>d</sup>		NA	30 <sup>d</sup>
Flammable liquid, combination (IA, IB, IC)	NA	H-2 or H-3	NA	120 <sup>d, e, h</sup>	NA	NA	120 <sup>d, h</sup>	NA	NA	30 <sup>d, h</sup>
Flammable solid	NA	H-3	125 <sup>d, e</sup>	NA	NA	125 <sup>d</sup>	NA	NA	25 <sup>d</sup>	NA

(continued)

***This image displays one of several pages from the 2018 building and fire codes indicating how much of a hazardous material may be located in each control area in a new building.***

Following the fire and explosion event that occurred in West, Texas in 2013, the U. S. Chemical Safety and Hazard Investigation Board offered five recommended additions to applicable fire codes.

These provisions have not been added to North Carolina's current codes.

Even if these provisions were added, they would only apply to newly constructed or newly occupied facilities.

## International Code Council (ICC)

### 2013-02-I-TX R6

In a subsequent edition of the International Fire Code, develop a chapter or a separate section under Chapter 50 (“Hazardous Materials”) or Chapter 63 (“Oxidizers, Oxidizing Gases and Oxidizing Cryogenic Fluids”) that includes the following requirements for the storage and handling of ammonium nitrate (AN):

- a. Require automatic fire detection and suppression systems in existing buildings constructed of combustible materials
- b. Provide ventilation requirements in accordance with the International Mechanical Code to prevent the accumulation of off-gases produced during AN decomposition
- c. Provide smoke and heat vents to remove heat from AN during fire situations
- d. Establish minimum safe separation distances between AN and combustible materials to avoid contamination in the event of fire.
- e. Prohibit the use of combustible materials of construction.

Questions?

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