

Mechanical Code: Refrigeration and Natural Gas

Self-Certification Training Class
January 18-20, 2022



CHICAGO
Department of Buildings

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Overview

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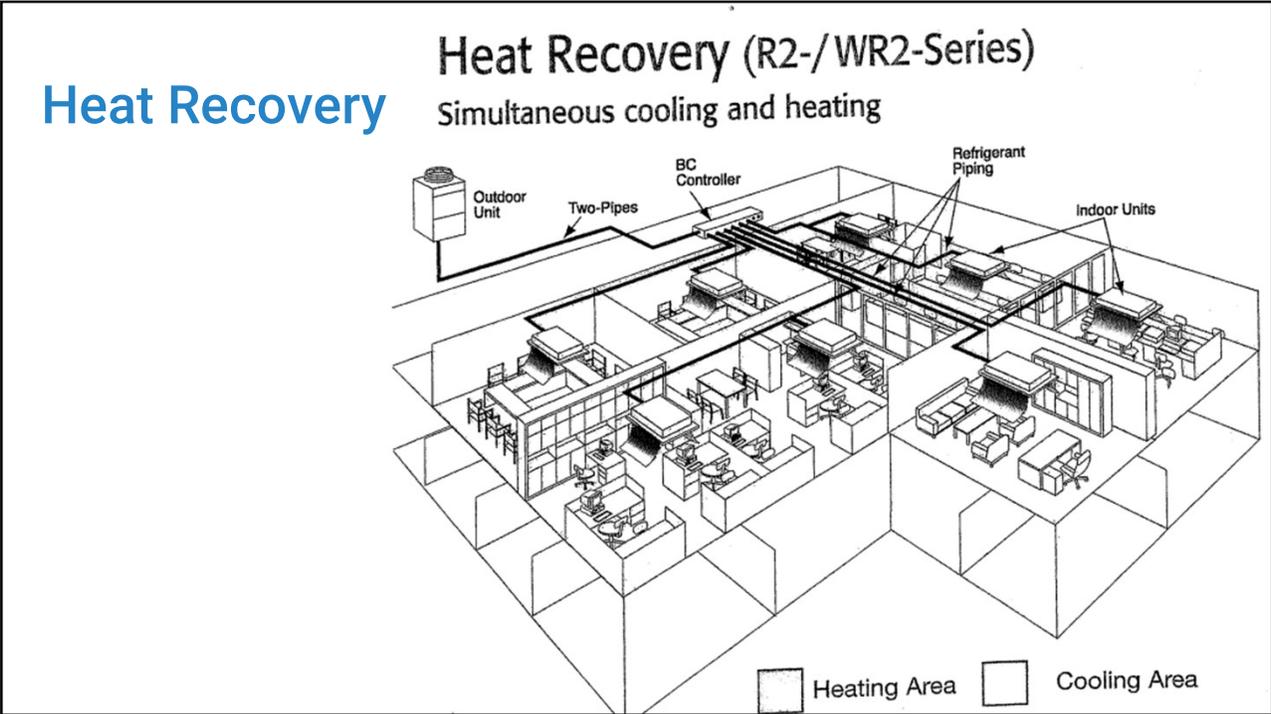
- Refrigeration and natural gas design basics
- 2021 interim Mechanical Code amendments
- What refrigeration and natural gas piping information is required in construction documents?
- Summary and Contact Information



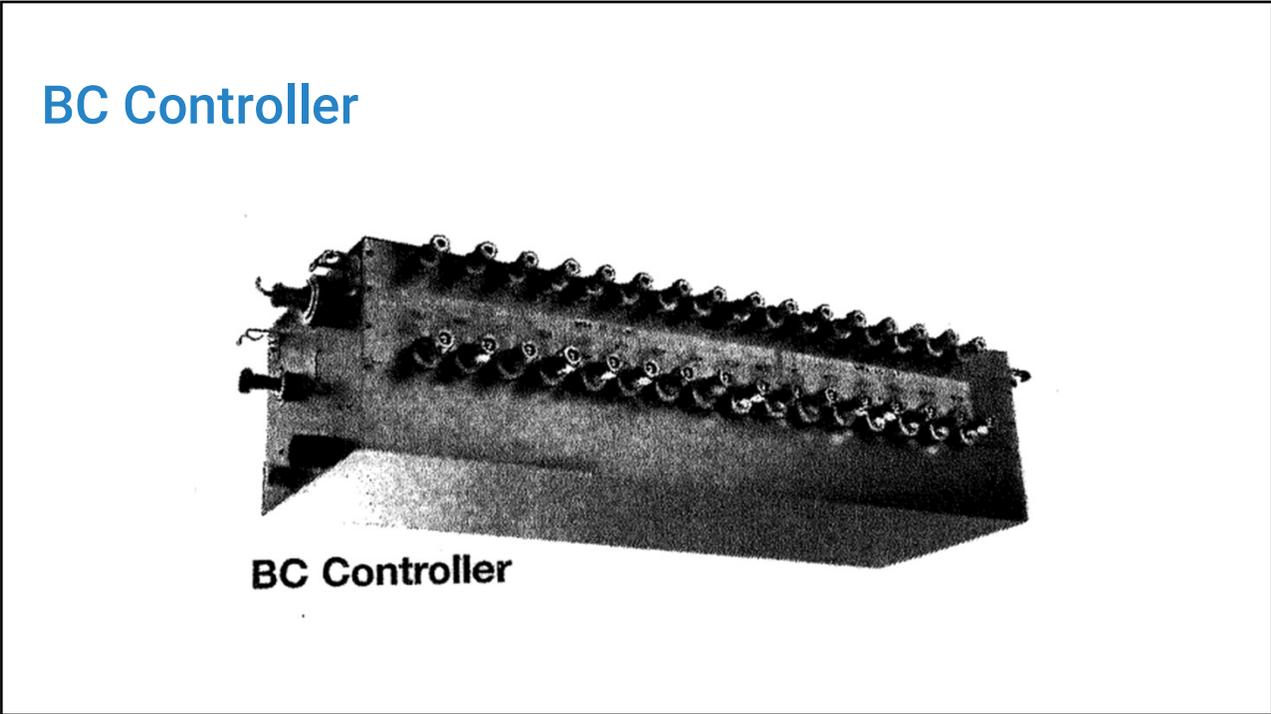
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Refrigeration and Natural Gas Design Basics

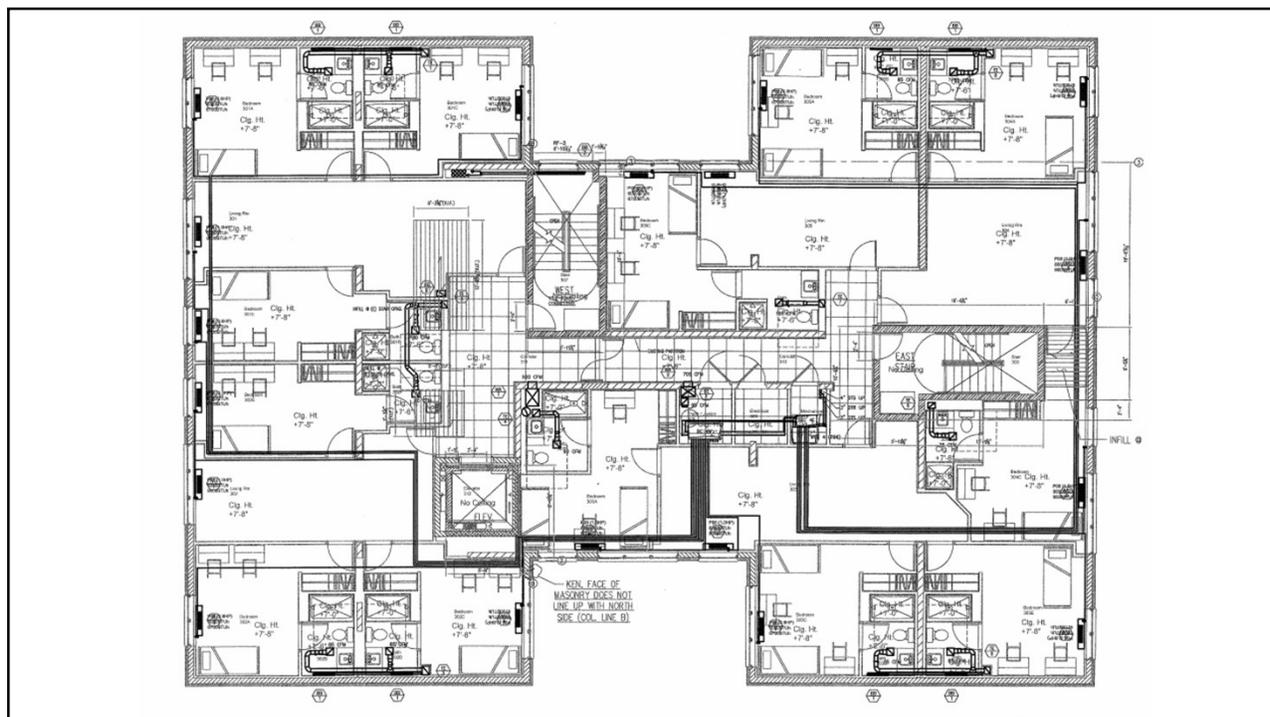
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Gas Distribution Piping Inside Buildings

- Must comply with 2016 memorandum
- Only rigid schedule 40 black steel gas pipe may be installed in concealed locations
- Fittings larger than 2" must be welded
- Use of flexible appliance connectors (FACs) limited to 6 feet in length, cannot be concealed in walls
- Every appliance connection must have an individual shut-off valve w/in 6 feet



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Updated method of accepting listed and labeled HVAC appliances

- Accepts listed and labeled appliances
- Consistent with 2018/2021 *International Mechanical Code*
- Reduces requests for in-field modifications that might void product warranties or result in unsafe conditions.

SERIAL	E141706050
FRID	N44318AKC100
MODEL	N44318AKC100
METERING TVU	NO
DEVICE	INDOOR OUTDOOR
FACTORY CHARGED	R410A
3.50	LEBS
INDOOR TYP. COOLING	18.0 °F
POWER SUPPLY	208-230 VOLTS AC
1	PH
PERMISSIBLE VOLTAGE AT WIRET	60
253	MAX
SUITABLE FOR OUTDOOR USE	197 °MIN
COMPRESSOR	208/230 VOLTS AC
1	PH
9.40	BLR
56.8	LBR
FAN MOTOR	208/230 VOLTS AC
1	PH
68	HP
1/12	FLR
DESIGN/TEST PRESSURE GAGE	
HI	450 PSI 3103 KPA
LO	250 PSI 1724 KPA
MAX DESIGN/WORKING PRESSURE	
780	PSIG 4826 kPa
MINIMUM CIRCUIT AMPS	12.3
MAX FUSE (MAX CKT-BKR)	20 A
20	A
Short Circuit Current (SCC) (Symmetrical) 230 V	

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Updated refrigerant requirements

- All refrigerants recognized by the 2021 *International Mechanical Code* have been added to the Mechanical Code
- Pipe joining methods based on refrigerant category
- Outdated references to refrigerants banned by federal law have been removed



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18-28-1107.4.4 Copper tube joints.

Copper tubing used in refrigerating systems **containing Group A2, A3, B1, B2 or B3 refrigerants** shall be brazed. Soldered joints and mechanical joints shall not be used in such refrigerating systems.

- Group A1 refrigerants (lower toxicity, low/no flammability) may now be used with soldered or mechanical joints

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Required Information

- Layout of all equipment
- Refrigerant piping
- Natural gas piping
- Condenser water piping (if used)

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Required Notes / Details

- Install pressure relief valve on high pressure side of system, upstream of any intervening valves
- Remove expansion valves, devices and connections from air stream
- Refrigeration piping top be type “K” copper or type ACR
- All connections and devices for Group A2, A3, B1, B2 or B3 refrigerants to be brazed



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Summary



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Summary

- Review the requirements for each project.
- Provide required equipment and piping information in construction documents.
- Follow the guidelines discussed for important issues where they apply.

**Feel free to call with questions
at 312-744-7694**

