





Section # & Req.ID	Plumbing Rough-In Inspection	Complies?	Comments/Assumptions
C404.7 [PL8] <sup>1</sup>	Water distribution system that pumps water from a heated-water supply pipe back to the heated-water source through a cold-water supply pipe is a demand recirculation water system. Pumps within this system have controls that start the pump upon receiving a signal from the action of a user of a fixture or appliance and limits the temperature of the water entering the cold-water piping to 104°F.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input checked="" type="checkbox"/> Not Applicable	<b>Exception:</b> Requirement does not apply.
C404.7 [PL8] <sup>1</sup>	Water distribution system that pumps water from a heated-water supply pipe back to the heated-water source through a cold-water supply pipe is a demand recirculation water system. Pumps within this system have controls that start the pump upon receiving a signal from the action of a user of a fixture or appliance and limits the temperature of the water entering the cold-water piping to 104°F.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met. <b>Location on plans/spec:</b> Refer #6 Under Domestic Water Piping on Sheet P-001
C404.7 [PL8] <sup>1</sup>	Water distribution system that pumps water from a heated-water supply pipe back to the heated-water source through a cold-water supply pipe is a demand recirculation water system. Pumps within this system have controls that start the pump upon receiving a signal from the action of a user of a fixture or appliance and limits the temperature of the water entering the cold-water piping to 104°F.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met. <b>Location on plans/spec:</b> Refer #6 Under Domestic Water Piping on Sheet P-001

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

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Section # & Req.ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C402.2.6 [ME41] <sup>1</sup>	Thermally ineffective panel surfaces of sensible heating panels have insulation $\geq$ R-3.5.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input checked="" type="checkbox"/> Not Applicable	<b>Exception:</b> Requirement does not apply.
C403.2.12.1 [ME65] <sup>1</sup>	HVAC fan systems at design conditions do not exceed allowable fan system motor nameplate hp or fan system bhp.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input checked="" type="checkbox"/> Not Applicable	<b>Exception:</b> Requirement does not apply.
C403.2.12.1 [ME65] <sup>1</sup>	HVAC fan systems at design conditions do not exceed allowable fan system motor nameplate hp or fan system bhp.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input checked="" type="checkbox"/> Not Applicable	<b>Exception:</b> Requirement does not apply.
C403.2.12.1 [ME65] <sup>1</sup>	HVAC fan systems at design conditions do not exceed allowable fan system motor nameplate hp or fan system bhp.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input checked="" type="checkbox"/> Not Applicable	<b>Exception:</b> Requirement does not apply.
C403.2.12.1 [ME65] <sup>1</sup>	HVAC fan systems at design conditions do not exceed allowable fan system motor nameplate hp or fan system bhp.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input checked="" type="checkbox"/> Not Applicable	<b>Exception:</b> Requirement does not apply.
C403.2.12 [ME117] <sup>1</sup>	Fans have efficiency grade (FEG) $\geq$ 67. The total efficiency of the fan at the design point of operation $\leq$ 15% of maximum total efficiency of the fan.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input checked="" type="checkbox"/> Not Applicable	<b>Exception:</b> Fans integral to equipment listed under Section C403.2.3.
C403.2.12 [ME117] <sup>1</sup>	Fans have efficiency grade (FEG) $\geq$ 67. The total efficiency of the fan at the design point of operation $\leq$ 15% of maximum total efficiency of the fan.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input checked="" type="checkbox"/> Not Applicable	<b>Exception:</b> Fans integral to equipment listed under Section C403.2.3.
C403.2.12 [ME117] <sup>1</sup>	Fans have efficiency grade (FEG) $\geq$ 67. The total efficiency of the fan at the design point of operation $\leq$ 15% of maximum total efficiency of the fan.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input checked="" type="checkbox"/> Not Applicable	<b>Exception:</b> Fans integral to equipment listed under Section C403.2.3.
C403.2.12 [ME117] <sup>1</sup>	Fans have efficiency grade (FEG) $\geq$ 67. The total efficiency of the fan at the design point of operation $\leq$ 15% of maximum total efficiency of the fan.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input checked="" type="checkbox"/> Not Applicable	<b>Exception:</b> Fans integral to equipment listed under Section C403.2.3.
C403.2.12 [ME117] <sup>1</sup>	Fans have efficiency grade (FEG) $\geq$ 67. The total efficiency of the fan at the design point of operation $\leq$ 15% of maximum total efficiency of the fan.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input checked="" type="checkbox"/> Not Applicable	<b>Exception:</b> Fans integral to equipment listed under Section C403.2.3.
C403.2.12 [ME117] <sup>1</sup>	Fans have efficiency grade (FEG) $\geq$ 67. The total efficiency of the fan at the design point of operation $\leq$ 15% of maximum total efficiency of the fan.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input checked="" type="checkbox"/> Not Applicable	<b>Exception:</b> Fans integral to equipment listed under Section C403.2.3.
C403.2.13 [ME71] <sup>1</sup>	Unenclosed spaces that are heated use only radiant heat.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input checked="" type="checkbox"/> Not Applicable	<b>Exception:</b> Requirement does not apply.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

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Section # & Req.ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C403.2.3 [ME55] <sup>1</sup>	HVAC equipment efficiency verified.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	REFER OUTDOOR UNITS SCHEDULE ON SHEET M-601
C403.2.6.1 [ME59] <sup>1</sup>	Demand control ventilation provided for spaces $>$ 500 ft <sup>2</sup> and $>$ 25 people/1000 ft <sup>2</sup> occupant density and served by systems with air side economizer, auto modulating outside air damper control, or design airflow $>$ 3,000 cfm.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input checked="" type="checkbox"/> Not Applicable	<b>Exception:</b> Requirement does not apply.
C403.2.6.2 [ME115] <sup>1</sup>	Enclosed parking garage ventilation has automatic contaminant detection and capacity to stage or modulate fans to 50% or less of design capacity.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input checked="" type="checkbox"/> Not Applicable	<b>Exception:</b> Requirement does not apply.
C403.2.7 [ME57] <sup>1</sup>	Exhaust air energy recovery on systems meeting Table C403.2.7(1) and C403.2.7(2).	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input checked="" type="checkbox"/> Not Applicable	<b>Exception:</b> Requirement does not apply. <b>Location on plans/spec:</b> Refer Note #18 Under NYC Building Department Notes On sheet M-001
C403.2.8 [ME116] <sup>1</sup>	Kitchen exhaust systems comply with replacement air and conditioned supply air limitations, and satisfy hood rating requirements and maximum exhaust rate criteria.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input checked="" type="checkbox"/> Not Applicable	<b>Exception:</b> Requirement does not apply.
C403.2.9 [ME60] <sup>1</sup>	HVAC ducts and plenums insulated. Where ducts or plenums are installed in or under a slab, verification may need to occur during Foundation Inspection.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met. <b>Location on plans/spec:</b> Refer #1.3 A Under Section 230713 On Sheet M-004.00
C403.2.9 [ME10] <sup>1</sup>	Ducts and plenums sealed based on static pressure and location.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met. <b>Location on plans/spec:</b> Refer #1.1 (F) and 1.2 (F), (G) Under Section 233113 on Sheet M-005
C403.2.9.1.3 [ME11] <sup>1</sup>	Ductwork operating $>$ 3 in. water column requires air leakage testing.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input checked="" type="checkbox"/> Not Applicable	<b>Exception:</b> Requirement does not apply.
C403.2.9.1.3 [ME11] <sup>1</sup>	Ductwork operating $>$ 3 in. water column requires air leakage testing.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input checked="" type="checkbox"/> Not Applicable	<b>Exception:</b> Requirement does not apply.
C403.2.9.1.3 [ME11] <sup>1</sup>	Ductwork operating $>$ 3 in. water column requires air leakage testing.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input checked="" type="checkbox"/> Not Applicable	<b>Exception:</b> Requirement does not apply.
C403.2.9.1.3 [ME11] <sup>1</sup>	Ductwork operating $>$ 3 in. water column requires air leakage testing.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input checked="" type="checkbox"/> Not Applicable	<b>Exception:</b> Requirement does not apply.
C403.2.9.1.3 [ME11] <sup>1</sup>	Ductwork operating $>$ 3 in. water column requires air leakage testing.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input checked="" type="checkbox"/> Not Applicable	<b>Exception:</b> Requirement does not apply.
C403.2.9.1.3 [ME11] <sup>1</sup>	Ductwork operating $>$ 3 in. water column requires air leakage testing.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	<b>Exception:</b> Requirement does not apply.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

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Section # & Req.ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C403.4.2.3.2.1 [ME121] <sup>1</sup>	Closed-circuit cooling tower within heat pump loop have either automatic bypass valve or lower leakage positive closure dampers. Open-circuit tower within heat pump loop have automatic valve to bypass all heat pump water flow around the tower. Open- or closed-circuit cooling towers used in conjunction with a separate heat exchanger have heat loss by shutting down the circulation pump on the cooling tower loop.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input checked="" type="checkbox"/> Not Applicable	<b>Exception:</b> Requirement does not apply.
C403.4.2.3.2.1 [ME121] <sup>1</sup>	Closed-circuit cooling tower within heat pump loop have either automatic bypass valve or lower leakage positive closure dampers. Open-circuit tower within heat pump loop have automatic valve to bypass all heat pump water flow around the tower. Open- or closed-circuit cooling towers used in conjunction with a separate heat exchanger have heat loss by shutting down the circulation pump on the cooling tower loop.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input checked="" type="checkbox"/> Not Applicable	<b>Exception:</b> Requirement does not apply.
C403.4.2.3.2.1 [ME121] <sup>1</sup>	Closed-circuit cooling tower within heat pump loop have either automatic bypass valve or lower leakage positive closure dampers. Open-circuit tower within heat pump loop have automatic valve to bypass all heat pump water flow around the tower. Open- or closed-circuit cooling towers used in conjunction with a separate heat exchanger have heat loss by shutting down the circulation pump on the cooling tower loop.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input checked="" type="checkbox"/> Not Applicable	<b>Exception:</b> Requirement does not apply.
C403.4.4.6 [ME110] <sup>1</sup>	Multiple zone VAV systems with DDC of individual zone boxes have static pressure setpoint reset controls.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input checked="" type="checkbox"/> Not Applicable	<b>Exception:</b> Requirement does not apply.
C403.4.4.6 [ME110] <sup>1</sup>	Multiple zone VAV systems with DDC of individual zone boxes have static pressure setpoint reset controls.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input checked="" type="checkbox"/> Not Applicable	<b>Exception:</b> Requirement does not apply.
C403.4.4.6 [ME110] <sup>1</sup>	Multiple zone VAV systems with DDC of individual zone boxes have static pressure setpoint reset controls.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input checked="" type="checkbox"/> Not Applicable	<b>Exception:</b> Requirement does not apply.
C403.4.4.6 [ME110] <sup>1</sup>	Multiple zone VAV systems with DDC of individual zone boxes have static pressure setpoint reset controls.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input checked="" type="checkbox"/> Not Applicable	<b>Exception:</b> Requirement does not apply.
C403.4.4.6 [ME110] <sup>1</sup>	Multiple zone VAV systems with DDC of individual zone boxes have static pressure setpoint reset controls.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input checked="" type="checkbox"/> Not Applicable	<b>Exception:</b> Requirement does not apply.
C408.2.2.1 [ME53] <sup>1</sup>	Air outlets and zone terminal devices have means for air balancing.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met. <b>Location on plans/spec:</b> Refer Section #230593 on Sheet M-004 and Mechanical Floor Plans on Sheet M-100 to M-104

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Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C303.3. C408.2.5.3 [F18] <sup>1</sup>	Furnished O&M manuals for HVAC systems within 90 days of system acceptance.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met. REFER #1.4 EQUIPMENT REQUIRED INSTRUCTIONS UNDER SECTION #0102 REQUIRED DOCUMENTS ON SHEET M-004
C403.2.2 [F127] <sup>1</sup>	HVAC systems and equipment capacity does not exceed calculated loads.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met. <b>Location on plans/spec:</b> Refer Mechanical Schedule On Sheet M-601
C403.2.4.1 [F147] <sup>1</sup>	Heating and cooling to each zone is controlled by a thermostat control. Minimum one humidity control device per installed humidification/dehumidification system.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met. <b>Location on plans/spec:</b> Refer Mechanical Floor Plans On Sheet M-100 to M-104 for Thermostat Locations Dehumidificator Not Applicable
C403.2.4.1 [F147] <sup>1</sup>	Heating and cooling to each zone is controlled by a thermostat control. Minimum one humidity control device per installed humidification/dehumidification system.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met. <b>Location on plans/spec:</b> Refer Mechanical Floor Plans On Sheet M-100 to M-104 for Thermostat Locations Dehumidificator Not Applicable
C403.2.4.1 [F147] <sup>1</sup>	Heating and cooling to each zone is controlled by a thermostat control. Minimum one humidity control device per installed humidification/dehumidification system.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met. <b>Location on plans/spec:</b> Refer Mechanical Floor Plans On Sheet M-100 to M-104 for Thermostat Locations Dehumidificator Not Applicable
C403.2.4.1 [F147] <sup>1</sup>	Heating and cooling to each zone is controlled by a thermostat control. Minimum one humidity control device per installed humidification/dehumidification system.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met. <b>Location on plans/spec:</b> Refer Mechanical Floor Plans On Sheet M-100 to M-104 for Thermostat Locations Dehumidificator Not Applicable
C403.2.4.1.1 [F142] <sup>1</sup>	Heat pump controls prevent supplemental electric resistance heat from coming on when not needed.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met. <b>Location on plans/spec:</b> Refer #C Heat Pump Supplementary heat Under # Sequence of operation On sheet M-005
C403.2.4.1.1 [F142] <sup>1</sup>	Heat pump controls prevent supplemental electric resistance heat from coming on when not needed.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met. <b>Location on plans/spec:</b> Refer #C Heat Pump Supplementary heat Under # Sequence of operation On sheet M-005
C403.2.4.1.1 [F142] <sup>1</sup>	Heat pump controls prevent supplemental electric resistance heat from coming on when not needed.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met. <b>Location on plans/spec:</b> Refer #C Heat Pump Supplementary heat Under # Sequence of operation On sheet M-005
C403.2.4.1.2 [F138] <sup>1</sup>	Thermostatic controls have a 5 °F deadband.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met. <b>Location on plans/spec:</b> Refer #D Deadband Under # Sequence of operation On sheet M-005

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DOB STAMP



Section # & Req. ID	Final Inspection	Complies?	Comments/Assumptions
C403.2.4.1.3 [F120]³	Temperature controls have setback overlap restrictions.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met. <b>Location on plans/spec:</b> Refer #B Setpoint Overlap Restriction Under # Sequence of operation On sheet M-005
C403.2.4.2 [F139]³	Each zone equipped with setback controls using automatic time clock or programmable control system.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input checked="" type="checkbox"/> Not Applicable	<b>Exception:</b> Requirement does not apply.
C403.2.4.2.1, C403.2.4.2.2 [F140]³	Automatic Controls: Setback to 55°F (heat) and 85°F (cool); 7-day clock, 2-hour occupant override, 10-hour backup	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input checked="" type="checkbox"/> Not Applicable	<b>Exception:</b> Requirement does not apply.
C408.2.1 [F128]³	Commissioning plan developed by approved agency. Lighting controls shall be commissioned in accordance with C408.3.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met. <b>Location on plans/spec:</b> Refer Note #18 Under NYC Building Department Notes On sheet M-001
C408.2.3.1 [F131]³	HVAC equipment has been tested to ensure proper operation.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met. <b>Location on plans/spec:</b> Refer Section #230593 on Sheet M-004
C408.2.3.2 [F110]³	HVAC control systems have been tested to ensure proper operation, calibration and adjustment of controls.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met. <b>Location on plans/spec:</b> Refer Section #230593 on Sheet M-004
C408.2.5.1 [F17]³	Furnished HVAC as-built drawings submitted within 90 days of system acceptance.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met. REFER #1.3 RECORD DRAWINGS UNDER SECTION #0102 REQUIRED DOCUMENTS ON SHEET M-004
C408.2.5.3 [F143]³	An air and/or hydronic system balancing report is provided for HVAC systems.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met. <b>Location on plans/spec:</b> Refer Section #230593 on Sheet M-004
C408.2.5.4 [F130]³	Final commissioning report due to building owner within 30 months (for new buildings > 500,000 R2) or 18 months (for R-2 and all other buildings) of receipt of certificate of occupancy.	<input checked="" type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Observable <input type="checkbox"/> Not Applicable	Requirement will be met. <b>Location on plans/spec:</b> Refer Note #18 Under NYC Building Department Notes On sheet M-001

Additional Comments/Assumptions:

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## ENERGY ANALYSIS - COMMERCIAL BUILDING MECHANICAL SYSTEMS

1 RCNY §5000-1, CHAPTER 5000  
2016 ECCNYC, CH. 4  
CLIMATE ZONE 4A

ITEM DESCRIPTION	CODE PRESCRIPTIVE VALUES AND REQUIREMENTS	PROPOSED DESIGN VALUES AND OR PROCEDURES	SUPPORTING DOCUMENTS									
CALCULATION OF SPACE THERMAL LOADS	C403.2.1: DESIGN LOADS SHALL BE DETERMINED IN ACCORDANCE WITH THE PROCEDURES DESCRIBED IN THE ASHRAE/ACCA 183. HEATING AND COOLING LOADS SHALL BE ADJUSTED TO ACCOUNT FOR LOAD REDUCTIONS THAT ARE ACHIEVED WHEN ENERGY RECOVERY SYSTEMS ARE UTILIZED IN THE HVAC SYSTEM IN ACCORDANCE WITH ASHRAE HVAC SYSTEMS AND EQUIPMENT HANDBOOK. ALTERNATIVELY, DESIGN LOADS SHALL BE DETERMINED BY AN APPROVED EQUIVALENT COMPUTATION PROCEDURE, USING THE DESIGN PARAMETERS SPECIFIED IN CHAPTER 3.	C403.2.1: DESIGN LOADS HAVE BEEN DETERMINED IN ACCORDANCE WITH THE PROCEDURES DESCRIBED IN ANSI/ASHRAE/ACCA STANDARD 183. THE DESIGN LOADS ACCOUNT FOR THE BUILDING ENVELOPE, LIGHTING, VENTILATION AND OCCUPANCY LOADS BASED ON THE PROJECT DESIGN.	#19 UNDER NYC DEPARTMENT BUILDING NOTES ON SHEET M-001.00									
THERMOSTATIC CONTROLS	403.2.4.1: AT LEAST ONE THERMOSTAT SHALL BE PROVIDED FOR EACH SEPARATE HEATING AND COOLING SYSTEM.	THERMOSTATS CONTROLLING HEATING AND COOLING PROVIDED PER ZONE AS REQUIRED	MECHANICAL FLOOR PLANS ON SHEET M-100 TO M-104 FOR T-STAT LOCATIONS & REFER THERMOSTATIC CONTROLS ON SHEET M-005.00									
SHUTOFF DAMPERS	403.2.4.3: OUTDOOR AIR INTAKES AND EXHAUSTS SHALL BE PROVIDED WITH CLASS I MOTORIZED DAMPERS THAT CLOSE WHEN THE VENTILATION SYSTEM IS NOT OPERATING.	EACH OUTDOOR SUPPLY AIR AND EXHAUST AIR DUCTS ARE PROVIDED WITH MOTORIZED DAMPERS TO SHUT OFF WHEN NOT IN USE	REFER MECHANICAL FLOOR PLANS ON SHEET M-100 TO M-104.00									
DUCT AND PLENUM INSULATION AND SEALING	C403.2.9: ALL SUPPLY AND RETURN AIR DUCTS AND PLENUMS SHALL BE INSULATED WITH A MINIMUM OF R-6 INSULATION WHEN LOCATED IN UNCONDITIONED SPACES. EXCEPTIONS: 2. WHEN THE DESIGN TEMPERATURE DIFFERENCE BETWEEN THE INTERIOR AND EXTERIOR OF THE DUCT OR PLENUM DOES NOT EXCEED 15°F (8°C). ALL OUTDOOR RETURN AND SUPPLY DUCTWORK AND PLENUMS SHALL BE INSULATED WITH A MINIMUM OF R-8 INSULATION.	ALL SUPPLY AIR DUCTS AND PLENUMS LOCATED WITHIN THE CONDITIONED SPACE ARE DESIGNED TO HAVE A MINIMAL INSTALLED THERMAL RESISTANCE OF R-6. DESIGN TEMPERATURE DIFFERENCE BETWEEN THE INTERIOR SPACE AND INTERIOR OF RETURN AIR DUCTS AND PLENUMS LOCATED WITHIN THE THE CONDITIONED SPACE DO NOT EXCEED 15°F (8°C).	REFER SECTION #230713 DUCT INSULATION AND #233113 METAL DUCTS AND ON SHEET M-004.00 & M-005.00 RESPECTIVELY.									
MINIMUM MECHANICAL VENTILATION	C403.2.6: VENTILATION, EITHER NATURAL OR MECHANICAL, SHALL BE PROVIDED IN ACCORDANCE WITH CHAPTER 4 OF THE NEW YORK CITY MECHANICAL CODE. WHERE MECHANICAL VENTILATION IS PROVIDED, THE SYSTEM SHALL BE CONFIGURED TO PROVIDE NO GREATER THAN 150 PERCENT OF THE MINIMUM OUTDOOR AIR REQUIRED BY CHAPTER 4 OF THE INTERNATIONAL MECHANICAL CODE OR OTHER APPLICABLE CODE OR STANDARD, WHICHEVER IS GREATER.	VENTILATION SYSTEM PROVIDED AS PER REQUIREMENTS.	REFER MECHANICAL FLOOR PLANS ON SHEET M-100.00 TO M-104.00									
PIPING INSULATION	403.2.10: ALL PIPING SERVING AS PART OF A HEATING OR COOLING SYSTEM SHALL BE THERMALLY INSULATED IN ACCORDANCE WITH TABLE 403.2.8. TABLE C403.2.8: <table border="1"> <thead> <tr> <th colspan="3">NOMINAL PIPE DIAM.</th> </tr> <tr> <th>FLUID</th> <th>&lt;=1.5"</th> <th>&gt;1.5"</th> </tr> </thead> <tbody> <tr> <td>REFRIGERANT PIPING</td> <td>1/2"</td> <td>1 1/2"</td> </tr> </tbody> </table>	NOMINAL PIPE DIAM.			FLUID	<=1.5"	>1.5"	REFRIGERANT PIPING	1/2"	1 1/2"	ALL HVAC PIPING TO BE INSULATED AS PER TABLE C403.2.10	REFER #7 PIPING INSULATION ON SHEET M-003.00
NOMINAL PIPE DIAM.												
FLUID	<=1.5"	>1.5"										
REFRIGERANT PIPING	1/2"	1 1/2"										
HVAC EQUIPMENT PERFORMANCE REQUIREMENTS	C403.2.3: EQUIPMENT SHALL MEET THE MINIMUM EFFICIENCY REQUIREMENTS OF TABLES C403.2.3(1), C403.2.3(2), C403.2.3(3), C403.2.3(4), C403.2.3(5), C403.2.3(6), C403.2.3(7), C403.2.3(8), C403.2.3(9), C403.2.3(10), C403.2.3(11) AND C403.2.3(12) WHEN TESTED AND RATED IN ACCORDANCE WITH THE APPLICABLE TEST PROCEDURE	ALL SELECTED UNITS ARE MEETING REQUIRED MINIMUM EFFICIENCY NUMBERS.	MECHANICAL SCHEDULES ON SHEET M-601.00									
LOW-PRESSURE DUCT SYSTEMS	C403.2.3: ALL LOW PRESSURE DUCT SHALL BE PROPERLY SEALED AS PER REQUIREMENTS.	ALL LOW PRESSURE DUCTS, OPERATING AT STATIC PRESSURE 2" W.G OR LESS SHALL BE PROPERLY SEALED WITH APPROVED METHODS.	REFER SECTION #233113 METAL DUCTS ON SHEET M-005.00									
MANUALS	C408.2.5.2: OPERATING AND MAINTENANCE MANUAL REQUIREMENTS.	OPERATING AND MAINTENANCE MANUAL SHALL BE PROVIDED BY MECHANICAL CONTRACTOR AND SPECIFIED IN CONSTRUCTION DOCUMENTS.	REFER #1.4 UNDER SECTION #0102 REQUIRED DOCUMENTS ON SHEET M-004.00									

1. TO THE BEST OF MY PROFESSIONAL KNOWLEDGE AND JUDGEMENT, THESE PLANS AND SPECIFICATIONS ARE IN COMPLIANCE WITH THE ENERGY CONSERVATION CONSTRUCTION CODE OF NEW YORK CITY 2016.

### SYSTEMS REQUIRING COMMISSIONING

SYSTEM	SUB-SYSTEM	QTY	CAPACITY (MBH)		TOTAL CAPACITY (MBH) COOLING	TOTAL CAPACITY (MBH) HEATING	REQUIRED COMMISSIONING
			COOLING	HEATING			
COOLING AND HEATING	HEAT PUMP HEATING AND COOLING-10 TON	1	120	135	120	135	HEATING (>600 MBH) YES COOLING (<480 MBH) NO
	HEAT PUMP HEATING AND COOLING-3 TON	1	36	42	36	42	
	CONDENSER COOLING-0.75 TON	1	9	-	9	-	
	DUCT HEATER EDH-1 & 2 (HEATING ONLY) 5 KW	2	-	17.06	-	34.12	
	DUCT HEATER EDH-3 (HEATING ONLY) 10 KW	1	-	34.12	-	34.12	
	UNIT HEATERS (HEATING ONLY) - 3 KW	1	-	10.23	-	10.23	
	UNIT HEATERS (HEATING ONLY) - 1.5 KW	7	-	5.11	-	35.77	
	HWHT-1 & 2 (WATER HEATING) - 125 MBH	2	-	125	-	250	
	HWHT-3 (WATER HEATING) - 1.44 KW	1	-	4.91	-	4.91	
	PTAC-1 (HEATING & COOLING) - 1 TON	15	7.2	12	108	180	
	VTAC-1 (HEATING & COOLING) - 0.8 TON	5	8.9	8.53	44.5	42.65	
	AIR CURTAIN HEATER - 5 KW	2	-	17.06	-	34.12	
	ELECTRIC BASEBOARD HEATERS 1KW	4	-	3.41	-	13.64	
TOTAL					317.5	816.46	

### SYSTEMS COMMISSIONING PURSUANT TO SECTION 408.2, NYCECC-2016

#### SYSTEMS REQUIRING COMMISSIONING

1- HEATING, COOLING, AIR HANDLING AND DISTRIBUTION, VENTILATION, AND EXHAUST SYSTEMS, AND THEIR RELATED AIR QUALITY MONITORING SYSTEMS.
2- AIR, WATER, AND OTHER ENERGY RECOVERY SYSTEMS.
3- MANUAL OR AUTOMATIC CONTROLS, WHETHER LOCAL OR REMOTE, ON ENERGY USING SYSTEMS INCLUDING BUT NOT LIMITED TO TEMPERATURE CONTROLS, SETBACK SEQUENCES, AND OCCUPANCY BASED CONTROL, INCLUDING ENERGY MANAGEMENT FUNCTIONS OF THE BUILDING MANAGEMENT SYSTEM.
4- PLUMBING, INCLUDING INSULATION OF PIPING AND ASSOCIATED VALVES, DOMESTIC AND PROCESS WATER PUMPING, AND MIXING SYSTEMS.
5- MECHANICAL HEATING SYSTEMS AND SERVICE WATER HEATING SYSTEMS.
6- OTHER SYSTEMS, EQUIPMENT AND COMPONENTS THAT ARE USED FOR HEATING, COOLING OR VENTILATION AND THAT AFFECT ENERGY USE.

DOB STAMP