

Energy Code Tabular Analysis

NYCECC Citation	Provision	Item Description	Proposed Design Value	Code Prescriptive Value	Supporting Documentation
Climate Zones, Design Conditions, Materials, Equipment and Systems					
302	Design Conditions				
302.1	Interior Design Conditions	Minimum and maximum temperatures for interior design load calculations	<i>Sample text: Load calculations performed at a maximum of 72 degrees F for heating and a minimum of 75 degrees F for cooling.</i>	Load calculations performed at a maximum of 72 degrees F for heating and a minimum of 75 degrees F for cooling.	<i>Sample text: Sign and Sealed engineer's state of energy compliance on drawing XX.</i>
Residential Energy Efficiency					
401	General				
401.3	Certificate	Permanent certificate on the electrical distribution panel.	<i>Sample text: certificate provided as per code</i>	A permanent certificate shall be posted on or in the electrical distribution panel stating insulation R-values and equipment efficiencies	<i>Sample text: See architectural plans, A-XXX, A-XXX and specifications drawing A-XXX</i>
Residential Building Thermal Envelope					
402	Thermal Envelope				
402.1.1	Insulation and fenestration criteria	<i>Sample text: Replace existing windows new aluminum framed windows, Floors X - Z</i>	<i>Sample text: Window Type A: U = 0.46, SHGC = 0.29</i> <i>Window Types B + C: U = 0.41, SHGC = 0.31</i> <i>Window Type D: U = 0.41, SHGC = 0.23</i>	<i>Sample text: Window : U = 0.40, SHGC = NR</i>	<i>Sample text: Vertical fenestration: A-XX1-XX2 (Building Elevations) A-XY1 (Schedules)</i>
402.1.2	R-value computation	<i>Sample text: R-value computation</i>	<i>Sample text: Outside air film R = 0.17</i> <i>4" Brick veneer R = 0.44</i> <i>Air space R = 1.00</i> <i>6" CMU R = 1.75</i> <i>3.5" batt insulation R = 13.0</i> <i>Craft paper backing R = 0.06</i> <i>5/8" GWB R = 0.56</i> <i>Inside Air Film R = 0.68</i> <i>Total R-Value is R-17.66</i>	Insulation material used in layers, such as framing cavity insulation and insulating sheathing, shall be summed to compute the component Rvalue. The manufacturer's settled R-value shall be used for blown insulation.	<i>Sample text: Exterior Wall Type 1: A-XX0 (1st Floor Plan) 2/A-XXX (Wall Details)</i>
402.1.3 and Tables 402.1.1 and 402.1.3	U-Factor alternative	<i>Sample text: replacement aluminum frame window assembly XXX at Floor X</i>	<i>Sample text: U = 0.XXX</i>	<i>Sample text: Window : U = 0.40</i>	<i>Sample text: Vertical fenestration: A-XX1-XX2 (Building Elevations) A-XY1 (Schedules)</i>
402.1.4	Total UA alternative	<i>Sample text: Total building thermal envelope UA = XXXXX</i>	<i>Sample text: XXXX sq ft * 0.0XXX U-factor = XXXXXX UA</i>	If the total building thermal envelope UA (sum of U-factor times assembly area) is less than or equal to the total UA resulting from using the U-factors in Table 402.1.3 (multiplied by the same assembly area as in the proposed building), the building shall be considered in compliance with Table 402.1.1.	<i>Sample text: Vertical fenestration: A-XX1-XX2 (Building Elevations) A-XY1 (Schedules)</i>
402.2	Specific insulation requirements (Prescriptive)				
402.2.1 and Table 402.1.1, as well as 402.1.3 and 402.1.4 where applicable.	Ceilings with attic spaces	Insulation in ceiling with attic space	<i>Sample text: Insulation extends over wall top plate at eaves, so R-30 has been used.</i>	When Section 402.1.1 would require R-38 in the ceiling, R-30 shall be deemed to satisfy the requirement for R-38 wherever the full height of uncompressed R-30 insulation extends over the wall top plate at the eaves. Similarly R-38 for R-49 where above condition applies. This reduction shall not apply to the Ufactor alternative approach in Section 402.1.3 and the total UA alternative in Section 402.1.4.	<i>Sample text: A-XXX (Roof Plan) A-XXX (Wall Section) A-XXX (Wall Details)</i>

NYCECC Citation	Provision	Item Description	Proposed Design Value	Code Prescriptive Value	Supporting Documentation
402.2.2 and Table 402.1.1, as well as 402.1.3 and 402.1.4 where applicable.	Existing ceiling/ roof assemblies without attic spaces	Insulation in ceiling without attic space	<i>Sample text: Insulation extends over wall top plate at eaves, so R-30 has been used.</i>	Where Section 402.1.1 would require insulation levels above R-30 and the design of the roof/ ceiling assembly does not allow sufficient space for the required insulation, the min required insulation for such roof/ ceiling assemblies shall be R-30. This reduction of insulation from the requirements of Section 402.1.1 shall be limited to 500SF (46 m2) or 20% of the total insulated ceiling area, whichever is less. This reduction shall not apply to the U-factor alternative approach in Section 402.1.3 and the total UA alternative in Section 402.1.4.	<i>Sample text: A-XXX (Roof Plan) A-XXX (Wall Section) A-XXX (Wall Details)</i>
402.2.3	Access hatches and doors (Mandatory)	Crawl space access hatch.	<i>Sample text: Access door to uninsulated crawl weatherstripped and insulated to R-99.</i>	Access doors from conditioned spaces to unconditioned spaces (e.g., attics and crawl spaces) shall be weatherstripped and insulated to a level equivalent to the insulation on the surrounding surfaces. Access shall be provided to all equipment which prevents damaging or compressing the insulation. A wood framed or equivalent baffle or retainer is required to be provided when loose fill insulation is installed, the purpose of which is to prevent the loose fill insulation from spilling into the living space when the attic access is opened, and to provide a permanent means of maintaining the installed R-value of the loose fill insulation.	<i>Sample text: A-XXX (Roof Plan) A-XXX (Building Section)</i>
402.2.4	Mass walls.	Concrete masonry walls.	<i>Sample text: Mass walls are 6" CMU with brick veneer.</i>	Mass walls for the purposes of this Chapter shall be considered above-grade walls of concrete block, concrete, insulated concrete form (ICF), masonry cavity, brick (other than brick veneer), earth (adobe, compressed earth block, rammed earth) and solid timber/logs.	<i>Sample text: A-XXX (Wall Section) A-XXX (Wall Details)</i>
402.2.5 and Tables 402.2.5, as well as Table 402.1.3.	Steel-frame ceilings, walls and floors.	Steel frame walls	<i>Sample text: steel frame walls insulated to R-XXX</i>	Steel-frame ceilings, walls and floors shall meet the insulation requirements of Table 402.2.5, or shall meet the U-factor reqs of Table 402.1.3. The calculation of the Ufactor for a steel-frame envelope assembly shall use a series-parallel path calculation method.	<i>Sample text: A-XXX (Wall Section) A-XXX (Wall Details)</i>
402.2.6	Floors	Subfloor insulation installation.	<i>Sample text: Extruded polystyrene insulation adhered to underside of subfloor assembly and fastened to maintain permanent contact with subfloor decking.</i>	Floor insulation shall be installed to maintain permanent contact with the underside of the subfloor decking.	<i>Sample text: Note provided in general notes as well as on ground floor or foundation plan.</i>
402.2.7 as well as Sections 402.1.1 and 402.2.6.	Basement Walls	Basement Walls	<i>Sample text: basement walls insulated to R-XXX</i>	Walls associated with conditioned basements shall be insulated from the top of the basement wall down to 10 feet (3048 mm) below grade or to the basement floor, whichever is less. Walls associated with unconditioned basements shall meet this requirement unless the floor overhead is insulated in accordance with Sections 402.1.1 and 402.2.6.	<i>Sample text: A-XXX (Wall Section) A-XXX (Wall Details)</i>
402.2.8	Slab-on-grade floors	Slab on grade floor insulation and location	<i>Sample text: slab on grade floor insulated to R-XXX and located as per code</i>	Slab-on-grade floors with a floor surface less than 12 inches (305 mm) below grade shall be insulated in accordance with Table 402.1.1.	<i>Sample text: A-XXX (Floor Plan) A-XXX (Wall Section) A-XXX (Wall Details)</i>

NYCECC Citation	Provision	Item Description	Proposed Design Value	Code Prescriptive Value	Supporting Documentation
402.2.9	Crawl space walls	Crawl space walls	<i>Sample text: crawl space walls insulated to R-XXX</i>	As an alternative to insulating floors over crawl spaces, crawl space walls shall be permitted to be insulated when the crawl space is not vented to the outside. Crawl space wall insulation shall be permanently fastened to the wall and extend downward from the floor to the finished grade level and then vertically and/or horizontally for at least an additional 24 inches (610 mm). Exposed earth in unvented crawl space foundations shall be covered with a continuous Class I vapor retarder. All joints of the vapor retarder shall overlap by 6 inches (153 mm) and be sealed or taped. The edges of the vapor retarder shall extend at least 6 inches (153 mm) up the stem wall and shall be attached to the stem wall.	<i>Sample text: A-XXX (Floor Plan) A-XXX (Wall Section) A-XXX (Wall Details)</i>
402.2.10	Masonry veneer.	Masonry veneer.	<i>Sample text: insulation on masonry veneer support portions of foundation not provided</i>	Insulation shall not be required on the horizontal portion of the foundation that supports a masonry veneer.	<i>Sample text: A-XXX (Floor Plan) A-XXX (Wall Section) A-XXX (Wall Details)</i>
402.2.11 and Table 402.1.1	Thermally isolated sunroom insulation (Prescriptive)	Thermally isolated sunroom insulation	<i>Sample text: sunroom ceiling and walls insulated to R-XXX</i>	For sunroom additions not exceeding 500 SF (46 m ²) in area, the min ceiling insulation R-values shall be R-19 in Zone 4 and R-24 in Zones 5 and 6. The min wall R-value shall be R-13 in all zones. New wall(s), windows and doors separating such sunroom addition from conditioned space shall meet the building thermal envelope requirements of Table 402.1.1.	<i>Sample text: A-XXX (Floor Plan) A-XXX (Wall Section) A-XXX (Wall Details)</i>
402.2.12	Tenant separation walls	Tenant separation wall insulation	<i>Sample text: tenant wall separations insulated to R-XXX</i>	Fire separations between dwelling units in two-family dwellings and multiple single-family dwellings (townhouses) shall be insulated to no less than R-10 and the walls shall be air sealed in accordance with Section 402.4.1 of this chapter.	<i>Sample text: A-XXX (Floor Plan) A-XXX (Wall Section) A-XXX (Wall Details)</i>
402.3	Fenestration (Prescriptive)				
402.3.1	U-Factor.	Glazing U-Factor	$U = 0.35$	An area-weighted average of fenestration products shall be permitted to satisfy the U-factor requirements.	<i>Sample text: Vertical fenestration: A-301-302 (Building Elevations) A-501 (Schedules)</i>
402.3.2	Glazed fenestration exemption.	Glazing U-factor requirement exemption	<i>Sample text: 8 SF exempt from U-factor requirement</i>	Up to 15 SF (1.4 m ²) of glazed fenestration per dwelling unit shall be permitted to be exempt from U-factor reqs in Sect. 402.1.1. This exemption shall not apply to the Ufactor alt. approach in Sect. 402.1.3 and the Total UA alt. in Sect. 402.1.4.	<i>Sample text: Vertical fenestration: A-301-302 (Building Elevations) A-501 (Schedules)</i>
402.3.3	Opaque door exemption.	Door U-factor requirement exemption	<i>Sample text: 22 SF door exempt from U-factor requirement</i>	One side-hinged opaque door assembly up to 24 square feet (2.22 m ²) in area is exempted from the U-factor requirement in Section 402.1.1. This exemption shall not apply to the U-factor alternative approach in Section 402.1.3 and the total UA alternative in Section 402.1.4.	<i>Sample text: Vertical fenestration: A-XXX-XXY (Building Elevations) A-XXX (Schedules)</i>
402.3.4	Thermally isolated sunroom U-factor (Prescriptive)	Thermally isolated sunroom U-factor	<i>Sample text: Fenestration U-factor = 0.5</i>	For Zones 4 through 6, the max fenestration U-factor shall be 0.50 and the maximum skylight Ufactor shall be 0.75.	<i>Sample text: Vertical fenestration: A-XXX-XXY (Building Elevations) A-XXX (Schedules)</i>
402.3.5	Replacement fenestration.	Fenestration replacement requirements	<i>Sample text: new fenestration provided as per code</i>	Where some or all of an existing fenestration unit is replaced with a new fenestration product, including sash and glazing, the replacement fenestration unit shall meet the applicable requirements for U-factor in Table 402.1.1, where required by Section 101.4.3.	<i>Sample text: Vertical fenestration: A-XXX-XXY (Building Elevations) A-XXX (Schedules)</i>
402.4	Air Leakage				

NYCECC Citation	Provision	Item Description	Proposed Design Value	Code Prescriptive Value	Supporting Documentation
402.4.1	Building Thermal Envelope.	Building thermal envelope to be sealed to limit infiltration.	<i>Sample text: building thermal envelope sealed as per code</i>	The building thermal envelope shall be durably sealed to limit infiltration. The sealing methods between dissimilar materials shall allow for differential expansion and contraction. The following shall be caulked, gasketed, weather-stripped or otherwise sealed with an air barrier material, suitable film or solid material.	<i>Sample text: A-XXX (Floor Plan) A-XXX (Wall Section) A-XXX (Wall Details)</i>
402.4.2, as well as Sections 402.4.2.1 or 402.4.2.2.	Air Sealing and insulation (Mandatory)	Envelope air sealing requirement	<i>Sample text: envelope air sealed and testing schedule TBD</i>	Building envelope air tightness and insulation installation shall be demonstrated to comply with one of the following options given by Section 402.4.2.1 or 402.4.2.2:	<i>Sample text: A-XXX (Schedule)</i>
402.4.2.1	Testing option	Testing building envelope tightness and insulation	<i>Sample text: Instruction to Progress Inspector to test to 1RCNY5000-01 Table IA7</i>	Less than 7 ACH	<i>Sample text: A-XXX table of progress inspections</i>
402.4.2.2 and Table 402.4.2	Visual inspection option.	Field verification required.	<i>Sample text: field verification schedule TBD</i>	Building envelope tightness and insulation installation shall be considered acceptable when the items listed in Table 402.4.2, applicable to the method of construction, are field verified. Progress inspection shall be in accordance with 1RCNY5000-01 Table IA6	<i>Sample text: A-XXX (Schedule)</i>
402.4.3	Recessed Lighting	Recessed lighting sealing	<i>Sample text: sealing at exterior lights provided as per code</i>	Class I: Sheet polyethylene, unperforated aluminum foil. Class II: Kraft-faced fiberglass batt, or low perm paint (0.1 < perm <= 1.0). Class III: Latex or enamel paint.	<i>Sample text: A-XXX (Floor Plan) A-XXX (Wall Section) A-XXX (Wall Details)</i>
402.4.4	Fenestration air leakage.	Window infiltration rates.	<i>Sample text: Sealing provided to prevent air leakage at 0.1 cfm per sf. Field verification schedule TBD</i>	Windows, skylights and sliding glass doors shall have an air infiltration rate of no more than 0.3 cfm per square foot (1.5 L/s/m ²), and swinging doors no more than 0.5 cfm per square foot (2.6 L/s/m ²), when tested according to NFRC 400 or AAMA/WDMA/CSA 01/I.S.2/A440 by an accredited, independent laboratory and listed and labeled by the manufacturer.	<i>Sample text: Vertical fenestration: A-XXX-XXY (Building Elevations) A-XXX (Schedules)</i>
402.5	Vapor retarders (Mandatory).				
402.5.3	Minimum clear air spaces and vented openings for vented cladding.	<i>Sample text: clear air space for stucco siding</i>	<i>Sample text: Stucco siding provided with 3/8 in clear airspace with 3/8 inch continuous slot vent openings at top and bottom of walls</i>	<i>Sample text: clear airspace for stucco minimum 3/8 in with 3/8 in continuous slot vents at top and bottom</i>	<i>Sample text: A-XXX (Wall Details)</i>
402.6	Maximum fenestration U factor. (Mandatory).	Glazing U-Factor	<i>Sample text: U = 0.35</i>	Weighted average U-factor permitted using trade offs Vertical fenestration: 0.48 in Zones 4 and 5 0.40 in Zone 6 Skylights: 0.75 in Zones 4-6	<i>Sample text: Vertical fenestration: A-XXX-XXY (Building Elevations) A-XXX (Schedules)</i>
Residential Building HVAC					
403	HVAC				
403.1.1	Programmable Thermostat	Thermostats	<i>Sample text: thermostat is provided for each system with ability to setback temperatures down to 55 degrees F, or up to 85 degrees F, is programmable for different temperatures at different times of day, control based on largest zone. Initial set point to be no higher than 70 degrees F in heating and 78 degrees F in cooling.</i>	At least one thermostat is provided for each system. Thermostat shall have ability to setback temperatures down to 55 degrees F, or up to 85 degrees F. Be programmable for different temperatures at different times of day, control based on largest zone. Initial set point to be no higher than 70 degrees F in heating and 78 degrees F in cooling.	<i>Sample text: See mechanical plans, M-XXX, M-XXX and mechanical specifications drawing M-XXX</i>
403.1.2	Heat Pump Supplementary Electric Resistance Heat	<i>Sample text: Split Heat Pump System, HP-1</i>	<i>Sample text: Electric heat shall be enable only when the heat pump cannot meet load.</i>	Except during defrost, supplementary electric heat to be prevented from coming on when heat pump can meet load	<i>Sample text: See mechanical control sequences, Drawing M-XXX.</i>
403.2.1	Insulation	Duct Insulation Minimums	<i>Sample text: Supply ducts in attics R-16 minimum, R-26 minimum in all other locations.</i>	Supply ducts in attics shall be R-8 minimum, R-6 minimum in all other locations.	<i>Sample text: See mechanical specifications, drawing M-XXX</i>

NYCECC Citation	Provision	Item Description	Proposed Design Value	Code Prescriptive Value	Supporting Documentation
403.2.2	Duct Sealing and Leakage Testing*	Duct Sealing	Sealing and testing requirements per code, see specifications	Ducts, filter boxes, air handlers etc shall be sealed. Joints and seams comply with NYC Construction codes. Leakage test to be performed.	See mechanical specifications, drawing M-500
403.2.3	Building Cavities, supply ducts	Prohibition on use of framing cavities as supply ducts	<i>Sample text: Ductwork supplied to all spaces</i>	Building framing cavities shall not be used as supply ducts	<i>Sample text: See mechanical specifications, drawing M-XXX</i>
403.3	Mechanical System Piping Insulation	Radiator Piping Insulation	<i>Sample text: Piping insulated to R-21</i>	Piping carrying fluids above 105 degrees F and below 55 degrees F shall be insulated to a minimum of R-3.	<i>Sample text: See mechanical specifications, drawing M-XXX</i>
403.4	Circulating Hot Water Systems	Circulating hot water system piping insulation	<i>Sample text: Piping insulated to R-21</i>	Shall be insulated to R-2 minimum and include readily accessible manual switch to turn off circulating pump when system is not in use	<i>Sample text: See mechanical specifications, drawing M-XXX</i>
403.5	Mechanical Ventilation	<i>Sample text: Toilet and Kitchen Exhaust duct dampers</i>	<i>Sample text: Specified with Gravity Dampers</i>	Outdoor air intakes and exhaust shall have automatic or gravity dampers that close when system is not in operation	<i>Sample text: See mechanical plans, M-XXX, M-XXX and mechanical specifications drawing M-XXX</i>
403.6	Equipment Sizing	<i>Sample text: Split Heat Pump System, HP-1</i>	<i>Sample text: Sized per Manual J</i>	Heating and cooling equipment sizing shall be per ACCA Manual J or similar section of Residential Code of New York State	See Signed and Sealed statement from Engineer certifying compliance with energy code
403.7	Systems Serving Multiple Dwelling Units	<i>Sample text: See Table XXX on Sheet M-XXX</i>	<i>Sample text: See Table XXX on Sheet M-XXX</i>	Systems serving 3 or more dwelling units shall comply with Section 503 and 504	<i>Sample text: See Table XXX on Sheet M-XXX</i>
403.8	Snow Melt Controls	Snow melt automatic control limits	<i>Sample text: Controls set to shut off to comply with code</i>	Automatic controls shall shutoff snowmelt systems when pavement temperature is above 50 degrees F. and no precipitation is falling and automatic or manual control to shutoff the system when the outdoor temperature is above 40 degrees F	<i>Sample text: See mechanical plans, M-XXX, M-XXX and mechanical specifications drawing M-XXX</i>
403.9.1	Pool Heater On-Off Switch	Pool heater on-off switch	<i>Sample text: On-off switch located to comply with code</i>	Readily Accessible On-off switch shall be capable of operation without adjusting thermostat. Natural gas and LPG heaters shall not have continuous burning pilots	<i>Sample text: See mechanical plans, M-XXX, M-XXX and mechanical specifications drawing M-XXX</i>
403.9.2	Time Switches (pool heaters)*	Pool heater time switches	<i>Sample text: Time switches provided to comply with code</i>	Automatic timers shall turn on and off pool heaters and pumps based on preset schedule	<i>Sample text: See mechanical plans, M-XXX, M-XXX and mechanical specifications drawing M-XXX</i>
403.9.3	Pool Covers*	Pool covers	<i>Sample text: Pool cover equipped with vapor retardant cover and insulated to R-44</i>	Pool shall be equipped with vapor retardant cover, pools heated over 90 degrees F shall have a cover with a minimum R-12 insulation	<i>Sample text: See mechanical plans, M-XXX, M-XXX and mechanical specifications drawing M-XXX</i>
Residential Building Lighting					
404	Lighting				
404.2	Electric meters	Electric meters for separate dwelling units	<i>Sample text: Electric meter provided for each dwelling unit</i>	Provisions shall be made to determine the electrical energy consumed by each unit by separately metering or monitoring individual dwelling units	<i>Sample text: See floor plans, M-XXX, M-XXX and specifications drawing M-XXX</i>
Commercial Building Thermal Envelope					
502.2	Opaque Assemblies				
502.1.2 or 502.2 (1)	Roof Assembly - Insulation Entirely Above Deck	<i>Sample text: new roof membrane and thermal insulation</i>	<i>Sample text: Roof Type 1: 4" XPS (R -XX) continuous insulation above deck</i>	Minimum R-20 continuous insulation	<i>Sample text: Roof Type 1: A-XXX (Roof Plan) A-XXX (Wall Sections) X-Y/A-XXY (Roof Details)</i>
502.1.2 or 502.2 (1)	Roof Assembly - Metal Buildings (with R-5 thermal blocks)	<i>Sample text: new roof membrane and thermal insulation</i>	<i>Sample text: Roof Type 1: 4" XPS (R -XX) continuous insulation</i>	<i>Sample text: Minimum R-20 continuous insulation</i>	<i>Sample text: Roof Type 1: A-XXX (Roof Plan) A-XXX (Wall Sections) X-Y/A-XXY (Roof Details)</i>
502.1.2 or 502.2 (1)	Roof Assembly - Attic and Other	<i>Sample text: new thermal insulation in attic</i>	<i>Sample text: Roof Type 1: R -XX continuous insulation</i>	Minimum R-38 continuous insulation	<i>Sample text: Roof Type 1: A-XXX (Roof Plan) A-XXX (Wall Sections) X-Y/A-XXY (Roof Details)</i>
502.1.2 or 502.2 (1)	Walls, Above-grade: Mass.	<i>Sample text: CMU wall with continuous rigid insulation and brick veneer</i>	<i>Sample text: 2" Extruded Polystyrene (XPS) = R-XX</i>	<i>Sample text: R9.5ci</i>	<i>Sample text: Exterior Wall Type X: A-XXX (1st Floor Plan) 2/A-XXX (Wall Details)</i>
502.1.2 or 502.2 (1)	Walls, Above-grade: Metal Building	<i>Sample text: Metal framing with batt insulation between wall panels and framing</i>	<i>Sample text: Exterior Wall Type 1: R-13 fiberglass batt cavity insulation + 2" EPS (R-8) ci</i>	R-19	<i>Sample text: Exterior Wall Type X: A-XXX (1st Floor Plan) 2/A-XXX (Wall Details)</i>
502.1.2 or 502.2 (1)	Walls, Above-grade: Metal framed	<i>Sample text: Re-insulate existing 6" steel stud walls, add new EIFS exterior.</i>	<i>Sample text: Exterior Wall Type 1: R-13 fiberglass batt cavity insulation + 2" EPS (R-8) ci</i>	R13 + R7.5ci	<i>Sample text: Exterior Wall Type X: A-XXX (1st Floor Plan) 2/A-XXX (Wall Details)</i>

NYCECC Citation	Provision	Item Description	Proposed Design Value	Code Prescriptive Value	Supporting Documentation
502.1.2 or 502.2 (1)	Walls, Above-grade: Wood framed & Other	Sample text: Re-insulate existing 6" wood stud walls, add new veneer exterior.	Sample text: Exterior Wall Type 1: R-13 fiberglass batt cavity insulation + 2" EPS (R-8) ci	Sample text: R13	Sample text: Exterior Wall Type X: A-XXX (1st Floor Plan) 2/A-XXX (Wall Details)
502.1.2 or 502.2 (1)	Below-Grade Walls	Sample text: thermal insulation at new basement wall	Sample text: 2" Extruded Polystyrene (XPS) = R-XX	Sample text: R7.5ci	Sample text: Exterior Wall Type X: A-XXX (Basement Floor Plan) 2/A-XXX (Foundation Details)
502.1.2 or 502.2 (1)	Floors: Mass	Sample text: thermal insulation at new basement floor	Sample text: 2" Extruded Polystyrene (XPS) = R-XX	Sample text: R10.4ci	Sample text: Exterior Wall Type X: A-XXX (Basement Floor Plan) 2/A-XXX (Foundation Details)
502.1.2 or 502.2 (1)	Floors: Joist/Framing	Sample text: thermal insulation at new basement floor	Sample text: Exterior Wall Type 1: R-50 fiberglass batt cavity insulation + 2" EPS (R-8) ci	R-30	Sample text: Exterior Wall Type X: A-XXX (Basement Floor Plan) 2/A-XXX (Foundation Details)
502.1.2 or 502.2 (1)	Slab-on-Grade Floors: Unheated Slabs	Sample text: New slab on grade under proposed addition.	Sample text: Unheated slab not required to be insulated for commercial use.	Sample text: NR	Sample text: N/A
502.1.2 or 502.2 (1)	Slab-on-Grade Floors: Heated Slabs	Sample text: thermal insulation at new basement floor	Sample text: 2" Extruded Polystyrene (XPS) = R-XX	R-15 for 24 in. below	Sample text: Exterior Wall Type X: A-XXX (Basement Floor Plan) 2/A-XXX (Foundation Details)
502.1.2 or 502.2 (1)	Opaque Doors, Swinging	Sample text: Insulated Metal entry door	Sample text: U = 0.50	U = 0.70	Insulated Metal Door: A-301-302 (Building Elevations) A-501 (Schedules)
502.1.2 or 502.2 (1)	Opaque Doors, Roll-up or Sliding	Sample text: Insulated metal roll-up garage door.	Sample text: U = 0.50	U = 0.50	Insulated Metal Roll-up Door: A-301-302 (Elevations) A-501 (Schedules)
502.2.8.1 or 502.2.8.2	Siding Minimum Fastening Requirements over Foam Plastic Sheathing	Sample text: 33 mil steel hat channel furring 16" oc over foam plastic sheathing / steel stud framing	Sample text: #8 screw fasteners to be spaced 16" on furring	Sample text: #8 screw fasteners to be spaced 16" on furring	Sample text: See note in general notes (A-XX1).
502.3	Fenestration				
502.3	Window to wall ratio (WWF)	Sample text: Unmodified WWF	Sample text: 32%	Sample text: 40% Maximum	Sample text: A-XX1-XX2 (Building Elevations) Gross wall area and gross window area.
502.3	Vertical Fenestration, Metal Framing with or without thermal break U Value, SHGC, PF	Sample text: Replace existing windows w/new aluminum framed windows, Floors 2 - 4	Sample text: Window Type A: U = 0.46, SHGC = 0.29 Window Types B + C: U = 0.41, SHGC = 0.31 Window Type D: U = 0.41, SHGC = 0.23	Window : U = 0.40, SHGC = NR	Sample text: Vertical fenestration: A-XX1-XX2 (Building Elevations) A-XXX (Schedules)
502.3	Glazed Doors, Metal Framing with or without thermal break U Value & SHGC	Sample text: Replace existing doors w/new aluminum framed glazed doors, Floor 1	Sample text: Window Type E: Glass Doors U = 0.40, SHGC = 0.32	Sample text: Window Types A-E: Maximum U-Factor = 0.55 Maximum SHGC = 0.40	Sample text: Vertical fenestration: A-XX1-XX2 (Building Elevations) A-5XX (Schedules) A-6XX (Section details)
502.3	Skylight to roof ratio	Sample text: Unmodified SRR	Sample text: 2.2%	3% Maximum	Sample text: Horizontal fenestration: A-1XX (Roof Plan) A-5XX (Schedules) A-6XX (Section details)
502.3	Skylights - U factor & SHGC	Sample text: Replace existing skylights w/ new fiberglass framed skylights.	Sample text: Window Type F: Skylight U = 0.60, SHGC = 0.20	Sample text: Window Types E: Maximum U-Factor = 0.6 Maximum SHGC = 0.40	Sample text: Horizontal fenestration: A-1XX (Roof Plan) A-5XX (Schedules) A-6XX (Section details)
502.4	Air leakage				
502.4.1	Window and door assemblies	Sample text: Replace existing windows w/new aluminum framed windows, Floors 2 - 4	Sample text: Window Type A: Air leakage ≤ 0.10 cfm/SF Window Types B + C: Air leakage ≤ 0.30 cfm/SF Window Type D: Air leakage ≤ 0.30 cfm/SF	Maximum Air Leakage = 0.3 cfm/SF	Sample text: Vertical fenestration: A-XX1-XX2 (Building Elevations) A-5XX (Schedules) A-6XX (Section details)
502.4.2	Curtain wall, storefront glazing and commercial entrance doors.	Sample text: Replace curtainwall and glazed entrance doors, Floor 1.	Sample text: Curtain walls and storefront glazing = 0.3 cfm/sf Commercial glazed swinging entrance doors and revolving doors = 1.0 cfm/sf of door area	Max Air Leakage Rates: Curtain walls and storefront glazing = 0.3 cfm/sf Commercial glazed swinging entrance doors and revolving doors = 1.0 cfm/sf of door area	Sample text: Vertical fenestration: A-XX1-XX2 (Building Elevations) A-5XX (Schedules) A-6XX (Section details)

NYCECC Citation	Provision	Item Description	Proposed Design Value	Code Prescriptive Value	Supporting Documentation
502.4.3	Continuous Air Barrier	<i>Sample text: Expandable spray-applied polyurethane foam sealant, continuous @ window rough openings.</i>	<i>Sample text: Expandable spray-applied polyurethane foam sealant, continuous @ window rough openings.</i>	A continuous air barrier shall be installed: sealing all seams, openings and penetrations of the building and shall be sealed with caulking materials or closed with gasketing systems compatible with the construction materials and location.	<i>Sample text: Vertical fenestration: A-XX1-XX2 (Building Elevations) A-5XX (Schedules) (incl. air sealing notes in comments column of Window Schedule) A-6XX (Section details) .</i>
502.4.4	Outdoor intakes and exhaust openings	<i>Sample text: New vents and air intakes.</i>	<i>Sample text: All new vents and air intakes to be provided with Class I motorized, leakage-rated damper with a max leakage rate of 4 cfm/sf at 1.0 in. wg.</i>	Stair and elevator shaft vents and other outdoor air intakes and exhaust openings integral to the bldg envelope shall be equipped with not less than a Class I motorized, leakage-rated damper with a max leakage rate of 4 cfm/sf at 1.0 in. wg.	<i>Sample text: See note in general notes (A-XX1).</i>
502.4.5	Loading dock weatherseals.	Provide weatherseals at loading dock.	<i>Sample text: weatherseals provided at loding dock door</i>	Cargo doors and loading dock doors shall be equipped with weatherseals to restrict infiltration when vehicles are parked in doorway.	<i>Sample text: See note in general notes (A-XX1).</i>
502.4.6	Vestibules	<i>Sample text: New 10' deep vestibule @ building entrance. Two sets of swinging doors with self-closers.</i>	<i>Sample text: New 10' deep vestibule @ building entrance. Two sets of swinging doors with self-closers.</i>	Vestibule provided at door separating conditioned space from the exterior	<i>Sample text: A-XXX (1st Floor Plan) A-5XX (Schedules) Incl. door closer notes in Comments column of Door Schedule).</i>
502.4.7	Recessed lighting.	<i>Sample text: Recessed luminaires in the thermal envelope to be weather sealed</i>	<i>Sample text: Recessed luminaires in the roof ceiling assembly sealed to 1cfm air movement</i>	<i>Sample text: Recessed luminaires installed in the building thermal envelope shall be sealed to maximum air leakage 2cfm.</i>	<i>Sample text: A-XXX (Reflected ceiling plan) A-5XX (Schedules) Sealant notes in Comments column of Luminaire schedule.</i>
502.5.3	Minimum clear air spaces and vented openings for vented cladding.	<i>Sample text: Stucco with a 3/8" inch clear airspace with 3/8" inch continuous slot vent openings at the top and bottom of each wall.</i>	<i>Sample text: Stucco with a 3/8" inch clear airspace with 3/8" inch continuous slot vent openings at the top and bottom of each wall.</i>	<i>Sample text: Stucco with a 3/8" inch clear airspace with 3/8" inch continuous slot vent openings at the top and bottom of each wall.</i>	<i>Sample text: A-XX2 (Wall Sections)</i>
Commercial Building Mechanical Systems					
503	Building Mechanical Systems				
503.2	Mandatory Provisions				
503.2.1	Calculation of heating and cooling loads	Minimum and maximum temperatures for interior design load calculations	<i>Sample text: Design loads shall be determined in accordance with the procedures described in the ASHRAE/ACCA 183.</i>	<i>Sample text: ASHRAE/ACCA 183 ASHRAE HVAC Systems and Equipment Handbook, chapter 3 Energy Code</i>	Signed and Sealed statement from Engineer certifying compliance with energy code
503.2.2	Equipment and system sizing	Heating and cooling equipment shall not exceed calculated loads	<i>Sample text: Specified equipment sized within load calculation limits</i>	Heating and cooling equipment shall not exceed calculated loads	Signed and Sealed statement from Engineer certifying compliance with energy code
503.2.3	HVAC Equipment Performance Requirements				
503.2.3(1)	Unitary air conditioners, condensing units, electrically operated, minimum efficiency requirements	<i>Sample text: Split System 5 ton air cooled AC unit, AC-1</i>	<i>Sample text: 12.0 EER</i>	<i>Sample text: 11.2 EER</i>	<i>Sample text: Split System AC units schedule, drawing M-XXX</i>
503.2.3(1)	Unitary air conditioners, condensing units, electrically operated, minimum efficiency requirements	<i>Sample text: Through the Wall AC unit, 1 ton, AC-2</i>	<i>Sample text: 12.5 SEER</i>	<i>Sample text: 12.0 SEER</i>	<i>Sample text: Through the wall AC units schedule, drawing M-XXX</i>
503.2.3(2)	Unitary and applied heat pumps, electrically operated, minimum efficiency requirements	<i>Sample text: 3 ton air cooled heat pump, single package, HP-1</i>	<i>Sample text: 13.2 SEER</i>	<i>Sample text: 13.0 SEER</i>	<i>Sample text: AC units schedule, drawing M-XXX</i>
503.2.3(3)	Packaged Terminal Air Conditioners and Packaged Terminal Heat Pumps	<i>Sample text: PTAC (Cooling Mode) Replacement, 12,000 BTU, PTAC-1</i>	<i>Sample text: 9.8 EER</i>	<i>Sample text: 10.9-(12000/1000) EER=8.344 EER</i>	<i>Sample text: PTAC AC units schedule, drawing M-XXX</i>
503.2.3(4)	Warm air furnaces and combination warm air furnaces/air-conditioning units, warm air duct furnaces and unit heaters	<i>Sample text: new warm air furnace, oil fired 250kbtu</i>	<i>Sample text: 81%Etg</i>	<i>Sample text: 81%Etg</i>	<i>Sample text: Furnace units schedule, drawing M-XXX</i>
503.2.3(5)	Boilers, Gas and Oil Fired	<i>Sample text: Oil fired, 250,000 Btu input, B-1</i>	<i>Sample text: 82% AFUE</i>	<i>Sample text: 80% AFUE</i>	<i>Sample text: Boiler schedule, drawing M-XXX</i>
503.2.3(6)	Condensing Units, Electrically operated	<i>Sample text: new air cooled condensing unit</i>	<i>Sample text: 10.1 EER</i>	<i>Sample text: 10.1 EER</i>	<i>Sample text: PTAC AC units schedule, drawing M-XXX</i>
503.2.3(7)	Water Chilling Packages	<i>Sample text: new air cooled chiller, 200 ton</i>	<i>Sample text: 10.1 EER</i>	<i>Sample text: 9.562 EER</i>	<i>Sample text: PTAC AC units schedule, drawing M-XXX</i>
503.2.4	HVAC System Controls				

NYCECC Citation	Provision	Item Description	Proposed Design Value	Code Prescriptive Value	Supporting Documentation
503.2.4.1	Thermostatic Controls	Thermostats/humidistats for mechanical zones	<i>Sample text: One thermostat is provided for each zone</i>	Minimum one thermostat/humidistat required per zone	<i>Sample text: Thermostats shown on mechanical plans, M-XX1, M-XX2, M-XX3.</i>
503.2.4.1.1	Heat Pump Supplementary Electric Resistance Heat	<i>Sample text: 3 ton packaged heat pump with electrical heat, HP-1</i>	<i>Sample text: Electric heat shall be enable only when the heat pump cannot meet load.</i>	Except during defrost, supplementary electric heat to be prevented from coming on when heat pump can meet load	<i>Sample text: See mechanical control sequences, Drawing M-XXX.</i>
503.2.4.2	Set Point Overlap Restriction	<i>Sample text: Heat Pump, Split Unit thermostats</i>	<i>Sample text: Each thermostat will be programmed as required</i>	Zone thermostat operation shall have minimum 5 degree dead band between heating and cooling	<i>Sample text: See mechanical control sequences, Drawing M-XXX.</i>
503.2.4.3	Off-hour Controls, setbacks	<i>Sample text: All Zones</i>	<i>Sample text: Each thermostat will be programmable to meet requirements</i>	All zone thermostat shall be operated via thermostatic setback controls operated via an automatic time clock or a programmable control system	<i>Sample text: See mechanical control sequences, Drawing M-XXX.</i>
503.2.4.3.1	Thermostatic Setback capabilities	<i>Sample text: All Zones</i>	<i>Sample text: Each thermostat will be programmable to meet requirements</i>	Controls shall have ability to setback temperatures down to 55 degrees F, or up to 85 degrees F.	<i>Sample text: See mechanical control sequences, Drawing M-XX1, and mechanical specifications drawing M-XXX</i>
503.2.4.3.2	Automatic Setback and shutdown Capabilities	<i>Sample text: All Zones</i>	<i>Sample text: Each thermostat will be programmable to meet requirements</i>	Controls shall be capable of automatically starting and stopping the systems for seven different daily schedules per week, capable of having settings saved in memory for 10 hours during a loss of power, and a manual system "on" override for up to two hours, or an occupancy sensor	<i>Sample text: See mechanical control sequences, Drawing M-XX1, and mechanical specifications drawing M-XXX</i>
503.2.4.4	Shutoff damper controls*	Outside air intakes and exhaust	Each outdoor supply air and exhaust air ducts are provided with motorized dampers to shut off when not in use	Each outdoor supply air and exhaust air ducts shall be provided with motorized dampers to shut off when not in use	<i>Sample text: See mechanical plans, M-XX1, M-XX2, M-XX3, mechanical control sequences, Drawing M-4XX, and mechanical specifications drawing M-XXX</i>
503.2.4.5	Snow Melt System Controls	<i>Sample text: Snow melt system at carport</i>	<i>Sample text: Esnomelt system programmable to meet requirements</i>	Automatic controls shall shutoff snowmelt systems when pavement temperature is above 50 degrees F, and no precipitation is falling and automatic or manual control to shutoff the system when the outdoor temperature is above 40 degrees F	<i>Sample text: See mechanical plans, M-XX1, M-XX2, M-XX3, mechanical control sequences, Drawing M-4XX, and mechanical specifications drawing M-XXX</i>
503.2.5	Ventilation				
503.2.5	Minimum Mechanical Ventilation	<i>Sample text: Outside air control</i>	<i>Sample text: Motorized dampers shall have ability to operate at minimum positions</i>	Where mechanical ventilation is provided system shall be capable of reducing outside air to the minimum requirements	<i>Sample text: See mechanical control sequences, Drawing M-XXX</i>
503.2.5.1	Demand Controlled Ventilation*	<i>Sample text: DCV system in auditorium</i>	<i>Sample text: DCV system provided as per requirements</i>	Required in spaces greater than 500 square feet and occupant density of 40 people per 1000 square feet or greater.	<i>Sample text: See mechanical control sequences, Drawing M-XX1, and mechanical specifications drawing M-XXX</i>
503.2.6	Energy Recovery Ventilation Systems				
503.2.6	Energy Recovery Ventilation Systems*	<i>Sample text: air handling system serving all spaces</i>	<i>Sample text: Energy recovery system provided as per requirements</i>	Required in systems with design air capacity greater than 5,000 CFM and 70% or greater outside air.	<i>Sample text: See mechanical control sequences, Drawing M-XX1, and mechanical specifications drawing M-XXX</i>
503.2.7	Duct and Plenum Insulation and Sealing				
503.2.7	Minimum duct Insulation	Minimum duct insulation	<i>Sample text: R-XX provided on all ducts</i>	R-5 in unconditioned spaces, R-8 for outdoor spaces, all duct joints and seams shall be sealed	<i>Sample text: See mechanical Specifications, duct insulation, drawing M-XXX</i>
503.2.7.1.1	Low Pressure Duct Systems	Low Pressure Ductwork	<i>Sample text: All low pressure ducts properly sealed as per requirements</i>	All low pressure ducts, operating at 2" of W.G. or less shall be properly sealed with approved methods	<i>Sample text: See Mechanical Specifications, ductwork, drawing M-XXX</i>
503.2.7.1.2	Medium Pressure Duct Systems	Medium Pressure Ductwork	<i>Sample text: all medium pressure ducts sealed as per requirements and insulated to R-XX</i>	ducts operating between 2" and 3" W.G. shall be insulated and sealed per 503.2.7	<i>Sample text: See Mechanical Specifications, ductwork, drawing M-XXX</i>
503.2.7.1.3	High Pressure Ductwork	High Pressure Ductwork	<i>Sample text: all high pressure ducts sealed as per requirements and insulated to R-XX</i>	Ducts operating in excess of 3" W.G. shall be insulated and sealed per 503.2.7 and pressured tested per code requirements	<i>Sample text: See Mechanical Specifications, ductwork, drawing M-XXX</i>
503.2.8	Piping Insulation				
Table 503.2.8	Steam Piping Insulation	<i>Sample text: Steam Heating System Piping Insulation</i>	<i>Sample text: 3" insulation provided</i>	1.5" for pipe less than 1.5" diameter. 3" for piping greater than 1.5" in diameter. Where k for insulation is 0.27 or less.	<i>Sample text: See Mechanical Specifications, pipe insulation, drawing M-XXX</i>
Table 503.2.8	Hot Water Piping Insulation	Insulation for Hot Water Piping	<i>Sample text: 2" insulation provided for piping greater than 1.5" in diameter</i>	1.5" for pipe less than 1.5" diameter. 2" for piping greater than 1.5" in diameter. Where k for insulation is 0.27 or less.	<i>See Mechanical Specifications, Pipe Insulation, drawing M-XXX</i>
Table 503.2.8	Chilled Water, Brine, or Refrigerant Piping Insulation	Insulation for Refrigerant Piping	<i>Sample text: 1.5" insulation provided for for 1" diameter piping</i>	1.5" for pipe less than 1.5" diameter. 1.5" for piping greater than 1.5" in diameter. Where k for insulation is 0.27 or less.	<i>See Mechanical Specifications, Pipe Insulation, drawing M-XXX</i>
503.2.9	HVAC System Completion				

NYCECC Citation	Provision	Item Description	Proposed Design Value	Code Prescriptive Value	Supporting Documentation
503.2.9.1	Air System Balancing	Air Balancing Devices	<i>Sample text: All air outlets provided with volume dampers for balancing</i>	Each supply air outlet, and zone terminal device shall be provided with means of balancing. Discharge dampers prohibited on constant volume and VAV fans with motors greater than 10 HP.	<i>Sample text: See mechanical plans, M-1XX, M-1XX, M-1XX, mechanical control sequences, Drawing M-XXX, and mechanical specifications drawing M-XXX</i>
503.2.9.2	Hydronic System Balancing	Hydronic System balancing valves	<i>Sample text: All heating and cooling coils are specified with a balancing valve and pressure test connection</i>	All heating and cooling coils to be provided with a means of balancing and pressure test	<i>Sample text: See mechanical details, Drawing M-XXX</i>
503.2.9.3	Manuals	Operating and Maintenance Manual Requirements	<i>Sample text: Contractor shall provide manual as specified in mechanical specifications</i>	Operating and Maintenance manual shall be provided by mechanical contractor and specified in the construction documents	<i>Sample text: See Mechanical Specifications, Operating and Maintenance Manual, drawing M-XXX</i>
503.2.10 Air System Design and Control (systems with total nameplate horsepower rating greater than 5 hp)					
503.2.10.1, Table 503.2.10.1(1), Table 503.2.10.1(2)	Allowable Fan Horsepower*	<i>Sample text: Exhaust Fan power limitation</i>	<i>Sample text: Fan power = XXX bhp</i>	Total system fan hp shall not exceed limits in table 503.2.10.1(1)	<i>Sample text: See mechanical details, Drawing M-XXX</i>
503.2.10.2	Motor nameplate horsepower*	<i>Sample text: All exhaust fan motors</i>	<i>Sample text: fan power = XXbhp</i>	Selected fan motor shall not be larger than the first available motor size greater than the brake horsepower (bhp).	<i>Sample text: See mechanical details, Drawing M-XXX</i>
503.2.11 Heating Outside a Building					
503.2.11	Heating Outside a Building	Radiant heat systems outside of buildings	<i>Sample text: XXX type radiant heat system provided as per requirements</i>	All heating systems installed outdoors shall be of the radiant type, with an occupancy switch or timer switch	<i>Sample text: See mechanical plans, M-1XX, M-1XX, M-1XX, mechanical control sequences, Drawing M-XXX, and mechanical specifications drawing M-XXX</i>
503.3 Simple HVAC Systems and Equipment (Prescriptive)(applicable to systems listed in tables 503.2.3(1) thru 503.2.3(5))					
503.3.1	Economizers*	<i>Sample text: Economizer for single zone 60,000 btuh cooling system</i>	<i>Sample text: economizer provided as per requirements</i>	Air Economizer required for all systems 54,000 Btu/h and greater in climate zones 4,5,6, per table 503.3.1(1). Relief air required.	<i>Sample text: See mechanical plans, M-1XX, M-1XX, M-1XX, mechanical control sequences, Drawing M-XXX, and mechanical specifications drawing M-XXX</i>
503.3.2	Hydronic System Controls	<i>Sample text: system controls for 90kW hydronic system</i>	<i>Sample text: controls provided as per requirements</i>	Hydronic systems supply at least 300,000 Btu/h heated and chilled water shall include controls required in section 503.4.3	<i>Sample text: See mechanical plans, M-1XX, M-1XX, M-1XX, mechanical control sequences, Drawing M-XXX, and mechanical specifications drawing M-XXX</i>
503.4 Complex HVAC Systems and Equipment					
503.4.1	Economizers*	<i>Sample text: Economizer for single zone 60,000 btuh cooling system</i>	<i>Sample text: economizer provided as per requirements</i>	Air Economizer required for all systems 54,000 Btu/h and greater in climate zones 4,5,6, per table 503.3.1(1).	<i>Sample text: See mechanical plans, M-1XX, M-1XX, M-1XX, mechanical control sequences, Drawing M-XXX, and mechanical specifications drawing M-XXX</i>
503.4.2	VAV Fan Control	<i>Sample text: VAV fans with XXhp motors</i>	<i>Sample text: electrical variable speed drive provided</i>	Fans 10 hp or greater shall have variable speed drive, operate at max 30% wattage at 50% design flow when static pressure set point is 1/3 of design.	<i>Sample text: See mechanical plans, M-1XX, M-1XX, M-1XX, mechanical control sequences, Drawing M-XXX, and mechanical specifications drawing M-XXX</i>
503.4.2	VAV Fan Control, DDV VAV Boxes	<i>Sample text: Control set points</i>	<i>Sample text: reset based on zone XXX</i>	Systems with DDC controlled VAV boxes shall reset based on zone requiring greatest pressure	<i>Sample text: See mechanical plans, M-1XX, M-1XX, M-1XX, mechanical control sequences, Drawing M-XXX, and mechanical specifications drawing M-XXX</i>
503.4.3	Hydronic System Controls, Multiple Packaged Boilers	Multiple packaged boilers	<i>Sample text: controls provided as per requirements</i>	Heating systems consisting of multiple packaged boilers delivering conditioned water or steam into a common distribution system shall have automatic controls capable of sequencing boilers	<i>Sample text: See mechanical plans, M-1XX, M-1XX, M-1XX, mechanical control sequences, Drawing M-XXX, and mechanical specifications drawing M-XXX</i>
503.4.3	Hydronic System Controls, Burners	<i>Sample text: Boiler, B-1</i>	<i>Sample text: Modulating Burner</i>	For Single boiler system greater than 500,000 Btu/hr input, Boiler shall have multistage of modulating burner	<i>See mechanical schedules on drawing M-XXX</i>
504.4.3.1	Three Pipe Systems	Three Pipe Systems	<i>Sample text: Not used in systems</i>	Hydronic systems using a common return for both hot water and chilled water are prohibited	<i>Sample text: These systems are not used</i>
503.4.3.2	Two-pipe Changeover Systems	Two Pipe Changeover	<i>Sample text: 20 degree F deadband specified</i>	dead band for change-over is a minimum of 15 degrees F based on O.A., minimum operation in one mode for 4 hours before changeover, heating and cooling supply temperature no more than 30 degrees F apart at change-over point.	<i>Sample text: See mechanical plans, M-1XX, M-1XX, M-1XX, mechanical control sequences, Drawing M-XXX, and mechanical specifications drawing M-XXX</i>

NYCECC Citation	Provision	Item Description	Proposed Design Value	Code Prescriptive Value	Supporting Documentation
503.4.3.3.1	Water Loop Heat Pump Systems, Dead Band*	Water loop heat pump	<i>Sample text: 20 degree F deadband specified</i>	Minimum 20 degree F dead band between initiation of heat injection or heat rejection to water loop	<i>Sample text: See mechanical plans, M-1XX, M-1XX, M-1XX, mechanical control sequences, Drawing M-XXX, and mechanical specifications drawing M-XXX</i>
503.4.3.3.2	Water Loop Heat Pump Systems* Heat Rejection	<i>Sample text: Heat rejection of water loop heat pump</i>	<i>Sample text: lower leakage positive closure dampers provided</i>	<i>Sample text: Climate Zone 4, for a closed circuit cooling tower, automatic bypass valve or low leakage positive closure dampers are provided</i>	<i>Sample text: See mechanical plans, M-1XX, and mechanical specifications drawing M-XXX</i>
503.4.3.3.2	Water Loop Heat Pump Systems* Heat Rejection, Bypass Valves	<i>Sample text: Heat rejection of water loop heat pump</i>	<i>Sample text: automatic bypass valve provided</i>	<i>Sample text: Climate Zone 4, for an open circuit tower, an automatic bypass valve is installed to bypass all flow around tower</i>	<i>Sample text: See mechanical plans, M-1XX, and mechanical specifications drawing M-XXX</i>
503.4.3.3.2	Water Loop Heat Pump Systems* Heat Rejection, Pump Shutdown	<i>Sample text: Water loop heat pump shutdown</i>	<i>Sample text: circulation pump shutdown controls provided</i>	<i>Sample text: Climate Zone 4, for an open or closed tower with a heat exchanger to isolate heat pump loop from cooling tower is provided with control to shut down the circulation pump</i>	<i>Sample text: See mechanical plans, M-1XX, and mechanical specifications drawing M-XXX</i>
503.4.3.3.3	Two position Valves on Heat Pumps	<i>Sample text: 20 HP hydronic heat pump</i>	<i>Sample text: two-position valve provided</i>	Systems over 10 hp in pumping capacity shall have a two position valve installed on heat pump units	<i>Sample text: See mechanical plans, M-1XX, and mechanical specifications drawing M-XXX</i>
503.4.3.4	Part load controls on Hydronic Systems with 300,000 Btu/hr or more, hot or chilled water	<i>Sample text: 1,000,000 btuh hydronic system controls</i>	<i>Sample text: control sequences provided as required</i>	Automatically reset supply temperature based on zone or building return temperature. Capable of reset-minimum 25% design supply to return water temperature difference. OR reduce system pump flow by 50% via VSD, or multistage pumps where 50% of the hp can be turned off	<i>Sample text: See mechanical plans, M-1XX, M-1XX, M-1XX, mechanical control sequences, Drawing M-XXX, and mechanical specifications drawing M-XXX</i>
503.4.3.5	Pump Isolation. Chilled and Hot water plans with multiple chillers/boilers	<i>Sample text: dual-chiller chilled water plant</i>	<i>Sample text: flow reduction valves provided as required</i>	Plants shall have the ability to reduce pumping flow through the plant when one or more units are turned off	<i>Sample text: See mechanical plans, M-1XX, M-1XX, M-1XX, mechanical control sequences, Drawing M-XXX, and mechanical specifications drawing M-XXX</i>
503.4.4	Heat Rejection Equipment Fan Speed Control, fans 7.5 hp and greater*	<i>Sample text: 10hp fans at central furnace</i>	<i>Sample text: fan controls provided as required</i>	Fans shall be able to operate at 2/3 speed or less, and have controls to adjust fan speed based on demand	<i>Sample text: See mechanical plans, M-1XX, M-1XX, M-1XX, mechanical control sequences, Drawing M-XXX, and mechanical specifications drawing M-XXX</i>
503.4.5	Requirements for complex mechanical systems serving multiple zones*	<i>Sample text: VAV system serving zones 1 through 4</i>	<i>Sample text: control sequences provided as required</i>	VAV system with multiple zone, primary air to each zone shall be reduced to a minimum requirements before reheating, recooling, or mixing takes place.	<i>Sample text: See mechanical plans, M-1XX, M-1XX, M-1XX, mechanical control sequences, Drawing M-XXX, and mechanical specifications drawing M-XXX</i>
503.4.5.1	Single duct VAV system, terminal devices	<i>Sample text: single duct VAV system in zone XX</i>	<i>Sample text: control sequences provided as required</i>	Terminal devices shall be capable of reducing primary supply air before reheating or recooling takes place	<i>Sample text: See mechanical plans, M-1XX, M-1XX, M-1XX, mechanical control sequences, Drawing M-XXX, and mechanical specifications drawing M-XXX</i>
503.4.5.2	Dual duct and mixing VAV systems, terminal devices	<i>Sample text: dual duct mixing VAV system in zone XX</i>	<i>Sample text: control sequences provided as required</i>	Terminal devices shall be capable of reducing air from one duct to a minimum before mixing takes place	<i>Sample text: See mechanical plans, M-1XX, M-1XX, M-1XX, mechanical control sequences, Drawing M-XXX, and mechanical specifications drawing M-XXX</i>
503.4.5.3	Single fan dual duct and mixing VAV systems, economizers	<i>Sample text: dual duct mixing VAV system in zone XX</i>	<i>Sample text: economizer not provided as per requirements</i>	Individual dual duct or mixing heating and cooling systems with a single fan and capacities greater than 90,000 Btu/h shall not be equipped with air economizers	<i>Sample text: See mechanical plans, M-1XX and mechanical specifications drawing M-XXX</i>
503.4.5.4	VAV System with Multiple Zone, supply-air temperature reset controls*	<i>Sample text: HVAC system serving zones 5-XX</i>	<i>Sample text: control sequences provided as required</i>	Control system shall automatically reset supply-air temperature in response to building load or O.A. temperature	<i>Sample text: See mechanical plans, M-1XX, M-1XX, M-1XX, mechanical control sequences, Drawing M-XXX, and mechanical specifications drawing M-XXX</i>
503.4.6	Heat Recovery for Service Water Heating for systems*	<i>Sample text: XXm btuh water cooled system</i>	<i>Sample text: heat recover provided as required</i>	Provide condenser water heat recovery, required for 24 hr/day operations, with water cooled systems over 6 million btu/h	<i>Sample text: See mechanical plans, M-1XX, M-1XX, M-1XX, mechanical control sequences, Drawing M-XXX, and mechanical specifications drawing M-XXX</i>
503.4.7, table 503.4.7	Hot Gas Bypass Limitation	<i>Sample text: 75kbtuh unitary package</i>	<i>Sample text: exempt as per exception</i>	Hot gas bypass is allowed only on systems with multiple steps of unloading or continuous capacity modulation. Allowed Bypass capacity per table 503.4.7	<i>Sample text: See mechanical plans, M-1XX, M-1XX, M-1XX, mechanical control sequences, Drawing M-XXX, and mechanical specifications drawing M-XXX</i>
Commercial Building Service Water Heating					
502.2	Service Water Heating				

NYCECC Citation	Provision	Item Description	Proposed Design Value	Code Prescriptive Value	Supporting Documentation
504.2	Equipment Performance Efficiency	<i>Sample text: Domestic Water Heater, DWH-1</i>	<i>Sample text: 80% Et, instantaneous Gas, 210,000 Btu/h</i>	Shall meet efficiency requirements of table 504.2	<i>Sample text: See plumbing schedules, drawing P-XXX</i>
504.3	Temperature Controls	Temperature Controls	<i>Sample text: Holby Valve, mixed water temperature set for 90 degrees F.</i>	Controls shall allow 110 degree F set point for dwellings, and 90 degrees F for other occupancies. Lavatories in public restrooms shall be limited to 110 degrees F	<i>Sample text: See plumbing schedules, drawing P-XXX</i>
504.4	Heat Traps	Heat traps	<i>Sample text: Brand XXX water heating equipment supplied with integral heat traps</i>	Water heating equipment shall be provided with heat traps on the supply and discharge piping if not integrated with equipment	<i>Sample text: See plumbing schedules, drawing P-XXX</i>
504.5	Pipe Insulation	Pipe Insulation	<i>Sample text: 1" insulation shall be used on all hot water service piping</i>	Automatic circulating hot water systems-1" insulation. First 8' pipe in non-circulating systems without integral heat traps-0.5" insulation. Conductivity for insulation shall not exceed 0.27 Btu/inch/hxt*2xF	<i>Sample text: See plumbing specification drawings, P-XXX</i>
504.6	Hot water system controls	Circulating Pumps & Heat Trace	Controls shall shut of heat trace and pumps when heating system is not in operation	Automatic circulating hot water system pumps and heat trace to be turned off manually or automatically when hot water system is not in operation	<i>Sample text: See plumbing specification drawings, P-XXX</i>
504.7.1	Pool Heaters, On-off Control	<i>Sample text: Brand XXX pool heater</i>	<i>Sample text: on-off switch provided as required</i>	On-off switch shall be capable of operation without adjusting thermostat. Natural gas and LPG heaters shall not have continuous burning pilots	<i>Sample text: See plumbing specification drawings, P-XXX</i>
504.7.3	Pool Heater, Time Switches*	<i>Sample text: Brand XXX pool heater</i>	<i>Sample text: automatic timers provided as required</i>	Automatic timers shall turn on and off pool heaters and pumps based on preset schedule	<i>Sample text: See plumbing specification drawings, P-XXX</i>
504.7.4	Pool Covers, Heated Pools	Pool covers	<i>Sample text: R-XX cover provided at pool ZZ</i>	Pool shall be equipped with vapor retardant cover, pools heated over 90 degrees F shall have a cover with a minimum R-12 insulation	<i>Sample text: See plumbing specification drawings, P-XXX</i>
Commercial Building Electrical and Power Lighting Systems					
502.2	Lighting Controls (Mandatory)				
505.2.1 - as well as 505.2.2, 505.2.3 and 505.2.4.	Interior lighting controls	<i>Sample text: Interior lighting controls include manual, automatic, and occupant sensor controls.</i>	<i>Sample text: Interior lighting controls have been provided.</i>	Lighting systems shall be provided with controls as required in Sections 505.2.1, 505.2.2, 505.2.3 and 505.2.4.	<i>Sample text: see drawing E-XXX (Lighting fixture schedules)</i>
505.2.2, see sections 505.2.2.1 and 505.2.2.2.	Additional controls	Sample text: manual controls at room XX-X	<i>Sample text: Interior lighting controls have been provided.</i>	Each area that is required to have a manual control shall have additional controls that meet the requirements of Sections 505.2.2.1 and 505.2.2.2.	<i>Sample text: see drawing E-XXX (Lighting fixture schedules)</i>
505.2.2.1	Lighting reduction controls	<i>Sample text: Automatic and occupant sensor controls are provided at room XX-X.</i>	<i>Sample text: Proposed lighting controls designed to reduce connected lighting load by 50%.</i>	Each area that is required to have a manual control shall also allow the occupant to reduce the connected lighting load in a reasonably uniform illumination pattern by at least 50%. *See code for approved methods of reduction	<i>Sample text: see drawing E-XXX (Lighting fixture schedules)</i>
505.2.2.2	Automatic lighting shutoff	<i>Sample text: Automatic lighting shutoff</i>	<i>Sample text: occupant sensors provided as required</i>	Buildings larger than 5,000 SF shall be equipped with an auto control device to shutoff lighting in those areas. *See code for specific methods and exceptions.	<i>Sample text: see drawing E-XXX (Lighting fixture schedules)</i>
505.2.2.2.1	Occupant override	<i>Sample text: occupant override of automatic lighting shutoff</i>	<i>Sample text: occupant override provided as required</i>	Where an automatic time switch control device is installed to comply with Section 505.2.2.2, Item 1, it shall incorporate an override switching device that meets the code requirements.	<i>Sample text: see drawing E-XXX (Lighting fixture schedules)</i>
505.2.2.2.2	Holiday Scheduling	<i>Sample text: holiday override of automatic lighting shutoff</i>	<i>Sample text: holiday override provided as required</i>	If an automatic time switch control device is installed in accordance with Section 505.2.2.2, Item 1, it shall incorporate an automatic holiday scheduling feature that turns off all loads for at least 24 hours, then resumes the normally scheduled operation.	<i>Sample text: see drawing E-XXX (Lighting fixture schedules)</i>

NYCECC Citation	Provision	Item Description	Proposed Design Value	Code Prescriptive Value	Supporting Documentation
505.2.2.3	Daylight zone control.	<i>Sample text: daylight zone control at rooms XX-X through XX-X</i>	<i>Sample text: daylight zone control provided as required</i>	Daylight zones, as defined by this code, shall be provided with individual controls that control the lights independent of general area lighting. Contiguous daylight zones adjacent to vertical fenestration are allowed to be controlled by a single controlling device provided that they do not include zones facing more than two adjacent cardinal orientations (i.e., north, east, south, west). Daylight zones under skylights more than 15 feet (4572 mm) from the perimeter shall be controlled separately from daylight zones adjacent to vertical fenestration.	<i>Sample text: see drawing E-XXX (Lighting fixture schedules) and A-XXX (reflected ceiling plan)</i>
505.2.3	Sleeping unit controls.	N/A	N/A	Sleeping units in hotels, motels, boarding houses or similar bldgs shall have at least one master switch at the main entry door that controls all permanently wired luminaires and switched receptacles, except those in the bathroom(s).	N/A
505.2.4	Exterior lighting controls.	<i>Sample text: Daylight sensor controls provided for canopy and entry lighting. Manual overrides to be provided.</i>	<i>Sample text: photosensors provided and programmed as per requirements</i>	Lighting not designated for dusk-to-dawn operation shall be controlled by either a combination of a photosensor and a time switch, or an astronomical time switch. Lighting designated for dusk-to-dawn operation shall be controlled by an astronomical time switch or photosensor. All time switches shall be capable of retaining programming and the time setting during loss of power for a period of at least 10 hrs.	<i>Sample text: see drawing E-XXX (Lighting fixture schedules) and A-XXX (landscape plan)</i>
505.3	Tandem wiring. (Mandatory).	<i>Sample text: Automotive and retail fluorescent lighting will be tandem wired where applicable.</i>	<i>Luminaires XX-X through XX-X on floors X to X tandem wired as per requirements</i>	The following luminaires located within the same area shall be tandem wired: 1. Fluorescent luminaires equipped with one, three or odd-numbered lamp configurations, that are recessed within 10 ft center-to-center of each other. 2. Fluorescent luminaires equipped with one, three or any other odd-numbered lamp configuration, that are pendant- or surface-mounted within 1 ft edge-to-edge of each other.	<i>Sample text: A-XXX drawings (Reflected Ceiling Plans for all floors) E-XXX drawings (Reflected Ceiling Plans for all floors) E-XXX - XXX (Fixture schedule, control narrative, and details)</i>
505.4	Exit Signs	<i>Sample text: Two new LED exit signs to be provided.</i>	<i>Sample text: 5W per side</i>	Internally illuminated exit signs shall not exceed 5 watts per side.	<i>Sample text: see drawing E-XXX (Lighting fixture schedules)</i>
505.5	Interior lighting power requirements (Prescriptive)				
505.5.1	Total connected interior lighting power	<i>Sample text: Total connected load of proposed interior lighting. Describe building area type, area and associated watts per square foot (w/sq.ft).</i>	<i>Sample text: 0.77 w/ sq.ft.</i>	The total connected interior lighting power (watts) shall be the sum of the watts of all interior lighting equipment as determined in accordance with Sections 505.5.1.1 through 505.5.1.4. * See code for specific space type requirements and exceptions: 1.0 w/sq.ft for office.	<i>Sample text: A-XXX drawings (Reflected Ceiling Plans for all floors) E-XXX drawings (Reflected Ceiling Plans for all floors) E-XXX - XXX (Fixture schedule, control narrative, and details)</i>
505.5.2 and 505.5.2	Interior lighting power	<i>Sample text: Interior lighting power for all building use types.</i>	<i>Sample text: XXXX w</i>	The total interior lighting power (watts) is the sum of all interior lighting powers for all areas in the building covered in this permit. The interior lighting power is the floor area for each building area type listed in Table 505.5.2 times the value from Table 505.5.2 for that area.	<i>Sample text: E-XXX - XXX (Fixture schedule, control narrative, and details)</i>
505.5.3	Lighting within dwelling units	<i>Sample text: lighting in dwelling units XX through XX</i>	<i>Sample text: 100% of permanently installed fixtures provided with Brand XX high efficacy lamp</i>	Lighting within dwelling units may have a minimum of 50 percent of the permanently installed interior light fixtures fitted with high-efficacy lamps as an alternative to Section 505.5.2.	<i>Sample text: A-XXX drawings (Reflected Ceiling Plans for all floors) E-XXX drawings (Reflected Ceiling Plans for all floors) E-XXX - XXX (Fixture schedule, control narrative, and details)</i>

NYCECC Citation	Provision	Item Description	Proposed Design Value	Code Prescriptive Value	Supporting Documentation
505.6, 505.6.2(1) and 505.6.2(2)	Exterior lighting (Mandatory).	<i>Sample text: Total connected load of proposed exterior lighting for lighting zone 3</i>	<i>Sample text: 27.66 kW</i>	<i>Sample text: total allowance calculated to XXX kW</i>	<i>Sample text: A-XXX drawings (Reflected Ceiling Plans for all floors) E-XXX drawings (Reflected Ceiling Plans for all floors) E-XXX - XXX (Fixture schedule, control narrative, and details)</i>
505.6, 505.6.2(1) and 505.6.2(2)	Exterior building lighting power.	<i>Sample text: Exterior lighting is provided for automotive facility at 0.9 W/ft2. Additional lighting provided for advertising signage excluded from calculation.</i>	<i>Sample text: 27.66 kW</i>	<i>Sample text: total allowance calculated to XXX kW</i>	<i>Sample text: Value provided in tabular analysis corroborated on lighting fixture tabulation.</i>
505.7	Electrical energy consumption (Mandatory).	Separate electrical meters have been provided for each unit.	<i>Sample text: meter at unit XXX through XXX</i>	<i>Sample text: separate electrical meters required for separate dwelling units</i>	<i>Sample text: See note in general notes (A-XXX).</i>