4. ADMINISTRATION AND ENFORCEMENT

4.1 General

4.1.1 Scope

4.1.1.1 New Buildings. New *buildings* shall comply with the standard as described in Section 4.2.

4.1.1.2 Additions to Existing Buildings. *Additions* to *existing buildings* shall comply with the standard as described in Section 4.2.

4.1.1.3 Alterations of Existing Buildings. *Alterations* of *existing buildings* shall comply with the standard as described in Section 4.2.

4.1.1.4 Replacement of Portions of Existing Buildings. Portions of a *building envelope*, heating, ventilating, air-conditioning, *service water heating*, power, lighting, and other *systems* and *equipment* that are being replaced shall be considered as *alterations* of *existing buildings* and shall comply with the standard as described in Section 4.2.

4.1.1.5 Changes in Space Conditioning. Whenever *unconditioned space* or *semiheated space* in a *building* is converted to a *conditioned space*, such *conditioned space* shall be brought into compliance with all the applicable requirements of this standard that would apply to the *building envelope*, heating, ventilating, air-conditioning, *service water heating*, power, lighting, and other *systems* and *equipment* of the *space* as if the *building* was new.

4.1.1.6 Sites and New Site Systems and Equipment. *Sites*, with or without a contiguous *building* or *buildings*, and s*ite systems* and *equipment* using or producing *energy*, such as *site* lighting, motors for *pumps* (for example, fountain *pumps* and water movement *equipment*), and transportation *equipment* (for example, elevators and escalators) shall comply with the standard as described in Section 4.2 for *systems* and *equipment* specifically identified in the standard.

4.1.2 Administrative Requirements. Administrative requirements relating to permit requirements, enforcement by the *authority having jurisdiction*, locally adopted *energy* standards, interpretations, claims of exemption, and rights of appeal are specified by the *authority having jurisdiction*.

4.1.3 Alternative Materials, Methods of Construction, or Design. The provisions of this standard are not intended to prevent the use of any material, method of *construction*, design, *equipment*, or *building system* not specifically prescribed herein.

4.1.4 Validity. If any term, part, provision, section, paragraph, subdivision, table, chart, or referenced standard of this standard shall be held unconstitutional, invalid, or ineffective, in whole or in part, such determination shall not be deemed to invalidate any remaining term, part, provision, section, paragraph, subdivision, table, chart, or referenced standard of this standard.

4.1.5 Other Laws. The provisions of this standard shall not be deemed to nullify any provisions of local, state, or federal law. Where there is a conflict between a requirement of this standard and such other law affecting *construction* of the *building*, precedence shall be determined by the *authority having jurisdiction*.

4.1.6 Referenced Standards. The standards referenced in this standard and listed in Section 13 shall be considered part of the requirements of this standard to the prescribed extent of such reference. Where differences occur between the provision of this standard and referenced standards, the provisions of this standard shall apply. Informative references are cited to acknowledge sources and are not part of this standard. They are identified in Informative Appendix E.

4.1.7 Normative Appendices. The normative appendices to this standard are considered to be integral parts of the mandatory requirements of this standard, which, for reasons of convenience, are placed apart from all other normative elements.

4.1.8 Informative Appendices. The informative appendices to this standard, and informative notes located within this standard, contain additional information and are not mandatory or part of this standard.

4.1.9 Reference Standard Reproduction Annex. The reference standard reproduction annex contains material that is cited in this standard but contained in another standard. The reference standard reproduction annex is not part of this standard but is included in the publication of this standard to facilitate use of this standard.

4.2 Compliance

4.2.1 Compliance Paths

4.2.1.1 New Buildings. New *buildings* shall comply with Section 4.2.2 through 4.2.5, 4.3.1 (C405.4) through 4.3.4 (C405.18) and either the provisions of

a. Sections 5, “Building Envelope”; 6, “Heating, Ventilating, and Air Conditioning”; 7, “Service Water Heating”; 8, “Power”; 9, “Lighting”; 10, “Other Equipment”; and 11, “Additional Efficiency Requirements,” or

b. Normative Appendix G, “Performance Rating Method.”

When using Normative Appendix G, the Performance Index (Site Energy) of new *buildings*, *additions* to *existing buildings*, and/or *alterations* to *existing buildings* shall be less than or equal to the Performance Index Target (PI_t) when calculated in accordance with the following:

$$PI_t = [BBUE + (BPF_{site} \times BBRE) - PRE]/BBP$$

where

PI = Performance Index (Site Energy) calculated in accordance with Section G1.2

BBUE = baseline *building* unregulated site energy, the portion of the annual site energy of a *baseline building design* that is due to *unregulated energy use*

BPF = *building* performance factor from Table 4.2.1.1. For *building* area types not listed in Table 4.2.1.1, use “All others.” Where a *building* has multiple *building* area types, the required BPF shall be equal to the area-weighted average of the *building* area types based on their *gross floor area*. Where a project includes an *existing building* and an *addition*, the required BPF shall be equal to the area-weighted average, based on the *gross floor area*, of the *existing building* BPF determined as described in Section 4.2.1.3 and the *addition* BPF from Table 4.2.1.1.

BBRE = baseline *building* regulated site energy, the portion of the annual site energy of a *baseline building design* that is due to *regulated energy use*

PRE = $PBP_{nre} - PBP_{pre}$

PBP = *proposed building performance*, including the reduced, annual site energy associated with all *on-site renewable energy* generation *systems*

PBP_{nre} = *proposed building performance* without any credit for reduced annual *energy* from *on-site renewable energy* generation *systems*

PBP_{pre} = *proposed building performance*, excluding any renewable *energy system* in the *proposed design* and including an *on-site renewable energy system* that meets but does not exceed the requirements of Section 10.5.1.1 modeled following the requirements for a *budget building design* in Table 12.5.1

BBP = *baseline building performance*

When $(PBP_{pre} - PBP)/BBP > 0.05$, new *buildings*, *additions* to *existing buildings*, and/or *alterations* to *existing buildings* shall comply with the following:

$$PSEI + [(PBP_{nre} - PBP)/BBP] - 0.05 < PSEI_t$$

When $(PBP_{pre} - PBP)/BBP > 0.05$, new *buildings*, *additions* to *existing buildings*, and/or *alterations* to *existing buildings* shall comply with the following:

$$PCI + [(PBP_{pre} - PBP)/BBP] - 0.05 < PCI_t$$

Informative Notes:

1. PBP_{nre} = *proposed building performance*, no renewable *energy*.
2. PBP_{pre} = *proposed building performance*, prescriptive renewable *energy*.
3. PRE = prescriptive renewable *energy*.

Table 4.2.1.1 Building Performance Factor (BPF)

Building Area Type	Climate Zone	
	4A	5A
Multifamily	0.61	0.56
Healthcare/hospital	0.62	0.65
Hotel/motel	0.65	0.63
Office	0.47	0.49
Restaurant	0.66	0.69

Table 4.2.1.1 Building Performance Factor (BPF) *(Continued)*

Building Area Type	Climate Zone	
	4A	5A
Retail	0.47	0.52
School	0.42	0.44
Warehouse	0.38	0.46
All others	0.55	0.57

4.2.1.2 Additions to Existing Buildings. *Additions* to *existing buildings* shall comply with the provisions of Section 4.2.2 through 4.2.5, 4.3.5 (C502.3.7) through 4.3.11 (C505.1.3) and one of the following:

a. Sections 5, "Building Envelope"; 6, "Heating, Ventilating, and Air Conditioning"; 7, "Service Water Heating"; 8, "Power"; 9, "Lighting"; 10, "Other Equipment"; and 11, "Additional Efficiency Requirements," or
b. Section 12, "Energy Cost Budget Method," or
c. Normative Appendix G, "Performance Rating Method," in accordance with Section 4.2.1.1.

4.2.1.2.1 When an *addition* to an *existing building* cannot comply by itself, trade-offs will be allowed by modification to one or more of the existing components of the *existing building*. Modeling of the modified components of the *existing building* and *addition* shall employ the procedures of Section 12 or Normative Appendix G; the *addition* shall not increase the *energy* consumption of the *existing building* plus the *addition* beyond the *energy* that would be consumed by the *existing building* plus the *addition* if the *addition* alone did comply.

4.2.1.3 Alterations of Existing Building Assemblies, Systems, and Equipment. *Alterations* of *existing building* assemblies, *systems*, and *equipment* shall comply with the provisions of Section 4.2.2 through 4.2.5, 4.3.5 (C502.3.7) through 4.3.11 (C505.1.3) and one of the following:

a. Sections 5, "Building Envelope"; 6, "Heating, Ventilating, and Air Conditioning"; 7, "Service Water Heating"; 8, "Power"; 9, "Lighting"; 10, "Other Equipment"; and 11, "Additional Efficiency Requirements," or
b. Section 12, "Energy Cost Budget Method," or
c. Normative Appendix G, "Performance Rating Method," in accordance with Section 4.2.1.1 with the following modifications:
   1. *Alterations* that meet the criteria in Section G3.1.4(a) shall use the BPF from Table 4.2.1.1 multiplied by 1.05.
   2. All other *alterations* modeled following Section G3.3 shall use BPF = 1.

Exceptions to 4.2.1.3: A *building* that has been specifically designated as historically significant by the *adopting authority* or is listed in The National Register of Historic Places or has been determined to be eligible for listing by the U.S. Secretary of the Interior need not comply with these requirements.

4.2.1.4 New Sites and New Site Systems and Equipment. New *sites* and new *site systems* and *equipment* shall comply with either the provisions of

a. Sections 6, "Heating, Ventilating, and Air Conditioning"; 7, "Service Water Heating"; 8, "Power"; 9, "Lighting"; and 10, "Other Equipment," or
b. Section 12, "Energy Cost Budget Method."

4.2.1.5 Additions and Alterations to Existing Sites and Site Systems and Equipment. *Additions* and *alterations* to *existing sites and existing site systems and equipment* shall comply with the provisions of Sections 5, 6, 7, 8, 9, and 10, or Section 11. This section shall not apply to *buildings* on the *site* where the *alterations* or *additions* are to be performed except as required by Sections 4.2.1.2 and 4.2.1.3.

4.2.2 Compliance Documentation

4.2.2.1 Construction Details. Compliance documents shall show all the pertinent data and features of the *building*, *equipment*, and *systems* in sufficient detail to permit a determination of compliance by the *building official* and to indicate compliance with the requirements of this standard.

4.2.2.2 Supplemental Information. Supplemental information necessary to verify compliance with this standard, such as calculations, worksheets, compliance forms, vendor literature, or other data, shall be made available when required by the *building official*.

4.2.2.3 Manuals. Operating and maintenance information shall be provided to the *building* owner. This information shall include but not be limited to the information specified in Sections 5.7.3.2, 6.7.3.2, 7.7.3.2, 8.7.3.2, 9.7.3.2, and 10.7.3.2.

4.2.3 Labeling of Material and Equipment. Materials and *equipment* shall be *labeled* in a manner that will allow for a determination of their compliance with the applicable provisions of this standard.

4.2.4 Inspections. All *building construction*, *additions*, or *alterations* work subject to the provisions of this standard shall remain accessible and exposed for inspection purposes until approved in accordance with the procedures specified by the *building official*. The *building official*, upon notification, shall make the inspections set forth in Section 4.2.4.1 through 4.2.4.6.

4.2.4.1 Fenestration Inspections. *Fenestration* shall be inspected in accordance with the compliance path selected in Section 4.2.1 and approved documentation provided in Section 4.2.2.

4.2.4.2 Opaque Assembly Thermal Insulation Inspections. *Opaque* assemblies shall be inspected in accordance with the compliance path selected in Section 4.2.1 and approved documentation provided in Section 4.2.2.

4.2.4.3 Continuous-Air-Barrier Inspections. Where a *continuous air barrier* is installed as a component of an *opaque roof*, *above-grade walls* and *below-grade walls*, or *floors*, it shall be inspected for compliance in accordance with Section 5.8.3.1. Integration with adjoining *fenestration* and other *continuous air barrier* elements shall be in accordance with Section 5.4.3.1.

4.2.4.4 Operable Fenestration and Door Inspections. *Fenestration* and *door* closers, inclusive of operating mechanisms, shall be installed in accordance with the *manufacturer*'s installation instructions. Associated seals and gaskets shall be installed in accordance with the *manufacturer*'s installation instructions and consistent with the provisions of Section 5.4.3.

4.2.4.5 Loading-Dock Weatherseals Inspections. Loading-dock weatherseals shall be inspected for installation and to verify that the seals are in good condition.

4.2.4.6 Other Inspections. Other inspections related to mechanical, plumbing, lighting, and other *equipment* shall be inspected in accordance with the compliance path selected in Section 4.2.1 and approved documentation provided in Section 4.2.2, or as otherwise required by the *building official*.

4.2.5 Verification, Testing, and Commissioning. Building *systems*, controls, and the *building envelope* shall comply with Sections 4.2.5.1, 4.2.5.2, and 4.2.5.3.

Informative Notes:

1. There are additional requirements within specific sections of this standard regarding documentation, procedures, independence of providers, and reporting. Requirements in individual sections are in addition to the general requirements provided in Section 4.2.5.
2. See Informative Appendix H for additional *commissioning* guidance.

4.2.5.1 Building Systems Verification and Testing Requirements. Verification or *functional performance testing* (*FPT*) to confirm compliance with required provisions of this standard shall be performed on *building systems*, controls, and the *building envelope*, as required by Sections 5.9.1, 6.9.1, 7.9.1, 8.9.1, 9.9.1, 10.9.1, 12.2(e), and G1.2.1(e). Where testing is required but specific *FPT* procedures are not specified in this standard, testing shall use *generally accepted engineering standards* acceptable to the *building official*.

For *alterations* and *additions*, verification and testing (V&T) shall be performed for new *systems*, and their interface and integration with existing *building systems* shall be verified or tested.

V&T providers shall be the owner's qualified employees, *commissioning providers*, *design professionals*, qualified designers, or qualified technicians experienced with verification or *FPT* of the designated *systems*. *V&T providers* shall not be individuals who performed design or installation of the *systems* or assemblies being verified or tested.

4.2.5.1.1 Information on Building Permit Application. The following information shall be included on the *construction documents* as part of the *building* permit application:

a. For *systems* that are required to comply with Section 4.2.5.1, the *construction documents* shall identify *V&T providers.*
b. *V&T providers* shall review the *construction documents* to verify that the relevant sensor locations, devices, and control sequences are properly specified; performance and testing criteria are included; and *equipment* to be tested is accessible for testing and maintenance.

c. *FPT* and verification processes and *system* performance requirements shall be incorporated into the *construction documents*.

4.2.5.1.2 FPT and Verification Documentation. The completed verification and *FPT* documentation shall include the results of the *FPT* and verification, be provided to the owner, and be retained with the project records. The *V&T providers* shall certify completion of required verification and *FPT* and include a plan for the completion of any deferred *FPT*, including climatic and other conditions required for performance of the deferred tests. A copy of verification and *FPT* documentation shall be submitted to the *building official* if requested.

4.2.5.2 Building Commissioning Requirements. *Commissioning* shall be performed in accordance with this section and Sections 5.9.2, 6.9.2, 7.9.2, 8.9.2, 9.9.2, 10.9.2, 12.2(e), and G1.2.1(f). *Commissioning* shall use ASHRAE/IES Standard 202 or other *generally accepted engineering standards* acceptable to the *building official*. *FPT* and verification requirements for *commissioning* are as stated in Section 4.2.5.1. *Commissioning* shall also document in sufficient detail compliance of the *building systems*, controls, and *building envelope* with required provisions of this standard. *Commissioning* requirements shall be incorporated into the *construction documents*.

The *commissioning provider* shall have the necessary training, experience, and *FPT equipment*. The *commissioning* team shall include *V&T providers*. The *commissioning provider* shall be (a) a third-party entity not associated with the *building* project, (b) owner's qualified employees, or (c) an individual associated with the design firm or contractor but not directly associated with design or installation of the *building systems*, controls, or *building envelope* being commissioned.

Exceptions to 4.2.5.2:

1. *Buildings*, *additions*, or *alterations* with less than 10,000 ft^2 of *conditioned space* and combined heating, cooling, and *service water heating equipment* totaling less than 960,000 Btu/h in capacity.
2. *Buildings* or portions of *buildings* that use the simplified approach building compliance path for HVAC systems in Section 6.3.
3. *Dwelling units*.
4. Nonrefrigerated warehouses.

4.2.5.2.1 Commissioning Activities Prior to Building Permit Issuance. The following activities shall be completed prior to issuance of a *building* permit:

a. A copy of the *commissioning* plan shall be submitted to the owner. A copy of the *commissioning* plan shall be submitted with the *building* permit application if requested by the *building official*.
b. A *commissioning provider* shall be designated by the owner to manage *commissioning* activities prior to completion of *construction documents*. The *construction documents* shall identify the *commissioning provider*.
c. The *commissioning provider* shall submit the design review report to the owner.
d. *Construction* phase *commissioning* requirements shall be incorporated into *construction documents*.

4.2.5.2.2 Project Commissioning Documents. Project *commissioning* documents shall comply with ASHRAE/IES Standard 202 or other *generally accepted engineering standards* acceptable to the *building official.* The *commissioning provider* shall certify completion of the required *commissioning process* and provide the following documents to the owner and design teams:

a. **Commissioning Plan.** Identify *FPT* or verification procedures for all *systems* to be verified, commissioned, or tested.
b. **Design Review Report.** Detail compliance of the design with the Owner's Project Requirements and provisions of this standard. This *commissioning* design review shall not be considered a design peer review or a code or regulatory review.
c. **Preliminary Commissioning Report.** The preliminary *commissioning* report shall include the following:
    1. Required performance of commissioned *equipment*, *systems*, and assemblies, and results of *FPT* and verification
    2. Summary of compliance of the *building* and its components, assemblies, controls, and *systems* with required provisions of this standard
    3. Issues and resolution logs, including itemization of deficiencies found during verification, testing, and *commissioning* that have not been corrected at the time of report preparation
    4. Deferred tests that cannot be performed at the time of report preparation
    5. Documentation of the training of operating personnel and *building* occupants on commissioned *systems*, and a plan for the completion of any deferred trainings not completed at the time of report preparation

6. A plan for the completion of *commissioning* and training, including climatic and other conditions required for performance of the deferred tests

d. **Final Commissioning Report.** The *construction documents* shall require the *commissioning provider* to provide a final *commissioning* report to the owner before completion of the contractor's general warranty period.

4.2.5.3 Activities Prior to Building Occupancy. Before issuance of a certificate of occupancy, the *V&T providers* or *commissioning provider* shall complete the following activities:

a. Verification and *FPT* of the *systems* specified in Section 4.2.5.1 shall be completed and documented.
   Exception to 4.2.5.3(a): *Systems* for which operation is seasonally dependent, and which cannot be fully verified or tested at the time of occupancy, shall be functionally tested or commissioned when allowed for by post-occupancy operating conditions as determined by the *commissioning* or *V&T providers.*
b. The owner shall be provided with the verification and *FPT* documentation as provided for in Section 4.2.5.1.2, or a preliminary *commissioning* report as provided for in Section 4.2.5.2.2.
c. The owner shall provide the *building official* with one of the following:
   1. A letter of transmittal acknowledging that the *building* owner or owner's authorized agent has received and accepted all required verification documentation, *FPT* documentation, and required preliminary *commissioning* report
   2. A copy of the reports listed in Section 4.2.5.3(b), if requested by the *building official*

4.3 Illinois Specific Requirements. The following sections are required for all compliance paths where noted in Section 4.2.

4.3.1 (C405.4) Horticultural lighting. Permanently installed luminaires shall have a *photosynthetic photon efficacy* of not less than 1.7 micromoles per joule (μmol/J) for *horticultural lighting* in greenhouses and not less than 2.2 μmol/J for all other *horticultural lighting*. Luminaires for *horticultural lighting* in greenhouses shall be controlled by a device that automatically turns off the luminaire when sufficient daylight is available. Luminaires for *horticultural lighting* shall be controlled by a device that automatically turns off the luminaire at specific programmed times.

Exception: Cannabis facilities subject to 410 ILCS 705/10-45, the Cannabis Regulation and Tax Act.

4.3.2 (C405.14) Electric vehicle power transfer infrastructure. Parking facilities shall be provided with electric vehicle power transfer infrastructure in accordance with Sections 4.3.2.1 (C405.14.1) through 4.3.2.6 (C405.14.6).

4.3.2.1 (C405.14.1) Quantity. The number of required electric vehicle (EV) spaces, *EV capable spaces* and *EV ready spaces* shall be determined in accordance with this section and Table 4.3.2.1 (C405.14.1) based on the total number of *automobile parking spaces* and shall be rounded up to the nearest whole number. For Group R-2 buildings, the table requirements shall be based on the total number of *dwelling units* or the total number of *automobile parking spaces*, whichever is less.

1. Where more than one parking facility is provided on a *building site*, the number of required *automobile parking spaces* required to have EV power transfer infrastructure shall be calculated separately for each parking facility.
2. Where one shared parking facility serves multiple building occupancies, the required number of spaces shall be determined proportionally based on the floor area of each building occupancy.
3. Installed *electric vehicle supply equipment (EVSE)* spaces that exceed the minimum requirements of this section may be used to meet the minimum requirements for *EV ready spaces* and *EV capable spaces.*
4. Installed *EV ready spaces* that exceed the minimum requirements of this section may be used to meet the minimum requirements for *EV capable spaces*.
5. Where the number of *EV ready spaces* allocated for Group R-2 occupancies is equal to the number of *dwelling units* or to the number of *automobile parking spaces* allocated to Group R-2 occupancies, whichever is less, requirements for *EVSE spaces* for Group R-2 occupancies shall not apply.
6. Requirements for a Group S-2 parking garage shall be determined by the occupancies served by that parking garage. Where new automobile spaces do not serve specific occupancies, the values for Group S-2 parking garages in Table 4.3.2.1 (C405.14.1) shall be used.

Exception: Parking facilities serving occupancies other than Group R-2 with fewer than 10 *automobile parking spaces*.

TABLE 4.3.2.1 (C405.14.1)
REQUIRED EV POWER TRANSFER INFRASTRUCTURE

OCCUPANCY	EVSE SPACES	EV READY SPACES	EV CAPABLE SPACES
Group A	10%	0%	10%
Group B	15%	0%	30%
Group E	15%	0%	30%
Group F	2%	0%	5%
Group H	1%	0%	0%
Group I	15%	0%	30%
Group M	15%	0%	30%
Group R-1	20%	5%	75%
Group R-2	20%	5%	75%
Groups R-3 and R-4	2%	0%	5%
Group S exclusive of parking garages	1%	0%	0%
Group S-2 parking garages	15%	0%	30%

4.3.2.2 (C405.14.2) EV capable spaces. Each *EV capable space* used to meet the requirements of Section 4.3.2.1 (C405.14.1) shall comply with the following:

1. A continuous raceway or cable assembly shall be installed between an enclosure or outlet located within 3 feet (914 mm) of the *EV capable space* and electrical distribution equipment.
2. The installed raceway or cable assembly shall be sized and rated to supply a minimum circuit capacity in accordance with Section 4.3.2.5 (C405.14.5).
3. The electrical distribution equipment to which the raceway or cable assembly connects shall have dedicated overcurrent protection device space and electrical capacity to supply a calculated load in accordance with Section 4.3.2.5 (C405.14.5).
4. The enclosure or outlet and the electrical distribution equipment directory shall be marked: "For electric vehicle supply equipment (EVSE)."

4.3.2.3 (C405.14.3) EV ready spaces. Each branch circuit serving *EV ready spaces* used to meet the requirements of Section 4.3.2.1 (C405.14.1) shall comply with the following:

1. Terminate at an outlet or enclosure located within 3 feet (914 mm) of each *EV ready space* it serves.
2. Have a minimum system and circuit capacity in accordance with Section 4.3.2.5 (C405.14.5).
3. The electrical distribution equipment directory shall designate the branch circuit as "For electric vehicle supply equipment (EVSE)" and the outlet or enclosure shall be marked, "For electric vehicle supply equipment (EVSE)."

4.3.2.4 (C405.14.4) EVSE spaces. An installed EVSE with multiple output connections shall be permitted to serve multiple *EVSE spaces*. Each EVSE installed to meet the requirements of Section 4.3.2.1 (C405.14.1), serving either a single *EVSE space* or multiple *EVSE spaces*, shall comply with the following:

1. Have a minimum system and circuit capacity in accordance with Section 4.3.2.5 (C405.14.5).
2. Have a nameplate rating not less than 6.2 kW.
3. Be located within 3 feet (914 mm) of each *EVSE space* it serves.
4. Be installed in accordance with Section 4.3.2.6 (C405.14.6).

4.3.2.5 (C405.14.5) System and circuit capacity. The system and circuit capacity shall comply with Sections 4.3.2.5.1 (C405.14.5.1) and 4.3.2.5.2 (C405.14.5.2).

4.3.2.5.1 (C405.14.5.1) System capacity. The electrical distribution equipment supplying the branch circuit(s) serving each *EV capable space, EV ready space* and *EVSE space* shall comply with one of the following:

1. Have a calculated load of 7.2 kVA or the nameplate rating of the equipment, whichever is larger, for each *EV capable space*, *EV ready space* and *EVSE space.*
2. Meets the requirements of Section 4.3.2.5.3.1 (C405.14.5.3.1).

4.3.2.5.2 (C405.14.5.2) Circuit capacity. The branch circuit serving each *EV capable space, EV ready space* and *EVSE space* shall comply with one of the following:

1. Have a rated capacity not less than 50 amperes or the nameplate rating of the equipment, whichever is larger.
2. Meets the requirements of Section 4.3.2.5.3.2 (C405.14.5.3.2).

4.3.2.5.3 (C405.14.5.3) System and circuit capacity management. Where system and circuit capacity management is selected in Section 4.3.2.5.1 (C405.14.5.1), Item 2 or 4.3.2.5.2 (C405.14.5.2), Item 2, the installation shall comply with Sections 4.3.2.5.3.1 (C405.14.5.3.1) and 4.3.2.5.3.2 (C405.14.5.3.2).

4.3.2.5.3.1 (C405.14.5.3.1) System capacity management. The maximum equipment load on the electrical distribution equipment supplying the branch circuits(s) serving *EV capable spaces, EV ready spaces* and *EVSE spaces* controlled by an energy management system shall be the maximum load permitted by the energy management system, but not less than 3.3 kVA per space.

4.3.2.5.3.2 (C405.14.5.3.2) Circuit capacity management. Each branch circuit serving multiple *EVSE spaces, EV ready spaces* or *EV capable spaces* controlled by an energy management system shall comply with one of the following:

1. Have a minimum capacity of 25 amperes per space.
2. Have a minimum capacity of 20 amperes per space for Group R-2 occupancies when all *automobile parking spaces* are *EV ready spaces* or *EVSE spaces.*

4.3.2.6 (C405.14.6) EVSE installation. *EVSE* shall be installed in accordance with NFPA 70 and shall be *listed* and *labeled* in accordance with UL 2202 or UL 2594. *EVSE* shall be accessible in accordance with Section 1107 of the 2024 edition of the *International Building Code.*

4.3.3 (C405.16) Electrical energy storage system. Buildings shall comply with Section 4.3.3.3 (C405.16.3) and either Section 4.3.3.1 (C405.16.1) or 4.3.3.2 (C405.16.2).

4.3.3.1 (C405.16.1) Electrical energy storage system (ESS) capacity. Each building shall have one or more ESS with a total rated energy capacity and rated power capacity as follows:

1. ESS-rated energy capacity (kWh) ≥ 1.0 × installed on-site renewable electric energy system rated power (kWDC).
2. ESS-rated power capacity (kW) ≥ 0.25 × installed on-site renewable electric energy system rated power (kWDC).

Where installed, DC-coupled battery systems shall meet the requirements for rated energy capacity alone.

4.3.3.2 (C405.16.2) Electrical energy storage system (ESS) ready. Each building shall have one or more reserved ESS-ready areas to accommodate future electrical storage.

4.3.3.3 (C405.16.3) Electrical energy storage system (ESS)-installed or -ready area. Areas where ESS is installed and ESS-ready areas shall comply with Sections 4.3.3.3.1 (C405.16.3.1) through 4.3.3.3.4 (C405.16.3.4).

4.3.3.3.1 (C405.16.3.1) ESS-installed or -ready location. Each ESS-installed or -ready area shall be located in accordance with either Section 1207 of the 2024 *International Fire Code* or NFPA 855. For the purposes of locating and designing means of egress, ESS-installed or -ready areas shall comply with either (1) means of egress requirements for Group H occupancies of the 2024 *International Fire Code* or (2) Sections 7.2.1.4.2(3) and 7.11 of NFPA 101 (2015).

4.3.3.3.2 (C405.16.3.2) ESS-installed or -ready minimum area requirements. Each ESS-installed or -ready area shall be sized in accordance with the spacing requirements of (1) either Section 1207 of the 2024 edition of the *International Fire Code* or NFPA 855 and (2) the UL 9540 or UL 9540A designated rating of the planned system. Where rated to UL 9540A, the area shall be sized in accordance with the manufacturer's instructions.

4.3.3.3.3 (C405.16.3.3) Electrical distribution equipment. The on-site electrical distribution equipment shall have sufficient capacity, rating and space to allow installation of overcurrent devices and circuit wiring in accordance with NFPA 70 for future electrical ESS installation complying with the capacity criteria of Section 4.3.3.3.4 (C405.16.3.4).

4.3.3.3.4 (C405.16.3.4) ESS-installed or -ready minimum system capacity. Compliance with ESS-installed or -ready requirements in Sections 4.3.3.3.1 (C405.16.3.1) through 4.3.3.3.3 (C405.16.3.3) shall be based on a minimum total energy capacity and minimum rated power capacity as follows:

1. ESS-rated energy capacity (kWh) ≥ gross conditioned floor area of the three largest floors (ft^2) × 0.0008 kWh/ft^2.
2. ESS-rated power capacity (kW) ≥ gross conditioned floor area of the three largest floors (ft^2) × 0.0002 kW/ft^2.

4.3.4 (C405.18) Electric infrastructure. New Group R-2 occupancies that use fossil fuels for space heating, *service water heating*, cooking or clothes drying shall install electric infrastructure in accordance with