

# Compliance Checklists for IL 2023 Residential Stretch Energy Code

**HOW TO USE |** For use ensuring building compliance with IL 2023 Residential Stretch Energy Code. Checklists are organized by compliance pathway and definitions, and equations are provided in Appendices A and B. All information in this document, including Appendices, comes from the 2021 International Energy Conservation Code (IECC) and the 2023 Illinois Residential Stretch Energy Code, unless otherwise specified.

**INSTRUCTIONS:**  
Select the compliance path indicated by the builder. On the relevant checklist, indicate if the design is in compliance by selecting Yes (Y), No (N), or Not Applicable (N/A) next to each requirement. **All items in a checklist must be marked Yes or Not Applicable to be considered in compliance with the stretch code.** If using the prescriptive path, also complete Credits for Additional Energy Efficiency worksheet.

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## PRESCRIPTIVE COMPLIANCE PATH R401-404, R408

| Y | N | N/A | Requirement                     |                                                                                    | Documentation in addition to design detail | Relevant Code Section                                      |
|---|---|-----|---------------------------------|------------------------------------------------------------------------------------|--------------------------------------------|------------------------------------------------------------|
|   |   |     | Maximum envelope air filtration | 3ACH(50)                                                                           | Blower door test                           | C406.9 (2021 Illinois Energy Conservation Code) R402.4.1.2 |
|   |   |     | Duct Testing                    | All ducts must be tested for tightness                                             | Duct blaster test                          | R403.3.5                                                   |
|   |   |     | Duct Tightness                  | Unconditioned: Must meet 4 cfm/100 sq ft<br>Conditioned: Must meet 8 cfm/100 sq ft | Duct blaster test                          | R403.3.6                                                   |
|   |   |     | Duct Insulation                 | R-8 for 3 inches and larger<br>R-6 for smaller than 3 inches                       |                                            |                                                            |
|   |   |     | Cavities as Ducts               | Neither Supply nor Return                                                          | Visual inspection/<br>Manual D             | R403.3                                                     |
|   |   |     | Piping Insulation               | R-3                                                                                | Visual inspection at rough-in              | R403.4                                                     |

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**PRESCRIPTIVE COMPLIANCE PATH | R401-404, R408 *continued***

| Y | N | N/A | Requirement                                                                     |                                                                                                        | Documentation in addition to design detail  | Relevant Code Section      |
|---|---|-----|---------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------|----------------------------|
|   |   |     | <b>Ventilation</b>                                                              | Comply with M1505 or IRC or IMC                                                                        | Visual inspection                           | R403.6                     |
|   |   |     | <b>Ventilation Fan Efficiency</b>                                               | Table R403.6.2 (2021 IECC)                                                                             | Visual inspection                           | Table R403.6.2             |
|   |   |     | <b>High Efficacy Lighting</b>                                                   | 100%; controls for permanent fixtures required                                                         | Visual inspection                           | R404.1                     |
|   |   |     | <b>Wood Frame Wall U-Factor</b>                                                 | 0.045                                                                                                  | Visual inspection at rough-in               | Table R402.1.2 (2021 IECC) |
|   |   |     | <b>Wood Frame Wall R-Value</b>                                                  | 20+5ci or 13+10ci or 20ci                                                                              | Visual inspection at rough-in               | Table R402.1.3 (2021 IECC) |
|   |   |     | <b>Demand responsive thermostat—variable capacity and two-stage HVAC system</b> | Demand-responsive control complies with communication/performance requirements of AHRI 1380            | Electrical inspection                       | R403.1.3, R403.1.3.2       |
|   |   |     | <b>Demand-responsive water heating</b>                                          | Demand-responsive control complies with Table R403.5.4                                                 | Electrical inspection                       | R403.5.4, Table R403.5.4   |
|   |   |     | <b>Floor</b>                                                                    | <input type="checkbox"/> CZ 4: R-19<br><input type="checkbox"/> CZ 5: R-30                             | Visual inspection at rough-in               | Table R402.1.3 (2021 IECC) |
|   |   |     | <b>Floor U-Factor</b>                                                           | <input type="checkbox"/> CZ 4: 0.047<br><input type="checkbox"/> CZ 5: 0.033                           | Visual inspection at rough-in               | Table R402.1.2 (2021 IECC) |
|   |   |     | <b>Foundation Wall</b>                                                          | <input type="checkbox"/> CZ 4: R-10ci or 13<br><input type="checkbox"/> CZ 5: R-15ci or 19 or R-13+5ci | Visual inspection at rough-in or foundation | Table R402.1.3 (2021 IECC) |
|   |   |     | <b>EV-ready parking</b>                                                         | One EV-ready space per dwelling unit with designated attached or detached garage                       | Electrical inspection                       | R404.4; R404.4.1           |
|   |   |     | <b>EV power transfer infrastructure</b>                                         | Each branch circuit serving an EV-ready spaces complies with the requirements outlined in R404.4.2     | Electrical inspection                       | R404.4; 404.4.2            |

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**PRESCRIPTIVE COMPLIANCE PATH | R401-404, R408 *continued***

| Y | N | N/A | Requirement                            |                                                                                                                                                                                                                                                    | Documentation in addition to design detail  | Relevant Code Section                      |
|---|---|-----|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|--------------------------------------------|
|   |   |     | <b>Electric readiness</b>              | Systems using fossil fuel: water heaters, household clothes dryers, conventional cooking tops, conventional ovens and space heating equipment shall comply with the requirements of Sections R404.5.1 through R404.5.5                             | Electrical inspection                       | R404.5.1 through R404.5.5                  |
|   |   |     | <b>Renewable Energy Infrastructure</b> | One- and two- family dwellings and townhouses. One- and two-family dwellings and townhouses shall comply with Sections R404.6.1.1 through R404.6.1.4                                                                                               | Electrical inspection                       | R404.6; R404.6.1.1 through R404.6.1.4      |
|   |   |     | <b>Basement Wall U-Factor</b>          | ≤ 0.050                                                                                                                                                                                                                                            | Visual inspection at rough-in or foundation | Table R402.1.2 (2021 IECC)                 |
|   |   |     | <b>Roof/Ceiling Insulation</b>         | R60                                                                                                                                                                                                                                                | Visual inspection                           | Table R402.1.3 (2021 IECC)                 |
|   |   |     | <b>Roof/Ceiling U-Factor</b>           | ≤ 0.024                                                                                                                                                                                                                                            | Visual inspection                           | Table R402.1.3 (2021 IECC)                 |
|   |   |     | <b>Fenestration U-Factor</b>           | ≤ 0.30                                                                                                                                                                                                                                             | Visual inspection                           | Table R402.1.2 (2021 IECC)                 |
|   |   |     | <b>Additional Compliance Package</b>   | <input type="checkbox"/> Achieve 30 energy credits from modified Section R408 (taken from 2024 IECC)<br><b>OR</b><br><input type="checkbox"/> Install electric heat pump space heating and water heating with a tight envelope (2 ACH50 + ERV/HRV) |                                             | R408.2, R408.3 and all related subsections |

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| Credits for Additional Energy Efficiency (R408) |                |                                                              |                |                |
|-------------------------------------------------|----------------|--------------------------------------------------------------|----------------|----------------|
| Check Selected Measure                          | Measure Number | Measure Description                                          | Credit Value   |                |
|                                                 |                |                                                              | Climate Zone 4 | Climate Zone 5 |
|                                                 | R408.3.1.1 (1) | ≥ 2.5% reduction in total UA                                 | 1              | 1              |
|                                                 | R408.2.1.1 (2) | ≥ 5% reduction in total UA                                   | 2              | 3              |
|                                                 | R408.3.1.1 (3) | > 7.5% reduction in total UA                                 | 2              | 3              |
|                                                 | R408.3.1.2     | 0.22 U-factor windows                                        | 3              | 4              |
|                                                 | R408.3.2 (1)   | High performance cooling system option 1                     | 3              | 3              |
|                                                 | R408.3.2 (2)   | High performance cooling system option 2                     | 3              | 2              |
|                                                 | R408.3.2 (3)   | High performance gas furnace option 1                        | 5              | 7              |
|                                                 | R408.3.2(4)    | High performance gas furnace option 2                        | 4              | 5              |
|                                                 | R408.3.2(5)    | High performance heat pump system option 1                   | 21             | 31             |
|                                                 | R408.3.2 (6)   | High performance heat pump system option 2                   | 22             | 32             |
|                                                 | R408.3.2 (7)   | Ground source heat pump                                      | 23             | 33             |
|                                                 | R408.3.2 (8)   | High performance gas heat pump space heating system option 1 | 8              | 11             |
|                                                 | R408.3.2 (9)   | High performance gas heat pump space heating system option 2 | 11             | 16             |
|                                                 | R408.3.3 (1)   | Fossil fuel service water heating system                     | 3              | 2              |
|                                                 | R408.3.3 (2)   | High performance heat pump water heating system option 1     | 8              | 6              |
|                                                 | R408.3.3 (3)   | Solar hot water heating system                               | 6              | 2              |
|                                                 | R408.3.3 (4)   | Compact hot water distribution                               | 2              |                |
|                                                 | R408.3.4 (1)   | More efficient distribution system                           | 10             | 12             |
|                                                 | R408.3.4 (2)   | 100% of ducts in conditioned space                           | 12             | 15             |
|                                                 | R408.3.4 (3)   | Reduced total duct leakage                                   | 1              | 1              |
|                                                 | R408.3.5 (1)   | 2 ACH50 air leakage rate with ERV or HRV installed           | 10             | 13             |
|                                                 | R408.3.5 (2)   | 2 ACH50 air leakage rate with balanced ventilation           | 4              | 5              |
|                                                 | R408.3.5 (3)   | 1.5 ACH50 air leakage rate with ERV or HRV installed         | 12             | 15             |
|                                                 | R408.3.5 (4)   | 1 ACH50 air leakage rate with ERV or HRV installed           | 14             | 17             |
|                                                 | R408.3.6       | Energy Efficient Appliances                                  | 1              | 1              |
| TOTAL CREDITS ACHIEVED                          |                |                                                              |                |                |

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Additional Notes:

**TOTAL BUILDING PERFORMANCE  
R405**

| Y | N | N/A | Requirement                          |                                                                                                                                          | Documentation<br>in addition to<br>design detail | Relevant Code<br>Section(s) as<br>required by<br>Table 405.2 |
|---|---|-----|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|--------------------------------------------------------------|
|   |   |     | <b>Total Performance Requirement</b> | The site energy use of the proposed design is less than or equal to 71% of the site energy use of the <i>standard reference design</i> . | Performance software read-out                    | R405.2                                                       |

**General (R401)**

|  |  |  |                                     |                                                                                                                                                                                         |  |          |
|--|--|--|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------|
|  |  |  | <b>Additional Energy Efficiency</b> | According to the deletion of R401.2.5, the Total Building Performance path has no additional requirements for efficiency (beyond changing the metrics for calculations).                |  | R401.2.5 |
|  |  |  | <b>Certificate</b>                  | The approved party shall complete a permanent certificate and post it on a wall in the space where the furnace is located, a utility room, or an approved location inside the building. |  | R401.3   |

**Building Thermal Envelope (R402)**

|  |  |  |                                              |                                                                                    |                             |                             |
|--|--|--|----------------------------------------------|------------------------------------------------------------------------------------|-----------------------------|-----------------------------|
|  |  |  | <b>Max Air Infiltration</b>                  | 5ACH(50)—Improved air tightness can be traded                                      | Blower door test            | R405.2, R402.4.1.2          |
|  |  |  | <b>Ceiling U-Factor backstop<sup>1</sup></b> | UA <sub>Proposed design</sub> ≤ 1.10 x UA <sub>Prescriptive reference design</sub> | Performance software report | Table 402.1.2, Equation 4-1 |
|  |  |  | <b>Wood Frame Wall U-Factor backstop</b>     |                                                                                    |                             |                             |

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<sup>1</sup>Table R402.1.2 multiplied by 1.10 in accordance with Equation 4-1

| TOTAL BUILDING PERFORMANCE   R405 <i>continued</i> |   |     |                                        |                                                                                                                                                                                                                                                                                                                                                                                                |                                            |                             |
|----------------------------------------------------|---|-----|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-----------------------------|
| Y                                                  | N | N/A | Requirement                            |                                                                                                                                                                                                                                                                                                                                                                                                | Documentation in addition to design detail | Relevant Code Section       |
|                                                    |   |     | <b>Basement Wall U-Factor backstop</b> | Calculate using prescriptive U-Factors in Table 402.1.2.                                                                                                                                                                                                                                                                                                                                       | Performance software report                | Table 402.1.2, Equation 4-1 |
|                                                    |   |     | <b>Fenestration U-Factor backstop</b>  |                                                                                                                                                                                                                                                                                                                                                                                                |                                            |                             |
|                                                    |   |     | <b>Building thermal envelope</b>       | <p> <math>UA_{\text{Proposed design}} \leq 1.10 \times UA_{\text{Prescriptive reference design}}</math> </p> <p>The proposed building thermal envelope UA is the sum of the U-Factor times assembly area. The proposed UA should be less than or equal to the UA of the prescriptive reference design multiplied by 1.10, as calculated using the prescriptive U-Factors in Table 402.1.2.</p> |                                            |                             |
|                                                    |   |     | <b>Vapor retarder</b>                  | Complies with the vapor retarder requirements of Section R702.7 of the IRC or Section 1404.3 of the IBC                                                                                                                                                                                                                                                                                        | Visual inspection at rough-in              | R402.1.1                    |
|                                                    |   |     | <b>Eave baffle</b>                     | For air-permeable insulation in vented attics, a baffle is installed adjacent to soffit and eave vents.                                                                                                                                                                                                                                                                                        | Visual inspection                          | R402.2.3                    |
|                                                    |   |     | <b>Access hatches and doors</b>        | Insulated to the same R-Value required by Table R402.1.3 for the wall or ceiling in which they are installed.                                                                                                                                                                                                                                                                                  | Visual inspection                          | R402.2.4.1; Table R402.1.3  |
|                                                    |   |     | <b>Maximum fenestration U-factor</b>   | 0.48                                                                                                                                                                                                                                                                                                                                                                                           | Visual inspection                          | R402.5                      |

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TOTAL BUILDING PERFORMANCE | R405 *continued*

| Y                 | N | N/A | Requirement                                                  |                                                                                                                                                                                                                                                                                    | Documentation in addition to design detail | Relevant Code Section |
|-------------------|---|-----|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-----------------------|
| Mechanical (R403) |   |     |                                                              |                                                                                                                                                                                                                                                                                    |                                            |                       |
|                   |   |     | Demand response                                              | Demand-response-capable thermostats and water heaters required                                                                                                                                                                                                                     | Electrical inspection                      | R403.1                |
|                   |   |     | Duct Testing                                                 | All ducts must be tested for tightness                                                                                                                                                                                                                                             | Duct blaster test                          | R403.3.5              |
|                   |   |     | Duct Insulation                                              | R-8 for 3 inches and larger<br>R-6 for smaller than 3 inches                                                                                                                                                                                                                       | Visual inspection at rough-in              | R403.3.1              |
|                   |   |     | Cavities as Ducts                                            | Neither Supply nor Return                                                                                                                                                                                                                                                          | Visual inspection/<br>Manual D             | R403.3.7              |
|                   |   |     | Piping Insulation                                            | R-3                                                                                                                                                                                                                                                                                | Visual inspection at rough-in              | R403.4                |
|                   |   |     | Heated water circulation and temperature maintenance systems | Controls for circulation pumps will automatically turn off the pump when water in circulation loop is at the desired temperature and there is no demand for hot water.<br><br>Controls limit the temperature of the water entering the cold water piping to not greater than 104F. | Visual inspection                          | R403.5.1              |
|                   |   |     | Drain water heat recovery units                              | Comply with CSA B55.2.<br><br>Potable water-side pressure loss for individual units connected to one or two shorts is less than 3 psi, and less than 2 psi for units connected to three or more showers.                                                                           | Visual inspection                          | R403.5.3              |
|                   |   |     | Ventilation                                                  | Comply with M1505 or IRC or IMC                                                                                                                                                                                                                                                    | Visual inspection                          | R403.6                |
|                   |   |     | Ventilation Fan Efficiency                                   | Table R403.6.2 (2021 IECC)                                                                                                                                                                                                                                                         | Visual inspection                          | Table R403.6.2        |

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**TOTAL BUILDING PERFORMANCE | R405 *continued***

| Y                           | N | N/A | Requirement                                      | Documentation<br>in addition to<br>design detail                                                                                                                                                                                                                                                                                                                                   | Relevant Code<br>Section       |         |
|-----------------------------|---|-----|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|---------|
| Mechanical (R403) continued |   |     |                                                  |                                                                                                                                                                                                                                                                                                                                                                                    |                                |         |
|                             |   |     | Equipment sizing and efficiency rating           | Heating and cooling equipment sized in accordance with ACCA Manual J                                                                                                                                                                                                                                                                                                               | Visual inspection/<br>Manual J | R403.7  |
|                             |   |     | Systems serving multiple dwelling units          | Comply with Section C403 and C404 of the IECC—Commercial provisions instead of R403                                                                                                                                                                                                                                                                                                | Visual inspection/<br>Manual J | R403.8  |
|                             |   |     | Snow melt and ice systems                        | Controls are capable of shutting off the system when pavement temperature is greater than 50F and precipitation is not falling, and when the outdoor temperature is greater than 50F.                                                                                                                                                                                              | Visual inspection              | R403.9  |
|                             |   |     | Pools and spas                                   | Electric power to heaters is controlled by an on-off switch, mounted on the exterior of the heater in a location with ready access. Heaters and pump motors are equipped with time switches or other methods that can automatically shut them off and on according to a preset schedule.<br><br>Outdoor heated pools and permanent spas are provided with a vapor-retardant cover. | Visual inspection              | R403.10 |
|                             |   |     | Portable spas                                    | Compliant with APSP 14                                                                                                                                                                                                                                                                                                                                                             | Visual inspection              | R403.11 |
|                             |   |     | Residential pools and permanent residential spas | Compliant with APSP 15                                                                                                                                                                                                                                                                                                                                                             | Visual inspection              | R403.12 |

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TOTAL BUILDING PERFORMANCE | R405 *continued*

| Y                                    | N | N/A | Requirement                |                                                                                                                                                                                                                                            | Documentation<br>in addition to<br>design detail | Relevant Code<br>Section |
|--------------------------------------|---|-----|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|--------------------------|
| Electrical Power and Lighting (R404) |   |     |                            |                                                                                                                                                                                                                                            |                                                  |                          |
|                                      |   |     | High Efficacy Lighting     | 100%; controls for permanent fixtures required                                                                                                                                                                                             | Visual inspection                                | R404.1                   |
|                                      |   |     | Interior lighting controls | Permanently installed interior lighting fixtures should be controlled with either a dimmer, occupant sensor control or other control that is installed or built into the fixture.                                                          | Electrical inspection                            | R404.2                   |
|                                      |   |     | EV-readiness               | Single-family homes are required to be EV-ready or have an EV charger installed.                                                                                                                                                           | Electrical inspection                            | R404.4                   |
|                                      |   |     | Electric-readiness         | Mixed-fuel residential buildings are required to be electric-ready for:<br><input type="checkbox"/> water heating<br><input type="checkbox"/> space heating<br><input type="checkbox"/> cooking<br><input type="checkbox"/> clothes drying | Electrical inspection                            | R404.5                   |
|                                      |   |     | Solar-readiness            | SF homes are required to be solar-ready                                                                                                                                                                                                    | Electrical inspection                            | R404.6                   |

**Additional Notes:***continued on page 10*

**ERI (ENERGY RATING INDEX) PATH  
R406**

| Y | N | N/A | Requirement                                                                  |                                                                                                                                                                                      | Documentation<br>in addition to<br>design detail | Relevant Code<br>Section(s) as<br>required by<br>Table 406.2 |
|---|---|-----|------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|--------------------------------------------------------------|
|   |   |     | <b>Maximum Envelope Air Infiltration</b>                                     | 5ACH(50) Improved air tightness can be traded                                                                                                                                        | Blower door test                                 |                                                              |
|   |   |     | <b>Energy Rating Index of Rate Proposed Design is less than or equal to:</b> | Without combustion equipment<br><input type="checkbox"/> CZ 4: 54<br><input type="checkbox"/> CZ 5: 55<br>With combustion equipment<br><input type="checkbox"/> CZ 4: 51<br>CZ 5: 50 | HERS certificate or other ERI equivalent         | Table R406.5                                                 |
|   |   |     | <b>Building Thermal Envelope Backstop</b>                                    | UAProposed design $\leq 1.10 \times$<br>UAPrescriptive reference design                                                                                                              | HERS certificate or other ERI equivalent         | R406.3                                                       |

**General (R401)**

|  |  |  |                                       |                                                                                                                                                                                         |  |          |
|--|--|--|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------|
|  |  |  | <b>Additional efficiency packages</b> | <i>According to the deletion of R401.2.5, the ERI path has no additional requirements for efficiency (beyond changing the metrics for calculations)</i>                                 |  | R401.2.5 |
|  |  |  | <b>Certificate</b>                    | The approved party shall complete a permanent certificate and post it on a wall in the space where the furnace is located, a utility room, or an approved location inside the building. |  | R401.3   |

**Building Thermal Envelope (R402)**

|  |  |  |                       |                                                                                                         |                               |          |
|--|--|--|-----------------------|---------------------------------------------------------------------------------------------------------|-------------------------------|----------|
|  |  |  | <b>Vapor retarder</b> | Complies with the vapor retarder requirements of Section R702.7 of the IRC or Section 1404.3 of the IBC | Visual inspection at rough-in | R402.1.1 |
|  |  |  | <b>Eave baffle</b>    | For air-permeable insulation in vented attics, a baffle is installed adjacent to soffit and eave vents. | Visual inspection             | R402.2.3 |

*continued on page 11*

ERI (ENERGY RATING INDEX) PATH | R406 *continued*

| Y | N | N/A | Requirement | Documentation<br>in addition to<br>design detail | Relevant Code<br>Section |
|---|---|-----|-------------|--------------------------------------------------|--------------------------|
|---|---|-----|-------------|--------------------------------------------------|--------------------------|

Building Thermal Envelope (R402) *continued*

|  |  |  |                                                 |                                                                                                                                                                                                                                                                                    |                               |                               |
|--|--|--|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------|
|  |  |  | <b>Access hatches and doors</b>                 | Insulated to the same R-Value required by Table R402.1.3 for the wall or ceiling in which they are installed.                                                                                                                                                                      | Visual inspection             | R402.2.4.1;<br>Table R402.1.3 |
|  |  |  | <b>Crawl space wall insulation installation</b> | Crawl space wall insulation is permanently fastened to the wall and extends downwards from the floor to the finished grade elevation, then vertically or horizontally for at least an additional 24 inches. Joints of the vapor retarder overlap by 6 inches and are sealed/taped. | Visual inspection at rough-in | R402.2.10.1                   |

Mechanical (R403)

|  |  |  |                                                                     |                                                                                                                                                                                                                                                                                    |                                |          |
|--|--|--|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|----------|
|  |  |  | <b>Demand-response</b>                                              | Demand-response-capable thermostats and water heaters required                                                                                                                                                                                                                     | Electrical inspection          | R403.1   |
|  |  |  | <b>Duct Insulation</b>                                              | R-8 for 3 inches and larger<br>R-6 for smaller than 3 inches                                                                                                                                                                                                                       | Visual inspection at rough-in  | R403.3.1 |
|  |  |  | <b>Cavities as Ducts</b>                                            | Neither Supply nor Return                                                                                                                                                                                                                                                          | Visual inspection/<br>Manual D | R403.3   |
|  |  |  | <b>Duct testing</b>                                                 | All ducts must be tested for tightness                                                                                                                                                                                                                                             | Duct blaster test              | R403.3.5 |
|  |  |  | <b>Piping insulation</b>                                            | R-3                                                                                                                                                                                                                                                                                | Visual inspection at rough-in  | R403.4   |
|  |  |  | <b>Heated water calculation and temperature maintenance systems</b> | Controls for circulation pumps will automatically turn off the pump when water in circulation loop is at the desired temperature and there is no demand for hot water.<br><br>Controls limit the temperature of the water entering the cold water piping to not greater than 104F. | Visual inspection              | R403.5.1 |

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ERI (ENERGY RATING INDEX) PATH | R406 *continued*

| Y                                         | N | N/A | Requirement                                    | Documentation<br>in addition to<br>design detail                                                                                                                                                     | Relevant Code<br>Section                     |
|-------------------------------------------|---|-----|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|
| <b>Mechanical (R403) <i>continued</i></b> |   |     |                                                |                                                                                                                                                                                                      |                                              |
|                                           |   |     | <b>Drain water heat recovery units</b>         | Comply with CSA B55.2.<br>Potable water-side pressure loss for individual units connected to one or two shorts is less than 3 psi, and less than 2 psi for units connected to three or more showers. | Visual inspection<br><br>R403.5.3            |
|                                           |   |     | <b>Ventilation</b>                             | Comply with M1505 or IRC or IMC                                                                                                                                                                      | Visual inspection<br><br>R403.6              |
|                                           |   |     | <b>Ventilation fan efficiency</b>              | Table R403.6.2                                                                                                                                                                                       | Visual inspection<br><br>Table R403.6.2      |
|                                           |   |     | <b>Equipment sizing and efficiency rating</b>  | Heating and cooling equipment sized in accordance with ACCA Manual J.                                                                                                                                | Visual inspection/<br>Manual J<br><br>R403.7 |
|                                           |   |     | <b>Systems serving multiple dwelling units</b> | Comply with Section C403 and C404 of the IECC—Commercial provisions instead of R403                                                                                                                  | Visual inspection/<br>Manual J<br><br>R403.8 |
|                                           |   |     | <b>Snow melt and ice systems</b>               | Controls are capable of shutting off the system when pavement temperature is greater than 50F and precipitation is not falling, and when the outdoor temperature is greater than 50F.                | Visual inspection<br><br>R403.9              |

*continued on page 13*

ERI (ENERGY RATING INDEX) PATH | R406 *continued*

| Y                                            | N | N/A | Requirement                                      |                                                                                                                                                                                                                                                                                                                                                                                    | Documentation<br>in addition to<br>design detail | Relevant Code<br>Section |
|----------------------------------------------|---|-----|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|--------------------------|
| Mechanical (R403) <i>continued</i>           |   |     |                                                  |                                                                                                                                                                                                                                                                                                                                                                                    |                                                  |                          |
|                                              |   |     | Pools and spas                                   | Electric power to heaters is controlled by an on-off switch, mounted on the exterior of the heater in a location with ready access. Heaters and pump motors are equipped with time switches or other methods that can automatically shut them off and on according to a preset schedule.<br><br>Outdoor heated pools and permanent spas are provided with a vapor-retardant cover. | Visual inspection                                | R403.10                  |
|                                              |   |     | Portable spas                                    | Compliant with APSP 14.                                                                                                                                                                                                                                                                                                                                                            | Visual inspection                                | R403.11                  |
|                                              |   |     | Residential pools and permanent residential spas | Compliant with APSP 15.                                                                                                                                                                                                                                                                                                                                                            | Visual inspection                                | R403.12                  |
| Electrical Power and Lighting Systems (R404) |   |     |                                                  |                                                                                                                                                                                                                                                                                                                                                                                    |                                                  |                          |
|                                              |   |     | High efficacy lighting                           | 100%; controls for permanent fixtures required                                                                                                                                                                                                                                                                                                                                     | Visual inspection                                | R404.1                   |
|                                              |   |     | Interior lighting controls                       | Permanently installed interior lighting fixtures should be controlled with either a dimmer, occupant sensor control or other control that is installed or built into the fixture.                                                                                                                                                                                                  | Electrical inspection                            | R404.2                   |
|                                              |   |     | EV-readiness                                     | Single-family homes are required to be EV-ready or have an EV charger installed.                                                                                                                                                                                                                                                                                                   | Electrical inspection                            | R404.4                   |

*continued on page 14*

| ERI (ENERGY RATING INDEX) PATH   R406 <i>continued</i>        |   |     |                    |                                                                                                                                                                                                            |                                            |                       |
|---------------------------------------------------------------|---|-----|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-----------------------|
| Y                                                             | N | N/A | Requirement        |                                                                                                                                                                                                            | Documentation in addition to design detail | Relevant Code Section |
| Electrical Power and Lighting Systems (R404) <i>continued</i> |   |     |                    |                                                                                                                                                                                                            |                                            |                       |
|                                                               |   |     | Electric readiness | Mixed-fuel residential buildings are required to be electric-ready for: <ul style="list-style-type: none"><li>▪ water heating</li><li>▪ space heating</li><li>▪ cooking</li><li>▪ clothes drying</li></ul> | Electrical inspection                      | R404.5                |
|                                                               |   |     | Solar-readiness    | SF homes are required to be solar-ready.                                                                                                                                                                   | Electrical inspection                      | R404.6                |

Additional Notes:

*continued on page 15*

## PHIUS ALTERNATIVE COMPLIANCE OPTION R102

| Y | N | N/A | Requirement                                                                                                                 |                                                     | Documentation in addition to design detail | Relevant Code Section(s) as required by Table 405.2 |
|---|---|-----|-----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|--------------------------------------------|-----------------------------------------------------|
|   |   |     | Meets Phius 2021 Standard <sup>2</sup> with U.S. DOE Energy Star and Zero Energy Ready Home corequisites                    |                                                     | Phius documentation                        | R102.1.1                                            |
|   |   |     | Additional Phius requirements (check one)                                                                                   | Performance calculations by Phius-approved software |                                            |                                                     |
|   |   |     |                                                                                                                             | Use of Phius 2021 Prescriptive Path                 |                                            |                                                     |
|   |   |     | <input type="checkbox"/> List of compliance features<br><input type="checkbox"/> Phius precertification letter <sup>3</sup> |                                                     |                                            |                                                     |
|   |   |     | Phius 2021 (or later) project certificate was provided prior to issuing a certificate of occupancy                          |                                                     | Project certificate                        |                                                     |

### General (R401)

|  |  |  |                                     |                                                                                                                                                                                         |          |
|--|--|--|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
|  |  |  | <b>Additional Energy Efficiency</b> | According to the deletion of R401.2.5, Phius Alternative Compliance Path has no additional requirements for efficiency (beyond changing the metrics for calculations)                   | R401.2.5 |
|  |  |  | <b>Certificate</b>                  | The approved party shall complete a permanent certificate and post it on a wall in the space where the furnace is located, a utility room, or an approved location inside the building. | R401.3   |

### Building Thermal Envelope (R402)

|  |  |  |                             |                                               |                  |                    |
|--|--|--|-----------------------------|-----------------------------------------------|------------------|--------------------|
|  |  |  | <b>Max Air Infiltration</b> | 5ACH(50)—Improved air tightness can be traded | Blower door test | R405.2, R402.4.1.2 |
|--|--|--|-----------------------------|-----------------------------------------------|------------------|--------------------|

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<sup>2</sup> Phius 2021 Passive Building Standard: Standard-Setting Documentation | Phius Phius 2021 Passive Building Standard: Standard-Setting Documentation

<sup>3</sup> Project Certification Overview | Phius Project Certification Overview

PHIUS ALTERNATIVE COMPLIANCE OPTION | R102 *continued*

| Y                                                        | N | N/A | Requirement                                  | Documentation in addition to design detail                                                                                                                                                                                                                                                                                                                                          | Relevant Code Section                              |
|----------------------------------------------------------|---|-----|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| <b>Building Thermal Envelope (R402) <i>continued</i></b> |   |     |                                              |                                                                                                                                                                                                                                                                                                                                                                                     |                                                    |
|                                                          |   |     | <b>Ceiling U-Factor backstop<sup>4</sup></b> | Performance software report                                                                                                                                                                                                                                                                                                                                                         | Table 402.1.2, Equation 4-1                        |
|                                                          |   |     | <b>Wood Frame Wall U-Factor backstop</b>     |                                                                                                                                                                                                                                                                                                                                                                                     |                                                    |
|                                                          |   |     | <b>Basement Wall U-Factor backstop</b>       |                                                                                                                                                                                                                                                                                                                                                                                     |                                                    |
|                                                          |   |     | <b>Fenestration U-Factor backstop</b>        |                                                                                                                                                                                                                                                                                                                                                                                     |                                                    |
|                                                          |   |     | <b>Building thermal envelope</b>             | <p>UAProposed design <math>\leq 1.10 \times</math><br/>UAPrescriptive reference design</p> <p><i>The proposed building thermal envelope UA is the sum of the U-Factor times assembly area. The proposed UA should be less than or equal to the UA of the prescriptive reference design multiplied by 1.10, as calculated using the prescriptive U-Factors in Table 402.1.2.</i></p> |                                                    |
|                                                          |   |     | <b>Vapor retarder</b>                        | Complies with the vapor retarder requirements of Section R702.7 of the IRC or Section 1404.3 of the IBC                                                                                                                                                                                                                                                                             | Visual inspection at rough-in<br>R402.1.1          |
|                                                          |   |     | <b>Eave baffle</b>                           | For air-permeable insulation in vented attics, a baffle is installed adjacent to soffit and eave vents.                                                                                                                                                                                                                                                                             | Visual inspection<br>R402.2.3                      |
|                                                          |   |     | <b>Access hatches and doors</b>              | Insulated to the same R-Value required by Table R402.1.3 for the wall or ceiling in which they are installed.                                                                                                                                                                                                                                                                       | Visual inspection<br>R402.2.4.1;<br>Table R402.1.3 |
|                                                          |   |     | <b>Maximum fenestration U-factor</b>         | 0.48                                                                                                                                                                                                                                                                                                                                                                                | Visual inspection<br>R402.5                        |

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<sup>4</sup>Table R402.1.2 multiplied by 1.10 in accordance with Equation 4-1

PHIUS ALTERNATIVE COMPLIANCE OPTION | R102 *continued*

| Y                 | N | N/A | Requirement                                                  |                                                                                                                                                                                                                                                                                    | Documentation in addition to design detail | Relevant Code Section |
|-------------------|---|-----|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|-----------------------|
| Mechanical (R403) |   |     |                                                              |                                                                                                                                                                                                                                                                                    |                                            |                       |
|                   |   |     | Demand response                                              | Demand-response-capable thermostats and water heaters required                                                                                                                                                                                                                     | Electrical inspection                      | R403.1                |
|                   |   |     | Duct Testing                                                 | All ducts must be tested for tightness                                                                                                                                                                                                                                             | Duct blaster test                          | R403.3.5              |
|                   |   |     | Duct Insulation                                              | R-8 for 3 inches and larger<br>R-6 for smaller than 3 inches                                                                                                                                                                                                                       | Visual inspection at rough-in              | R403.3.1              |
|                   |   |     | Cavities as Ducts                                            | Neither Supply nor Return                                                                                                                                                                                                                                                          | Visual inspection/<br>Manual D             | R403.3.7              |
|                   |   |     | Piping Insulation                                            | R-3                                                                                                                                                                                                                                                                                | Visual inspection at rough-in              | R403.4                |
|                   |   |     | Heated water circulation and temperature maintenance systems | Controls for circulation pumps will automatically turn off the pump when water in circulation loop is at the desired temperature and there is no demand for hot water.<br><br>Controls limit the temperature of the water entering the cold water piping to not greater than 104F. | Visual inspection                          | R403.5.1              |
|                   |   |     | Drain water heat recovery units                              | Comply with CSA B55.2.<br><br>Potable water-side pressure loss for individual units connected to one or two shorts is less than 3 psi, and less than 2 psi for units connected to three or more showers.                                                                           | Visual inspection                          | R403.5.3              |
|                   |   |     | Ventilation                                                  | Comply with M1505 or IRC or IMC                                                                                                                                                                                                                                                    | Visual inspection                          | R403.6                |
|                   |   |     | Ventilation Fan Efficiency                                   | Table R403.6.2 (2021 IECC)                                                                                                                                                                                                                                                         | Visual inspection                          | Table R403.6.2        |

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PHIUS ALTERNATIVE COMPLIANCE OPTION | R102 *continued*

| Y                           | N | N/A | Requirement                                      |                                                                                                                                                                                                                                                                                                                                                                                    | Documentation<br>in addition to<br>design detail | Relevant Code<br>Section |
|-----------------------------|---|-----|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|--------------------------|
| Mechanical (R403) continued |   |     |                                                  |                                                                                                                                                                                                                                                                                                                                                                                    |                                                  |                          |
|                             |   |     | Equipment sizing and efficiency rating           | Heating and cooling equipment sized in accordance with ACCA Manual J.                                                                                                                                                                                                                                                                                                              | Visual inspection/<br>Manual J                   | R403.7                   |
|                             |   |     | Systems serving multiple dwelling units          | Comply with Section C403 and C404 of the IECC—Commercial provisions instead of R403                                                                                                                                                                                                                                                                                                | Visual inspection/<br>Manual J                   | R403.8                   |
|                             |   |     | Snow melt and ice systems                        | Controls are capable of shutting off the system when pavement temperature is greater than 50F and precipitation is not falling, and when the outdoor temperature is greater than 50F.                                                                                                                                                                                              | Visual inspection                                | R403.9                   |
|                             |   |     | Pools and spas                                   | Electric power to heaters is controlled by an on-off switch, mounted on the exterior of the heater in a location with ready access. Heaters and pump motors are equipped with time switches or other methods that can automatically shut them off and on according to a preset schedule.<br><br>Outdoor heated pools and permanent spas are provided with a vapor-retardant cover. | Visual inspection                                | R403.10                  |
|                             |   |     | Portable spas                                    | Compliant with APSP 14.                                                                                                                                                                                                                                                                                                                                                            | Visual inspection                                | R403.11                  |
|                             |   |     | Residential pools and permanent residential spas | Compliant with APSP 15.                                                                                                                                                                                                                                                                                                                                                            | Visual inspection                                | R403.12                  |

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PHIUS ALTERNATIVE COMPLIANCE OPTION | R102 *continued*

| Y                                    | N | N/A | Requirement                |                                                                                                                                                                                                                                            | Documentation<br>in addition to<br>design detail | Relevant Code<br>Section |
|--------------------------------------|---|-----|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|--------------------------|
| Electrical Power and Lighting (R404) |   |     |                            |                                                                                                                                                                                                                                            |                                                  |                          |
|                                      |   |     | High Efficacy Lighting     | 100%; controls for permanent fixtures required                                                                                                                                                                                             | Visual inspection                                | R404.1                   |
|                                      |   |     | Interior lighting controls | Permanently installed interior lighting fixtures should be controlled with either a dimmer, occupant sensor control or other control that is installed or built into the fixture.                                                          | Electrical inspection                            | R404.2                   |
|                                      |   |     | EV-readiness               | Single-family homes are required to be EV-ready or have an EV charger installed.                                                                                                                                                           | Electrical inspection                            | R404.4                   |
|                                      |   |     | Electric-readiness         | Mixed-fuel residential buildings are required to be electric-ready for:<br><input type="checkbox"/> water heating<br><input type="checkbox"/> space heating<br><input type="checkbox"/> cooking<br><input type="checkbox"/> clothes drying | Electrical inspection                            | R404.5                   |
|                                      |   |     | Solar-readiness            | SF homes are required to be solar-ready.                                                                                                                                                                                                   | Electrical inspection                            | R404.6                   |

**Additional Notes:**

*continued on page 20*

## RESIDENTIAL ZERO ENERGY PATH APPENDIX RC

| Y                                       | N | N/A | Requirement                                                                  |                                                                                                                                                                                         | Documentation in addition to design detail | Relevant Code Section as required by Table 406.2 |
|-----------------------------------------|---|-----|------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|--------------------------------------------------|
|                                         |   |     | <b>Building Thermal Envelope</b>                                             | Greater than or equal to the levels of efficiency in Table R402.1.2 or R402.1.3 of the 2015 IECC                                                                                        | Blower door test                           | R406.3                                           |
|                                         |   |     | <b>Energy Rating Index of Rate Proposed Design is less than or equal to:</b> | <input type="checkbox"/> Not including OPP: 47<br><input type="checkbox"/> Including adjusted OPP <sup>5</sup> : 0                                                                      | HERS Certificate or other ERI equivalent   | Table R406.5 (2021 IECC)                         |
| <b>General (R401)</b>                   |   |     |                                                                              |                                                                                                                                                                                         |                                            |                                                  |
|                                         |   |     | <b>Additional efficiency packages</b>                                        | According to the deletion of R401.2.5, the ERI path has no additional requirements for efficiency (beyond changing the metrics for calculations)                                        |                                            | R401.2.5                                         |
|                                         |   |     | <b>Certificate</b>                                                           | The approved party shall complete a permanent certificate and post it on a wall in the space where the furnace is located, a utility room, or an approved location inside the building. |                                            | R401.3                                           |
| <b>Building Thermal Envelope (R402)</b> |   |     |                                                                              |                                                                                                                                                                                         |                                            |                                                  |
|                                         |   |     | <b>Vapor retarder</b>                                                        | Complies with the vapor retarder requirements of Section R702.7 of the IRC or Section 1404.3 of the IBC                                                                                 | Visual inspection at rough-in              |                                                  |
|                                         |   |     | <b>Eave baffle</b>                                                           | For air-permeable insulation in vented attics, a baffle is installed adjacent to soffit and eave vents.                                                                                 | Visual inspection                          | R402.2.3                                         |
|                                         |   |     | <b>Access hatches and doors</b>                                              | Insulated to the same R-Value required by Table R402.1.3 for the wall or ceiling in which they are installed.                                                                           | Visual inspection                          | R402.2.4.1; Table R402.1.3                       |

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<sup>5</sup>Calculated in accordance with Equation RC-1, detailed in Appendix B

RESIDENTIAL ZERO ENERGY PATH | APPENDIX RC *continued*

| Y                                                 | N | N/A | Requirement                                                  |                                                                                                                                                                                                                                                                                    | Documentation<br>in addition to<br>design detail | Relevant Code<br>Section as<br>required by<br>Table 406.2 |
|---------------------------------------------------|---|-----|--------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------|
| Building Thermal Envelope (R402) <i>continued</i> |   |     |                                                              |                                                                                                                                                                                                                                                                                    |                                                  |                                                           |
|                                                   |   |     | Crawl space<br>wall insulation<br>installation               | Crawl space wall insulation is permanently fastened to the wall and extends downwards from the floor to the finished grade elevation, then vertically or horizontally for at least an additional 24 inches. Joints of the vapor retarder overlap by 6 inches and are sealed/taped. | Visual inspection at rough-in                    | R402.2.10.1                                               |
| Mechanical (R403)                                 |   |     |                                                              |                                                                                                                                                                                                                                                                                    |                                                  |                                                           |
|                                                   |   |     | Demand-response                                              | Demand-response-capable thermostats and water heaters required                                                                                                                                                                                                                     | Electrical inspection                            | R403.1                                                    |
|                                                   |   |     | Duct Insulation                                              | R-8 for 3 inches and larger<br>R-6 for smaller than 3 inches                                                                                                                                                                                                                       | Visual inspection at rough-in                    | R403.3.1                                                  |
|                                                   |   |     | Cavities as Ducts                                            | Neither Supply nor Return                                                                                                                                                                                                                                                          | Visual inspection/<br>Manual D                   | R403.3                                                    |
|                                                   |   |     | Duct testing                                                 | All ducts must be tested for tightness                                                                                                                                                                                                                                             | Duct blaster test                                | R403.3.5                                                  |
|                                                   |   |     | Piping insulation                                            | R-3                                                                                                                                                                                                                                                                                | Visual inspection at rough-in                    | R403.4                                                    |
|                                                   |   |     | Heated water calculation and temperature maintenance systems | Controls for circulation pumps will automatically turn off the pump when water in circulation loop is at the desired temperature and there is no demand for hot water.<br><br>Controls limit the temperature of the water entering the cold water piping to not greater than 104F. | Visual inspection                                | R403.5.1                                                  |

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RESIDENTIAL ZERO ENERGY PATH | APPENDIX RC *continued*

| Y                           | N | N/A | Requirement                                   |                                                                                                                                                                                                                         | Documentation<br>in addition to<br>design detail | Relevant Code<br>Section as<br>required by<br>Table 406.2 |
|-----------------------------|---|-----|-----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------|
| Mechanical (R403) continued |   |     |                                               |                                                                                                                                                                                                                         |                                                  |                                                           |
|                             |   |     | Drain water heat<br>recovery units            | Comply with CSA B55.2.<br><br>Potable water-side pressure<br>loss for individual units<br>connected to one or two shorts<br>is less than 3 psi, and less than<br>2 psi for units connected to<br>three or more showers. | Visual inspection                                | R403.5.3                                                  |
|                             |   |     | Ventilation                                   | Comply with M1505 or IRC or<br>IMC                                                                                                                                                                                      | Visual inspection                                | R403.6                                                    |
|                             |   |     | Ventilation fan<br>efficiency                 | Table R403.6.2                                                                                                                                                                                                          | Visual inspection                                | Table R403.6.2                                            |
|                             |   |     | Equipment sizing<br>and efficiency rating     | Heating and cooling<br>equipment sized in accordance<br>with ACCA Manual J.                                                                                                                                             | Visual inspection/<br>Manual J                   | R403.7                                                    |
|                             |   |     | Systems serving<br>multiple dwelling<br>units | Comply with Section C403<br>and C404 of the IECC—<br>Commercial provisions<br>instead of R403                                                                                                                           | Visual inspection/<br>Manual J                   | R403.8                                                    |
|                             |   |     | Snow melt and ice<br>systems                  | Controls are capable of<br>shutting off the system when<br>pavement temperature<br>is greater than 50F and<br>precipitation is not falling, and<br>when the outdoor temperature<br>is greater than 50F.                 | Visual inspection                                | R403.9                                                    |

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RESIDENTIAL ZERO ENERGY PATH | APPENDIX RC *continued*

| Y                                            | N | N/A | Requirement                                      |                                                                                                                                                                                                                                                                                                                                                                                    | Documentation<br>in addition to<br>design detail | Relevant Code<br>Section as<br>required by<br>Table 406.2 |
|----------------------------------------------|---|-----|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------|
| Mechanical (R403) continued                  |   |     |                                                  |                                                                                                                                                                                                                                                                                                                                                                                    |                                                  |                                                           |
|                                              |   |     | Pools and spas                                   | Electric power to heaters is controlled by an on-off switch, mounted on the exterior of the heater in a location with ready access. Heaters and pump motors are equipped with time switches or other methods that can automatically shut them off and on according to a preset schedule.<br><br>Outdoor heated pools and permanent spas are provided with a vapor-retardant cover. | Visual inspection                                | R403.10                                                   |
|                                              |   |     | Portable spas                                    | Compliant with APSP 14.                                                                                                                                                                                                                                                                                                                                                            | Visual inspection                                | R403.11                                                   |
|                                              |   |     | Residential pools and permanent residential spas | Compliant with APSP 15.                                                                                                                                                                                                                                                                                                                                                            | Visual inspection                                | R403.12                                                   |
| Electrical Power and Lighting Systems (R404) |   |     |                                                  |                                                                                                                                                                                                                                                                                                                                                                                    |                                                  |                                                           |
|                                              |   |     | High efficacy lighting                           | 100%; controls for permanent fixtures required                                                                                                                                                                                                                                                                                                                                     | Visual inspection                                | R404.1                                                    |
|                                              |   |     | Interior lighting controls                       | Permanently installed interior lighting fixtures should be controlled with either a dimmer, occupant sensor control or other control that is installed or built into the fixture.                                                                                                                                                                                                  | Electrical inspection                            | R404.2                                                    |

*continued on page 24*

RESIDENTIAL ZERO ENERGY PATH | APPENDIX RC *continued*

| Y                                                      | N | N/A | Requirement        |                                                                                                                                                                                                                                               | Documentation<br>in addition to<br>design detail | Relevant Code<br>Section as<br>required by<br>Table 406.2 |
|--------------------------------------------------------|---|-----|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------|
| Electrical Power and Lighting Systems (R404) continued |   |     |                    |                                                                                                                                                                                                                                               |                                                  |                                                           |
|                                                        |   |     | EV-readiness       | Single-family homes are required to be EV-ready or have an EV charger installed.                                                                                                                                                              | Electrical inspection                            | R404.4                                                    |
|                                                        |   |     | Electric readiness | Mixed-fuel residential buildings are required to be electric-ready for:<br><input type="checkbox"/> water heating,<br><input type="checkbox"/> space heating,<br><input type="checkbox"/> cooking<br><input type="checkbox"/> clothes drying. | Electrical inspection                            | R404.5                                                    |
|                                                        |   |     | Solar-readiness    | SF homes are required to be solar-ready.                                                                                                                                                                                                      | Electrical inspection                            | R404.6                                                    |

**Additional Notes:**

*continued on page 25*

## APPENDIX A: DEFINITIONS

**Automobile Parking Space:** A space within a building or private or public parking lot, exclusive of driveways, ramps, columns, office and work areas, for the parking of an automobile.

**Demand Response Signal:** A signal that indicates a price or a request to modify electricity consumption for a limited time period.

**Demand Responsive Control:** A control capable of receiving and automatically responding to a demand response signal.

**Electric Vehicle (EV):** An automotive-type vehicle for on-road use, such as passenger automobiles, buses, trucks, vans, neighborhood electric vehicles, and electric motorcycles, primarily powered by an electric motor that draws current from a building electrical service, EVSE (Electric Vehicle Supply Equipment), a rechargeable storage battery, a fuel cell, a photovoltaic array, or another source of electric current.

**Electric Vehicle Ready Space (EV-Ready Space):** An automobile parking space with a branch circuit and either an outlet, junction box or receptacle, that will support an installed EVSE. An EV-Ready Space should be sized for a minimum EV charging load of 7.2 kVA.

**Solar-ready Zone:** A section or sections of the roof or building overhang designated and reserved for the future installation of a solar photovoltaic or solar thermal system (2021 IECC).

**Mixed-fuel building:** A building that uses natural gas for cooking, laundry, space heating, water heating, and other secondary end-uses such as fireplaces, decorative lighting, pool and spa heating<sup>6</sup>.

**OPP:** On-site power production (calculated in accordance with RESNET/ICC301)

**CREF (Community Renewable Energy Facility) power production:** the yearly energy, in kilowatt hour equivalent (kWh<sub>eq</sub>), contracted from a community renewable energy facility that is qualified under applicable state and local utility statutes and rules, and that allocated bill credits to the rated home.

**REPC (Renewable Energy Purchase Contract) power production:** the yearly energy, in kilowatt hour equivalent, contracted from an energy facility that generates energy with photovoltaic, solar thermal, geothermal energy or wind systems, and that is demonstrated by an energy purchase contract or lease with a duration of not less than 15 years.

<sup>6</sup>Young, J., Shiao, J., & Kristjasson, S. (2016). ZNE Simulation Study—California Homes with Mixed Fuel vs. Electric Only Appliances. ACEEE Summer Study on Energy Efficiency in Buildings. <https://www.aceee.org/files/proceedings/2016/data/index.htm>

## APPENDIX B: EQUATIONS

## Equation 4-1:

$$U_{\text{proposed design}} \leq 1.10 \times U_{\text{prescriptive reference design}}$$

## Equation RC-1 (2021 IECC):

$$\text{Adjusted OPP} = \text{OPP} + \text{CREF} + \text{REPC}$$