

# Solar-Ready DRAFT Code Language

## Residential Solar-Ready Chapter 1

### SECTION RB101 – SCOPE

**RB101.1 General.** These provisions shall be applicable for new construction where solar-ready provisions are required.

### SECTION RB102 – GENERAL DEFINITION

**Solar-Ready Zone.** A section or sections of the roof or building overhang designated and reserved for future installation of a solar photovoltaic or solar thermal system.

### SECTION RB103 – SOLAR-READY ZONE

**RB103.1 General.** New residential buildings, as defined in the International Residential Code, with not less than 600 square feet of roof area oriented between 110 degrees and 270 degrees of true north or that is a low-sloped roof shall comply with Sections RB103.2 through RB103.9.

Exceptions:

1. New residential dwelling units with a permanently installed on-site renewable energy system.
2. A building where all areas of the roof that would otherwise meet the requirements of Section RB103 are in full or partial shade for more than 70 percent of daylight hours annually.

**RB103.2 Construction document requirements for solar-ready zone.** Construction documents shall indicate the solar-ready zone.

**RB103.3 Solar-ready zone areas.** The total solar-ready zone area shall be not less than 300 square feet exclusive of mandatory access or setback areas as required by the International Fire Code. New townhouses three stories or less in height above grade plane and with a total floor area less than or equal to 2,000 square feet of conditioned

space per townhouse unit shall have a solar-ready zone area of not less than 150 square feet. The solar-ready zone per townhouse unit shall be composed of areas not less than 5 feet in width and not less than 80 square feet exclusive of access or setback areas as required by the International Fire Code.

**RB103.4 Obstructions.** Solar-ready zones shall be free from obstructions, including but not limited to vents, chimneys, and roof-mounted equipment.

**RB103.5 Shading.** The solar-ready zone shall be set back from any existing or new permanently affixed object on the building or site that is located south, east, or west of the solar-ready zone a distance not less than two times the object's height above the nearest point on the roof surface. Such objects include, but are not limited to, taller portions of the building itself, parapets, chimneys, antennas, signage, rooftop equipment, trees, and roof plantings.

**RB103.6 Capped roof penetration sleeve.** A capped roof penetration sleeve shall be provided adjacent to a solar-ready zone located on a roof slope of not greater than 1 unit vertical in 12 units horizontal (8 percent slope). The capped roof penetration sleeve shall be sized to accommodate the future photovoltaic system conduit, but shall have an inside diameter of not less than 1  $\frac{1}{4}$  inches.

Exception: All conduit installed on the exterior of the structure to the solar ready zone shall not be required to be capped.

**RB103.7 Roof load documentation.** The structural design loads of roof dead load and roof live load shall be clearly indicated on the construction documents. A dead load of not less than 5 pounds per square foot shall be included in the design calculations of the solar-ready zone.

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**NOTE: There are three options below for RB103.8. The Board will choose one option they would like to incorporate. The survey will provide an option for BOTH a choice between the options AND for the Board to suggest edits to the option they selected.**

**OPTION 1 RB103.8 Interconnection pathway.** Construction documents shall indicate pathways for routing of conduit or plumbing from the solar-ready zone to the electrical service panel or service hot water system.

**OPTION 2 RB103.8 Interconnection pathway.** Conduit or plumbing shall be installed from the solar-ready zone to the electrical service panel or service hot water system, and the construction documents shall indicate location of routing of conduit or plumbing from the solar-ready zone to the electrical service panel or service hot water system.

**OPTION 3 RB103.8 Interconnection pathway.** The interconnection pathway shall comply with one of the following:

1. Construction documents shall indicate pathways for routing of conduit or plumbing from the solar-ready zone to the electrical service panel or service hot water system.
2. Conduit or plumbing shall be installed from the solar-ready zone to the electrical service panel or service hot water system, and the construction documents shall indicate location of routing of conduit or plumbing from the solar-ready zone to the electrical service panel or service hot water system.

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**RB103.9 Electrical service reserved space.** The main electrical service panel shall have sufficient reserved space to allow installation of a dual pole circuit breaker for future solar electric installation and shall be labeled "For Future Solar Electric." The reserved space shall be positioned at the opposite (load) end from the input feeder location or main circuit location.

## Commercial Solar-Ready Chapter 2

### SECTION CB101 - SCOPE

**CB101.1 General.** These provisions shall be applicable for new construction where solar-ready provisions are required.

## **SECTION CB102 – GENERAL DEFINITION**

**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.

## **SECTION CB103 – SOLAR-READY ZONE**

**CB103.1 General.** A solar-ready zone shall be located on the roof of all new commercial buildings, as defined in the International Building Code, and are oriented between 110 and 270 degrees of true north or have low-slope roofs. Solar-ready zones shall comply with Sections CB103.2 through CB103.7.

Exceptions:

1. A building with a permanently-installed, on-site renewable energy system that meets the following criteria.
  1. The system produces the energy output equivalent to covering 40% of the net roof area with solar PV calculated as the horizontally projected gross roof area less the area covered by skylights, occupied roof decks, vegetative roof areas, and mandatory access or set back areas as required by the International Fire Code.
  2. The system is located on the roof or overhang of the building or on the roof or overhang of another structure located within 250 feet of the building, on the building premise, on covered parking, or another approved location installed with the building project.
2. A building with a solar-ready zone that is shaded for more than 70 percent of daylight hours annually.
3. A building where the licensed design professional certifies that the incident solar radiation available to the building is not suitable for a solar-ready zone.
4. A building where the licensed design professional certifies that the solar-ready zone area required by Section CB103.3 cannot be met because of extensive rooftop equipment, skylights, vegetative roof areas, or other obstructions.

**CB103.2 Construction document requirements for a solar-ready zone.** Construction documents shall indicate the solar-ready zone.

**CB103.3 Solar-ready zone area.** The total solar-ready zone area shall not be less than 40 percent of the roof area calculated as the horizontally projected gross roof area less the area covered by skylights, occupied roof decks, vegetative roof areas, and mandatory access or set back areas as required by the International Fire Code. The solar-ready zone shall be a single area or smaller, separated sub-zone areas. Each sub-zone area shall be not less than 5 feet in width in the narrowest dimension.

This zone shall be located on the roof or overhang of the building or on the roof or overhang of another structure located within 250 feet of the building, on the building premise, on covered parking, or another approved location installed with the building project.

**CB103.4 Obstructions.** Solar-ready zones shall be free from obstructions, including pipes, vents, ducts, HVAC equipment, skylights, and roof-mounted equipment.

**CB103.5 Roof loads and documentation.** A collateral dead load of not less than 5 pounds per square foot shall be included in the gravity and lateral design calculations of the solar-ready zone. The structural design loads for roof dead load and roof live load shall be indicated on the construction documents.

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**NOTE: There are three options below for CB103.6. The Board will choose one option they would like to incorporate. The survey will provide an option for BOTH a choice between the options AND for the Board to suggest edits to the option they selected.**

**OPTION 1 CB103.6 Interconnection pathway.** Construction documents shall indicate pathways for routing of conduit or piping from the solar-ready zone to the electrical service panel and service hot water system.

**OPTION 2 CB103.6 Interconnection pathway.** Conduit or plumbing shall be installed from the solar-ready zone to the electrical service panel and electric energy storage system area or service hot water system, and the construction documents shall

indicate location of routing of conduit or plumbing from the solar-ready zone to the electrical service panel and service hot water system.

**OPTION 3 CB103.6 Interconnection pathway.** The interconnection pathway shall comply with one of the following:

1. Construction documents shall indicate pathways for routing of conduit or piping from the solar-ready zone to the electrical service panel and service hot water system.
2. Interconnection pathway. Conduit or plumbing shall be installed from the solar-ready zone to the electrical service panel and electric energy storage system area or service hot water system, and the construction documents shall indicate location of routing of conduit or plumbing from the solar-ready zone to the electrical service panel and service hot water system.

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**CB103.7 Electrical service reserved space.** The main electrical service panel shall have a reserved space to allow installation of a dual-pole circuit breaker for future solar electric. These spaces shall be labeled "For Future Solar Electric." The reserved spaces shall be positioned at the end of the panel that is opposite from the panel supply conductor connection.

## Residential Solar Panel Capacity Chapter 3

### SECTION RE101 – SCOPE

**RE101.1 General.** These provisions shall be applicable for all new construction for which this code applies.

**RE101.2 Electric Service Reserved Space** The main electrical service panel shall have sufficient reserved space to allow installation of a dual pole circuit breaker for future solar electric installation and shall be labeled "For Future Solar Electric." The reserved

space shall be positioned at the opposite (load) end from the input feeder location or main circuit location.

Exceptions: A dwelling unit that already must comply with the solar-ready provisions in Chapter 1.

## Commercial Solar Panel Capacity Chapter 4

### SECTION CE101 – SCOPE

**CE101.1 General.** These provisions shall be applicable for new construction for which this code applies.

**CE101.2 Electric Service Reserved Space** The main electrical service panel shall have sufficient reserved space to allow installation of a dual pole circuit breaker for future solar electric installation and shall be labeled “For Future Solar Electric.” The reserved space shall be positioned at the opposite (load) end from the input feeder location or main circuit location.

Exceptions: A building that already must comply with the solar-ready provisions in Chapter 2.

## Jurisdictional Options

**CB103.X Electrical energy storage system-ready area.** The floor area of the electrical energy storage system-ready area shall be not less than 2 feet in one dimension and 4 feet in another dimension, and located in accordance with Section 1207 of the International Fire Code. The location and layout diagram of the electrical energy storage system-ready area, including the conduit or plumbing running to the energy storage system-ready area, shall be indicated on the construction documents. The main electrical service panel shall have a reserved space to allow installation of a dual-pole circuit breaker for future electrical energy storage system installation.

**RB103.X / CB103.X Construction documentation certificate.** A permanent certificate, indicating the solar-ready zone and other requirements of this section, shall be posted near the electrical distribution panel, water heater, or other conspicuous location by the builder.

