California Title 24 Part 6 2019 Energy Code Updates

The state of California is at the forefront of energy conservation regulations designed to address climate change. Because wildfires are common in California, Title 24, the state's building code, also includes strict fire code requirements to address the vulnerability of buildings near wildfire-prone areas known as wildland urban interface (WUI) zones.

Designing buildings — whether a home or commercial space — in WUI zones can be challenging. Plastic foam exterior insulation is commonly used to meet energy-efficiency standards, but this practice can make achieving a desired fire resilience for wall and roof assemblies difficult.

ROCKWOOL stone wool insulation provides high performance solutions to meet both energy and fire codes.

Key performance properties include:

- Dimensional stability and long term thermal performance results in stable and consistent R-values for the lifetime of the building
- Ignition-resistant, noncombustible stone wool produces zero flame spread and zero smoke development

View the full Title 24 Part 6, 2019 Standard

What are the changes to insulation requirements in the California Building Energy Code?

Title 24 consists of 12 parts that set standards for all aspects of building in California, and Part 6 contains the energy code. The full code is updated every three years, most recently the 2019 Title 24 code, that went into effect on Jan. 1 2020. While the most significant changes focused on rooftop photovoltaic (PV) solar, battery storage and electric-ready wiring, the Commission also updated the insulation requirements. The new code look for a balance between an energy-efficient building and a reasonable amount of PV production.

The Building Materials Listing (BML) consists of products that have been tested by State Fire Marshal-accredited laboratories. It provides a convenient list of fire-tested products for architects and builders. ROCKWOOL currently has four products included in the BML:

- **Comfortboard® 80** continuous insulation for residential or commercial buildings
- **Comfortboard® 110** rigid continuous exterior insulation for commercial applications.
- **Toprock® DD** high-density, uncoated, stone wool insulation board for low-slope roof applications
- **Multifix™** dual-density stone wool insulation board with glass fiber coating for flat roof applications

Title 24 Part 6 paths for compliance

Architects and builders can choose how their project will comply with the energy code:

- Mandatory – These standards are always required regardless of the compliance approach used.
- Prescriptive – The building must meet prescriptive requirements laid out in the code.
- Performance – The project takes a whole building approach that uses performance-based computer modeling to allow for design flexibility in the form of trade-offs, such as using lower performing glazing in exchange for a more energy-efficient HVAC.

Roof Deck Insulation Requirements

Above deck roof insulation requires performance modeling, and cannot be used as a prescriptive option. The use of below deck insulation can still be installed as a prescriptive option.

- New insulation requirements below the roof deck increased from R-13 to R-19
- Multi-family below deck requirements allows R-13 in Zones 10 and 16

Above-grade exterior walls - prescriptive approach

- In Climate Zones 1-5, 8-16 the U-factor of 0.048 is required.
- No changes to Climate Zones 6 and 7.

Above-grade mass walls (density >45 lbs/cu.ft.) – prescriptive approach

- Option to install continuous insulation on the interior or exterior:
  - Interior insulation R-13 continuous (R-17 in Climate Zone 16)
  - Exterior insulation R-8 continuous (R-13 in Climate Zone 16)

Below-grade walls (basements) – prescriptive approach

- Option to install continuous insulation on the interior or exterior
  - R-13 continuous insulation interior (R-15 in Climate Zone 16)
  - R-5 continuous insulation exterior (R-10 in Climate Zones 14-15, R-19 in Climate Zone 16)

Additions – prescriptive approach.

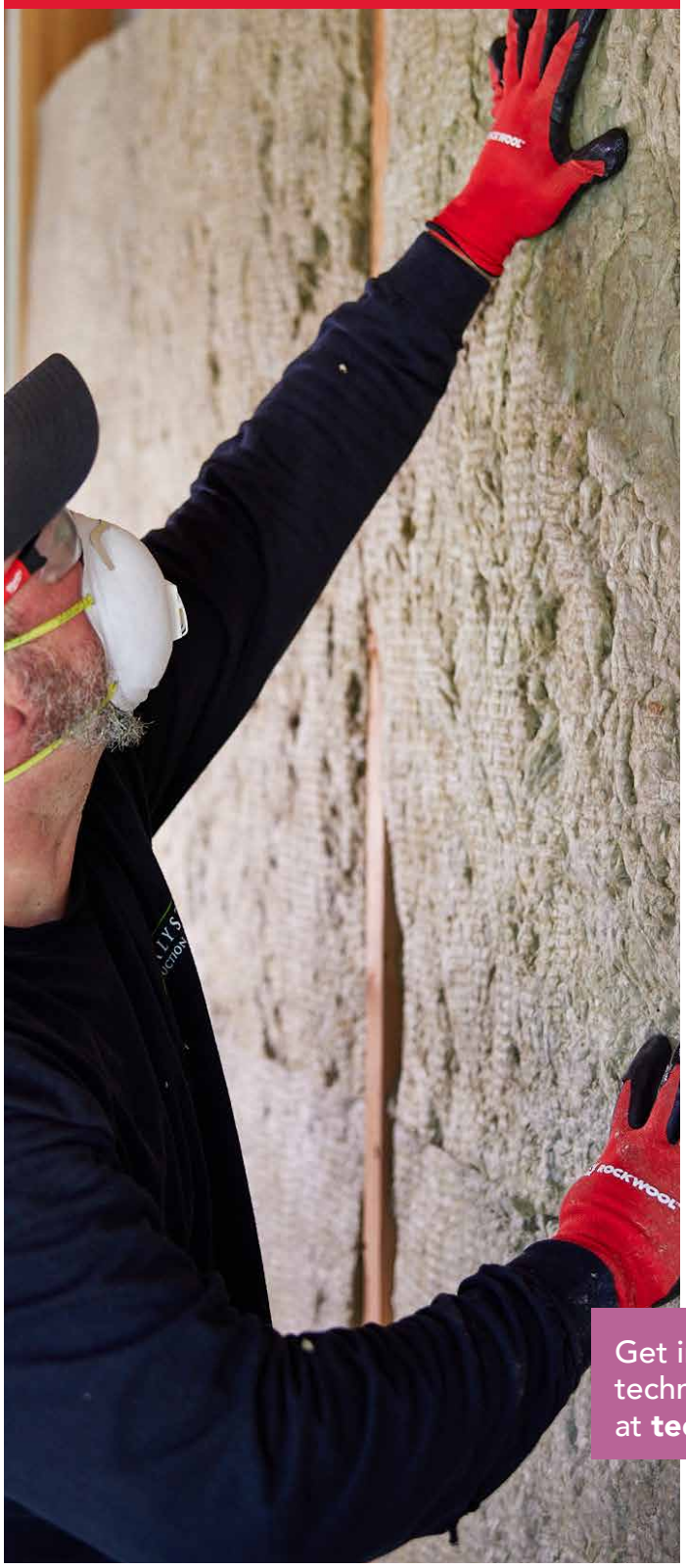
- Exterior wall additions designed as 2x6 construction require R-21 in the cavity.
- Quality Insulation Installation (QII) is required on additions larger than 700 square feet.
- Attic insulation in rafters should meet R-22.
- Attic floor insulation in additions should meet:
  - Zones 1, 11-16 require R-38
  - Zones 2-10 require R-30

2022 Title 24 Low Rise Code Updates

In addition to the adjustments made in the 2019 Title 24 code around exterior wall and roof/attic insulation requirements, the planned 2022 Title 24 code will also allow insulated walls in multi-family residential buildings with 1-hour or better fire ratings to meet a U-Value of .059 rather than .051, which makes it easier to meet both fire and energy code. This equates to an approximate effective R17 for the wall assembly. Using a noncombustible stone wool insulation in these exterior wall assemblies will help to achieve the requirements for both energy and fire performance.

The ROCKWOOL Building Science team (RBS) provides services and resources for architects, designers and specifiers to assist in optimizing the thermal efficiency and durability of your building design, reaching far beyond insulation.

Get in touch with the RBS team here



Quality Insulation Installation (QII) is required on most residential buildings under the prescriptive compliance approach.

- QII means the insulation must be installed without any voids.
- It requires third-party verification by a Home Energy Rating System (HERS) inspector of the underfloor, wall, roof ceiling and the home's air barrier.
- QII applies to new construction and additions.
- It is not required for multi-family in Climate Zone 7.
- QII sets the baseline in the performance approach. If you choose not to do QII you will end up with a 10% to 15% hit in terms of compliance and will need to identify other measures to make up for that deficit.

Choose ROCKWOOL stone wool insulation to meet energy and fire code requirements

Stone wool insulation can help your projects meet target U-values contained in the updated California energy requirements, while also providing fire protection needed in WUI zones. High density stone wool allows for easy installation, cutting around obstructions, and minimizing voids and over compression of the product within the stud wall.

Get in touch with the ROCKWOOL technical team here, or reach out through email at **techservice@rockwool.com**.