

## California Residential Code (Seismic Design Category D<sub>o</sub>) Design Provisions

### What is California Residential Code?

The intention of a California Residential Code is to allow “repetitive” members in the designs of floors, walls, and ceiling – these shall be prescriptive and do not ordinarily require a structural design to comply with the code.

### Who Can Design the Plans?

Plans for single family dwellings of light wood-frame construction as defined by the 2022 California Residential Code (CRC), may be prepared by any person, if the structure consists of not more than two (2) stories and basement in height. However, if the structure has unusual design features – if the design involves split levels, has framing irregularities, or has an unusual shape, size, or weight – and deviates from conventional light-frame parameters, it shall be designed based on an engineered system. These plans shall be prepared by a professional architect or registered engineer, licensed in the State of California. Plans prepared in accordance with the 2022 CRC must provide a complete continuous load path for all gravity and lateral loads from load origin to the foundation. All details required for constructing the complete continuous load path must be detailed on the drawings.

### What types of buildings may use Light Wood-Frame Construction?

The following are examples of the types of building where conventional light-frame construction may apply:

- One, two or three-story buildings housing Group R Occupancies (residential).
- Group U Occupancies (detached/attached private garages, sheds, and agricultural buildings).
- Interior non-load bearing partitions, ceilings, and curtain walls in all other occupancies.

### Wall Bracing Design Provisions (2022 CRC, Section R602.10)

- **Braced wall lines** are basic elements of conventional light-frame construction - exterior walls and main cross partitions are required to be braced to resist wind and seismic forces.
- Braced wall lines shall consist of **braced wall panels** which meet the requirements for location, type and amount of bracing. Reference table in this handout and are in line or offset from each other by **not more than 4 feet**.
- All braced wall panels (i.e., **type** and **length**) shall be clearly indicated on the plans. Construction of braced wall panels shall be by one of the methods found under “*Permitted Types of Braced Wall Panels*”
- Braced wall panel sole plates shall be nailed to the floor framing with 3-16d nails per 16” on center. Blocking between joists or rafters shall be connected to the top plates with 3-8d toenails. Where joists are perpendicular to braced wall panels above, **blocking** shall be provided over and in line with the braced wall panels.
- Spacing of braced wall panels shall **not exceed 20-ft** between panels.
- Braced wall panels may be replaced by **alternate braced wall panels** which consist of not less than **2-ft 8-in** and a height of not more than **10-ft**.
- The above requirements are just a sample of the prescriptive requirements for braced wall design. See the 2022 California Residential Code for all requirements.