



**COUNTY OF ALAMEDA,
PUBLIC WORKS AGENCY,
BUILDING INSPECTION DEPARTMENT**

Public Works Agency
—Alameda County—

399 Elmhurst Street, Hayward, CA 94544
(510) 670-5440, Fax (510) 293-0960
<https://www.acpwa.org/permits/building-inspections/index.page>

This brochure is designed to provide basic information on how residents can strengthen their single family homes to better withstand earthquakes. More detailed information can be found at the website of the Association of Bay Area Governments (ABAG) – a regional planning agency for governments. Links to their website are provided under each section.

BAY AREA EARTHQUAKES

Most of Alameda County's densely populated areas are situated near active seismic fault zones, such as Hayward Fault. As evidenced during the 1989 Loma Prieta earthquake that large of an earthquake can cause significant damages to weak buildings. Therefore, investing to strengthen your home will go a long way to preserving property damages when the next large event strikes our area. Use the following link to find out more about Earthquakes and fault zones in the Bay Area:

<http://resilience.abag.ca.gov/earthquakes/>.

EARTHQUAKE HAZARDS FOR HOMES

Many wood-framed homes, particularly those homes built prior to 1970's, may not be adequately anchored to foundations or cripple walls that can be shaken off during an earthquake. Unsecured Water Heaters could fall during an earthquake and may break a gas line and cause a fire. Unreinforced brick chimneys could fall to the ground and damage houses when not properly retrofitted to code standards. A soft building line may exist for buildings with large doors, windows or garage openings.

STRENGTHEN YOUR HOME

- 1. Anchor Homes to Foundations:** Involves strengthening the walls of the crawl space under your home and making sure that it is attached to the foundation with bolts or anchors, and to floor framing above:
<https://www.earthquakecountry.org/step4/notbolted/>.
- 2. Secure Water Heaters:** Properly securing your water heater will minimize danger from fire or water leaks during earthquake –
<https://www.earthquakecountry.org/step1/waterheater/>.
- 3. Chimney Safety:** Unreinforced brick chimneys will break at the roofline during earthquake and can fall into the home, causing serious injury or death. Retrofitting your unreinforced brick chimneys to code standards is essential to protect your home. Visit the following website to get details:
<https://www.earthquakecountry.org/step4/urmchimneys/>
- 4. Strengthening Shear Walls & Other Structural Components:** You will need to hire a California licensed engineer to evaluate the building conditions and determine the best earthquake retrofits to your home.

STANDARD HOME STRENGTHENING PLANS

Throughout years of efforts from various organizations, a standard plan set of Residential Seismic Strengthening has been developed and accepted by most of Bay Area Building Departments. This plan set can be used for your permit submittal. You can download a copy of the plan set from the following link at:

<https://abag.ca.gov/sites/default/files/plan-set-a.pdf>

PERMITS

You must obtain a building permit from the Building Department for structural work on your home. The building permit is your record of the work performed to meet the State building code and acceptable construction standards verified by the County building inspector.

The Alameda County Building Inspection Department is a full cost recovery organization; therefore, there will be permit service fees for the building permit. Permit service fees will include processing, plan review, permit issuance, and inspection for your project. You can view service fee schedule and estimate permit fees from:

<https://www.acpwa.org/permits/building-inspections/index.page?>

HIRING PROFESSIONALS and CONTRACTORS

When structural strengthening of your home is beyond a simple step, particularly if your home is more than one story or on a hillside, you should consider hiring a design professional such as a licensed architect or engineer to evaluate your home to best retrofit the house. The following link will help you hire a design professional:

<https://cab.ca.gov/consumers/>

When the construction retrofit work is beyond your ability and you want to hire a licensed contractor, please visit:

https://www.cslb.ca.gov/Consumers/Hire_A_Contractor/

ABAG also compiled a list of local contractors and engineers on their website.

RESOURCES

1. Association of Bay Area Government (ABAG): (510) 464-7900, <https://abag.ca.gov/>.
2. Contractors State License Board: (510) 577-2429, www.cslb.ca.gov/.
3. Structural Engineers Association of Northern California (SEAONC): (510) 974-5147. www.seaonc.org/.
4. American Institute of Architect (AIA) – East Bay Chapter: (510) 464-3600, www.aiaeb.org.
5. PG&E Earthquake Information https://www.pge.com/en_US/safety/emergency-preparedness/natural-disaster/earthquakes/earthquakes.page
6. USGS <https://www.usgs.gov/programs/earthquake-hazards/earthquakes>

CODES

Effective: January 1, 2023

2022 California Building Standards Code:

- 2022 California Building Code (T24, Part 2).
- 2022 California Residential Code (T24, Part 2.5).
- 2022 California Electrical Code (T24, Part 3).
- 2022 California Mechanical Code (T24, Part 4).
- 2022 California Plumbing Code (T24, Part 5).
- 2022 California Energy Code (T24, Part 6).
- 2022 California Historical Code (T24, Part 8).
- 2022 California Existing Building Code (T24, Part 10).
- 2022 California Green Building Code (T24, Part 11).
- *Alameda County Building Ordinance: The Adoption and Amendments of California Building Standards Code.*



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GUIDELINE

**EARTHQUAKE
STRENGTHENING
FOR
RESIDENTIAL HOMES**

2022 California Building Code

**IN UNINCORPORATED
ALAMEDA COUNTY**

IMPORTANT, PLEASE READ!!

This brochure provides basic information about work exempt from permit according to 2022 California Building Codes & adopted County Ordinances. Please refer to the code language for detailed requirements.



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