

**Summary of URM Retrofit Laws
California Jurisdictions**

California State Law

Defines “potentially hazardous bldg” as constructed before bldg code required earthquake-resistant design of unreinforced masonry. Warehouses and other bldgs not used for human habitation are excluded unless emergency services equipment or supplies are stored there. Buildings having 5 or fewer living units are also excluded.

Law requires local jurisdictions in seismic zone 4 (the zone with the highest earthquake risk) to:

- identify all potentially hazardous buildings; and
- establish a mitigation program that includes notice to bldg owners. Local programs may include measures to strengthen bldgs, change use to acceptable occupancy level, demolish bldgs, tax incentives and low-cost loans for seismic rehabilitation.

Owners who have actual or constructive notice that their bldg located in seismic zone 4 is URM, and if building isn’t retrofitted by 12/31/2004, must post a large sign at entrance “Earthquake Warning. This is an unreinforced masonry building. You may not be safe inside or near unreinforced masonry buildings during an earthquake.”

Leases and rental agreements for bldgs subject to the law entered into after 1/1/2005 must contain the statement “This building, which you are renting or leasing, is an unreinforced masonry building. Unreinforced masonry buildings have proven to be unsafe in the event of an earthquake. Owners of unreinforced masonry buildings are required to post in a conspicuous place at the entrance of the building, the following statement: ‘Earthquake Warning. This is an unreinforced masonry building. You may not be safe inside or near an unreinforced masonry building during an earthquake.’ ”

Sign and lease provisions don’t apply to URM’s if walls are nonload bearing with steel or concrete frame, or to buildings retrofitted according to local ordinance.

Penalties for not complying with sign and lease reqments include administrative fine of \$250, plus add’l \$1000 if not in compliance within 30 days of the first fine.

Jurisdiction	Scope	Timeline for compliance	Standard for Retrofits	Penalties & Enforcement
San Francisco 2000 URM’s; apx 150 not in compliance	<ul style="list-style-type: none"> • One or more URM bearing walls and • Bldg is entirely residential; ≥ 5 units 	Bldg Official must issue notices by 2/15/1993 Up to 13 years to complete alterations, depends on level of risk. Measured from 2/15/1993 <ul style="list-style-type: none"> • 3.5 yrs for Level 1 (high) risk 	Comply with Chapter 16C of SF Building Code (not the standards for new bldgs) Essential & hazardous facilities per ASCE Std req’d to comply with new code.	Notice and inventory filed with property records until bldg complies Barricade or abate & recover costs \$500 per day penalty

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<p>as of Feb 2008; apx 100 demo'd</p> <p>Bonds used to fund loans to bldg owners, but program was too complex for most owners</p>	<ul style="list-style-type: none"> • Not accessory to previous • Not already in compliance 	<p>= assemblies \geq 300 occupants, schools, or > 3 stories on poor soil (areas of poor soil are mapped)</p> <ul style="list-style-type: none"> • 5 yrs for Level 2 = non-Level 1 on poor soil in certain mapped locations • 11 yrs for Level 3 = buildings in Level 2 mapped areas not on poor soils • 13 yrs for Level 4 = all other URM <p>Phasing may be allowed</p>	<p>Historic bldgs can choose Chap 16B or State Historic Bldg Code</p> <p>Specific provisions for mixed construction (e.g. part URM, part wood)</p> <p>Bolts Plus* allowed if justified by engineer according to Section 1609C.2 and <u>not</u>:</p> <ul style="list-style-type: none"> • Assembly with \geq 300 occupants, • School, • > certain amount of hazardous materials, • > 6 stories <p><i>*Bolts Plus is the installation of shear and tension anchors at the roof and floors and, when required, the bracing of the unreinforced masonry bearing walls upon evaluation of the height-to- thickness ratio of these walls.</i></p> <p>Energy Code only applies if change of use, increase in conditioned space, or alteration to mechanical or lighting system.</p> <p>Specifically states there is no exemption from state and federal accessibility reqmts.</p>	<p>6 months in jail per day</p>

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<p>Berkeley</p> <p>700 URMs identified; all but 22 are retrofitted. Some assistance is available— see Bay Area Best Practices summary</p>	<ul style="list-style-type: none"> • URM built before 1956 approved as commercial or mixed use; or • URM built before 1956 containing \geq 5 living units; or • Bldg with at least one brick infill wall located in high pedestrian traffic corridor; or • Bldg with brick veneer \geq 10' above grade located in high pedestrian traffic corridor; or • Bldg with unreinforced parapet with height/depth ratio $>$ 1:1/2 located in high pedestrian traffic corridor 	<p>2 yrs: engineering report due Timeline for retrofit depends on level of risk. Measured from 1/15/2001.</p> <ul style="list-style-type: none"> • 3/1/1997: Risk Category (RC) I = commercial bldgs* with occupant load \geq 1000; hospitals, fire & police stations, govt admin offices • 3/1/1997: RC II = Commercial bldgs with occupant load \geq 300; Residential bldgs with $>$ 100 living units/bedrooms; Mixed use with combined occupancy load $>$ 300 • 6/30/1997: RC III = Commercial bldgs with occupancy load \geq 100; Residential bldgs with \geq 50 living units/bedrooms; Mixed use with combined occupancy load $>$ 100 • 12/31/1997: RC IV = Commercial bldgs with occupancy load \geq 50; Residential bldgs with $<$ 50 living units/bedrooms; Mixed use with combined occupancy load $>$ 50. • 12/31/1998: RC V = 	<p>More stringent of Bldg Code for new construction or “performance standard”.</p> <p>Prescriptive standards can be used for “simple bldgs” rectangular or square bldgs \leq 2 stories</p> <p>1997 Uniform Code for Building Conservation Appendix Chapter 1 as amended is adopted</p> <p>Historic bldgs comply with more stringent of State Historical Bldg Code or UCBC</p> <p>Essential and hazardous facilities as defined by Bldg Code comply with more restrictive of UCBC & reqmts for new construction.</p>	<p>File notice with property title that transfer of title or refinancing reqs compliance with retrofit reqments</p> <p>Properties not retrofitted are public nuisances</p> <p>Notice of Violation ordering abatement</p>

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		<p>Commercial bldgs with occupancy load ≤ 50; Residential bldg with ≤ 20 living units/bedrooms; Mixed use with combined occupancy load ≤ 50</p> <ul style="list-style-type: none"> • 12/31/2001: RC VI = Nonresidential bldg used < 20 hrs per week; any bldg with masonry veneer $\geq 10'$ in height; any bldg with masonry parapet with ratio $> 1\frac{1}{2}$; bldg with masonry infill located in high pedestrian traffic corridor <p><i>*Commercial bldg includes businesses, assembly bldgs, educational and institutional occupancies</i></p> <p>Hardship extensions for up to 18 months</p> <p>City could order immediate retrofit in specified circumstances</p>		

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<p>Oakland</p> <p>Bay Area Best Practices summary says Oakland minimum standard is Bolts Plus. If voluntary upgrade to UCBC, more lucrative uses allowed in the building, such as live-work</p> <p>1612 URMs; by 2003 89% demo'd or retrofitted. 200+ met UCBC standard.</p>	<p>URMs built prior to 11/26/1948 Bldg Code</p> <p>Except:</p> <ul style="list-style-type: none"> • Detached single family residence or duplex • Detached multifamily with ≤ 5 units; • Bldgs accessory to the above; • Bldg structurally upgraded after 11/26/48 to comply with earthquake stds in effect at the time. 	<p>Bldg Dept req'd to identify priority bldgs based on soil type, # stories, adjacent pedestrian & vehicle traffic, use, # of occupants, complexity of retrofit work. 3 levels established.</p> <p>Bldgs with URM bearing walls req'd to apply for bldg permit within 1-3 yrs & complete construction in 2-4 yrs, depending on priority level</p> <p>Frame bldgs with URM infill walls & bldgs with URM veneer req'd to apply for bldg permit in 3-5 years, & complete construction in 5-7 yrs, depending on priority level</p>	<p><u>Bearing wall bldgs:</u> UCBC applied except that current code applied to parapets & nonstructural falling hazards</p> <p>Req'd to upgrade the following elements “to mitigate potential falling hazards”:</p> <ul style="list-style-type: none"> • Secure roof & floor to exterior walls, design connections for out of plane forces on the walls • Brace or reinforce parapets to current code, • Remove or upgrade nonstructural falling hazards to comply with current code, • Stairways, corridors, exit balconies, exit courts, exit passageways req'd to be protected from falling hazards <p><u>Frame bldgs with URM walls & bldgs with URM veneer:</u></p> <ul style="list-style-type: none"> • Brace or reinforce parapets to current code, • Remove or upgrade nonstructural falling hazards to comply with current code, • Stairways, corridors, exit balconies, exit courts, exit passageways req'd to be protected from falling hazards 	<p>\$1000 for failure to file timely bldg permit application & engineering analysis; \$5000 max per bldg (unclear how the fine accumulates)</p> <p>\$2000 per month for failure to complete upgrade; \$10,000 max per bldg</p> <p>City can file lien.</p> <p>Additional enforcement actions:</p> <ul style="list-style-type: none"> • Notify all parties with financial interest in property; • Record statement with property records; • Post a sign designating bldg as potentially hazardous; • Revoke Certificate of Occupancy & evacuate bldg 3 yrs after date work was due • Declare public nuisance • Injunction • Withhold other bldg permits for the property • Charge bldg owner with an infraction

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Los Angeles	<p>Bldgs with URM bearing walls built, under construction, or having a bldg permit prior to Oct 6, 1933</p> <p>Doesn't apply to:</p> <ul style="list-style-type: none"> • one- and two-family dwellings • detached apartment houses with less than 5 dwellings used only for residence • Historic bldgs comply with Division 84 (<i>Div 84 not found in current code</i>) and California Historical Bldgs Code 	<ul style="list-style-type: none"> • Structural analysis and plans for retrofit are due within 270 days¹ • Plan for wall anchors is due within 120 days¹ • Demolition plan is due within 270 days¹ <p>¹ <i>time is measured from date of service of order</i></p> <ul style="list-style-type: none"> • Alterations or demo complete within 3 years² • Wall anchor installation complete within 1 year² • Time extensions possible for wall anchor installations. <p>² <i>time is measured from issuance of building permit. There were intermediate deadlines for obtaining bldg permit, commencing construction</i></p> <p>Different rules for vacant buildings– For one-story bldg with wall anchors that is being retrofitted,</p> <ul style="list-style-type: none"> • Plans & structural analysis within 180 days of service of notice 	<p>As specified in the ordinance (Sec. 91.8808, .8809, .8811) Parapets & exterior wall appendages req'd to be removed, stabilized or braced. Max height of unbraced parapet is 1.5 x thickness.</p>	<ul style="list-style-type: none"> • City files notice with property records that bldg is subject to retrofit reqmts. • City may order bldg to be vacated; if owner doesn't comply within 90 days after order to vacate, city can order demolition of bldg. • Failure to comply is misdemeanor. • Demolition of building by city allowed for vacant bldgs.

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		<ul style="list-style-type: none"> • Bldg permit for alterations • issued within 270 days of service of notice. • Work to commence within 90 days of issuance of bldg permit • Complete work within 18 months of date of notice <p>For one-story bldg with wall anchors that is being demolished,</p> <ul style="list-style-type: none"> • Application for demo due within 180 days of service of notice • Permits for demo issued within 210 days of notice • Commence demolition within 21 days of obtaining permit • Complete demolition within 300 days of service of notice 		

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<p>San Diego</p>	<p>Bldgs constructed or with bldg permit issued before 3/24/1939</p> <p>Doesn't apply to:</p> <ul style="list-style-type: none"> • one- and two-family dwellings • detached apartment houses with less than 5 dwellings used only for residence • bldgs that have been retrofitted to certain standards before 1/1/2008 <p>Applies to wall anchorage and bracing of parapets and other exterior objects that have potential to give way internally or onto lower adjacent property, exits or public way, and extend above either the closest adjacent roof-to-wall anchors</p>	<p><u>Essential and hazardous facilities</u> demolish or retrofit by 1/1/2006</p> <p><u>Remodels > 100% value of bldg</u> in 5 yr period after 1/1/2001 must complete seismic retrofit within 10 years from issuance of permit that puts it over 100%</p> <p><u>Change to higher hazard category</u> of > 33% of floor area & occupant load of bldg increases (Table 145-26A lists hazards—high includes assembly, education, hospitals, nursing homes, restaurants with more than 50 occupants; residential uses are second highest) must complete seismic retrofit within 10 years of date of change of use</p> <p><u>Wall anchorage and parapets</u> within scope must either be stabilized, removed, or braced by 1/1/2006</p> <p><u>Remodels > 50% value of bldg</u> in 5 yr period after 1/1/2001; by 1/1/2006</p>	<p><u>Essential and hazardous facilities</u> have to comply with standards for new bldgs.</p> <p><u>Remodels > 100% value of bldg</u> in 5 yr period after 1/1/2001; <u>Change to higher hazard category</u> either comply with Historical Bldg Code, 2007 Building Code, or regs for archaic unreinforced masonry</p> <p><u>Remodels > 50% value of bldg</u> in 5 yr period after 1/1/2001; floor-to-wall and roof-to-wall anchors on perimeter</p> <p><u>Wall anchorage and parapet bracing</u> must meet Section A113.1 of 2007 CA Existing Bldg Code or State Historical Bldg Code</p> <p><u>Historical bldgs</u> comply with State Historical Bldg Code; strength values for existing materials from 2007 CA Existing Bldg Code</p> <p><u>Bldgs of “archaic unreinforced masonry”</u> (is there any other kind of unreinforced masonry?) For walls of unreinforced unburned clay, adobe or stone masonry:</p> <ul style="list-style-type: none"> • Height or length-to-thickness ratio is limited by 2007 CA Existing Bldg Code; bond beam req'd • Exterior bearing wall minimum thickness of 18”. • No adobe or stone structure > 1 story without historic evidence • Newly reconstructed walls must have reinforced concrete foundations 50% wider than the wall. Less is OK if facing is needed for authenticity • New or existing unstabilized brick and adobe brick 	<p>Bldg may be vacated</p> <p>Bldg may be demolished</p>

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	or the roof sheathing.		masonry shall test to 75% of compressive strength req'd for new materials. <ul style="list-style-type: none"> • Strength values for existing and new materials from 2007 CA Existing Bldg Code 	

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