

**Simplified Seismic Assessment Form
For Detached, Single-Family, Wood-Frame Dwellings**

(Please print all information)

Grade

| | | | |
|----------------|---------------------|----------|------|
| Street Address | Community/Area/City | Zip Code | Date |
|----------------|---------------------|----------|------|

| | | |
|-------|-----------|------------------------------|
| Owner | Inspector | Inspection Form # (optional) |
|-------|-----------|------------------------------|

For each question, circle only one answer. Circle the one with higher penalty if more than one answer applies. Exception: question B-1

A. Foundation System (If the dwelling has a crawl space, the inspector should view all areas that are accessible.)

| | <u>Penalty</u> | | <u>Penalty</u> |
|--|----------------|--|---|
| *A-1 The exterior footing is: | | A-4 For a foundation on a slope of 3:1 or steeper | |
| a. continuous concrete or reinforced masonry footing | [0] | a. is the top of the footing parallel to the slope? | [3.7] |
| b. continuous brick, masonry or stone footing | [4.2] | b. is the top of the footing stepped? | [1.8] |
| c. a series of posts on isolated caissons/pads/soil | [5.6] | c. are there no steps in the footing stem? | [0.6] |
| A-2 The first floor of the structure is: | | d. not applicable | [0] |
| a. slab-on-grade | [0] | *A-5 For a foundation system supporting a raised wood floor | |
| b. wood-framed, over crawl space or basement | [2.9] | a. the mudsill of the exterior walls is bolted to the foundation with average bolt spacing of 72" or less. | [0] |
| A-3 The interior main floor framing is supported on: | | b. the mudsill-to-foundation connection has been rehabilitated to the equivalent of 72" or less bolt spacing | [0] |
| a. continuous stem walls or a combination of continuous stem walls and girders on posts bearing on concrete footings/caissons, | [0] | c. the bolts have > 72" average spacing | [1.7] |
| b. girders on posts bearing on piers/pad footings | [0.8] | d. there are no foundation bolts | [4.6] |
| c. girders on posts not supported on concrete footings | [2.2] | e. not applicable | [0] |
| d. not applicable: slab-on-grade | [0] | | |
| | | Total | <input style="width: 50px; height: 20px;" type="text"/> |

B. Superstructure Framing and Configuration (Every accessible area such as the attic and under-floor area that reveals structural elements must be inspected.)

| | <u>Penalty</u> | | <u>Penalty</u> |
|--|----------------|---|---|
| B-1 Does the dwelling have: (circle all that apply, a to e) | | *B-5 The exterior wall covering is primarily: | |
| a. unsymmetrical wall strength | yes [1.6] | a. siding (horizontal or vertical) | [2.5] |
| b. reentrant corners | yes [0.3] | b. stucco, plywood (T1-11) or diagonal siding | [0] |
| c. floor diaphragm discontinuity (spilt level) | yes [2.0] | c. masonry veneer | [3.5] |
| d. out-of-plane offsets in walls more than 4' | yes [0.4] | B-6 Is there evidence of interior remodeling that has removed interior walls? | yes [1.0] no [0] not applicable [0] |
| e. non-parallel seismic resisting systems | yes [0.6] | | |
| f. none of the above, or built after 1992 | [0] | *B-7 Is the dwelling located on a 3:1 slope or steeper with wood frame braces or tension only braces below the lower level diaphragm? | yes [2.5] no [0] not applicable [0] |
| *B-2 For any of the first floor exterior walls, the total length of wall between openings is less than: (exclude < 4 ft. panels) | | B-8 The number of stories is | a. one [0] b. two [1.8] c. 3 or more [3.6] |
| a. 20% the length of the wall, if a single story | yes [3.2] | | |
| b. 25% the length of the wall, if two stories | yes [3.2] | *B-9 The main level floor is supported on: | |
| c. 40% the length of the wall, if 3 stories or more | yes [3.2] | a. cripple stud wall with no visible retrofit | [8.8] |
| d. none of the above | [0] | b. cripple wall with original plywood sheathing | [2.0] |
| *B-3 If the roofing is heavy (i.e. clay or concrete tile) is the dwelling: | | c. rehabilitated cripple wall, built after 1992 | [1.0] |
| a. single story? | [1.6] | d. no cripple wall | [0] |
| b. multi story? | [3.5] | | |
| c. not applicable: roofing is light | [0] | Total | <input style="width: 50px; height: 20px;" type="text"/> |
| *B-4 For an attached garage with a second floor above, the narrow walls on either side of the garage door openings have: | | | |
| a. wood structural panels on both walls | [0.5] | | |
| b. steel frames around or along side the door | [0] | | |
| c. none of the conditions specified in items a and b above are visible | [3.0] | | |
| d. not applicable: (single story), or built after 1992 | [0] | | |

*Condition that may be improved by seismic rehabilitation; see page 4, Section H

C. General Condition Assessment

| | <u>Penalty</u> | | <u>Penalty</u> |
|---|---|---|--|
| C-1 The overall condition of the main structure is: | | | |
| a. good (essentially crack free, no moisture/water intrusion problems) | [0] | *C-4 Is there any evidence of: | a. yes [4.0] |
| b. fair (minor wood decay and cracks) | [2.1] | stucco detachment, bowing of stucco, | b. minor [2.0] |
| c. poor (many cracks interior and exterior, floor unlevel and wood decay) | [4.3] | corroded chicken wire, extensive cracking at finished grade above the bottom of the stucco? | c. none [0] |
| *C-2 "Moisture condition" at the foundation level is: | | *C-5 At the foundation level, is there: | |
| a. well-ventilated/well-drained, no standing water or evidence of past standing water at perimeter footings or under house. | [0] | a. significant deterioration visible (corrosion, material breakdown) | [2.6] |
| b. evidence of moisture damage wood decay, extensive stucco cracks at mudsill, ground slopes down to foot print and does not drain water from footings. | severe [2.8] moderate [1.4] | b. some deterioration visible | [1.3] |
| | | c. no deterioration visible | [0] |
| *C-3 In the underfloor area, has there been any structural alteration (e.g. cutting or notching of framing for elec., plumb., mech) that would affect the performance of the dwelling in an earthquake? | yes [3.1] no [0] not applicable [0] | C-6 Throughout the dwelling, the quality of construction appears to be: | a. good [0] b. average [1.7] c. poor [3.5] |
| Total | | | <input type="text"/> |

D. Nonstructural Elements, Age, and Size

| | <u>Penalty</u> | | <u>Penalty</u> |
|---|---|---|--|
| *D-1 The chimney inspection revealed: | | *D-4 Is stone or brick veneer present on any exterior wall? | a. full story height [1.7] b. partial story height [1.0] c. none [0] |
| a. properly connected anchor straps tying the masonry/concrete chimney(s) at side of house to the roof or ceiling; or, roof diaphragm encloses chimney. | yes [1.0] no [2.1] | D-5 The dwelling was built: (if remodel/added area >50% of total area, use remodel/addition date) | a. before 1920 [2.6] b. 1921 to 1977 [2.0] c. 1978 to 1993 [1.0] d. 1994 or later [0] |
| b. dwelling has no masonry/concrete chimney | [0] | D-6 The approximate total floor area (sq. ft.) of the house and attached garage is: | a. <1600 [0] b. 1601-2500 [0.6] c. >2501 [1.3] |
| *D-2 Does the gas water heater have City of L.A. approved anchor straps and water and gas connections? | yes [0] no [1.3] | | |
| If electric water heater, does it have City of L.A. approved anchor straps? | yes [0] no [0.7] | | |
| *D-3 Are earthquake-activated gas shut-off valves present? | yes [0] no [1.0] not applicable [0] | | |
| Total | | | <input type="text"/> |

E. Local Site Conditions

| | <u>Penalty</u> | | <u>Penalty</u> |
|---|----------------|--|---|
| E-1 The structure is located primarily on: | | E-4 The evidence of differential settlement in or around the house is: | |
| a. a flat lot or slope < 3:1 | [0] | a. extensive | [2.5] |
| b. steep slope (> 3:1) | [3.0] | b. minor | [1.0] |
| c. cut-and-fill lot | [3.2] | c. none visible | [0] |
| E-2 The dwelling is located on a cut-and-fill pad, which was developed: | | E-5 Does the slope above or below the structure appear to be unstable? | yes [3.2] no [0] not applicable [0] |
| a. before 1963 | [2.6] | | |
| b. 1964 or later | [1.3] | | |
| c. dwelling is <u>not</u> on cut-and-fill pad | [0] | | |
| *E-3 The exterior concrete footing has: | | *E-6 General condition of site drainage: | |
| a. no visible cracks or a few minor cracks | [0] | a. roof gutters and downspouts collecting and conducting water away from foundation. | [0] |
| b. minor cracks in several areas | [1.0] | b. water collecting at/near perimeter footing with no positive slope away from house. | [2.6] |
| c. extensive cracking | [2.6] | c. no roof gutters but drainage appears to be adequate or roof gutters with downspouts that empty into splash blocks | [1.3] |
| Total | | | <input type="text"/> |

F. Regional Seismic Hazard Score (Considers the potential for shaking hazard, fault rupture, and liquefaction.)

F-1 Enter points for shaking hazard potential for zip code [] in which dwelling is located (from Table 1)

F-2 Is zip code exposed to fault rupture potential? (see Table 2) yes [1.0] no [0]

F-3 Liquefaction potential for zip code (see Table 3) is: high [0.9] moderate [0.4] not applicable [0]

F-4 If property is in zip code 90272, is 1st floor 9 ft. or more above high tide level? yes [0] no [1.1] not applicable [0]

F-5 If property is in zip code 90291, 90292 or 90293, is 1st floor 14 ft. or more above high tide level? yes [0] no [1.0] not applicable [0]

Total Seismic Hazard Score

(Sum of F-1 through F-5)

Table 1. Shaking Hazard Potential By Zip Code

| Points | City of Los Angeles Zip Codes |
|--------|---|
| 9 | 90004, 90028, 90029, 90038, 90041, 90078, 90093, 91017, 91327, 91328, 91333, 91334, 91345, 91388, 91394, 91395, 91401, 91402, 91405, 91407, 91408, 91411, 91412, 91426, 91494, 91496, 91497, 91602, 91605, 91606, 91607, 91609, 91610, 91615, 91616, 91617 |
| 8 | 90005, 90010, 90020, 90024, 90035, 90036, 90048, 90065, 90067, 90070, 90073, 90075, 90076, 91021, 91118, 91187, 91191, 91222, 91224, 91303, 91304, 91305, 91306, 91309, 91324, 91325, 91326, 91329, 91330, 91331, 91335, 91337, 91343, 91344, 91346, 91352, 91353, 91357, 91365, 91370, 91371, 91385, 91403, 91406, 91409, 91410, 91423, 91436, 91470, 91495, 91499, 91601, 91603, 91611, 91612 |
| 7 | 90006, 90015, 90016, 90017, 90019, 90025, 90026, 90030, 90031, 90034, 90039, 90042, 90049, 90051, 90053, 90054, 90056, 90057, 90060, 90064, 90066, 90071, 90074, 90084, 90086, 90087, 90088, 90094, 90097, 90099, 90248, 90291, 90292, 91041, 91316, 91356, 91364, 91367, 91399, 91404, 91413, 91416, 91604, 91614 |
| 6 | 90001, 90002, 90007, 90008, 90011, 90012, 90013, 90014, 90018, 90022, 90033, 90040, 90047, 90052, 90055, 90058, 90059, 90061, 90063, 90079, 90089, 90091, 90096, 90502, 90710, 90733, 90744, 91312, 91313 |
| 5 | 90003, 90021, 90023, 90037, 90043, 90044, 90046, 90062, 90077, 90082, 91012, 91023, 91311 |
| 4 | 90009, 90045, 90050, 90068, 90069, 90080, 90083, 90296, 90731, 91042, 91302, 91308, 91608 |
| 3 | 90027, 90032, 90293, 90732, 91040 |
| 2 | 90734 |
| 1 | 90072, 90272, 91226, 91322, 91372 |

Table 2. City of Los Angeles Zip Codes With Potential Surface Fault Rupture (Fault names are underlined)

| | |
|---|---|
| <u>Palos Verdes Hills</u> : 90731, 90732 | <u>Newport Inglewood</u> : 90025, 90034, 90047, 90056, 90064, 90248 |
| <u>Santa Monica/Raymond</u> : 90024, 90025, 90027, 90028, 90039, 90042, 90046, 90061, 90065, 90068, 90069 | <u>Hollywood</u> : 91423, 91601, 91607, |
| <u>San Fernando</u> : 91331, 91342, 91344 | <u>Northridge</u> : 91311, 91324, 91325, 91343 |
| | <u>Verdugo</u> : 91040, 91042 |

Table 3. City of Los Angeles Zip Codes With Potential Liquefaction

| | |
|----------|---|
| High | 90001, 90002, 90003, 90016, 90018, 90035, 90037, 90048, 90059, 90062, 90291, 90810, 91303, 91306, 91316, 91367, 91371, 91401, 91411, 91423, 91601, 91602, 91604, 91606, 91607 |
| Moderate | 90008, 90012, 90025, 90031, 90032, 90041, 90044, 90058, 90066, 90071, 90293, 91324, 91335, 91356, 91364, 91403, 91406, 91436 |

ADDITIONAL INFORMATION ABOUT ATC-50

The technical basis for the ATC-50 Simplified Seismic Assessment Form is described in the ATC-50 Report, *Simplified Seismic Assessment of Detached Single-Family Wood-Frame Dwellings*, published by the Applied Technology Council (ATC). The companion ATC-50-1 report, *Seismic Rehabilitation Guidelines for Detached Single-Family Wood-Frame Dwellings*, provides guidance for seismically rehabilitating a dwelling to improve its Seismic Performance Grade. These and other related reports are available from the Applied Technology Council. See www.atcouncil.org for information on how to obtain ATC reports.

Table 4. Seismic Performance Grade Based on Structural Score and Regional Seismic Hazard Score

| Structural Score \ Seismic Hazard Score | Seismic Hazard Score | | | | | | | | | | | | | |
|---|----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|------------|------------|------------|--|
| | 0 - 1.0 | 1.1- 1.9 | 2.0- 2.9 | 3.0- 3.9 | 4.0- 4.9 | 5.0- 5.9 | 6.0- 6.9 | 7.0- 7.9 | 8.0- 8.9 | 9.0- 9.9 | 10.0- 10.9 | 11.0- 11.9 | 12.0- 13.0 | |
| 1.0 - 45.9 | C- | D+ | D+ | D | D | D | D | D | D | D- | D- | D- | D- | |
| 46.0 - 64.9 | C+ | C | C | C | C- | C- | D+ | D+ | D+ | D | D | D | D | |
| 65.0 - 74.9 | B | B | B | B | B- | C+ | C+ | C | C | C | C | C- | C- | |
| 75.0 - 84.9 | A- | A- | A- | A- | B+ | B+ | B | B | B | B | B | B- | B- | |
| 85.0 - 100 | A+ | A | A | A | A | A | A- | A- | A- | A- | B+ | B+ | B+ | |

G. Determination of Seismic Performance Grade

| 1. Structural Score | Penalty Sum | Expected Losses ¹ in Damaging Earthquake ² |
|---|----------------------|--|
| | | Mean Insurance Payout ³ |
| a. Foundation System (from Section A) | [] | Grade A, A+, A-: Superior Performer 2% 12% (Expect minor damage, immediate occupancy, minor repairs) Grade B, B+, B-: Good Performer 6% 17% (Expect damage, occupancy after inspection and minor repairs) Grade C, C+, C-: Fair Performer 11% 22% (Expect structural damage, occupancy only after structural repairs) Grade D, D+, D-: Poor Performer 26% 36% (Expect severe damage, perhaps beyond repair) |
| b. Superstructure/Framing and Configuration (Section B) | [] | |
| c. General Condition Assessment (Section C) | [] | |
| d. Nonstructural Elements, Age, and Size (Section D) | [] | |
| e. Local Site Conditions (Section E) | [] | |
| Total Penalty Points (a to e): | <input type="text"/> | |
| Structural Score = (100 - Total penalty points from line above): | <input type="text"/> | |
| 2. Seismic Hazard Score (from Section F): | <input type="text"/> | |
| 3. Seismic Performance Grade (from Table 4): | <input type="text"/> | |
| Note: insert this grade, including + or -, if applicable, in box on page 1. | | |

H. Improving the Seismic Performance Grade

The Structural Score and Seismic Performance Grade may be altered as a result of seismic rehabilitation or by a more in-depth seismic evaluation of the dwelling and the site by a qualified licensed design professional. Guidance on these issues is provided in the ATC-50-1 Report, *Seismic Rehabilitation Guidelines for Detached Single-Family Wood-Frame Dwellings*. If seismic rehabilitation is being considered, the Structural Score could be increased (and the Seismic Performance Grade potentially increased) by rehabilitating conditions that would allow the elimination or reduction in penalties, if any, for the following items:

- A-1, A-5, B-2, B-3, B-4, B-5, B-7, B-9, C-2, C-3, C-4, C-5, D-1, D-2, D-3, D-4, E-3, E-6
 (circle all that apply).

For this dwelling, the Structural Score could be increased by as many as _____ points (insert sum of penalties for circled items)

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OTHER CONDITIONS AFFECTING THIS PROPERTY OR ADJACENT PROPERTIES THAT WERE NOT INSPECTED, WERE NOT ACCESSIBLE NOR ANTICIPATED ARE BEYOND THE SCOPE OF THE SIMPLIFIED SEISMIC ASSESSMENT METHODOLOGY AND MAY AFFECT THE ASSESSMENT RESULTS. OTHER FACTORS WHICH CANNOT BE MEASURED AND THAT AFFECT THIS ASSESSMENT INCLUDE THE FACT THAT THE QUALITY OF THE CONSTRUCTION OF THE STRUCTURAL FRAMING, WHICH AFFECTS THE SEISMIC PERFORMANCE OF A DWELLING, IS FOR THE MOST PART CONCEALED FROM INSPECTION, AND THE CONCEALED PORTIONS ARE NOT CONSIDERED IN THE ASSESSMENT.

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