

PROPOSAL 3-122 (2009)

SCOPE: Part 2, Commentary Chapter 22

PROPOSAL FOR CHANGE:

Add Chapter 22 to Part 2, of the 2009 Commentary:

Proposed Chapter is attached. Text is not underlined to allow easier review.

REASON FOR PROPOSAL:

One of the basic tasks of the 2009 NEHRP *Provisions* update is to develop a viable commentary to Part 1. Since Part 1 adopts ASCE 7-05 and lists any exceptions to it, the Commentary is developed in accordance with the format and sections of ASCE 7-05.

TS 3 VOTE:

YES Yes with Reservations No Not Voting

TS 3 developed this commentary chapter and approved for submission. The chapter was edited and is being reviewed by TS 3. No comments have been received as of issue of this ballot.

1 **Chapter 22**

2 **SEISMIC GROUND MOTION AND LONG-PERIOD TRANSITION MAPS**

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4 **SEISMIC GROUND MOTION MAPS**

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6 The 2005 edition of ASCE 7 continues to use contour maps of spectral response acceleration (Figures 22-
7 1 through 22-14). The spectral acceleration design maps were prepared by the United States Geological
8 Survey (USGS) based on USGS probabilistic maps of the 48 conterminous states (2002), Alaska (1998),
9 Hawaii (1998), and Puerto Rico/Virgin Islands (2003) with modifications based on the 1997
10 recommendations of the Building Seismic Safety Council. The maps of the 48 states and PRVI have been
11 updated from the 2002 edition of this standard. The maps of Alaska, Hawaii, Guam, and Tutilla are
12 unchanged from the 2002 edition.

13
14 The USGS has also developed a companion software program that calculates location-specific spectral
15 values based on latitude and longitude or zip code; use of the latter method is discouraged in regions
16 where ground-motion values vary substantially over short distance. The calculated values are based on
17 the data used to prepare the maps shown as Figures 22-1 through 22-14. The spectral values may be
18 adjusted for Site Class effects using the Site Classification Procedure in Section 20 and the site
19 coefficients in Section 11.4. Latitude and longitude for a given address can be found at a variety of Web
20 sites. The software program may be accessed at the USGS Web site
21 (<http://earthquake.usgs.gov/research/hazmaps/>) by clicking on “Seismic Design Values for Buildings.”
22 This site can also be used to obtain values from the 2002 edition of this standard. The software program
23 should be used to establish spectral values for design because the maps found in ASCE 7 and at Web sites
24 are at too large a scale to provide accurate spectral values for many sites.

25
26 **LONG-PERIOD TRANSITION MAPS**

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28 The maps of the Long-Period Transition Period, T_L , are new in this edition (Figures 22-15 through 22-20).
29 They were prepared by the USGS based on the 2003 recommendations of the BSSC. See Section C11.4.5
30 for a discussion of the technical basis of these maps. The value of T_L obtained from these maps is used in
31 equation 11.4-7 to determine values of S_a for periods greater than T_L .
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