

C: American Code System

c1: ASCE 7 section 9 earthquake loads or IBC 2012 chapter 16 structural design, section 1613 to 1623 This seismic design code defines seismic load for new buildings, based on elastic spectrum and ductility, based on 2% probability of exceedance of earthquake within a 50-year period.

c2: ASCE 31-2003 SEISMIC EVALUATION OF EXISTING BUILDINGS (this supersedes FEMA310-1998 handbook for seismic evaluation of existing buildings)

c3: ASCE 41-13 Seismic retrofit for existing building (This code supersedes FEMA 356 Pre standard and commentary for the seismic rehabilitation of buildings) This seismic design code is for existing buildings retrofit and special seismic resistance technologies such as base isolation and energy dissipation system. Seismic load is calculated on 2 levels of ground motion, performance based design criteria is used. For traditional retrofit technology, seismic load calculation is based on ductility, but for special retrofit technology, seismic load calculation is based on equivalent damping ratio, equivalent stiffness and elastic spectral.

c4: FEMA 450 part 1, provisions, 2003 edition, NEHRP Recommended provisions for seismic regulations for new buildings and structures

FEMA 450 part 2, commentaries

FEMA 451, seismic design examples

This document is the American new buildings seismic design code for all kinds of material, including steel, concrete, wood, masonry, not for evaluation and upgrading of existing buildings. This document is also for special seismic resistance technologies such as base isolation and energy dissipation system. For new buildings, seismic load calculation is based on one level of ground motion and based on ductility; for special seismic resistance technologies, seismic load calculation is based on 2 levels of ground motion, equivalent damping ratio equivalent stiffness and spectral response.

c5: FEMA 547-2006 Techniques for the seismic rehabilitation of existing buildings.

c6: AISC 341, seismic provisions for structural steel buildings; AISC 358, steel moment frame connection seismic design

c7: ASCE Guidelines for seismic evaluation and design of petrochemical facilities, 2nd edition