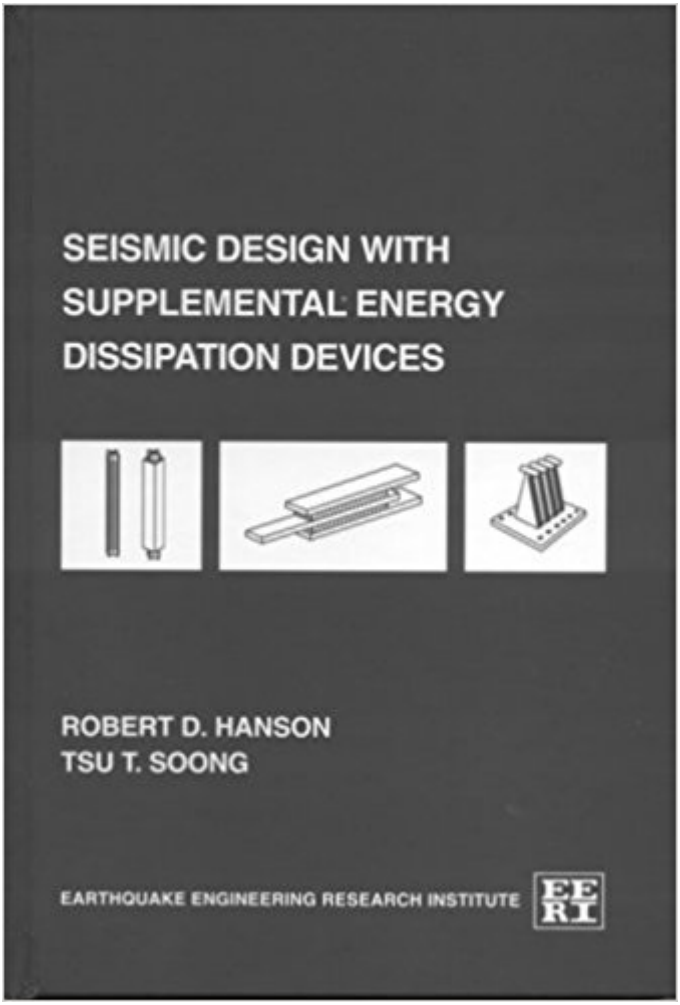
Seismic Design With Supplemental Energy Dissipation Devices (Publication / Earthquake Engineering Research Institute)



Synopsis

Seismic Design with Supplemental Energy Dissipation Devices imparts basic concepts of the supplemental energy dissipation technology to design engineers, architects, and building officials so they can understand its benefits and limitations in structural applications. The approach is introductory. References are cited throughout the monograph for readers who wish to study the subject in more depth. Supplemental energy dissipation systems are recent innovations to improve earthquake building performance. Research has led to a better understanding of the effects of supplemental energy dissipation on the earthquake response of buildings. Over the last 20 years, significant progress has been made in developing manufactured systems. They are being reliably designed and installed in new as well as existing buildings. Development of design codes and standards for energy dissipation systems has progressed slowly. This monograph summarizes information on their use in designing new earthquake-resistant buildings and upgrading the seismic performance of existing buildings. The following areas are covered: * The physical consequences of adding energy dissipation systems to a structure for various types of input motion * Summary of generic energy dissipation device characteristics * Summary of pros and cons of specific device characteristics in meeting selected design objectives * Seismic design limits for selecting energy dissipation systems * Design approaches for the limits of elastic or inelastic response

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Customer Reviews

ROBERT D. HANSON received his undergraduate and master’s degrees in Civil Engineering

(structural engineering) from the California Institute of Technology. He is professor emeritus in the Civil Engineering Department at the University of Michigan. He was chairman of the department from 1976 to 1984. His primary research areas have been concerned with inelastic response of steel and reinforced concrete buildings, earthquake-resistant design, repair and retrofitting of buildings, pseudodynamic testing, and supplemental damping techniques. Hanson is a past president of the Earthquake Engineering Research Institute. For many years he served as the USA Technical Coordinator for the US/Japan Large-Scale Earthquake Research program for the Reinforced Concrete and Structural Steel phases. He has been a member of the NAE/NRC Committee on Earthquake Engineering, the Technical Management Committee of the Building Seismic Safety Council, the American Society of Civil Engineers, and the American Concrete Institute. He was elected to the National Academy of Engineering in 1984. TSU T. SOONG, P.E. is Samuel P. Capen Professor of Engineering Science at the State University of New York at Buffalo, where he has been on the faculty since 1963. He earned M.S. and Ph.D. degrees in engineering sciences from Purdue University. His present teaching and research interests are large-scale systems in civil engineering, structural control and identification, reliability and safety of engineering systems, and earthquake engineering. He has served on professional committees of ATC, ASCE, and BSSC, has published extensively, has been associate editor of numerous journals, and has been co-coordinator of the NSF Research Initiative on Structural Control. He was recipient of ASCE Norman and Newmark medals in 1999 and 2002, respectively.

Design Provisions for Wind and Seismic with Commentary (2008) Seismic Ground Response Analysis (Geotechnical, Geological and Earthquake Engineering) Texas Seashells: A Field Guide (Harte Research Institute for Gulf of Mexico Studies Series, Sponsored by the Harte Research Institute for Gulf of Mexico Studies, Texas A&M University-Corpus Christi) Fire Following Earthquake (American Society of Civil Engineers: Technical Council on Lifeline Earthquake Engineering Monograph, No. 26) American National Standard for Safe Use of Lasers: ANSI Z136.1-2000 (ANSI (Laser Institute of America)) (ANSI (Laser Institute of America)) (ANSI (Laser Institute of America)) SPD 37th Publication Design Annual (Publication Design Annual, No. 37) Earthquake Engineering: From Engineering Seismology to Performance-Based Engineering Seismic Principles Practice Exams for the California Civil Seismic Exam Seismic Loads: Guide to the Seismic Load Provisions of ASCE 7 - 10 Seismic Interpretation of Contractional Fault-Related Folds: An AAPG Seismic Atlas (AAPG Studies in Geology)