

SEISMIC DESIGN



MANUAL

AMERICAN INSTITUTE
OF
STEEL CONSTRUCTION
INC.

AND THE
STRUCTURAL STEEL
EDUCATIONAL COUNCIL

American Institute of Steel Construction, Inc.

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PART 1 GENERAL DESIGN CONSIDERATIONS

SEISMIC DESIGN OVERVIEW	1-2
Terminology	1-2
Earthquake Ground Motion and Structure Response Spectra	1-2
Seismic Use Groups, Maximum Considered Earthquake, and Design Earthquake	1-4
Seismic Design Category	1-5
ANALYSIS PROCEDURES	1-5
Equivalent Lateral Force Method	1-6
Response Modification Coefficient (R -factor)	1-6
R Equal to 7 Applications	1-7
R Greater Than 7 Applications	1-8
Redundancy Factors	1-10
Overstrength Factors	1-10
LOAD COMBINATIONS USED IN DESIGN EXAMPLES	1-10
Structural Deflection and Story Drift	1-11
Stability Coefficient	1-11
Drift Limits	1-12
TABLES	1-13
Table 1-1. Workable Seismic Weld Access Hole Configurations	1-13
Table 1-2. W-Shapes That Satisfy Seismic Local Buckling Requirements	1-13
Table 1-3. Single Angles That Satisfy Seismic Local Buckling Requirements	1-14
Table 1-4. Rectangular and Square HSS That Satisfy Seismic Local Buckling Requirements	1-14
Table 1-5. Round HSS That Satisfy Seismic Local Buckling Requirements	1-15
Table 1-6. Pipes That Satisfy Seismic Local Buckling Requirements	1-15

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Guide to Stability Design Criteria for Metal Structures Ronald D. Ziemian, 2010-02-08 The definitive guide to stability design criteria fully updated and incorporating current research Representing nearly fifty years of cooperation between Wiley and the Structural Stability Research Council the Guide to Stability Design Criteria for Metal Structures is often described as an invaluable reference for practicing structural engineers and researchers For generations of engineers and architects the Guide has served as the definitive work on designing steel and aluminum structures for stability Under the editorship of Ronald Ziemian and written by SSRC task group members who are leading experts in structural stability theory and research this Sixth Edition brings this foundational work in line with current practice and research The Sixth Edition incorporates a decade of progress in the field since the previous edition with new features including Updated chapters on beams beam columns bracing plates box girders and curved girders Significantly revised chapters on columns plates composite columns and structural systems frame stability and arches Fully rewritten chapters on thin walled cold formed metal structural members stability under seismic loading and stability analysis by finite element methods State of the art coverage of many topics such as shear walls concrete filled tubes direct strength member design method behavior of arches direct analysis method structural integrity and disproportionate collapse resistance and inelastic seismic performance and design recommendations for various moment resistant and braced steel frames Complete with over 350 illustrations plus references and technical memoranda the Guide to Stability Design Criteria for Metal Structures Sixth Edition offers detailed guidance and background on design specifications codes and standards worldwide **Seismic Design of Steel Structures**

Victor Gioncu, Federico Mazzolani, 2013-11-20 Providing real world applications for different structural types and seismic characteristics Seismic Design of Steel Structures combines knowledge of seismic behavior of steel structures with the principles of earthquake engineering This book focuses on seismic design and concentrates specifically on seismic resistant steel structures Drawing on *AASHTO Guide Specifications for LRFD Seismic Bridge Design*, 2009 Covers seismic design for typical bridge types and applies to non critical and non essential bridges Approved as an alternate to the seismic provisions in the AASHTO LRFD Bridge Design Specifications Differs from the current procedures in the LRFD Specifications in the use of displacement based design procedures instead of the traditional force based R Factor method Includes detailed guidance and commentary on earthquake resisting elements and systems global design strategies demand modeling capacity calculation and liquefaction effects Capacity design procedures underpin the Guide Specifications methodology includes prescriptive detailing for plastic hinging regions and design requirements for capacity protection of those elements that should not experience damage **Steel Structures Design: ASD/LRFD** Alan Williams, 2011-02-07 A COMPLETE GUIDE TO THE DESIGN OF STEEL STRUCTURES Steel Structures Design ASD LRFD introduces the theoretical background and fundamental basis of steel design and covers the detailed design of members and their connections This in depth resource

provides clear interpretations of the American Institute of Steel Construction AISC Specification for Structural Steel Buildings 2010 edition the American Society of Civil Engineers ASCE Minimum Design Loads for Buildings and Other Structures 2010 edition and the International Code Council ICC International Building Code 2012 edition The code requirements are illustrated with 170 design examples including concise step by step solutions Coverage includes Steel buildings and design criteria Design loads Behavior of steel structures under design loads Design of steel structures under design loads Design of steel beams in flexure Design of steel beams for shear and torsion Design of compression members Stability of frames Design by inelastic analysis Design of tension members Design of bolted and welded connections Plate girders Composite construction

Behaviour of Steel Structures in Seismic Areas Federico Mazzolani,Ricardo Herrera,2012-01-31 Behaviour of Steel Structures in Seismic Areas is a comprehensive overview of recent developments in the field of seismic resistant steel structures It comprises a collection of papers presented at the seventh International Specialty Conference STESSA 2012 Santiago Chile 9 11 January 2012 and includes the state of the art in both theore

Techniques for the Seismic Rehabilitation of Existing Buildings ,2006 *Seismic Behavior of Steel Storage Pallet Racking Systems* Carlo Andrea Castiglioni,2016-02-04 This book presents the main outcomes of the first European research project on the seismic behavior of adjustable steel storage pallet racking systems In particular it describes a comprehensive and unique set of full scale tests designed to assess such behavior The tests performed include cyclic tests of full scale rack components namely beam to upright connections and column base connections static and dynamic tests to assess the friction factor between pallets and rack beams full scale pushover and pseudodynamic tests of storage racks in down aisle and cross aisle directions and full scale dynamic tests on two bay three level rack models The implications of the findings of this extensive testing regime on the seismic behavior of racking systems are discussed in detail highlighting e g the confirmation that under severe dynamic conditions sliding is the main factor influencing rack response This work was conceived during the development of the SEISRACKS project Its outcomes will contribute significantly to increasing our knowledge of the structural behavior of racks under earthquake conditions and should inform future rack design Modern Steel

Construction ,2009 **Structural Design of Buildings** Feng Fu,David Richardson,2024-07-25 Structural Design of Buildings Holistic Design is the essential reference for structural engineers involved in the design of buildings and other structures It forms part of the Structural Design of Buildings series and introduces the concepts and principles involved in holistic structural design of a building Design and Analysis of Connections in Steel Structures Alfredo

Boracchini,2018-07-10 Dieses Buch f hrt in alle Aspekte der sicheren Berechnung Bemessung und Konstruktion von wirtschaftlichen modernen Verbindungen im Stahlbau ein Die Hintergrunderl uterungen sind nicht an eine spezifische Norm gekoppelt sondern es werden unterschiedliche Normen und Methoden verglichen die in der Praxis zur Anwendung kommen wie z B Eurocode AISC DIN BS Anhand einer Reihe von Beispielen werden Probleml sungen detailliert beschrieben und

illustriert Damit erhält der Leser alle notwendigen Werkzeuge an die Hand um auch komplexe Probleme bei der Konstruktion von Verbindungen zu lösen Das Buch ist für Berufseinsteiger für erfahrene Praktiker sowie auch für Stahlbaufachleute eine Arbeitshilfe denn es werden einfache und komplexe Beanspruchungen an Verbindungen abgebildet Weniger ausführlich werden Erdbebenauslegung Schweißen die Wechselwirkung mit anderen Materialien Beton Holz und kalt geformte Verbindungen behandelt

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Table of Contents Aisc Seismic Design Manual 2005

1. Understanding the eBook Aisc Seismic Design Manual 2005
 - The Rise of Digital Reading Aisc Seismic Design Manual 2005
 - Advantages of eBooks Over Traditional Books
2. Identifying Aisc Seismic Design Manual 2005
 - Exploring Different Genres
 - Considering Fiction vs. Non-Fiction
 - Determining Your Reading Goals
3. Choosing the Right eBook Platform
 - Popular eBook Platforms
 - Features to Look for in an Aisc Seismic Design Manual 2005
 - User-Friendly Interface
4. Exploring eBook Recommendations from Aisc Seismic Design Manual 2005
 - Personalized Recommendations
 - Aisc Seismic Design Manual 2005 User Reviews and Ratings
 - Aisc Seismic Design Manual 2005 and Bestseller Lists

5. Accessing Aisc Seismic Design Manual 2005 Free and Paid eBooks
 - Aisc Seismic Design Manual 2005 Public Domain eBooks
 - Aisc Seismic Design Manual 2005 eBook Subscription Services
 - Aisc Seismic Design Manual 2005 Budget-Friendly Options
6. Navigating Aisc Seismic Design Manual 2005 eBook Formats
 - ePub, PDF, MOBI, and More
 - Aisc Seismic Design Manual 2005 Compatibility with Devices
 - Aisc Seismic Design Manual 2005 Enhanced eBook Features
7. Enhancing Your Reading Experience
 - Adjustable Fonts and Text Sizes of Aisc Seismic Design Manual 2005
 - Highlighting and Note-Taking Aisc Seismic Design Manual 2005
 - Interactive Elements Aisc Seismic Design Manual 2005
8. Staying Engaged with Aisc Seismic Design Manual 2005
 - Joining Online Reading Communities
 - Participating in Virtual Book Clubs
 - Following Authors and Publishers Aisc Seismic Design Manual 2005
9. Balancing eBooks and Physical Books Aisc Seismic Design Manual 2005
 - Benefits of a Digital Library
 - Creating a Diverse Reading Collection Aisc Seismic Design Manual 2005
10. Overcoming Reading Challenges
 - Dealing with Digital Eye Strain
 - Minimizing Distractions
 - Managing Screen Time
11. Cultivating a Reading Routine Aisc Seismic Design Manual 2005
 - Setting Reading Goals Aisc Seismic Design Manual 2005
 - Carving Out Dedicated Reading Time
12. Sourcing Reliable Information of Aisc Seismic Design Manual 2005
 - Fact-Checking eBook Content of Aisc Seismic Design Manual 2005
 - Distinguishing Credible Sources
13. Promoting Lifelong Learning

- Utilizing eBooks for Skill Development
- Exploring Educational eBooks

14. Embracing eBook Trends

- Integration of Multimedia Elements
- Interactive and Gamified eBooks

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