PREFACE

Prepared by the Minimum Design Loads and Associated Criteria for Buildings and Other Structures Standards Committee of the Codes and Standards Activity Division of the Structural Engineering Institute of ASCE

ASCE/SEI 7-22 Minimum Design Loads and Associated Criteria for Buildings and Other Structures provides the most up-to-date and coordinated loading provisions for general structural design. ASCE 7-22 prescribes design loads for all hazards including dead, live, soil, flood, tsunami, snow, rain, atmospheric ice, seismic, wind, and fire, as well as how to evaluate load combinations. The 2022 edition of ASCE 7, which supersedes ASCE 7-16, coordinates with the most current structural material standards including those from ACI, AISC, AISI, AWC, and TMS.

Significant technical changes include the following:

- General Requirements
  - New target reliability tables for tsunami and extraordinary loads
  - Removal of importance factors for snow and ice due to risk category specific maps being provided
  - Expanded provisions for in situ load testing
- Load Combinations
  - Revised load combinations to reflect changes in snow loads and new tornado loads
  - New alternative method for loads from water in soil
  - Load combinations for flood loads and atmospheric ice are now explicitly written out and numbered for improved reference and clarity
- Dead and Live Loads
  - Reformatted lateral soil loads table for improved clarity
  - New alternative method for loads from water in soil
  - Terminology change from guardrail system to guard system
  - Additions and clarifications to the live load table
  - Updated crane load vertical impact force provisions including the use of bridge crane service classes
  - New provisions for emergency vehicle loads
- Tsunami Loads and Effects
  - Clarification for inundation calculations for overwashed areas
  - Updated data for Hawaii and many populous locations in California, coordinated with the state agencies
  - New provisions for above-ground horizontal pipelines
  - Clarifications and new provisions for debris impact analysis
  - New provisions for loss of foundation strength and scour
- Snow Loads
  - Ground snow loads have been revised to reflect more recent snow load data and reliability-targeted values
  - Method for estimating drifts revised to include a wind parameter
  - A more accurate estimation of the horizontal extent of windward drifts
  - Revised thermal factors to account current trends in roof insulation and venting
- Rain Loads
  - Design rain load revised to explicitly consider a ponding head
  - New commentary for low slope roofs and drainage to existing roofs
- Atmospheric Ice Loads
  - New risk-targeted atmospheric ice load data continental United States and Alaska
- Seismic Design
  - Multi-period response spectrum data eliminates F_a and F_v coefficients
  - Increase in number of site class definitions
  - Updated provisions for two-stage analysis proc
  - Updated provisions for calculating torsion imp cluding irregularities (new Torsional Irregulari (TIR) term] and accidental torsion
  - Updated directional loading provisions
  - Updated analysis procedure selection provisior
  - Updated displacement and drift provisions
  - Updated force equations for nonstructural com
  - New provisions for penthouses and equipment tribution system support structures
  - New Lateral Force Resisting Systems:
    - Steel and Concrete Coupled Composite Pl Walls
    - Reinforced Concrete Ductile Coupled Shea
    - Cross-laminated Timber Shear Walls
    - Concrete Tabletop Structures
  - New provisions for Rigid Wall, Flexible D buildings (big box stores/warehouses)
  - New and updated provisions for supported connected (coupled) nonbuilding structures
- Wind Design
  - Updates to the wind speed maps along hurricane
  - Removal of tabular methods for both the direc the envelope procedures, and C&C
  - New provisions for MWFRS and C&C of buildings
  - Updated and expanded provisions for roof an mounted solar
  - Updated provisions grouped circular bins and
  - Revisions to the (GC_p) graphs for external coefficients on C&C
  - Updates for wind tunnel testing and adoptio edition of ASCE 49-22
  - New chapter for tornado provisions
  - New long return period hazard maps for tornado
- Digital Data Available for all Hazards
  - Required to use digital data for tsunami, snow
  - Provided for flood, rain, ice, wind, tornado

In addition to the technical changes, the 2022 editi ASCE 7 provisions are accompanied by a detailed co with explanatory and supplementary information dev assist users of the standard, including design pra building code committees, and regulatory authorities.

ASCE 7 is an integral part of building codes in the Un and around the globe and is adopted by reference International Building Code, International Existing Code, International Residential Code, and NFPA 500 Construction and Safety Code. Structural engineers, arc those engaged in preparing and administering local bu will find the structural load requirements essential to th