

Contents of the FEMA Building Science Toolkit CD

FEMA Publication No.	Publication Name	Description	Year	Focus
None	Catalog of Building Science Publications for Risk MAP Outreach	List of publications that are used by FEMA's Federal Insurance and Mitigation Administration Building Science Branch and that are recommended for use by Risk MAP stakeholders. The list provides a quick, searchable compilation of available publications by name, focus, or key word. Most entries have links to downloadable materials from FEMA and other Web sites. The publications are organized into sheets (tabs) by hazard type. The individual hazard tabs can be printed and provided as take away materials during the Risk MAP Resilience meeting.	2012	Publication Catalog
P-85	Protecting Manufactured Homes from Floods and Other Hazards: A Multi-Hazard Foundation and Installation Guide (Second Edition)	Guidance for prospective homeowners, contractors, and local officials for the installation of manufactured homes in Special Flood Hazard Areas (SFHAs). Manufactured homes have unique challenges related to water intrusion into the structure, and the guide includes recommendations for foundation construction for this popular style of home.	2009	Residential – Manufactured Homes
P-259	Engineering Principles and Practices for Retrofitting Flood-Prone Residential Structures (Third Edition)	Provides aid to homeowners in selecting and successfully executing a flood retrofit on their home. Contains engineering design and economic guidance on what constitutes feasible and cost-effective retrofitting measures for floodprone residential and non-residential structures; elevation, relocation, dry floodproofing, wet floodproofing; and use of levees and floodwalls to mitigate flood hazards. This edition was updated to be more user-friendly and concise.	2012	Residential
P-320	Taking Shelter from the Storm: Building a Safe Room for Your Home or Small Business (Fourth Edition)	Intended to help home or small business owners assess their risk and determine the best type of safe room for their needs. Includes safe room designs and shows you and your builder/contractor or local design professional how to construct a safe room for your home or small business. Design options include safe rooms located inside or outside of a new home or small business.	2014	Residential and Non-Residential
347	Above the Flood: Elevating Your Floodprone House	This publication shows how floodprone houses in south Florida were elevated above the 100-year level following Hurricane Andrew and also presents multiple elevation techniques.	2000	Residential

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FEMA Publication No.	Publication Name	Description	Year	Focus
P-348	Protecting Building Utilities From Flood Damage: Principles and Practices for the Design and Construction of Flood Resistant Building Utility Systems	Guidance for construction of buildings with utility systems that are designed and built so that the buildings can be reoccupied and fully operational as soon as electricity, sewer, and water are restored to the neighborhood.	1999	Residential and Non-Residential
P-361	Safe Rooms for Tornadoes and Hurricanes: Guidance for Community and Residential Safe Rooms (Third Edition)	Important information about the design and construction of community and residential safe rooms that will provide protection during tornado and hurricane events.	2015	Residential and Non-Residential
P-499	Home Builder's Guide to Coastal Construction: Technical Fact Sheet Series	Technical guidance and recommendations on the construction of coastal residential buildings. Information aimed at improving the performance of buildings subject to flood and wind forces in coastal environments. Photographs and drawings illustrate NFIP regulatory requirements; the proper siting of coastal buildings; and recommended design and construction practices for building components, including structural connections, the building envelope, and utilities. Many of the fact sheets include lists of FEMA and other resources that provide more information on the topics discussed.	2010	All with primary focus is residential
P-550	Recommended Residential Construction in Coastal Areas: Building on Strong and Safe Foundations (Second Edition)	Recommended designs and guidance for rebuilding homes destroyed by hurricanes in coastal areas. Although good design and construction cannot completely eliminate risk, every storm has shown that they can significantly reduce the risk to life and damage to property. This design manual provides guidance on designing and building less vulnerable new homes to reduce the risk to life and property.	2009	Residential
P-710CD	Earthquake Publications for Teachers and Kids	This catalog of contains educational resources (posters, teacher packages, a storybook for children, hands-on activities, and guidance) for teachers, students, and child care providers. All of the publications included on the CD are listed in the Teachers and Kids section of the Catalog of FEMA Earthquake Resources, FEMA P-736 (FEMA 159, 240, 253, 527, 529, and 531). Two additional publications are also included: <i>Earthquake Safety Checklist</i> , FEMA 526, and <i>Earthquake Home Hazard Hunt Poster</i> , FEMA 528.	2008	Publication Catalog

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FEMA Publication No.	Publication Name	Description	Year	Focus
P-711CD	Earthquake Publications for Individuals and Homeowners	This catalog contains earthquake preparedness resources (guides and safety checklists) to help individuals, families, and homeowners prepare for an earthquake and prevent earthquake damage to their homes. The CD includes all of the publications listed in the individuals and homeowners section of FEMA P-736, Catalog of FEMA Earthquake Resources (including FEMA 74, 232, 526, 528, 530, and Are You Ready? An In-depth Guide to Citizen Preparedness). The CD also includes the “Drop, Cover, and Hold” poster (FEMA 529) and The Adventures of Terry the Turtle and Gracie the Wonder Dog, Grades 3 through 6 (FEMA 531).	2008	Publication Catalog
P-758	Substantial Improvement/ Substantial Damage Desk Reference	Comprehensive resource for local officials who are responsible for the administration of local codes and ordinances, including the SI/SD requirements. It is also intended for State officials who provide technical assistance to communities on the NFIP. Incorporating diagrams, decision charts, illustrations, and examples, the SI/SD Desk Reference is designed to clearly communicate responsibilities and strategies for administering this important NFIP requirement.	2010	Residential and Non-Residential
P-762	Local Officials Guide for Coastal Construction: Design Considerations, Regulatory Guidance, and Best Practices for Coastal Communities	Intended to assist building officials in understanding the connection between NFIP guidelines, the IBC, and the IRC. Flood and wind provisions of both ASCE 7-05 and ASCE 24-05 are also discussed. This guide also explores building performance and real-life success and failures following recent storm events and recommends design and construction “best practices” where appropriate.	2009	Residential
L-780	Building Science for Disaster-Resilient Communities: Wind Hazard Publications	Summary of publications that will help communities prepare for and mitigate against wind hazards. Developed by FEMA’s Federal Insurance and Mitigation Administration (FIMA) Building Science Branch, which develops and produces technical guidance and tools to foster a disaster-resilient built environment in support of FIMA’s mission to reduce risk to life and property by providing state-of-the-art technical hazard mitigation solutions for buildings.	2015	Publication Catalog
L-781	Building Science for Disaster-Resistant Communities: Hurricane Hazard Publications	Summary of publications that will help communities prepare and mitigate for hurricane hazards.	2011	Publication Catalog

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FEMA Publication No.	Publication Name	Description	Year	Focus
L-782	Building Science for Disaster-Resistant Communities: Flood Hazard Publications	Summary of publications that will help communities prepare and mitigate for hurricane hazards.	2011	Publication Catalog
L-783	Building Science for Disaster-Resistant Communities: Seismic Hazard Publications	Summary of publications that will help communities prepare and mitigate for seismic hazards.	2011	Publication Catalog
P-784	The FEMA Substantial Damage Estimator (SDE) Version 2.	The FEMA Substantial Damage Estimator (SDE) Tool and User Manual and Workbook were developed to assist State and local officials in estimating building value and damage costs for residential and non-residential buildings. The tool is based on the concept of using damage estimates for individual building elements to determine whether the structure as a whole is Substantially Damaged.	2014	Residential and Non-Residential
P-787	Catalog of FEMA Building Science Branch Publications and Training Courses	FEMA's Building Science Branch has compiled this catalog of available FEMA publications, training courses, and workshops for natural hazards. The publication descriptions are first organized by primary hazard (earthquake, flood, high wind, multi-hazard, and other), and then by stakeholder groups: individuals and homeowners, teachers and kids, private sector and small business, community planning and policy, building professionals and engineers (contractors, builders, engineers, and architects), and Mitigation Assessment Team (MAT) reports, which are applicable to all stakeholders.	2015	Publication Catalog
B-797	Hazard Mitigation Field Book: Roadways	Intended to help local government entities choose the best hazard mitigation solution(s) given their operational constraints and design considerations. By offering the user a quick selection tool, based on broad characteristics, the Field Book reduces a wide array of technical solutions to a few practical options. Although there are many causes of damage to roadways, this Field Book focuses primarily on flood-related causes of damage.	2010	Roadways
P-804	Wind Retrofit Guide for Residential Buildings	Guidance on how to improve the wind resistance of existing residential buildings in Mississippi and across the Gulf Coast. Although developed to support initiatives in the Gulf Coast region, this document can be used to guide retrofitting of existing buildings for improved performance during high-wind events in all coastal regions.	2010	Residential

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FEMA Publication No.	Publication Name	Description	Year	Focus
P-936	Floodproofing Non-Residential Buildings	The primary focus of the guidance document is on dry floodproofing technologies for non-residential buildings, but it also includes an overview of other techniques including wet floodproofing and the use of levees and floodwalls. The publication provides information about regulatory requirements, design considerations, and descriptions of floodproofing methods and equipment. Key document features include: 1) Tools to assist the designer or building owner in determining the best floodproofing option for a particular building including a vulnerability checklist, 2) Case studies providing examples of applied floodproofing techniques, 3) Equations for determining flood forces and loads, 4) A summary of results from recent dry floodproofing research and testing for new construction.	2013	Non-Residential
P-957	Snow Load Safety Guide	The objective of the Snow Load Safety Guide is to inform building stakeholders about the risks a snow event poses to their buildings, provide them with information about preventative measures to take before the snow season, and inform them of actions that should be taken before, during, and after a snow event. This document is not intended to provide a comprehensive discussion of the underlying issues or forensics of snow-induced structural failure. The purpose is instead to: 1. Inform building stakeholders of susceptible snow loading conditions 2. Identify potentially vulnerable roof framing systems 3. Outline a general methodology to monitor buildings for signs of potential failure so that steps can be taken to reduce the potential risk of snow-load-induced structural failure.	2013	Residential and Non-Residential
Recovery Advisory	Minimizing Wind and Water Intrusion by Covering the Underside of Elevated Buildings	The purpose of this Hurricane Recovery Advisory is to describe practices for minimizing damage to the underside of elevated buildings resulting from high-wind events. The undersides of elevated coastal buildings are typically covered with paneling (vinyl or aluminum soffit sheeting) or sheathing (plywood) to protect the insulation and metal connectors used for the floor system. These undersides are often damaged by high winds during hurricanes, allowing water to be driven into the building.	2012	Residential and Non-Residential
Recovery Advisory	Minimizing Flood Damage to Electrical Service Components	The purpose of this Hurricane Recovery Advisory is to describe practices for minimizing damage to electrical service components during coastal and riverine flood events. The primary focus is on services of less than 300 volts, which are typical of residential homes. Considering flood risks when designing and constructing electrical services can ensure that outage durations resulting from flooding are minimized and that utility and code requirements are met.	2012	Residential and Non-Residential

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FEMA Publication No.	Publication Name	Description	Year	Focus
Recovery Advisory	Tornado Risks and Hazards in the Southeastern United States (RA1)	Guidance on how to improve the wind resistance of existing residential buildings in Mississippi and across the Gulf Coast. Although developed to support initiatives in the Gulf Coast region, this document should serve as guidance on retrofitting existing buildings for improved performance during high-wind events in all coastal regions.	2011	Residential and Non-Residential
Recovery Advisory	Safe Rooms: Selecting Design Criteria (RA2)	Design guidance, code requirements, and other criteria that pertain to the design and construction of safe rooms for tornadoes and hurricanes. Different safe room and storm shelter criteria offer different levels of protection to safe room occupants. This Advisory is for anyone involved in the planning, policy-making, design, construction, or approval of safe rooms, including designers, emergency managers, public officials, policy or decision-makers, building code officials, and home or building owners. Homeowners and renters should also refer to the Tornado Recovery Advisory No. 3 Residential Sheltering: In-Residence and Stand-Alone Safe Rooms (updated in 2011).	2011	Residential and Non-Residential
Recovery Advisory	Residential Sheltering: In-Residence and Stand-Alone Safe Rooms (RA3)	Intended for homeowners, renters, apartment building owners, and manufactured home park owners, this Recovery Advisory describes the use of in-residence and stand-alone safe rooms to prevent injury or death from extreme winds. Safe rooms are intended to allow occupants to survive tornadoes and hurricanes with little or no injury. FEMA 320, <i>Taking Shelter from the Storm: Building a Safe Room For Your Home or Small Business</i> (2008) can aid in the decision to construct a safe.	2011	Residential
Recovery Advisory	Safe Rooms and Refuge Areas in the Home (RA4)	Types of safe rooms and brief overview of areas of refuge. Intended for homeowners or home builders. Homeowners and renters should also refer to the Tornado Recovery Advisory No. 3 <i>Residential Sheltering: In-Residence and Stand-Alone Safe Rooms</i> (updated in 2011).	2011	Residential
Recovery Advisory	Improving Connections in Elevated Coastal Residential Buildings	This Recovery Advisory describes how to improve connections attaching elevated floors to pile foundations. The improved connection details presented in this advisory will reduce potential damage from future wind events and provide added resistance against flood-related structural failure in the event that flood levels exceed the elevated height of the floor.	2013	Residential
Recovery Advisory	Reducing Flood Effects in Critical Facilities	This Recovery Advisory provides information and recommendations to improve the functionality of critical facilities by reducing the vulnerability of essential systems and equipment to flooding.	2013	Critical Facilities

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FEMA Publication No.	Publication Name	Description	Year	Focus
Recovery Advisory	Restoring Mechanical, Electrical, and Plumbing Systems In Non-Substantially Damaged Residential Buildings	The purpose of this Recovery Advisory is to describe methods to restore utility systems in a manner that minimizes damage from future flood events and reduces the system restoration time following future storms. The intended audience for this Recovery Advisory is homeowners and the information is solely for residential buildings.	2013	Residential
Recovery Advisory	Reducing Interruptions to Mid- and High-Rise Buildings During Floods	The focus of this advisory is on design enhancement and techniques to reduce flood risk for mid- to high-rise buildings. The recommendations in this advisory explain how to limit the interruption of building services caused by floods, but are not intended to enable buildings to remain occupied during an event or encourage sheltering in place.	2013	Residential and Non-Residential
Recovery Advisory	Designing for Flood Levels Above the BFE After Hurricane Sandy	This Recovery Advisory reviews how coastal Flood Insurance Rate Maps (FIRMs) and BFEs are established and provides guidance on elevating buildings to minimize flood damage in cases where flood levels exceed the BFE.	2013	Residential and Non-Residential
Recovery Advisory	Protecting Building Fuel Systems from Flood Damage	This Recovery Advisory provides building owners, operators, facility managers, and designers with information on mitigation actions that can help protect fuel supplies from flood damage, enabling basic functionality to be restored at facilities shortly after floodwaters recede.	2013	Residential and Non-Residential
Recovery Advisory	Reducing Flood Risk and Flood Insurance Premiums for Existing Residential Buildings in Zone A	The mitigation measures described in this advisory are intended to be applied to buildings that did not incur Substantial Damage during Hurricane Sandy and are not undergoing Substantial Improvement. In addition to describing mitigation measures such as elevation and filling in a basement, this advisory specifically includes guidance on modifying or strengthening existing ground floor walls of a single-family home or row house/townhouse into either an open foundation or solid foundation walls, while also converting the ground floor living area to an enclosure and moving the living area so it is at or above the BFE.	2013	Residential
Fact Sheet	Cleaning Flooded Buildings	This Fact Sheet builds on information provided in FEMA's Recovery Advisory, Initial Restoration for Flooded Buildings (2005), prepared after Hurricane Katrina. It offers information on correctly cleaning and drying buildings that were not adequately cleaned and dried shortly after the Hurricane Sandy flooding. The advisory describes the selection and application of appropriate cleaners as well as the equipment and process needed to properly dry the building prior to any restoration efforts.	2013	Residential

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FEMA Publication No.	Publication Name	Description	Year	Focus
Fact Sheet	Foundation Requirements and Recommendations for Elevated Homes	This Fact Sheet includes foundation requirements and recommendations for elevated homes. The Fact sheet summarizes key concepts of the National Flood Insurance Program (NFIP), describes the typical damaged foundation types observed after Hurricane Sandy, and offers design guidance for elevating homes by retrofitting with deep foundations.	2014	Residential and Non-Residential
Fact Sheet	Building Science Support and Code Changes Aiding Sandy Recovery	Two years ago, Hurricane Sandy made landfall, devastating New Jersey and New York with tens of billions of dollars in damages. Since then, recovery activities have focused on increasing resilience of buildings and the lifeline infrastructure. This fact sheet describes significant progress on this front.	2014	Residential and Non-Residential
Technical Bulletin 0	User's Guide to Technical Bulletins: Developed in Accordance with the National Flood Insurance Program	Assists in using the FEMA Technical Bulletins (TBs) by providing a key word/subject index that identifies topics addressed in the TBs regarding the NFIP. Reference sources and information about ordering additional NFIP publications are also provided.	2009	Publication Catalog
Technical Bulletin 1	Openings in Foundation Walls and Walls of Enclosures: Below Elevated Buildings in Special Flood Hazard Areas in accordance with the National Flood Insurance Program	Guidance on the NFIP regulations concerning the requirement for openings in below-base flood elevation foundation walls for buildings located in Zones A, AE, A1-A30, AR, AO, and AH.	2008	Primarily Residential
Technical Bulletin 2	Flood Damage-Resistant Materials Requirements for Buildings Located in Special Flood Hazard Areas in Accordance with the National Flood Insurance Program	Provides guidance on the NFIP regulations concerning the required use of flood damage-resistant construction materials for building components located below the base flood elevation in Special Flood Hazard Areas (both Zone A and Zone V).	2008	Primarily Residential

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FEMA Publication No.	Publication Name	Description	Year	Focus
Technical Bulletin 3	Non-Residential Floodproofing – Requirements and Certification for Buildings Located in Special Flood Hazard Areas in accordance with the National Flood Insurance Program	Guidance on the NFIP regulations concerning watertight construction and the required certification for floodproofed non-residential buildings in Zones A, AE, A1-A30, AR, AO, and AH that have lowest floors below the base flood elevation.	1993	Non-Residential
Technical Bulletin 4	Elevator Installation for Buildings Located in Special Flood Hazard Areas in Accordance with the National Flood Insurance Program	Guidance on the NFIP regulations concerning the installation of elevators below the base flood elevation in Special Flood Hazard Areas (both Zone A and Zone V).	2010	Residential and Non-Residential Buildings with Elevators
Technical Bulletin 5	Free-of-Obstruction Requirements for Buildings Located in Coastal High Hazard Areas in accordance with the National Flood Insurance Program	Guidance on NFIP regulations concerning obstructions to flood waters below elevated buildings and on building sites in Coastal High Hazard Areas (Zones V, VE, and V1-V30).	2008	Residential and Non-Residential
Technical Bulletin 6	Below-Grade Parking Requirements for Buildings Located in Special Flood Hazard Areas in Accordance with the National Flood Insurance Program	Guidance on the NFIP regulations concerning the design of below-grade parking garages beneath buildings located in Zones A, AE, A1-A30, AR, AO, and AH.	1993	Residential and Non-Residential

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FEMA Publication No.	Publication Name	Description	Year	Focus
Technical Bulletin 7	Wet Floodproofing Requirements for Structures Located in Special Flood Hazard Areas in Accordance with the National Flood Insurance Program	Guidance on the NFIP regulations concerning wet floodproofing of certain types of structures located in Zones A, AE, A1-A30, AR, AO, and AH.	1993	Residential and Non-Residential
Technical Bulletin 8	Corrosion Protection for Metal Connectors in Coastal Areas for Structures Located in Special Flood Hazard Areas in Accordance with the National Flood Insurance Program	Guidance on the NFIP regulations concerning the need for, selection of, and use of corrosion-resistant metal connectors for the construction of buildings in coastal areas.	1996	Residential and Non-Residential
Technical Bulletin 9	Design and Construction Guidance for Breakaway Walls Below Elevated Buildings Located in Coastal High Hazard Areas in Accordance with the National Flood Insurance Program	Guidance on the NFIP regulations concerning the design and construction of breakaway walls beneath elevated buildings in Coastal High Hazard Areas (Zones V, VE, and VI-V30).	2008	Residential and Non-Residential
Technical Bulletin 10	Ensuring that Structures Built on Fill In or Near Special Flood Hazard Areas are Reasonably Safe From Flooding in accordance with the National Flood Insurance Program	Guidance on the NFIP regulations concerning building techniques, including the use of fill that can be used to ensure that structures are reasonably safe from flooding.	2001	Primarily Residential

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FEMA Publication No.	Publication Name	Description	Year	Focus
Technical Bulletin 11	Crawlspace Construction for Buildings Located in Special Flood Hazard Areas in accordance with the National Flood Insurance Program	Interim guidance on minimum NFIP requirements, as well as best practices, for crawlspace construction in Special Flood Hazard Areas.	2001	Primarily Residential
None	The ABC's of Returning to Flooded Buildings	Returning to flood damaged buildings requires careful planning. This two-page document provides information and guidance on the safety needed when entering flooded buildings, the potential hazards that may exist and the tools needed, including a camera to document damage, when owners are ready to start clean-up and the recovery process.	2012	Residential and Non-Residential
None	Directory of FEMA Earthquake Partners	Contact information for more than 300 organizations and individuals involved in earthquake mitigation at the Federal and State levels and in the non-governmental sector.	2012	Directory
None	Anchor Fuel Tanks (FEMA)	Three-page summary of the benefits of anchoring above-ground fuel tanks to reduce threats to individual properties, public safety, and the environment.	2011	Residential and Non-Residential
None	Build with Flood Damage Resistant Materials (FEMA)	Two-page summary of the benefits of incorporating flood damage resistant materials into designs or repairs of structures located in floodprone areas.	2011	Primarily Residential
None	Install Sewer Backflow Valves (FEMA)	Two-page summary of the benefits of installing sanitary sewer backflow valves in floodprone areas to temporarily block sanitary drain pipes and prevent return flow.	2011	Residential
None	Reducing Flood Losses Through the International Codes: Coordinating Building Codes and Floodplain Management Regulations (Fourth Edition), in cooperation with the International Code Council (ICC)	Intended to help State and local officials integrate the International Codes® (I-Codes) into their current floodplain management regulatory processes related to structures, buildings, and other development in special flood hazard areas in order to meet the requirements to participate in the NFIP.	2014	Residential and Non-Residential

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FEMA Publication No.	Publication Name	Description	Year	Focus
None	FEMA Quick Reference Guide: Comparison of Select NFIP and Building Code Requirements for Special Flood Hazard Areas	Describes the similarities and highlights the differences between the NFIP minimum requirements and the requirements of the International Code series (I-Codes) and ASCE 24, Flood Resistant Design and Construction, a standard referenced by the I-Codes.	2012	Residential and Non-Residential
None	Flood Resistant Provisions of the 2015 International Codes (FEMA)	Compilation of provisions related to flood resistance in the 2012 International Code Series (IBC and IRC). The 2015 edition of the I-Codes contains provisions that are consistent with the minimum flood resistant design and construction requirements of the NFIP for buildings and structures.	2014	Residential and Non-Residential
None	Provisions of the 2009 I-Codes and ASCE 24 Compared to the NFIP (FEMA)	Comparison of the provisions of the 2009 I Codes/ASCE 24-05 and the NFIP requirements.	2010	Residential and Non-Residential
None	Flood Resistant Provisions of the 2015 International Codes (FEMA)	Compilation of provisions related to flood resistance in the 2012 International Code Series (IBC and IRC). The 2015 edition of the I-Codes contains provisions that are consistent with the minimum flood resistant design and construction requirements of the NFIP for buildings and structures.	2014	Residential and Non-Residential
None	2015 I-Codes: Summary of Changes From the 2012 I-Codes (FEMA)	Summary of the changes to the 2012 I-Codes that appear in the 2015 editions.	2014	Residential and Non-Residential
None	2012 I-Codes: Summary of Changes From the 2009 I-Codes (FEMA)	Summary of the changes to the 2009 I-Codes that appear in the 2012 editions.	2012	Residential and Non-Residential
None	Highlights of ASCE 24-14 Flood Resistant Design and Construction (FEMA)	The American Society of Civil Engineers (ASCE) 24-14 is a referenced standard in the 2015 International Building Code® (IBC) and the 2015 International Residential Code® (IRC). Building and structures within the scope of the IBC proposed to be constructed in flood hazard areas must be designed in accordance with ASCE 24-14. The IRC requires dwellings in floodways to be designed in accordance with ASCE 24-14 and includes an alternative that allows communities to require homes in any flood zone to be designed in accordance with ASCE 24-15. Highlights of ASCE 24-14 that complement the NFIP minimum requirements include: Building Performance; Flood-Damage Resistant Materials; Utilities and Service Equipment and Siting Considerations.	2015	Residential and Non-Residential

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FEMA Publication No.	Publication Name	Description	Year	Focus
None	Best Practices for Incorporating Building Science Guidance into Community Risk MAP Implementation	This report discusses how the FEMA Building Science library of guidance and design resources can be used in conjunction with Risk MAP products to strengthen a community's ability to reduce risk from natural hazards. The Risk MAP products can benefit the community by increasing their understanding of floods and how to mitigate the risk. This information plays an important role in determining the appropriate standards for new construction, how existing structures can be retrofitted to reduce future flood damage, and the benefits of enhancing or updating building codes to reduce the community's risk.	2012	Riverine and Coastal Flooding for Residential and Non-Residential
None	Recommended Procedures for Flood Velocity Data Development	This report highlights recommended procedures for developing flood velocity data within the context of the FEMA efforts related to the Risk Mapping, Assessment, and Planning (Risk MAP) Program and FEMA's Building Science Branch. Report sections provide detailed descriptions of velocity grid development and considerations for one-dimensional (1D), two-dimensional (2D), and three-dimensional (3D) models. The audience for this report includes FEMA staff who may provide guidance to local officials on building science issues related to the development and implementation of Risk MAP regulatory and non-regulatory products.	2012	Riverine and Coastal Flooding for Residential and Non-Residential
None	Including Building Codes in the National Flood Insurance Program	The Report describes the impact, effectiveness, and feasibility of including widely used and nationally recognized building codes as part of the National Flood Insurance Program (NFIP) floodplain management criteria. The Report found the overall impacts of including building codes as part of the NFIP would be positive in helping to reduce physical flood losses and other hazard losses, which would in turn positively affect the land use planning and regulatory climate. Current model building codes, such as the International Codes used in the United States, have flood provisions that are consistent with or exceed NFIP requirements for buildings and structures, and are effective in reducing flood-related damage because of the specific mitigation provisions required in those codes for compliance. FEMA prepared this report and delivered it to Congress on October 21, 2013, in response to Section 100235, Biggert-Waters Flood Insurance Reform Act of 2012 (HR 4348) Report on Inclusion of Building Codes in National Flood Insurance Program.	2013	Residential and Non-Residential

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FEMA Publication No.	Publication Name	Description	Year	Focus
None	Substantial Damage Estimator Best Practices	This document provides suggested approaches for dealing with some of the challenging situations users may encounter while using the FEMA SDE. SDE is designed to help Federal, State, and local officials manage data collection and assessment of substantial damage. Often the complexity of field conditions, limited access to technology, or inspection work in the field present situations that require additional organization and planning. This document contains suggested solutions to some common situations SDE users may encounter. The information and methods can be used by Federal, State, and local officials when developing SDE-based inventories of potentially substantially damaged residential and non-residential structures.	2012	Residential and Non-Residential
None	NFIP I-Codes and ASCE 24 Checklists (FEMA)	These checklists can be used to guide floodplain managers, building officials, and designers as they compare the flood provisions of the 2009 and 2012 I-Codes and ASCE 24, Flood Resistant Design and Construction, to the minimum requirements of the NFIP. It is based on the standard checklist used by FEMA and States to review local floodplain management regulations/ordinances to determine whether such regulations and ordinances are complete for the purpose of participating in the NFIP.	2013	Residential and Non-Residential
Fact Sheet	Flood Hazard Elevation and Siting Criteria for Community Safe Rooms	It is critical to consider flood hazards when designing a safe room. FEMA cannot fund and does not support placing safe rooms where floodwaters could endanger occupants. This quick guide includes flood elevation and siting criteria for community safe rooms to be compliant with FEMA P-361 guidance.	2015	Critical Facilities
Fact Sheet	Flood Hazard Elevation and Siting Criteria for Residential Safe Rooms	It is critical to consider flood hazards when designing a safe room. FEMA cannot fund and does not support placing safe rooms where floodwaters could endanger occupants. This quick guide includes flood elevation and siting criteria for residential safe rooms to be compliant with FEMA P-361 guidance.	2015	Residential
Web Page Link (within the CD Table of Contents)	FEMA Building Science Home Page	Web page that provides information on the FEMA Building Science Branch, including links for Who We Are, What We Do, and Resources. http://www.fema.gov/building-science	2015	Web page
Web Page Link (within the CD Table of Contents)	FEMA Building Code Resources	Web page that provides guidance on building codes applicable for flood-prone areas. http://www.fema.gov/building-code-resources	2015	Web page

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Web Page Link (within the CD Table of Contents)	FEMA Building Science Helpline	Helpline to address inquiries on natural and man-made hazards, building codes, and FEMA Building Science publications, tools, and MAT reports. Call: (866) 927-2104 or e-mail to: FEMA-Buildingsciencehelp@fema.dhs.gov	2015	Web page
Web Page Link (within the CD Table of Contents)	The Importance of Building Codes in Earthquake-Prone Communities	Web page for FEMA Building Code Resources within the main FEMA Web site (www.fema.gov) that provides guidance on building codes applicable to earthquake-prone areas. https://www.fema.gov/building-codes	2015	Web page
Web Page Link (within the CD Table of Contents)	National Earthquake Hazards Reduction Program (NEHRP)	Web page that explains the NEHRP, which leads the Federal government's efforts to reduce the fatalities, injuries, and property losses caused by earthquakes. NEHRP involves coordination of complimentary activities among four Federal agencies to implement and maintain the program. These agencies are FEMA, the National Institute of Standards and Technology (NIST), the National Science Foundation (NSF), and the U.S. Geological Survey (USGS). http://www.fema.gov/national-earthquake-hazards-reduction-program	2015	Web page
Web Page Link (within the CD Table of Contents)	National Earthquake Technical Assistance Program (NETAP) (FEMA)	Web page that provides information on FEMA's NETAP through various tabs, including the NETAP Toolkit for Earthquake Program Managers, information on training schedules, obtaining assistance through NETAP, and contact information. FEMA developed NETAP as a mechanism for delivering direct assistance to the public to increase their knowledge and ability to analyze their risk, make a plan, and take actions aimed at reducing their earthquake risk and supporting overall community resilience. https://www.fema.gov/national-earthquake-technical-assistance-program	2015	Web page

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FEMA Publication No.	Publication Name	Description	Year	Focus
Web Page Link (within the CD Table of Contents)	CodeMaster for Flood Resistant Design	<p>Provides designers with an easy-to-use desk reference that identifies the flood provisions in the 2009 and 2012 IBC® and IRC®, as well as the flood requirements of ASCE standards 7-05, 7-10, and 24-05. The CodeMaster is a unique and useful tool for designers to make sure that they incorporate the flood resistant provisions of these codes and standards. The eight-page guide provides sections on preliminary considerations and design process, key flood terminology, a 12-step process to incorporate flood resistance in the design of a building, an example showing the execution of the 12-step process, and information on additional FEMA mitigation resources related to flood-resistant design. The document also uses illustrations to ensure a clear understanding for users in the professional community. This guide can be purchased from the International Code Council.</p> <p>http://shop.iccsafe.org/codemaster-flood-resistant-design-2009-2012-ibc-2009-2012-irc-asce-7-05-7-10-asce-24-05.html</p>	2011	Residential and Non-Residential

ASCE = American Society of Civil Engineers

IBC = International Building Code

IRC = International Residential Code

NFIP = National Flood Insurance Program