

FEMA Building Science Resources to Assist with Reconstruction after a Hurricane

FEMA has produced numerous publications detailing best practices for natural hazard mitigation associated with hurricane impacts. This flyer summarizes a few of the readily available publications and resources that can be used by homeowners as well as design and construction professionals during reconstruction following hurricanes.

Recovery Advisories

These publications are released after major disasters, when FEMA's Mitigation Assessment Teams (MATs) have conducted forensic investigations of building performance and publish the results in various publications. Recovery Advisories present guidance on design, construction, and restoration of buildings in areas subject to the effects of the particular disaster. All Recovery Advisories are available on FEMA's website at <https://www.fema.gov/emergency-managers/risk-management/building-science/mitigation-assessment-team>.

Technical Bulletins

These bulletins provide guidance on complying with the minimum building performance requirements of the National Flood Insurance Program (NFIP). NFIP regulations are contained in Title 44 of the Code of Federal Regulations Section 60.3. The bulletins help state and local officials interpret the NFIP regulations and are also useful resources for homeowners, insurance agents, building professionals, and designers. The Technical Bulletins are available at <https://www.fema.gov/emergency-managers/risk-management/building-science/national-flood-insurance-technical-bulletins>.

FEMA P-499, Home Builder's Guide to Coastal Construction Fact Sheets

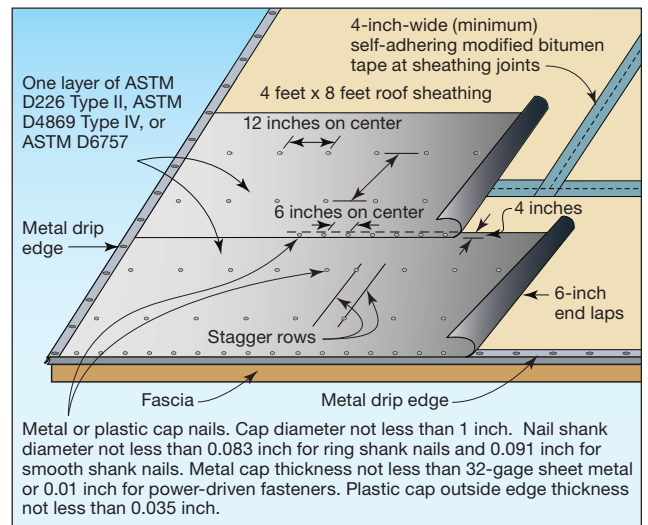
These 37 fact sheets provide technical guidance on constructing residential buildings in coastal environments and improving building performance in these areas subject to flood and wind forces. The fact sheets include information on planning, foundations, load paths, wall systems, openings, roofing, attachments, and repairs. FEMA P-499 is available online at <https://www.fema.gov/emergency-managers/risk-management/building-science/hurricanes>.

FEMA P-312, Homeowner's Guide to Retrofitting: Six Ways to Protect Your Home from Flooding

This guide provides clear information for homeowners who want to learn how to protect their homes from flooding and receive guidance about flood mitigation options. The guide is written for people with little or no experience in flood protection or construction and explains floodproofing. FEMAP-312 is available online at <https://www.fema.gov/emergency-managers/risk-management/building-science/hurricanes>.

FEMA P-804, Wind Retrofit Guide for Residential Buildings

This guide explains how to improve the wind resistance of existing one- and two-family dwellings for enhanced performance during high-wind events in coastal regions. FEMA P-804 is available online at <https://www.fema.gov/emergency-managers/risk-management/building-science/high-winds>.



Source: Figure 6 from Hurricane Irma MAT Recovery Advisory No. 3



Other Resources

FEMA's Building Science Branch has produced numerous publications on the impacts of hurricanes – including coastal foundation design and construction, retrofitting residential buildings for wind hazards, and a design guide for critical facilities prone to hurricanes. The list of publications is available in the FEMA P-787, *Catalog of FEMA Building Science Branch Publications and Training Courses* (<https://www.fema.gov/emergency-managers/risk-management/building-science/multi-hazard>). The Building Science Branch website (<https://www.fema.gov/emergency-managers/risk-management/building-science>) has links to additional resources for homeowners, local and government officials, engineers, and designers.

Notable resources include:

- Substantial Damage Estimator software (<https://www.fema.gov/emergency-managers/risk-management/building-science/substantial-damage-estimator-tool>)
- FEMA P-55, *Coastal Construction Manual* (<https://www.fema.gov/emergency-managers/risk-management/building-science/hurricanes>)
- FEMA P-85, *Protecting Manufactured Homes from Floods and Other Hazards* (<https://www.fema.gov/emergency-managers/risk-management/building-science/hurricanes>)
- FEMA P-320, *Taking Shelter from the Storm: Building a Safe Room for Your Home or Small Business* (<https://www.fema.gov/emergency-managers/risk-management/building-science/high-winds>)
- FEMA P-348, *Protecting Building Utilities from Flood Damage* (<https://www.fema.gov/emergency-managers/risk-management/building-science/flood>)
- FEMA P-361, *Safe Rooms for Tornadoes and Hurricanes: Guidance for Community and Residential Safe Rooms* (<https://www.fema.gov/emergency-managers/risk-management/building-science/high-winds>)
- FEMA P-550, *Recommended Residential Construction for Coastal Areas: Building on Strong and Safe Foundations* (<https://www.fema.gov/emergency-managers/risk-management/building-science/hurricanes>)
- FEMA P-2062, *Guidelines for Wind Vulnerability Assessments of Critical Facilities* (<https://www.fema.gov/emergency-managers/risk-management/building-science/high-winds>)

Additional building code resources from FEMA are available for flood and high wind on FEMA.gov:

- *Flood Resistant and Wind Provisions of the International Code Series* (<https://www.fema.gov/emergency-managers/risk-management/building-science/building-codes/high-wind>)
- *Highlights of ASCE 24 Flood Resistant Design and Construction*
- *Quick Reference Guide: Comparison of Select NFIP and Building Code Requirements for Special Flood Hazard Area*
- *Reducing Flood Losses Through the International Codes* (<https://www.fema.gov/emergency-managers/risk-management/building-science/building-codes/flood>)

For more information, see the FEMA Building Science Frequently Asked Questions website at <https://www.fema.gov/emergency-managers/risk-management/building-science>.

If you have any additional questions on FEMA Building Science Publications, contact the helpline at FEMA-Buildingsciencehelp@fema.dhs.gov or 866-927-2104.

You may also subscribe to the FEMA Building Science e-mail list serve, which is updated with publication releases and FEMA Building Science activities. Subscribe at https://public.govdelivery.com/accounts/USDHSFEMA/subscriber/new?topic_id=USDHSFEMA_193.

Visit the Building Science Branch of the Risk Management Directorate at FEMA's Federal Insurance and Mitigation Administration at <http://www.fema.gov/building-science>.

To order publications, contact the FEMA Distribution Center: Call: 1-800-480-2520 or fax: 1-719-948-9724

E-mail: FEMApubs@gpo.gov.

Additional FEMA documents can be found in the FEMA Library at <https://www.fema.gov/multimedia-library>.



Please scan this QR code to visit the FEMA Building Science web page.