

Overview of FEMA P-348, 2017 Edition

Protecting Building Utility Systems From Flood Damage

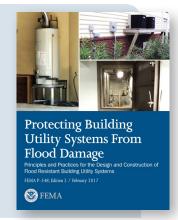
BUILDING SCIENCE BRANCH

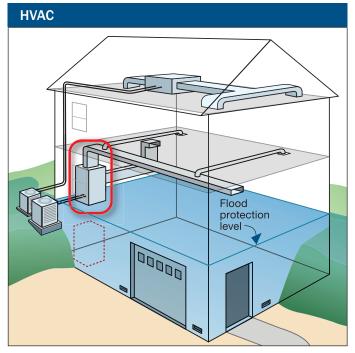
May 2019

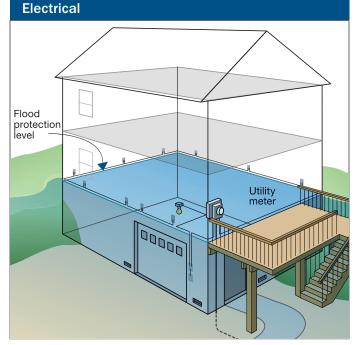
Key Topics:

- Flood risks to, and mitigation for:
 - HVAC (heating, ventilation, and air conditioning) components (Sections 3.2, 4.1, and 5.1)
 - Electrical systems (including generators) (Sec. 4.2 and 5.2)
 - Plumbing systems (including backflow prevention) (Sec. 4.3 and 5.3)
 - Fuel systems (including anchoring) (Sec. 4.4 and 5.4)

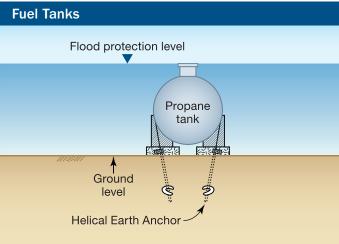
- Raising utility systems (Sec. 3.1)
- Residential buildings (Chapter 4)
- Non-residential buildings (Ch. 5)
- NFIP requirements (Sec. 2.1-2.3)











FEMA COMMUNITY EDUCATION AND OUTREACH (CEO) FLYER

Description

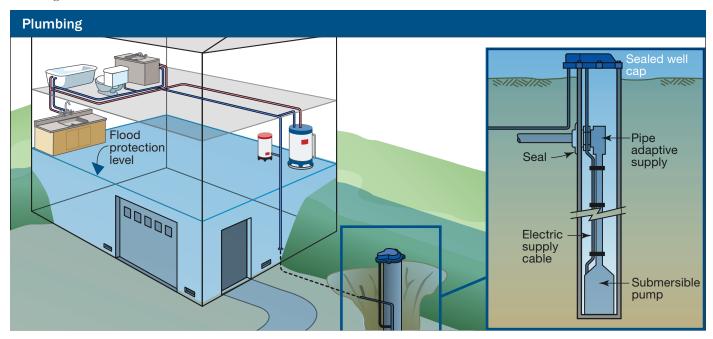
This publication illustrates the design and construction of utility systems that comply with the National Flood Insurance Program (NFIP) requirements for construction of new residential and non-residential structures in flood-prone areas. It is also useful when evaluating structures that will undergo Substantial Improvement, guiding users to meet floodplain management regulations and building code requirements. Even if compliance is not required, many building owners may find that applying mitigation measures described in this publication will not only reduce future flood damage, but also facilitate recovery after flooding.

Target Audience

Developers, property managers, designers (architects and engineers), building contractors, building owners, maintainers and operators of residential, non-residential and multi-family buildings, local officials responsible for enforcing floodplain management regulations and building codes.

General Publication Content

- Building Systems and Flood Hazards
 - Flood Hazard Characteristics and Flood Loads
 - Risk Assessment and Risk Reduction
- Regulatory Framework
 - National Flood Insurance Program Regulations
 - Building Codes and Standards
- National Flood Insurance Program Compliance and Mitigation Measures
 - Elevation, Relocation, and Component Protection
 - Partial Protection Measures when Compliance is not required
- Mitigation for Residential Buildings and Non-Residential Buildings
 - Heating, Ventilation and Air Conditioning (HVAC)
 - Electrical Systems
 - Plumbing Systems
 - Fuel Systems and Tanks
 - Conveyances Elevators and Lifts



For more information, see the FEMA Building Science Frequently Asked Questions website at http://www.fema.gov/frequently-asked-questions-building-science.

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

You may also sign up for the FEMA Building Science email subscription, which is updated with publication releases and FEMA Building Science activities. Subscribe at https://service.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 https://www.fema.gov/building-science.

To order publications, contact the FEMA Distribution Center:

Call 1-800-480-2520 (M–F, 8 a.m.–5 p.m., EST) | Fax 719-948-9724

Email FEMApubs@GPO.gov
Additional FEMA documents can be found

in the FEMA Library at

https://www.fema.gov/media library/resources.

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

