

**Fact Sheet**  
**Nonstructural Measures**  
**(Building Retrofit)**

**Option: Dry Floodproofing**

**Description:** Making the portion of a building below flood levels watertight through use of sealants, shields, or enhanced foundations; prevents floodwaters from entering windows or other openings. Use is generally restricted to commercial and institutional buildings, and in areas where flood depths are less than three feet. (Flood depths above three feet would exert unsupportable levels of hydrostatic pressure on foundations).

**Example(s):** Potential application would be to retrofit a critical public facility such as a fire station, subject to limited flooding (three feet or less in depth). (Fabric barrier shown below).

**Benefits:** Reduces flood risk to structure and contents; may be less costly than other retrofitting methods; does not require additional lot space. Effective in areas with high groundwater table.

**Challenges:** Only effective in areas where floodwaters are three feet or less in depth, and velocity of flow is less than three feet per second (fps); structural constraints; may require substantial upgrades to and/or replacement of existing foundation to withstand increased hydrostatic pressure; may require property owner intervention to install shields or barriers. Not allowed by FEMA for new or substantially improved or damaged residential structures located in the floodplain (allowed for non-residential structures in floodplain). Generally requires owner intervention to install risk management features (e.g., flood shields) in advance of flooding. Requires a design capable of withstanding hydrostatic, hydrodynamic, and impact forces of flooding.

