Substantial Damage Inspection Procedure

FEMA Region III
5 Ps, Prior, Planning, Promotes, Perfect, Procedures!

1. Plan how to accomplish the goals of performing substantial damage inspections, what resources do you have at your disposal?
2. Coordinate with the entire community.
3. What teams will go where, route development.
4. Who will enter data or calculate damages.
5. Transportation, drivable or walkable inspections?
6. Quality Control!
Ground Rules! Required! No-Compromise!

1. Inform Law Enforcement you and your teams will be in the area.
2. Never enter a property with posted, no trespassing, beware of dog, or purple paint.
3. Upon arriving at a property, always knock on the door, no exceptions.
4. Be polite, listen, survivors may need a comforting ear, never one up them, be understanding.
5. Take photos at an angle and if possible get the address in the photo, never have the survivor in the photo.
6. You are assisting the community to obtain damage data, the community will make the substantial damage determination.
7. The community (AHJ) condemns properties, FEMA does not have that authority.
2017 Cost Study

• Breakdown

- Foundation: 12.7%
- Superstructure: 21.8%
- Roof Covering: 3.8%
- Exterior Finish: 7.9%
- Interior Finish: 17.8%
- Doors and Windows: 4.5%
- Cabinets and Countertops: 5.8%
- Floor Finish: 5%
- Plumbing: 7%
- Electrical: 6.7%
- Appliances: 1.75%
- HVAC: 5.5%
Residence Type
Foundation
Superstructure
Exterior Finish, Story, & Roof Covering
CHAPTER 3 BUILDING PLANNING

R300.10 Required heating.

Where the winter design temperature in Table R301.2(1) is below 40°F (4°C), every dwelling unit shall be provided with heating facilities capable of maintaining a room temperature of not less than 60°F (26°C) at a point 3 feet (914 mm) above the floor and 2 feet (610 mm) from exterior walls in habitable rooms at the design temperature. The installation of one or more portable space heaters shall not be used to achieve compliance with this section.
Quality

Quality prior to the event occurring!
Determining the Height of Flooding
Housing Components

2018 International Residential Code for One- and Two Family Dwellings

Chapter 1: WALL CONSTRUCTION
Footers and Foundation

• Check for damage around the house:
  • Was footers or foundation undermined and allowed to settle?
  • Are there cracks, if so are the cracks new or existing prior to the event?
  • Are there portions missing?
Superstructure

• Walls and Roof Support
  • Did they become inundated?
  • Are they twisted, bowed, or broken?
  • Are portions missing?
Exterior Finish

• Does it need cleaned?
• Damaged?
• Missing?
Interior Finish

• Damage to Drywall or other wall coverings?
Doors and Windows

• Inundation may cause warping of frames and doors.
• Windows or doors broken or missing.
Cabinets and Countertops

• What are they made of (can they be cleaned)?
• What was the height of the flood? May only impact a portion of the cabinets.
Floor Finish

• Typically flooring will have to be replaced if inundated with flood water for any duration. Environmental conditions may also factor in.
Plumbing and Electrical

- Electrical and Plumbing components inundated by water should at minimum be inspected before re-use or re-energized.
  - Electric refer to UL pamphlet: After the Storm, Floodwater Safety
  - Plumbing, test according to applicable code and type of plumbing. (example Section P2503 of the 2018 IRC)
  - Did foundation torque or twist, could impact electric and plumbing (settling or superstructure flexing may have broken pipes, chafed wires, or stripped wires from fixtures?)
  - Plumbing and electrical components allow the possibility of infiltration of contaminants, can plumbing be cleaned and disinfected, was electrical components impacted by sediment, silt, or other factors.
Appliances

- Built in appliances (fridge, stove, washing machine, dryer, furnace, built in microwave, dishwasher, water heater, water pump, etc.)
HVAC

- Treat HVAC as any other plumbing or electrical components and inspect prior to re-energizing. For damage purposes if they were inundated, mark as needing to be replaced and let the AHJ have the conversation with the property owner.
Test House
Test House
Test House
**SDE Residential Worksheet**

**PROPERTY LOCATION**

- Photo: 
- Date: 
- Latitude: 
- Longitude: 
- Street: 
- Address: 
- City, State, Zip: 
- County: 

**STRUCTURE ATTRIBUTES**

- **Residence Type:**
  - Single Family Residence
  - Town or Row House
  - Manufactured House
  - Crawl Space
  - Slab - on - Grade
  - Piers & Posts

- **Foundation:**
  - Continuous Wall
  - Slab
  - Basement
  - Piles

- **Superstructure:**
  - Stud - Framed
  - Beam
  - Aries

- **Exterior Finish:**
  - Siding or Stucco
  - Brick Veneer
  - EIFS

**ELEMENT PERCENTAGES**

- **Exterior Finish:**
  - Siding or Stucco: 50%
  - Brick Veneer: 100%
  - EIFS: 0%

- **Foundation:**
  - 0%

- **Floor Finish:**
  - 100%

- **Roof Covering:**
  - 0%

- **HVAC System:**
  - Heating and/or Cooling: 100%
  - Plumbing: 100%
  - Electrical: 100%

- **Quality:**
  - Low
  - Average
  - Good
  - Excellent

- **Year of Construction:**

**MISC NOTES:**

- **Cause of Damage:**
  - Fire
  - Flood

- **Duration of Flood:**
  - Days

- **Depth of Flood Above Ground:**
  - **Note:**

- **Depth of Flood Above 1st Floor:**

- **Damage Occurred:**
  - / / 

**DIAGRAM OF MEASUREMENTS AND NUMBER OF STORIES**

- [Diagram]

**NOTE:**
Test House
Answer