



## Federal Emergency Management Agency

Region IV

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### NATIONAL FLOOD INSURANCE PROGRAM

#### THE 50% RULE

**SUBSTANTIAL DAMAGE** Pre-FIRM buildings must be elevated if damaged by any cause for which repair costs are 50% or more of the value of the building. This is a "hidden cost" that actually reduces the value of the structure. Most homeowners never know about this until it happens to them. Ask Saga Bay, Florida! Damage can, occur from flooding, fire, earthquake, wind, or man. This applies to all buildings in a flood hazard area, regardless if tile building has flood insurance.

The costs to repair must be calculated for full repair to "before-damage" condition, even if the owner elects to do less. The total costs to repair include both structural and finish materials and labor.

**SUBSTANTIAL IMPROVEMENT** When a Pre-FIRM building is proposed to be remodeled, renovated, rehabilitated, added to, or in any way improved, the proposed modifications must be evaluated for "substantial improvement". If the total costs of improvement are 50% or more of the building value, the building must be elevated, etc., just like "substantial damage". "Total costs" means all structural costs, as well as all finish materials, built-in appliances, hardware, in addition to profit and overhead. The substantial improvement rule is a hidden potential cost that the buyer needs to be aware of.

**BUILDING VALUE** Building value = market value of structure only. Land and exterior improvements are excluded, e.g. swimming pool, pool enclosure, landscaping, paving, etc. Market value = assessed value or properly-depreciated appraised building value. The assessed value may be adjusted upward to reflect the market more accurately. Replacement cost can only be used if properly depreciated. Certified appraisals must be based on the comparable sales method. The land and value must be deducted and it must be equal to or greater than that established by the County Assessor. The building value must be fairly depreciated to reflect the age of the building and the deterioration of building components.

**COSTS TO BE INCLUDED** The construction costs to be calculated for both substantial damage and improvement include both structural and finish labor and materials. This includes lighting fixtures, built-in appliances, interior moldings, paneling, tiling, wall-to-wall carpet over sub flooring, built-in cabinets, etc. The cost to demolish undamaged building components must be established and included. Overhead and profit are also included, but not the cost of permits. Many of these costs are not normally calculated for purposes of a building permit, nor are they regulated as part of the Building Code. But, they must be calculated for compliance with the 50% Rule. [see attached lists]

**SUBSTANTIAL DAMAGE** means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damage condition would equal or exceed 50 percent of the market value of structure before the damage occurred. (Note: The cost of the repairs must include all costs necessary to fully repair the structure to its before damage condition.)

**SUBSTANTIAL IMPROVEMENTS** means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the "start of construction" of the improvement.

## B. SUBSTANTIAL DAMAGE

**44 CFR 59.1. Definitions:** "Substantial damage" means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.

Two key points:

- The damage can be from any cause—flood, fire, earthquake, wind, rain, or other natural or human-induced hazard.
- The substantial damage rule applies to all buildings in a flood hazard area, regardless of whether the building was covered by flood insurance.

The formula is essentially the same as for substantial improvements:

$$\frac{\text{Cost to repair}}{\text{Market value of the building}} \geq 50 \text{ percent}$$

Market value is calculated in the same way as for substantial improvements. Use the pre-damage market value.

### COST TO REPAIR

Notice that the formula uses "cost to repair," not "cost of repairs." The cost to repair the structure must be calculated for full repair to the building's before-damage condition, even if the owner elects to do less. It must also include the cost of any improvements that the owner has opted to include during the repair project.

The total cost to repair includes the same items listed in Figure 8-1. As shown in Example 2 below, properly repairing a flooded building can be more expensive than people realize. The owner may opt not to pay for all of the items needed. The owner may:

- Do some of the work, such as removing and discarding wallboard.
- Obtain some of the materials free.
- Have a volunteer organization, such as the Mennonites, do some of the work.
- Decide not to do some repairs, such as choosing to nail down warped flooring rather than replace it.

## Example 2. Substantially damaged structure

To determine if a damaged structure meets the threshold for substantial damage, the cost of repairing the structure to its before-damaged condition is compared to the market value of the structure prior to the damage. The estimated cost of the repairs must include all costs necessary to fully repair the structure to its before-damaged condition.

If equal to or greater than 50 percent of that structure's market value before damage, then the structure must be elevated (or floodproofed if it is nonresidential) to or above the level of the base flood, and meet other applicable local ordinance requirements. This is the basic requirement for substantial damage.

*and brought up to post-FIRM standards*

Figure 8-11 graphically illustrates the amount of damage that can occur to a building flooded only four feet deep. Even though the structure appears sound and there are no cracks or breaks in the foundation, the total cost of repair can be significant.

The cost of repair after a flood that simply soaked the building will typically include the following structural items:

- Remove all wallboard and insulation.
- Install new wallboard and insulation.
- Tape and paint.
- Remove carpeting and vinyl flooring.
- Dry floor, replace warped flooring.
- Replace cabinets in the kitchen and bathroom.
- Replace built-in appliances.
- Replace hollow-core interior doors.
- Replace furnace and water heater.
- Clean and disinfect duct work.
- Repair porch flooring and front steps.
- Clean and test plumbing (licensed plumber may be required).
- Replace outlets and switches, clean and test wiring (licensed electrician may be required).

Note: See also Figures 7-7 through 7-12 for what happens to flood insurance premiums if a substantially damaged building is granted a variance and is not brought up to post-FIRM standards.