

CHAPTER 4

REPAIRS

SECTION 401 GENERAL

401.1 Scope. Repairs shall comply with the requirements of this chapter and with the provisions of Section 706. Repairs to *historic buildings* need only comply with Chapter 12.

401.2 Conformance. The work shall not make the building less conforming than it was before the *repair* was undertaken.

[BS] 401.3 Flood hazard areas. In flood hazard areas, repairs that constitute *substantial improvement* shall require that the building comply with Section 1612 of the *Florida Building Code, Building*, or Section R322 of the *Florida Building Code, Residential*, as applicable.

401.4 Structure seaward of a coastal construction line. Structures located seaward of the coastal construction line shall be designed to resist the predicted forces of a 100-year storm event in accordance with Section 3109 of the *Florida Building Code, Building*.

401.5 Dangerous buildings. When an historic building is determined as dangerous, no work shall be required except as necessary to correct identified dangerous conditions.

SECTION 402 BUILDING ELEMENTS AND MATERIALS

402.1 New and replacement materials. Except as otherwise required or permitted by this code, materials permitted by the applicable code for new construction shall be used. Like materials shall be permitted for *repairs* provided no *dangerous* or *unsafe* condition, as defined in Chapter 2, is created. Hazardous materials, such as asbestos and lead-based paint, shall not be used where the code for new construction would not permit their use in buildings of similar occupancy, purpose and location.

Exception: Repairs to a historic building shall be permitted using original or like materials. Materials shall comply with Sections 402.1, 402.2 and 402.3.

402.2 Glazing in hazardous locations. Replacement glazing in hazardous locations shall comply with the safety glazing requirements of the *Florida Building Code, Building* or *Florida Building Code, Residential* as applicable.

Exception: Glass block walls, louvered windows, and jalousies repaired with like materials.

402.3 Replacement. For repairs in an historic building, replacement or partial replacement of existing or missing features that match the original in configuration, height, size and original methods of construction shall be permitted.

Exception: Glazing in hazardous locations shall comply with Section 402.2.

SECTION 403 FIRE PROTECTION

403.1 General. Repairs shall be done in a manner that maintains the level of fire protection provided.

403.2 Smoke alarms in one-family and two-family dwellings and townhomes. One-family and two-family dwellings and townhomes undergoing a repair, or a Level 1 alteration as defined in the *Florida Building Code*, may use smoke alarms powered by 10-year nonremovable, nonreplaceable batteries in lieu of retrofitting such dwelling with smoke alarms powered by the dwelling's electrical system. A battery-powered smoke alarm that is newly installed or replaces an existing battery-powered smoke alarm as a result of a Level 1 alteration must be powered by a nonremovable, nonreplaceable battery that powers the alarm for at least 10 years. The battery requirements of this section do not apply to a fire alarm, smoke detector, smoke alarm, or ancillary component that is electronically connected as a part of a centrally monitored or supervised alarm system; that uses a low-power radio frequency wireless communication signal; or that contains multiple sensors, such as a smoke alarm combined with a carbon monoxide alarm or other multi devices, and is approved and listed by a nationally recognized testing laboratory.

SECTION 404 MEANS OF EGRESS

404.1 General. Repairs shall be done in a manner that maintains the level of protection provided for the means of egress.

SECTION 405 ACCESSIBILITY

405.1 General. Repairs shall be done in a manner that maintains the level of accessibility provided.

SECTION 406 STRUCTURAL

[BS] 406.1 General. Structural repairs shall be in compliance with this section and Section 401.2. Regardless of the extent of structural or nonstructural damage, *dangerous* conditions shall be eliminated. Regardless of the scope of *repair*, new structural members and connections used for *repair* or *rehabilitation* shall comply with the detailing provisions of the *Florida Building Code, Building* for new buildings of similar structure, purpose and location.

[BS] 406.2 Repairs to damaged buildings. Repairs to damaged buildings shall comply with this section and Section 706, Reroofing.

[BS] 406.2.1 Repairs for less than substantial structural damage. For damage less than *substantial struc-*

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tural damage, the damaged elements shall be permitted to be restored to their predamage condition.

[BS] 406.2.2 Substantial structural damage to vertical elements of the lateral force-resisting system. A building that has sustained *substantial structural damage* to the vertical elements of its lateral force-resisting system shall be evaluated in accordance with Section 406.2.2.1, and either repaired in accordance with Section 406.2.2.2 or repaired and rehabilitated in accordance with Section 406.2.2.3, depending on the results of the evaluation.

Exceptions:

1. Buildings assigned to Seismic Design Category A, B, or C whose substantial structural damage was not caused by earthquake need not be evaluated or rehabilitated for load combinations that include earthquake effects.
2. One- and two-family dwellings need not be evaluated or rehabilitated for load combinations that include earthquake effects.

[BS] 406.2.2.1 Evaluation. The building shall be evaluated by a registered design professional, and the evaluation findings shall be submitted to the *code official*. The evaluation shall establish whether the damaged building, if repaired to its predamage state, would comply with the provisions of the *Florida Building Code, Building* for load combinations that include wind or earthquake effects, except that the seismic forces shall be the reduced level seismic forces.

[BS] 406.2.2.2 Extent of repair for compliant buildings. If the evaluation establishes that the building in its predamage condition complies with the provisions of Section 406.2.2.1, then the damaged elements shall be permitted to be restored to their predamage condition.

[BS] 406.2.2.3 Extent of repair for noncompliant buildings. If the evaluation does not establish that the building in its predamage condition complies with the provisions of Section 406.2.2.1, then the building shall be rehabilitated to comply with the provisions of this section. The wind loads for the *repair* and *rehabilitation* shall be those required by the building code in effect at the time of original construction, unless the damage was caused by wind, in which case the wind loads shall be in accordance with the *Florida Building Code, Building*. The seismic forces for this *rehabilitation* design shall be those required by the building code in effect at the time of original construction, but not less than the reduced seismic forces.

[BS] 406.2.3 Substantial structural damage to gravity load-carrying components. Gravity load-carrying components that have sustained *substantial structural damage* shall be rehabilitated to comply with the applicable provisions for dead and live loads in the *Florida Building Code, Building*. Snow loads shall be considered if the *substantial structural damage* was caused by or related to snow load effects. Undamaged gravity load-carrying components that receive dead, live or snow loads from rehabilitated

components shall also be rehabilitated if required to comply with the design loads of the *rehabilitation* design.

[BS] 406.2.3.1 Lateral force-resisting elements. Regardless of the level of damage to gravity elements of the lateral force-resisting system, if substantial structural damage to gravity load-carrying components was caused primarily by wind or seismic effects, then the building shall be evaluated in accordance with Section 406.2.2.1 and, if noncompliant, rehabilitated in accordance with Section 406.2.2.3.

Exceptions:

1. Buildings assigned to Seismic Design Category A, B, or C whose substantial structural damage was not caused by earthquake need not be evaluated or rehabilitated for load combinations that include earthquake effects.
2. One- and two-family dwellings need not be evaluated or rehabilitated for load combinations that include earthquake effects.

[BS] 406.2.4 Flood hazard areas. In *flood hazard* areas, buildings that have sustained *substantial damage* shall be brought into compliance with Section 1612 of the *Florida Building Code, Building*, or Section R322 of the *Florida Building Code, Residential*, as applicable.

SECTION 407 ELECTRICAL

407.1 Material. Existing electrical wiring and equipment undergoing *repair* shall be allowed to be repaired or replaced with like material.

407.1.1 Receptacles. Replacement of electrical receptacles shall comply with the applicable requirements of Section 406.4(D) of NFPA 70.

407.1.2 Plug fuses. Plug fuses of the Edison-base type shall be used for replacements only where there is no evidence of over fusing or tampering per applicable requirements of Section 240.51(B) of NFPA 70.

407.1.3 Nongrounding-type receptacles. For replacement of nongrounding-type receptacles with grounding-type receptacles and for branch circuits that do not have an equipment grounding conductor in the branch circuitry, the grounding conductor of a grounding-type receptacle outlet shall be permitted to be grounded to any accessible point on the grounding electrode system or to any accessible point on the grounding electrode conductor in accordance with Section 250.130(C) of NFPA 70.

407.1.4 Group I-2 receptacles. Non-“hospital grade” receptacles in patient bed locations of Group I-2 shall be replaced with “hospital grade” receptacles, as required by NFPA 99 and Article 517 of NFPA 70.

407.1.5 Grounding of appliances. Frames of electric ranges, wall-mounted ovens, counter-mounted cooking units, clothes dryers and outlet or junction boxes that are part of the existing branch circuit for these appliances shall be permitted to be grounded to the grounded circuit conductor in accordance with Section 250.140 of NFPA 70.