

Issue DS 2020-022: The petitioner Eduard C. Badiu of CeBB Engineering & Testing Co is seeking a declaratory with regard to whether existing roofing component(s) that does not have a current Product Approval and needs to be detached & reset need to be subjected to the requirements of the 25% rule and whether used concrete tile can be used for repairs without having a current product approval.

Petitioner seeks clarification of the following questions:

Question 1: Do the existing roofing component(s) needed to be detached & reset (502.3) and WITHOUT having a current valid Product Approval (1521) need to be subjected to the requirements of the 25% rule (as set forth in 706.1.1. and 1511.1.1)?

Question 2: Can a roof concrete tile found in a boneyard/scrapyard WITHOUT having a current valid State of Florida Product Approval or a Miami-Dade County Product Approval (1521) be used for the repairs?

Background:

CeBB Engineering & Testing Co. is a Consulting Engineering Firm registered in the State of Florida since July 14th, 2003 involved with construction consulting and oftentimes with the applicability of the Florida Building Code in situation of origin, causation and extent of damages caused by but not limited to major natural catastrophe, such as Hurricanes.

CeBB Engineering & Testing Co. is seeking clarification on certain Sections of the 2017 Florida Building Code - Existing Building and Sections of the 2017 Florida Building Code - Building to seek a uniform interpretation so that the work needed to be performed is uniformly interpreted and implemented by the local Department Having Jurisdiction.

Project Information:

More specifically Petitioner had inspected a **residential complex, two-story multi-family residences, within the Tri-County Area in South-East Florida for roof damages to the existing roof coverings, consisting of double-roll mechanically fastened concrete roof tiles that exhibit wind damages post hurricane Irma.**

The building in question is Building #10, six (6) residential two-story units, that has with six (6) roof sections, outlined as follows:

- Section A, B, F, G, H totaling 1,452 square feet;
- Section C, D, E totaling 779 square feet;
- Section I totaling 91 square feet;
- Section J totaling 90 square feet;
- Section K totaling 103 square feet;
- Section L totaling 90 square feet;

The current roof damages on Building #10 per each roof section is as follows:

- Section A, B, F, G, H totaling 114 square feet or 8%;
- Section C, D, E totaling 47 square feet or 7%;

- Section I totaling 3 square feet or 3.5%;
- Section J totaling 4 square feet or 5%;
- Section K totaling 5 square feet or 5%;
- Section L totaling 4 square feet or 5%;

However, the area of undamaged roof that is necessary to be detached and reset for the required repair of damaged components, per each roof section would now be as follows:

- Section A, B, F, G, H totaling 902 square feet or an additional of 63%;
- Section C, D, E totaling 498 square feet or an additional of 63%;
- Section I totaling 24 square feet or an additional of 27%;
- Section J totaling 14 square feet or an additional of 15%;
- Section K totaling 15.6 square feet or an additional of 15%;
- Section L totaling 32 square feet or an additional of 35%;

which will now exceed the 25% of the roof section on the following sections as follows:

- Section A, B, F, G, H to a total of 70%
- Section C, D, E to a total of 70%
- Section I to a total of 30%
- Section L to a total of 40%

It shall be noted that the very same section, Section 502 - Repairs: 502.3 Related Work, does not allow now that the repair area to be part of the 25% Rule, as outlined by Section 706, Paragraph 706.1.1.

6th Edition (2017) Florida Building Code, Existing Building –

Chapter 2 Definitions

[A] REPAIR. The reconstruction or renewal of any part of an *existing building* for the purpose of its maintenance or to correct damage.

[BS] REROOFING. The process of recovering or replacing an existing roof covering.

[BS] ROOF RECOVER. The process of installing an additional roof covering over a repaired existing roof covering without removing the existing roof covering.

[BS] ROOF REPAIR. Reconstruction or renewal of any part of an existing roof for the purposes of its maintenance.

[BS] ROOF REPLACEMENT. The process of removing the existing roof covering, repairing any damaged substrate and installing a new roof covering.

[BS] SUBSTANTIAL STRUCTURAL DAMAGE. A condition where one or both of the following apply:

1. The vertical elements of the lateral force-resisting system have suffered damage such that the lateral load carrying capacity of any story in any horizontal direction has been reduced by more than 33 percent from its predamage condition.

2. The capacity of any vertical component carrying gravity load, or any group of such components, that supports more than 30 percent of the total area of the structure's floor(s) and roof(s) has been reduced more than 20 percent from its predamage condition and the remaining capacity of such affected elements, with respect to all dead and live loads, is less than 75 percent of that required by this code for new buildings of similar structure, purpose and location.

Chapter 5 Classification of Work

502.1 Scope

Repairs, as defined in Chapter 2, include the patching or restoration or replacement of damaged materials, elements, equipment or fixtures for the purpose of maintaining such components in good or sound condition with respect to existing loads or performance requirements.

502.2 Application. *Repairs* shall comply with the provisions of Chapter 6. **Reroofing shall comply with the provisions of Section 706.**

502.3 Related Work.

Work on undamaged components that is necessary for the required repair of damaged components shall be considered part of the repair and shall not be subject to the provisions of Chapter 7, 8, 9, 10 and 11.

CHAPTER 7 ALTERATIONS—LEVEL 1

702.6 Materials and methods. **All new work shall comply with the materials and methods requirements in the *Florida Building Code, Building*; *Florida Building Code, Energy Conservation*; *Florida Building Code, Mechanical*; and *Florida Building Code, Plumbing*, as applicable, that specify material standards, detail of installation and connection, joints, penetrations, and continuity of any element, component, or system in the building.**

CHAPTER 8 ALTERATIONS—LEVEL 2

801.2 Alteration Level 1 compliance. In addition to the requirements of this chapter, **all work shall comply with the requirements of Chapter 7.**

801.3 Compliance. All new construction elements, components, systems, and spaces shall comply with the requirements of the *Florida Building Code, Building*.

CHAPTER 9 ALTERATIONS—LEVEL 3

901.2 Compliance. In addition to the provisions of this chapter, **work shall comply with all of the requirements of Chapters 7 and 8.** The requirements of Sections 803, 804 and 805 shall apply within all *work areas* whether or not they

include exits and corridors shared by more than one tenant and regardless of the occupant load.

CHAPTER 10 CHANGE OF OCCUPANCY

1001.2.1 Change of use. Any work undertaken in connection with a change in use that does not involve a *change of occupancy* classification or a change to another group within an occupancy classification shall conform to the applicable requirements for the work as classified in Chapter 5 and to the requirements of Sections 1002 through 1011.

CHAPTER 11 ADDITIONS

1101.3 Other work. Any *repair* or *alteration* work within an *existing building* to which an *addition* is being made shall comply with the applicable requirements for the work as classified in Chapter 5.

Chapter 6 Repairs

601.2 Conformance.

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

602.1 Existing building materials. Materials already in use in a building in compliance with requirements or approvals in effect at the time of their erection or installation shall be permitted to remain in use unless determined by the *code official* to render the building or structure unsafe or *dangerous* as defined in Chapter 2.

602.2 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* and *alterations*, 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 602.2, 602.3 and 602.4.

[BS] 606.1 General.

Structural repairs shall be in compliance with this section and Section 601.2. 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] 606.2 Repairs to damaged buildings.

Repairs to damaged buildings shall comply with this section and Section 706, Reroofing.

[BS] 606.2.1 Repairs for less than substantial structural damage. For damage less than *substantial structural damage*, the damaged elements shall be permitted to be restored to their predamage condition.

[BS] 606.2.2 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 606.2.2.1, and either repaired in accordance with Section 606.2.2.2 or repaired and rehabilitated in accordance with Section 606.2.2.3, 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] 606.2.2.1 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 *Florida Building Code, Building*-level seismic forces.

[BS] 606.2.2.2 Extent of repair for compliant buildings. If the evaluation establishes that the building in its predamage condition complies with the provisions of Section 606.2.2.1, then the damaged elements shall be permitted to be restored to their predamage condition.

[BS] 606.2.2.3 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 606.2.2.1, 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 loads 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 *Florida Building Code, Building* level seismic forces.

Chapter 7 Alteration –Level 1

[BS] 706.1 General. Materials and methods of application used for recovering or replacing an existing roof covering shall comply with the requirements of Chapter 15 of the *Florida Building Code, Building*, or Chapter 9 of the *Florida Building Code, Residential*. Roof repairs to existing roofs and roof coverings shall comply with the provisions of this code.

706.1.1. Not more than 25 percent of the total area or roof section of any building or structure shall be repaired, replaced or recovered in any 12-month period unless the entire existing roofing system or roof section is replaced to conform to requirements of this code.

[BS] 706.5 Reinstallation of materials. Existing slate, clay or cement tile shall be permitted for reinstallation, except that damaged, cracked or broken slate or tile shall not be reinstalled. Existing vent flashing, metal edgings, drain outlets, collars and metal counterflashings shall not be reinstalled where rusted, damaged or deteriorated. Aggregate surfacing materials shall not be reinstalled (High-Velocity Hurricane Zones shall comply with Sections 1512 through 1525 of the *Florida Building Code, Building*).

As revised – draft 7th Edition (2020) Florida Building

706.5 Reinstallation/Reuse of materials.

Existing or salvaged slate, clay or ~~cement~~ concrete tile shall be permitted for reinstallation or reuse, to repair an existing slate or tile roof, except that salvaged slate or tile shall be of like kind in both material and profile. ~~D~~amaged, cracked or broken slate or tile shall not be reinstalled. The building official may permit salvaged slate, clay and concrete tile to be installed on additions and new construction, when the tile is tested in compliance with the provisions of Section 1507 or 1523 (HVH shall comply with Section 1523) and installed in accordance with Section 1507 or 1518 (HVHZ shall comply with Section 1518). Existing vent flashing, metal edgings, drain outlets, collars and metal counter flashings shall not be reinstalled where rusted, damaged or deteriorated. Aggregate surfacing materials shall not be reinstalled. (High-Velocity Hurricane Zones shall comply with Sections 1512 through 1525 of the Florida Building Code, Building). (R7314)

6th Edition (2017) Florida Building Code, Building

Chapter 1 Scope and Administration

[A] 101.4 Referenced codes. The other codes listed in Sections 101.4.1 through 101.4.9 and referenced elsewhere in this code shall be considered part of the requirements of this code to the prescribed extent of each such reference.

[A] 101.4.7 Existing buildings. The provisions of the *Florida Building Code, Existing Building* shall apply to matters governing the *repair, alteration, change of occupancy, addition to and relocation of existing buildings*.

[A] 104.9.1 Used materials and equipment. The use of used materials that meet the requirements of this code for new materials is permitted. Used equipment and devices shall not be reused unless *approved* by the *building official*.

Chapter 15 Roof Assemblies and Rooftop structures

ROOF ASSEMBLY. A system designed to provide weather protection and resistance to design loads. The system consists of a roof covering and roof deck or a single component serving as both the roof covering and the roof deck. A roof assembly includes the roof deck, *vapor retarder*, substrate or thermal barrier, insulation and roof covering

ROOF COVERING. The covering applied to the roof deck for weather resistance, fire classification or appearance.

ROOF ASSEMBLY. A system designed to provide weather protection and resistance to design loads. The system consists of a roof covering and roof deck or a single component serving as both the roof covering and the roof deck. A roof assembly includes the roof deck, *vapor retarder*, substrate or thermal barrier, insulation and roof covering. The definition of “Roof assembly” is limited in application to the provisions of Chapter 15.

1506.2 Material specifications and physical characteristics. Roof-covering materials shall conform to the applicable standards listed in this chapter.

1506.2.1 Compatibility of materials. Roofs and roof coverings shall be of materials that are compatible with each other and with the building or structure to which the materials are applied.

1511.1.1 Not more than 25 percent of the total roof area or roof section of any existing building or structure shall be repaired, replaced or recovered in any 12-month period unless the entire existing roofing system or roof section is replaced to conform to requirements of this code.

1521.2 Repairs shall be carried out with roofing components as defined in this chapter having a product approval.

Staff Analysis

Question 1:

Do the existing roofing component(s) needed to be detached & reset (502.3) and WITHOUT having a current valid Product Approval (1521) need to be subjected to the requirements of the 25% rule (as set forth in 706.1.1. and 1511.1.1)?

Answer:

Option #1/Petitioner:

Petitioner respectfully believes that the answer to the question above is “YES”.

If the answer is “No” then a repair to an existing roof based on the interpretation of Section 502 – Repairs: 502.3 Related Work is a clear conflict with the definition of the roof assemble (1502) when it comes to performance requirements (502.1), weather protection and resistance to design loads (1502).

Option #2/Staff:

The answer to the Petitioner's question is no. As per section 502.3 of the 6th Edition (2017) Florida Building Code, Existing Building, work on undamaged components that is necessary for the required repair of damaged components for the project in question is not subject to the requirements of Chapter 7, Alterations –Level 1, including the requirements of the 25% as set forth in Section 706.1.1 of the 6th Edition (2017) Florida Building Code, Existing Building.

Question 2:

Can a roof concrete tile found in a boneyard/scrapyard WITHOUT having a current valid State of Florida Product Approval or a Miami-Dade County Product Approval (1521) be used for the repairs?

Answer:

Option #1/Petitioner:

Petitioner respectfully believes that the answer to the question above is “No”.

If the answer is “YES” then said repair is a clear violation of Section 1521 of the 2017 Florida Building Code.

Option #2/Staff:

For the project in question and as per Section 104.9.1, Used materials and equipment, of the 6th Edition (2017) Florida Building Code, Building, used/salvaged roof concrete tiles that meet the requirements of current code for new materials are permitted to be used for the repairs in question. However, the use of said used/salvaged concrete tiles is subject to approval by the building official.