




BROWARD COUNTY BOARD OF RULES AND APPEALS

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broward.org/CodeAppeals

FBC 7th EDITION (2020) FORMAL INTERPRETATION (#29)

DATE: October 14, 2021
TO: All Building Officials
FROM: James DiPietro, Administrative Director 
SUBJECT: Requirement for concrete mix and protection of reinforcement to be used in buildings and structures to be constructed in corrosive environments

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Board Attorney

Charles M. Kramer, Esq.

Board Administrative Director

James DiPietro

—ESTABLISHED 1971—

At its regularly scheduled meeting of October 14, 2021, the Board approved an interpretation of the following sections of the 7th Edition (2020) Florida Building Code, Building and ACI 318-14:

FBC Section 1904 – Durability Requirements

Section 1904.1 - Structural concrete. Structural concrete shall conform to the durability requirements of ACI 318.

ACI 318-14 - Chapter 4 – Materials

Section 4.2.1 Design properties of concrete shall be selected to be in accordance with Chapter 19.

ACI 318-14 Table 19.3.1.1 – Exposure categories and classes

Concrete that will be subject to the exposures given in Table 19.3.1.1 of ACI 318 shall conform to the corresponding maximum water-cementitious materials ratios and minimum specified concrete compressive strength requirements of that table.

ACI 318-14 - Chapter 4 – Materials

Section 4.2.2 Design properties of reinforcement shall be selected to be in accordance with Chapter 20.

ACI 318-14 Section 20.6.1.4.1 In corrosive environments or other severe exposure conditions, the specified concrete cover shall be increased as deemed necessary. The applicable requirements for concrete based on exposure categories in 19.3 shall be satisfied, or other protection shall be provided.

ACI 318-14 Section 19.3 - Concrete durability requirements Section 19.3.1 - Exposure categories and classes

19.3.1.1 The licensed design professional shall assign exposure classes in accordance with the severity of the anticipated exposure of members for each exposure category in Table 19.3.1.1.



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Continuation:

ACI 318-14 Section 19.3.2 Requirements for concrete mixtures

19.3.2.1 Based on the exposure classes assigned from Table 19.3.1.1, concrete mixtures shall conform to the most restrictive requirements in Table 19.3.2.1.

For corrosion protection of steel reinforcement in concrete exposed to chlorides from de-icing chemicals, salt, saltwater, brackish water, seawater, or spray from these sources, the maximum water-cementitious materials ratio by weight for normal aggregate concrete shall be 0.40 with a minimum $f'c$ of 5000 psi.

ACI 318-14 Section 20.6 - Provisions for durability of steel reinforcement Section 20.6.1 Specified concrete cover

Section 20.6.1.1 Unless the general building code requires a greater concrete cover for fire protection, the minimum specified concrete cover shall be in accordance with 20.6.1.2 through 20.6.6.1.

Formal Interpretation:

To provide better durability for concrete and protection of reinforcement from corrosion, concrete mix used in buildings and structures to be constructed in corrosive environments, specifically those that will be subject to exposure to or the spray from seawater or other salt laden sources shall comply with the above sections of Florida Building Code and ACI 318-14. Compliance with these provisions shall be clearly shown on the construction documents.

EFFECTIVE DATE: October 14, 2021

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