JC Code & Construction Consultants, Inc.
A Leader in Code Consulting and Continuing Education
1101 Mystic Way, Wellington, FL 33414
561-383-8385 (office)
561-662-6545 (cell)

PETITION FOR DECLARATORY STATEMENT BEFORE THE FLORIDA BUILDING COMMISSION

Company: JC Code & Construction Consultants, Inc.
Name: John Farinelli, CBO, MCP
Address: 1101 Mystic Way
Wellington, FL 33414
Telephone: 561-383-8385
Email: john@jccode.com

DS 2015-084

Applicant: Ray Puzzitiello
Puzzitiello Builders, LLC
2143 Union Street
West Palm Beach, FL 33411-5758
Phone: 561-718-4176
Email: ray@puzzitiello.com

Petitioner's Attorney or Representative:
This request for a Declaratory Statement is hereby filed by the undersigned as consultant to Ray Puzzitiello and Puzzitiello Builders, LLC

Statute(s), Agency Rule(s), Agency Order(s) and/or Code Section(s) on which the Declaratory Statement is sought:

- 5th Edition (2014) *Florida Building Code, Residential* Volume, as follows:
    1. R703.6.4 Application
    2. R703.6.5 Curing
- Referenced Standard:
    1. ASTM C 926 – 11a, *Standard Specification for Application of Portland Cement-Based Plaster*, as referenced in Chapter 46 of the *Florida Building Code, Residential* Volume.

Background: Puzzitiello Builders, LLC is a general contractor serving Palm Beach and Broward Counties. The company specializes in custom home building. The company is currently in the design stages of several residential projects. Building designs comprise both masonry and wood frame construction. Portland cement plaster (stucco) is intended as the exterior finish. As such, Sections R703.6.4 and R703.6.5 of the 5th Edition (2014) *Florida Building Code, Residential* Volume are of concern to the petitioner.

The provisions contained in Sections R703.6.4 (Application) and R703.6.5 (Curing) appear at odds with one another as **Section R703.6.4, Application** contains an exception for applications installed in accordance with **ASTM C 926** while **Section R703.6.5, Curing** does not.

> ***R703.6.4 Application.*** *Each coat shall be kept in a moist condition for at least 48 hours prior to application of the next coat. Exception: Applications installed in accordance with ASTM C 926.* (Emphasis added)

Section 8 of the referenced standard states the following regarding moisture requirements:

> ***8. Curing and Time Between Coats.***
> *8.1 Provide sufficient moisture in the plaster mix or by moist or fog curing to permit continuous hydration of the cementitious materials. The most effective procedure for curing and time between coats will depend on climatic and job conditions. (See X1.4.2.)* (Emphasis added).

> ***R703.6.5 Curing.*** *The finish coat for two-coat cement plaster shall not be applied sooner than seven days after application of the first coat. For three-coat cement plaster, the second coat shall not be applied sooner than 48 hours after application of the first coat. The finish coat for three coat cement plaster shall not be applied sooner than seven days after application of the second coat.* (Emphasis added)

ASTM C 926 does not specify minimum curing times between coats as required per Section R703.6.5. Section 8 of the referenced standard states the following regarding moisture requirements:

> *8.2 Sufficient time between coats shall be allowed to permit each coat to cure or develop enough rigidity to resist cracking or other physical damage when the next coat is applied. (See X1.4.2.)* (Emphasis added).

As noted in Section 8 of the referenced standard, Section X1.4.2 provides additional information and specifications, as follows:

X1.4.2 ***Time Between Coats and Curing for Portland Cement-Based Plaster:***

X1.4.2.1 *The timing between coats will vary with climatic conditions and types of plaster base. Temperature and relative humidity extend or reduce the time between consecutive operations. Cold or wet weather lengthens and hot or dry weather shortens the time period. Moderate changes in temperature and relative humidity can be overcome by providing additional heating materials during cold weather and by reducing the absorption of the base by pre-wetting during hot or dry weather.* (Emphasis added)

X1.4.2.2 *In order to provide more intimate contact and bond between coats and to reduce rapid water loss, the second coat should be applied as soon as the first coat is sufficiently rigid to resist cracking, the pressures of the second coat application, and the leveling process.* (Emphasis added)

X1.4.2.3 *The amount of water and the timing for curing portland cement plaster will vary with the climatic conditions, the type of base, and use or nonuse of water-retentive admixtures.* (Emphasis added)

Therefore, the petitioner requests an answer to the following question:

Question #1: When stucco applications are installed per ASTM C 926 as permitted under the Exception to Section R703.6.4, is compliance with Section 703.6.5 also required?

Proposed Answer: The petitioner believes the answer to Question #1 is "NO". When considering the intent of the code, the petitioner can only conclude that the exception allowing compliance strictly with ASTM C 926 as contained in Section ***R703.6.4 Application,*** would not require compliance with Section ***R703.6.5 Curing***. In support of this conclusion, the petitioner offers the following rationale:

1) As ASTM C 926 is referenced in its entirety in Section R703.6.4 Application, it stands to reason that applications are intended to be installed as a complete system in compliance with the entire referenced standard. Therefore, applications installed per the provisions of the standard would not require compliance with Section R703.6.5, Curing;

2) The requirements for stucco application as contained in **Section 2512** of the 5th Edition *Florida Building Code, Building* Volume, defer to applications installed per ASTM C 926, as follows:

   2512.6 Curing and interval. *First and second coats of cement plaster shall be applied and moist cured as set forth in ASTM C 926 and Table 2512.6*

TABLE 2512.6 CEMENT PLASTERS

COAT	MINIMUM PERIOD MOIST CURING	MINIMUM INTERVAL BETWEEN COATS
First	48 hours[a]	48 hours[b]
Second	48 hours	7 days[c]
Finish	—	Note c

a. The first two coats shall be as required for the first coats of exterior plaster, except that the moist-curing time period between the first and second coats shall not be less than 24 hours. Moist curing shall not be required where job and weather conditions are favorable to the retention of moisture in the cement plaster for the required time period.
b. Twenty-four-hour minimum interval between coats of interior cement plaster. For alternative method of application, see Section 2512.8.
c. Finish coat plaster is permitted to be applied to interior cement plaster base coats after a 48-hour period.

Although the Table requires a minimum moist curing time of 48 hours and a minimum interval between coats of 48 hours, Table Footnote b provides for an alternate method of application under **Section 2512.8**, as follows:

> ***2512.8 Alternate method of application***. *The second coat is permitted to be applied as soon as the first coat has attained sufficiently rigidity to receive the second coat.*

Sections 2512.8.2, Curing, and **2512.9, Finish Coats**, also defer to ASTM C 926, as follows:

> ***2512.2 Curing***. *Curing of the first coat is permitted to be omitted and the second coat shall be cured as set forth in ASTM C 926 and Table 2512.6.*
>
> ***2512.9. Finish Coats***. *Cement plaster finish coats shall be applied over base coats that have been in place for the time periods set forth in ASTM C 926. The third or finish coat shall be applied with sufficient material and pressure to bond and to cover the brown coat and shall be of sufficient thickness to conceal the brown coat.*

3) Portland Cement Plastering (Stucco) product manufacturers reference ASTM C 926 for application of materials, as stated in *ICC-ES Report ESR-2535*, a copy of which is attached for review.

Respectfully Submitted on Behalf of Puzzitiello Builders, LLC on July 9, 2015 by:

John Farinelli

Digitally signed by John Farinelli
DN: cn=John Farinelli, o=JC Code, ou=Admin, email=john@jccode.com, c=US
Date: 2015.07.09 15:45:54 -04'00'

John Farinelli, CBO, MCP, CFM, LEED AP, FSI 1
Vice President

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ESR-2535

Reissued 05/2015

This report is subject to renewal 05/2017.

DIVISION: 09 00 00—FINISHES

SECTION: 09 24 00—PORTLAND CEMENT PLASTERING

REPORT HOLDER:

BMI PRODUCTS

990 AMES AVENUE
MILPITAS, CALIFORNIA 95035

EVALUATION SUBJECT:

BMI 690 PLASTER

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DIVISION: 09 00 00—FINISHES
Section: 09 24 00—Portland Cement Plastering

REPORT HOLDER:

BMI PRODUCTS
990 AMES AVENUE
MILPITAS, CALIFORNIA 95035
(408) 293-4008
www.bmi-products.com
rbronze@bmi-products.com

EVALUATION SUBJECT:

BMI 690 PLASTER

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2009 *International Building Code*® (2009 IBC)
- 2009 *International Residential Code*® (2009 IRC)
- 2006 *International Building Code*® (2006 IBC)
- 2006 *International Residential Code*® (2006 IRC)
- 2013 *Abu Dhabi International Building Code* (ADIBC)†

†The ADIBC is based on the 2009 IBC. 2009 IBC code sections referenced in this report are the same sections in the ADIBC.

Properties evaluated:

- Structural
- Durability
- Noncombustible Construction

2.0 USES

BMI 690 Plaster is a cementitious exterior wall covering installed over exterior walls of wood or steel framed, concrete or masonry construction. The coating materials are used as the first and second coat of three-coat exterior plaster applied under 2009 and 2006 IBC Section 2512 or 2009 and 2006 IRC Section R703.6. When applied in a single coat, the coating materials are an alternative to the first and second coat of three-coat exterior plaster (scratch and brown coat). When installed over steel framing and gypsum sheathing, the BMI 690 Plaster may be installed on walls required to be Type I, II, III, IV and V construction.

3.0 DESCRIPTION

3.1 General:

The BMI 690 Plasters are factory-prepared mixtures of portland cement, lime, sand and fibers, and are reinforced with wire fabric or metal lath. The products are supplied in 90-pound (40.82 kg) bags, 2500-pound (1134 kg) super bags or in portable bulk silos (mixers) containing 30 tons (27 216 kg).

3.2 Materials:

3.2.1 BMI 690 Plaster: BMI 690 Plaster is a factory-prepared mix consisting of Type I or Type II portland cement complying with ASTM C 150, Type S lime complying with ASTM C 206 and limestone or siliceous sand meeting the gradation requirements of ASTM C 897. The mixture complies with ASTM C 926 as Plaster Mix C.

3.2.2 BMI 690 Plaster with Fibers: BMI 690 Plaster with Fibers is identical to the BMI 690 Plaster except that polypropylene fibers complying with ASTM C 1116 are added. The mixture complies with ASTM C 926 as Plaster Mix C.

3.2.3 Lath:

3.2.3.1 Wire Fabric Lath or Metal Lath: No. 17 gage, $1^1/_2$-inch (38 mm), woven wire lath or metal lath complying with the ICC-ES Acceptance Criteria for Metal Plaster Bases (Lath) AC191 and recognized in a current ICC-ES evaluation report. The lath must be furred a minimum of $^1/_4$ inch (6.35 mm) from solid substrates or framing members.

3.2.3.2 Structa Mega Lath: The lath is recognized in ESR-2017 as an alternative to No. 17 gage, $1^1/_2$-inch (38 mm), woven wire lath and metal lath described in Section 3.2.3.1.

3.2.4 Water-resistive Barrier: Application of the barrier must comply with 2009 and 2006 IBC Section 1404.2 or 2009 and 2006 IRC Section R703.2. Except as described below for wood-based sheathing, the water-resistive barrier must be either a minimum of one layer of asphalt felt complying with ASTM D 226, Type I, or a water-resistive barrier recognized as equivalent to ASTM D 226, Type I, in a current ICC-ES evaluation report.

When installation is over wood-based sheathing, the water-resistive barrier must be a minimum of two layers of Grade D kraft building paper as set forth in 2009 and 2006 IBC Section 2510.6 and 2009 and 2006 IRC Section R703.6.3, or an equivalent recognized in a current ICC-ES evaluation report.

3.2.5 Vapor Retarder: Protection against condensation must be provided in accordance with 2009 and 2006 IBC Section 1403.2. Under the IRC, a vapor retarder complying

with the 2009 IRC Section R601.3 and 2006 IRC Section R318.1 must be provided, unless its omission is permitted under the exceptions to the 2009 IRC Section R601.3 and 2006 IRC Section R318.1.

4.0 INSTALLATION

4.1 Three-coat Application:

4.1.1 General: BMI 690 Plaster is applied to exterior walls of wood or steel frame, concrete or masonry construction in accordance with 2009 and 2006 IBC Section 2512 or 2009 and 2006 IRC Section R703.6 and as described in ASTM C 926 for Plaster Mix C. The BMI 690 Plaster must be mixed with water using a D30 mixer supplied by BMI Products; or, when product is delivered in portable silos, the plaster mixture is mixed with water using a mixer head attached at the bottom of the portable silo. The mix ratio is 1.75 gallons (6.65 L) of water to each 90 pounds (40.82 kg) of dry plaster mix. The product is applied in the conventional manner in two coats. The third coat of the three-coat stucco system must be a job-mixed finish coat complying with Table 4 of ASTM C 926 applied in accordance with ASTM C 926. All other details of installation are as required in ASTM C 926.

4.1.2 Fire-resistance rated Construction: When BMI Plaster is installed in accordance with Section 4.1.1 of this report and 2009 and 2006 IBC Section 720, the fire-resistance rating is as noted in 2009 and 2006 IBC Table 720.1(2).

4.1.3 Shear Walls: When BMI Plaster is installed on wood-framed walls in accordance with Section 4.1 of this report, 2009 IBC Section 2306.7 and 2006 IBC Section 2306.4.5, the allowable racking shear value is 180 plf (2627 kN/m). For seismic loads, the shear walls are designated as Item A.14 in Table 12.2-1 of ASCE 7-05 (limited to Seismic Design Categories A, B, C, and D).

4.2 Two-coat Application:

4.2.1 General: All details of application are as described in ASTM C 926, except as noted in this section (Section 4.2.) Lath is attached to wood framing spaced a maximum of 16 inches (406 mm) on center with minimum No. 16 gage corrosion-resistant staples spaced a maximum of 6 inches (152 mm) on center. Lath is attached to steel framing spaced a maximum of 16 inches (406 mm) on center with minimum $^{5}/_{8}$-inch-long (0.625 mm), S-12 corrosion-resistant screws spaced a maximum of 6 inches (152 mm) on center. As an alternative to the first and second coats described in ASTM C 926, the BMI plaster may be applied, in a single pass, to the full thickness of $^{3}/_{4}$ inch (19.1 mm) to $^{7}/_{8}$ inch (22 mm) when application is in accordance with the BMI Products published installation instructions and Section 4.1.1 of this report. The finish coat of the two-coat stucco system must be a job-mixed finish coat complying with Table 4 of ASTM C 926, applied in accordance with ASTM C 926.

4.2.2 Wind Resistance: The allowable wind load for the systems installed as described in Section 4.2.1 is as follows:

- For wood studs having a minimum specific gravity of 0.50 (Douglas fir– larch), allowable wind load is 50 psf (2.39 kPa), positive or negative.
- For minimum No. 20 gage steel studs, allowable wind load is 24 psf (1.15 kPa) negative (outward) and 45 psf (2.15 kPa) positive (inward).
- Framing must be designed to resist the applicable design forces. The maximum allowable deflection of the framing components must not exceed L/360, where L is the height of the framing members.

4.3 Noncombustible Construction:

When installed over steel framing and gypsum sheathing, the BMI Plaster may be installed on walls required to be of Type I, II, III or IV construction.

5.0 CONDITIONS OF USE

The BMI Products 690 plaster products described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 Materials and methods of installation must comply with this report and the manufacturer's published installation instructions. In the event of a conflict between this report and the manufacturer's published installation instructions, this report governs.

5.2 The products must be field-mixed with water using equipment supplied by BMI Products.

5.3 Two-coat applications described in Section 4.2 are limited to use in Type V-B construction except as noted in Section 4.3 of this report, and buildings under the 2009 and 2006 IRC. Use to resist racking loads is outside the scope of this report.

6.0 EVIDENCE SUBMITTED

6.1 Data showing compliance with 2009 and 2006 IBC Section 2512 and 2009 and 2006 IRC Section R703.6.

6.2 Data in accordance with the ICC-ES Acceptance Criteria for Cementitious Exterior Wall Coatings (AC11), dated March 2010.

7.0 IDENTIFICATION

The factory-prepared mixes are delivered to the jobsite in water-resistant bags or in portable silos. The bags bear labels and the silos are accompanied with certification of compliance to ASTM C 926 and both labels and certification documents carry the following information:

a. Name and address of the manufacturer (BMI Products) and the evaluation report number (ESR-2535).

b. Product name and component information.

c. Weight of packaged mix or net weight of bulk product when delivered in silos.

d. Storage instructions.

e. Maximum amount of water and conditions that must be considered during field-mixing with water.

f. Curing instructions.