

Description With Pennsylvania's Uniform Construction Code (UCC) updating to the 2018 ICC codes in early 2022, one of the critical changes that building professionals will need to consider involves stucco and stone wall assemblies. During the UCC code adoption process, provisions impacting stucco and stone were adopted based on language out of the 2021 International Residential Code. This session will dive into the changes that will have a significant impact on the design and installation of exterior plaster assemblies.







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When is it Changing?

• Effective date for UCC code changes:

February 14, 2022

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When is it Changing?
• Phase-in period • "Where a design or construction contract was signed before the effective date [2/14/22] of regulations for a subsequent Uniform Construction Code or International Fuel Gas Code issued under this act, the permit may be issued under the Uniform Construction Code or International Fuel Gas Code in effect at the time the design or construction contract was signed if the permit is applied for within six months of the effective date of the regulation or the period specified by a municipal ordinance, whichever is less."





Exterior Plaster Assemblies

- Exterior plaster provisions in the IRC were heavily modified in the 2021 version.
- These provisions were adopted by the UCC RAC to be included with the 2018 code adoption.

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Exterior Plaster: Hardcoat Stucco and Adhered Masonry Veneer

- Adhered masonry veneer will follow the 2018 Section R703.12
- Section RT05.12
 Adhered masonry veneer installation will refer to the 2021 Exterior Plaster section:

 R703.7.1 which is installation of lath and all accessories
 R703.7.3 water resistive barriers which will include a rainscreen drainage space

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Reservoir Cladding

• What is a reservoir cladding?

- Materials that absorb moisture from the surrounding environment and have significant moisture storage capacity

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- Examples:
 - Brick veneer
 - Adhered manufactured stone masonry veneer Hardcoat stucco
 - Wood



Changes in Construction (Mid to Late 90's)

Tighter buildings – larger moisture difference between inside and outside
 More insulation – Less energy flow – Less drying

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- More windows Lots of glass
- Variety of materials on same wall
- Vinyl windows Insulated glass
- · Central air Cooler on the inside (inward vapor drive)
- OSB instead of plywood
- · Contractors only applying scratch & finish
- · Furring strips not used anymore
- Synthetic Stucco? Less permeable?

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2021 IRC R703.7.3 Water-Resistive Barriers

• Water-resistive barriers shall be installed as required in Section R703.2 and, where applied over wood-based sheathing, shall comply with Section R703.7.3.1 or R703.7.3.2.

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*R703.2 = 2018 provisions

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2021 IRC R703.7.3.1 Dry Climates

- In Dry (B) climate zones indicated in Figure N1101.7, water-resistive barriers shall comply with one of the following:
 The water-resistive barrier shall be two layers of 10-minute Grade D paper or have a water resistance equal to or greater than two layers of a water-resistive barrier complying with ASTM £2556-10. Type 1. The individual layers shall be installed independently such that each layer provides a separate continuous plane. Flashing installed in accordance with Section R703.4 and intended to drain to the water-resistive barrier shall be 60-minute Grade D paper or have a water resistince barrier shall be 60-minute Grade D paper or have a water resistive barrier shall be separated from the succed by a layer of a water-resistive barrier shall be separated from the succed by a layer of a water-resistive barrier shall be separated from the succed by a layer of a water-resistive barrier shall be separated from the succed by a layer of a water-resistive barrier shall be separated from the succed by a layer of a water-resistive barrier shall be separated from the succed by a layer of form plastic insulating sheathing or other non-water-absorbing layer, or a designed drainage space.

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Integrate Weep Screed With Water Resistive Barrier Over Vertical Leg

- Vertical leg must be minimum 3 ½"
- · Terminates the wall
- Allows for a means of draining water from behind the drainage plane to the exterior. This is a flashing which must direct water to the exterior surface of cladding.
- Provides a capillary break for water that would wick up from the ground transported by masonry or stucco



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Expansion Gap Between All Dissimilar Substrates • ASTMC1063 7.11.7 Casing Bead—Install a casing bead lathing

- ASTMC1063 7.11.7 Casing Bead–Install a casing bead lathing accessory or other suitable means, at locations to separate cement plaster from dissimilar materials, penetrating elements, load bearing members and to avoid transfer of structural loads.
 ASTMC926 7.3.4 Separation shall be provided where plaster abuts
- ASTMC926 7.3.4 Separation shall be provided where plaster abuts dissimilar construction materials or openings. (See A2.1.3.)
 ASTMC926 A2.1.3 Sealing or caulking of V-grooves, exposed ends, and edges of plaster panels or exterior work to prevent entry of water shall be provided. "Good Practices to caulk the Joint"

Source: ASTM International. ASTM 5296-188 Standard Specification for Application of Portand Cennent-Based Plaster. West Constructional 2018. Source: ASTM International, ASTM C2053-188 Standard Specification for Instantiation of Landing and Furing to Receive Interior and Entries Portand Cennent-Based Plaster. West Construction of Landing Astm June 2019.

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ASTM C1063-18B

Source: 4ST

- Staples and nails shall penetrate wood framing not less than ¾".
 Screws used to attach metal plaster base to metal framing members shall project not less than 38 in. (10 mm) through the metal framing member
- A1.1 All wood-based sheathing shall be installed with a 1/8-in. (3 mm) minimum gap around all panel edges and between openings for doors and windows. NOTE A1.1—This 1/8-in. (3 mm) gap is intended to accommodate expansion. Linear expansion that is not accommodated by an expansion gap can cause stress on the stucco membrane resulting in stucco cracks

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More Requirements For Lath ASTMC926 7.3.3 Portland cement-based plaster shall be applied on furred metal plaster base when the surface of solid backing consists of gypsum board, gypsum plaster, wood, or rigid foam board-type products. "Not Flat" " Also called dimpled lath and self furred SF" ASTMC1063 Shall be 2.5 Lb lath on sheathed framed walls 16" and 24" on center. Must meet C847 Specification for metal lath "minimum width of lath 27" and

• Must meet Cost Spectration for metal and finimitary width of add 27 and minimum length is 97" "weight 25. EB or 3.4 EB Pus or minus 10%. Galvanized metal lath shall have a G60 coating in accordance with specification A653/A653M

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Source: ASTM International. ASTM CX65: ASE Randomic hor Applications of Pertain downer Based Plaster. West
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2021 IRC R703.7.1 Lath Exception: Lath is not required over masonry, cast-in-place concrete. precast concrete or stone substrates prepared in accordance with ASTM C1063-2018B. 703.7.1.1 Furring. Where provided, furring shall consist of wood furring strips not less than 1 inch by 2 inches (25 mm by 51 mm), minimum 3/4-inch (19 mm) metal channels, or self-furring lath, and shall be installed in accordance with ASTM C1063-2018B. Furring shall be spaced not greater than 24 inches (600 mm) on center and, where installed over wood or cold-formed steel framing, shall be fastened into framing members.









Building code requirements for masonry structures TMS402 /602-16

• 3.3 C. Placing adhered veneer

Source: The Ma

ry Society (2016). Building

- 1 Brush a paste of neat Portland cement on the backing and on the back of the veneer unit.
- 2 Apply Type S mortar to the backing and to the veneer unit.
 3 Tap the veneer unit into place, completely filling the space between the veneer unit and the backing. Sufficient mortar shall be used to create a slight excess to be forced out between the edges of the veneer units. The resulting thickness of the mortar in back of the veneer units shall not be less than 3/8 in (9.5 mm) nor more than 1 ¼ in . (31.8 mm).
- 4 Tool the mortar joint with a round jointer when the mortar is thumbprint hard.

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Adhered Veneer Manufacturers Recommendations

- Manufacturers may ask you to do more than is required in the codes discussed.
- One common addition is that they may require a polymer modified mortar to be used to increase adhesion.

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- $\ensuremath{\cdot}$ Some products may only be for use interior.
- Always check their recommendations.

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