



SACRAMENTO STUCCO CO., INC.
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 Sacramento, California 95691
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Western 1-Kote Exterior Stucco System

ADDITIONAL COMPANY AND PRODUCT NAMES RECOGNIZED IN THIS REPORT:

- **ASH GROVE PACKAGING, Ash Grove**
 10809 Executive Center Drive, Suite 321
 Little Rock, Arkansas 72211
 (501) 224-3372
ASH GROVE® 1-Kote Premix Stucco System
- **DRYVIT SYSTEMS, INC.**
 One Energy Way
 West Warwick, Rhode Island 02852
 (401) 822-4100
Dryvit Commercial Cement Plaster (CCP) System
- **STO CORP.**
 3800 Camp Creek Parkway SW
 Building 1400, Suite 120
 Atlanta, Georgia 30331
 (800) 221-2397
StoPowerwall® Stucco System

CSI Sections: 09 25 00 Other Plastering

1.0 RECOGNITION

Western 1-Kote Exterior Stucco Systems recognized in this report have been evaluated for use as exterior wall coverings in compliance with Chapters 14 and 25 of the IBC and Chapter 7 of the IRC. The systems have been evaluated for wind resistance, fire resistance, durability, and installation on walls required to be of Types I, II, III, IV, or V construction. Western 1-Kote Systems evaluated in this report are satisfactory alternatives to the cement plaster stucco wall coverings prescribed in the following codes and regulations:

- 2018, 2015, 2012, and 2009 International Building Code (IBC)
- 2018, 2015, 2012, and 2009 International Residential Code (IRC)
- 2019 California Building Code (CBC) and 2019 California Residential Code (CRC) - supplement attached
- ICC-ES AC11

2.0 LIMITATIONS

Use of the Western 1-Kote Systems recognized in this report

is subject to the following limitations:

- 2.1 The stucco systems shall be installed in accordance with this report, the code (IBC or IRC), and the manufacturer's published installation instructions. In the event of a conflict, this report governs.
- 2.2 All inspections outlined in IBC Section 110 or IRC Section R109 and required by the building official, shall be completed.
- 2.3 Wall bracing shall be provided in accordance with the code.
- 2.4 Western 1-Kote Stucco shall be moist-cured for a minimum of 48 hours and in accordance with the code and the manufacturer's instructions.
- 2.5 Where foam plastic insulation is used, a thermal barrier complying with IBC Section 2603.4 or IRC Section R316 is required and the foam plastic shall be protected in accordance with 2018, 2015, and 2009 IBC Section 2603.8 (2012 IBC Section 2603.9) or IRC Section R318.4, as applicable.
- 2.6 Where applied over wood-based sheathing, installation shall include a water-resistive barrier conforming with IBC Section 2510.6 or IRC Section R703.7.3, as applicable, and under the IBC, where installed in Climate Zone 1A, 2A, or 3A, a ventilated air space shall be provided between the stucco and the water-resistive barrier.
- 2.7 The Western 1-Kote Exterior Stucco Systems recognized in this report are produced in West Sacramento, CA.

3.0 PRODUCT USE

Western 1-Kote Exterior Stucco Systems described in this report are recognized for use as exterior or interior wall coverings. These systems are used as alternatives (AC11) to code prescribed conventional stucco systems - first and second (scratch and brown) coats - complying with ASTM C926 and may be used as conventional stucco systems in accordance with Sections 2510.3 and 2512.1 of the IBC.

When applied as described in Section 3.3.2 of this report, Western 1-Kote Stucco is recognized for use as a component of one-hour fire-resistance-rated wall assemblies. When applied in accordance with Section 3.3.3 of this report, Western 1-Kote Stucco is recognized for use applied on exterior walls of buildings of Types I, II, III, or IV construction of any height in accordance with IBC Section 2603.5.

3.1 Installation: The stucco systems described in this report, and as depicted in Figures 2 through 13, shall be installed in accordance with the code, ASTM C1063, and the manufacturer's published installation instructions, as applicable. The installation instructions shall be provided to the building official upon request.

The product described in this Uniform Evaluation Service (UES) Report has been evaluated as an alternative material, design or method of construction in order to satisfy and comply with the intent of the provision of the code, as noted in this report, and for at least equivalence to that prescribed in the code in quality, strength, effectiveness, fire resistance, durability and safety, as applicable, in accordance with IBC Section 104.11. This document shall only be reproduced in its entirety.





The systems shall be installed by qualified contractors recognized by Sacramento Stucco, Ash Grove Packaging, Dryvit Systems, or Sto Corp., as applicable. The manufacturer shall maintain a list of qualified contractors and present this list to the building code official upon request. An installation card such as that shown in Figure 14 of this report, and containing equivalent information, shall be completed by the installation contractor and presented to the building code official prior to final inspection.

3.2 Substrates: Substrates shall be load bearing walls of concrete, masonry, or light-framing covered with gypsum board, fiberboard, wood structural panel wall sheathing, foam plastic insulation, or similar substrates. The light-framed walls shall be of minimum 0.5-specific-gravity wood studs or minimum 20-gauge [0.035 inch (0.889 mm)] steel studs spaced at 24 inches (610 mm) on center, maximum. The wall shall be prepared for the application of stucco in accordance with Section 3.2.3 of this report.

3.2.1 Foam Plastic Boards: Expanded or extruded polystyrene foam plastic insulation boards may be used as components of wall substrates receiving Western 1-Kote Exterior Stucco. Table 1 of this report specifies the minimum thickness for foam plastic insulation installed over sheathing or open studs. Where used, foam plastic insulation shall be installed to the exterior of the water-resistive barrier and the joints between the boards shall be lapped or oriented so that water is diverted to the exterior. Where Dow Styrofoam Tongue and Groove XPS is installed in accordance with ICC ESR-2142, the water-resistive barrier shall be fastened directly to the framing. All foam plastic insulation shall have flame-spread and smoke-developed indices complying with Section 2603.5.4 of the IBC.

3.2.1.1 Expanded Polystyrene (EPS): EPS foam plastic insulation boards used as backer over open framing shall be Type II in accordance with ASTM C578, with a minimum nominal density of 1.5 pcf (24 kg/m³).

3.2.1.2 Extruded Polystyrene (XPS): XPS foam plastic insulation boards used as backer over open framing shall be Type IV or Type V in accordance with ASTM C578, with a minimum nominal density of 1.5 pcf (24 kg/m³).

3.2.1.3 Fastening: Where the foam backing boards are installed over wood framing, the boards shall be fastened using 11-gauge roofing nails or 16-gauge staples with 7/16-inch-wide (11.1 mm) crowns complying with ASTM F1667. The fasteners shall penetrate no less than 1 inch (25.4 mm) into the wood framing. Where the foam boards are installed over steel framing, the boards shall be fastened using No.6, Type S screws that shall penetrate no less than 1/4 inch (6.35 mm) through the steel flanges. Fastener spacing shall be maximum 6 inches (152 mm) on center.

TABLE 1 – FOAM PLASTIC BOARDS

Backing	Configuration
Open framing	1.0- to 1.5-inch-thick foam plastic boards with 3/8-inch tongue and groove horizontal joints as shown in Figure 1 of this report
	1-inch-thick, 2 ft by 8 ft Dow StyroFoam XPS with 4-sided tongue and groove edges installed according to ICC ESR-2142.
Wood structural panel (WSP) sheathing	minimum 0.5-inch-thick, 1.0 pcf density EPS insulation with vertical drainage grooves ¹ on the back face of the EPS board as with solid sheathing
WSP sheathing where foam plastic forms part of the water-resistive barrier	minimum 1.0-inch-thick foam plastic insulation with 3/8-inch tongue and groove horizontal joints as shown in Figure 1 of this report
Solid sheathing	minimum 0.5-inch-thick, 1.0 pcf density EPS insulation with vertical drainage grooves ¹ on the back face of the EPS board

SI conversions: 1 inch = 25.4 mm; 1 foot = 305 mm; 1 pcf = 16 kg/m³

¹ Grooves 1/4-inch-wide x 1/8-inch-deep, spaced 12 inches on center. As an alternative to the vertical drainage grooves, the EPS may be installed over Tyvek® Stuccowrap® or Tyvek® DrainWrap™ water-resistive barrier.

3.2.2 Rigid Backing: Rigid backings include gypsum board, fiberboard, and wood structural panel sheathing. The water-resistive barrier shall be installed to the exterior of rigid backings.

3.2.2.1 Gypsum Board: Gypsum boards shall be protected from the weather in accordance with IBC Section 2508.2 and ASTM C1280. The boards shall be minimum 1/2-inch-thick (12.7 mm) and shall comply with Section 2506 of the IBC or Sections R602.3 and R702 of the IRC, as applicable. Permitted types include water-resistant gypsum backing board and gypsum sheathing board complying with ASTM C1396, and glass mat gypsum substrate complying with ASTM C1177. Gypsum wallboard complying with ASTM C1396 is permitted on the interior side of walls where specified in this report. Refer to the gypsum board evaluation report or manufacturer’s literature for limitations and use recommendations.

3.2.2.2 Fiberboard: Cellulosic fiber insulating board (fiberboard) shall comply with Section 2303.1.6 of the 2018 and 2015 IBC (Section 2303.1.5 of the 2012 and 2009 IBC) and shall be Type IV, Grade 1 or Grade 2 wall sheathing as set forth in ASTM C208, minimum 1/2-inch-thick (12.7 mm). Refer to the fiberboard evaluation report or manufacturer’s literature for limitations and use recommendations.



3.2.2.3 Wood Structural Panel Sheathing: Wood structural panel (WSP) sheathing shall comply with Sections 2303.1.5 of the 2018 and 2015 IBC (2303.1.4 of the 2012 and 2009 IBC), Section 2304.6.1 and Table 2304.6.1 of the IBC or Section R602.3 and Table R602.3(3) of the IRC, as applicable.

3.2.2.4 Concrete or Masonry Substrates: Application of the stucco directly to concrete or masonry is permitted in accordance with ASTM C926 or IRC Section R703.6. No water-repellent coatings such as bituminous coatings or other foreign matter shall be present on the substrate. The substrate shall be sufficiently moist to prevent it from drawing the water needed for hydration from the stucco paste. Where required to remove foreign matter, surfaces shall be cleaned using acid solutions, solvents, or detergents and then washed with clean water. Smooth surfaces shall be roughened, and an approved bonding agent shall be applied to block, concrete, or masonry surfaces, as appropriate.

3.2.3 Substrate Preparation: The substrates shall be prepared for the application of stucco in accordance with this section (Section 3.2.3) of this report.

3.2.3.1 Weep Screed: Weep screeds shall be installed at the base of the assembly. Weep screeds shall comply with Section 2512.1.2 of the IBC or Section R703.7.2.1 of the 2018 and 2015 IRC (R703.6.2.1 of the 2012 and 2009 IRC) and ASTM C1063.

3.2.3.2 Water-Resistive Barrier: Water-resistive barriers (WRB) shall be installed in accordance with IBC Sections 1404.2 and 2510.6, IRC Section R703.2, or the WRB certification report, as applicable, to prevent water from entering the substrate.

3.2.3.2.1 Wood-based sheathing: For installation over wood-based sheathing (cellulosic fiber insulating board or WSP sheathing), the water-resistive barrier shall be installed in accordance with Section 2510.6 of the IBC or Section R703.6.3 of the IRC, as applicable. The barrier must be a minimum of two layers of Grade D Kraft paper, or one layer of polystyrene (EPS or XPS) foam plastic insulation board described in Sections 3.2.1.1 and 3.2.1.2 of this report, applied over one layer of 60-minute Grade D building paper may be used as a WRB. For installations without wood-based sheathing, the water-resistive barrier shall be a minimum of one layer.

3.2.3.2.2 Types I through IV construction: In Types I through IV construction of buildings of any height in accordance with Tables 6 and 7 of this report, Fortifiber Super Jumbo Tex 60 Minute or other water-resistive barrier that is shown by ASTM E1354 testing (at 50kW/m² min. heat flux) and analysis to be equivalent in flammability shall be used.

In prescriptive assemblies of construction Types I through IV, any WRB meeting the maximum combustion, heat release, and surface burning criteria contained in ASTM

E1354 and ASTM E84, as described in IBC Section 1402.5, may be used provided the WRB is the assembly's only combustible component.

3.2.3.3 Keene Building Products Rainscreens: Keene Driwall Rainscreens, DWRS 10mm or DWRS 020, with Keene Easy-Fur, may be used in assemblies with Western 1-Kote systems. The Keene Driwall Rainscreens may be installed in Construction Types I, II, III, and IV over approved water resistive barriers and shall be installed horizontally and against the exterior wall with fabric side out, and mechanically fastened as noted in Section 3.2.1.3 of this report.

3.2.3.4 Casing Beads and Corner Beads: Casing and corner beads shall be installed to provide a finish at the boundaries of the assemblies in accordance with ASTM C1063. Areas of backings not covered by plaster shall be covered with galvanized steel casing beads.

3.2.3.5 Flashing: Flashing shall be installed to properly divert water in accordance with the manufacturer's instructions and the applicable code. Flashing shall comply with Section 1404.4 of the 2018 IBC, Section 1405.4 of the 2015 and 2012 IBC, Section R703.4 of the 2018 and 2015 IRC, or Section R703.8 of the 2012 and 2009 IRC, as applicable. Membrane flashing shall be self-adhering flexible rubberized asphalt and polyethylene, minimum 0.030 inch (0.762 mm) thick.

3.2.3.6 Metal or Wire Fabric Lath: Lath shall be regular or self-furring wire fabric or metal lath complying with the code and ICC-ES AC191, as applicable. The lath shall be corrosion-resistant and shall be the furred or self-furring type. Wire fabric lath shall be minimum 20 gauge [0.035 inch (0.889 mm)] by 1-inch (25.4 mm), galvanized steel, woven-wire fabric. The lath shall be installed in accordance with IBC Sections 2510 through 2512 or IRC Section R703, and ASTM C1063, as applicable. Lath fasteners shall penetrate through foam plastic insulation and sheathing and shall be embedded directly into framing to transfer the loads to structural load bearing members. Refer to the lath evaluation report or the lath manufacturer's literature for limitations and use recommendations. The self-furring lath shall be furred in accordance with IBC Section 2510.3, IRC 2018 and 2015 Section R703.7, or 2012 IRC Section R703.6, as applicable. Furred 20-gauge [0.035 inch (0.889 mm)] lath shall be used with the Western 1-Kote products up to ½ inch (12.7 mm) thick. For coating thicknesses greater than ½ inch (12.7 mm), furred 17-gauge [0.056 inch (1.42 mm)] wire fabric lath shall be used. Furring crimps shall be provided at maximum 6-inch (152 mm) intervals each way. The crimps shall fur the body of the lath a minimum of ⅛ inch (3.18 mm) from the substrate after installation. Unfurred lath is permitted over unbacked polystyrene boards in accordance with AC11.

3.2.4 Plaster Mixing: The stucco blends shall be mixed with suitable sand and clean, potable water in accordance with Section 4 of this report and the manufacturer's mixing



instructions.

3.2.5 Plaster Application: Western 1-Kote Exterior Stucco shall be applied in one coat, minimum $\frac{3}{8}$ inch (9.53 mm) thick without cold joints as specified in the manufacturer's installation instructions. When used in construction types I through IV assemblies incorporating foam plastic insulation on buildings over 40 feet in height, Western 1-Kote Exterior Stucco shall be applied in one coat, minimum $\frac{1}{2}$ inch thick, in accordance with Table 6 of this report. The ambient air temperature range for application of the plaster shall be 40°F to 110° F (4.4°C to 43°C). The stucco shall be hard floated to promote densification. Finish coats may be applied in accordance with the finish coat application instructions after the base coat has fully cured.

3.2.6 Finish Coat: Acceptable finish coats for Western 1-Kote and the products noted by the additional listees in this report include Western Blended Products (WBP) Premium Acrylic Finishes (PAF), WBP Exterior Stucco Finishes, WBP Elastomeric Paints, and WBP PAF Specialty Products. Finish coats may be applied in accordance with the finish coat application instructions after the base coat fully cures.

3.2.7 Miscellaneous:

3.2.7.1 Sills: Windowsills or pop-outs may be plastered where the sill is up to 6 inches (152 mm) wide. Wider sills require lumber or WSP fastened to framing in accordance with Section 2304.10.1 of the 2018 and 2015 IBC (2304.9.1 of the 2012 or 2009 IBC) or IRC Section R602.3.

3.2.7.2 Control and Expansion Joints: Control and expansion joints shall be provided as specified by the building designer, the installation contractor, or the stucco manufacturer, as applicable.

3.2.7.3 Caulking: Joints formed where the boards abut dissimilar materials such as at windows, door, and other penetrations shall be filled with caulking. Caulking shall be acrylic latex complying with ASTM C834 or polysulfide, polyurethane, polyurethane modified, or silyl-terminated polyether elastomeric sealant complying with ASTM C920.

3.2.7.4 Vapor Retarder: Vapor retarders shall comply with Section 1405.3 of the IBC or Section R702.7 of the IRC (Section R601.3 of the 2009 IRC), as applicable.

3.2.7.5 Soffits: Application of plaster to soffits requires metal lath complying with Section 3.2.3.6 in lieu of fabric wire lath per ASTM C1063. Fasteners shall penetrate into framing.

3.2.7.6 Product Storage: The bags shall be kept indoors or, if stored outdoors, shall be stored off the ground and adequately covered to keep the product dry.

3.3 Design

3.3.1 Wind Load: The maximum allowable wind pressures, for the stucco applied over various substrates, is given in Table 3 of this report. The backing and fastening of the

backing, including the lath on which the stucco is applied shall be capable of withstanding the design wind loads, and installation shall comply with the applicable code and this report.

3.3.2 Fire-resistance-rated Construction: Fire-resistance-rated (FRR) assemblies incorporating Western 1-Kote Stucco are described in Table 5 of this report. Assembly No.1 is recognized based on GA File No. WP8105, referenced in The Gypsum Association Fire-resistance and Sound Control Design Manual (GA 600). Assembly No. 2 through Assembly No. 5 are recognized as meeting ASTM E119 and UL 263 for fire-resistance from both sides based on successful ASTM E119 testing for 1-hour fire-resistance.

Recognition of Western 1-Kote Exterior Stucco Systems in 2-hour fire-resistant construction is out of the scope of this evaluation report. Approval of 2-hour FRR assemblies shall be based on Section 703.3 of the IBC.

3.3.3 Exterior Walls on Buildings of Types I, II, III, or IV Construction

3.3.3.1 General: Exterior wall assemblies incorporating Western 1-Kote Stucco and constructed entirely of noncombustible components or concrete/masonry walls with directly applied stucco in accordance with Section 3.2.2.4 of this report, are permitted to be used in Types I through IV construction on buildings of any height allowed in IBC Section 504. These assemblies may include a water-resistive barrier as its only combustible component, provided the WRB does not exceed the maximum combustion, heat release, and surface burning criteria contained in ASTM E1354 and ASTM E84 as described in Sections 1403.5 and 2603.5 of the 2018, 2015, and 2012 IBC. Use of these WRBs shall be approved by the building official based on reports of WRB testing in accordance with ASTM E1354 and ASTM E84.

3.3.3.2 Assemblies based on NFPA 285 testing: Tables 6 and 7 of this report detail exterior wall assemblies containing non-combustible components and combustible alternatives recognized for use on buildings of Types I through IV construction of any height based on NFPA 285 testing and analysis. Use of components other than the allowable alternatives described in the tables is outside the scope of this report.

4.0 PRODUCT DESCRIPTION

4.1 General: Western 1-Kote is a factory prepared, dry-blended, fiber-reinforced, modified Portland cement product which, when mixed with the proper types and amounts of sand and water, forms a stucco plaster paste. The stucco meets ASTM C150, C595, C1157, and C926. The paste is applied in one coat, minimum $\frac{3}{8}$ -inch-thick (9.53 mm), as an alternative to the code prescribed scratch and brown coats in conventional stucco systems. The Western 1-Kote Exterior Stucco Systems comply with 2018, 2015, 2012, and 2009 IBC Chapters 14 and 25, IRC Chapter 7, and ICC AC11 as



alternative exterior wall coverings. The systems also comply with Chapter 8 of the IBC and Chapter 7 of the IRC as interior wall coverings. Western 1-Kote products are noncombustible materials in accordance with Section 703.5 of the IBC.

4.2 Formulations: Western 1-Kote products are manufactured in two formulation classes: Classic Formula (CL) and Advanced Formula (AF). Either formulation may be used interchangeably to mix with the Gray or Premium Gray, Concentrate or Sanded Blends. The formulation class is provided on the packaging.

4.3 Western 1-Kote Blends: Western 1-Kote is available in four blends to provide mixing options for the user. Gray Concentrate and Gray Premium Concentrate require sand and water to form the plaster paste. Sanded Gray and Premium Sanded Gray require only water. The Premium blends are faster setting, have lower shrinkage, and achieve higher compressive strengths. Western 1-Kote blends are packaged in 80 lb (36.3 kg) bags.

4.3.1 Gray Concentrate and Gray Premium Concentrate: The Western 1-Kote Concentrates shall be mixed with suitable sand and clean, potable water in accordance with the manufacturer’s instructions. Each bag of Classic Formula Gray or Premium Concentrate shall be mixed with approximately 200 pounds (90.7 kg) of loose, damp, plaster sand. Each bag of Advanced Formula Gray or Concentrate shall be mixed with approximately 250 pounds (113.4 kg) of loose, damp, plaster sand. Each shall be mixed with approximately 5.64 gallons (21.4 L) of water, as required for the conditions at the time of installation. The concentrate, sand, and water shall be mixed for a minimum of five minutes.

4.3.1.1 Sand: The stucco sand shall be clean and free of deleterious amounts of loam, clay, silt, soluble salts and organic matter; and shall comply with ASTM C144, ASTM C897, or shall be graded in accordance with Table 2 of this report.

TABLE 2 – Sand Gradation

U.S. Standard Sieve	Weight Percent of Aggregate Retained ± 2 Percent	
	Min.	Max.
No. 4	–	0
No. 8	0	10
No. 16	10	40
No. 30	30	65
No. 50	70	90
No. 100	95	100

4.3.2 Sanded Gray and Premium Sanded Gray: The Western 1-Kote Sanded blends shall be mixed with clean, potable water in accordance with the manufacturer’s instructions. Each bag of sanded blend shall be mixed with no more than one and one-third gallons (5 L) of water to produce the paste. One gallon (3.8 L) of water shall be added to the mixer before the addition of each bag of Sanded blend product. The additional one-third gallon (1.3 L) or 40 fluid

ounces shall be added as the product is mixing.

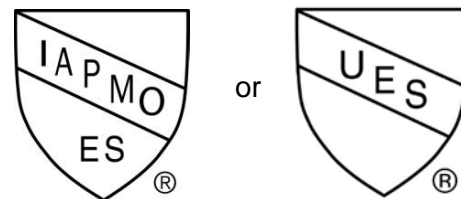
5.0 IDENTIFICATION

To identify the products recognized in this report, the packaging shall include the company name or trademark, the product name, and the Evaluation Report Number (ER-382).

This report recognizes the following products:

- Western 1-Kote Exterior Stucco System
 - Western 1-Kote Gray Concentrate
 - Western 1-Kote Gray Premium Concentrate
 - Western 1-Kote Sanded Gray
 - Western 1-Kote Premium Sanded Gray
- ASH GROVE® 1-Kote Premix Stucco System
- Dryvit Commercial Cement Plaster (CCP) System
- StoPowerwall® Stucco System

Identification includes the IAPMO Uniform ES Mark of Conformity. Either Mark of Conformity may be used as follows:



IAPMO UES ER-382

The Mark of Conformity and Evaluation Report Number may be linked to the certified product by placement of the following web address on the packaging. This web address directs users to the product compliance page, which includes a link to the evaluation report, the manufacturer’s published installation instructions, and product specifications. The web address is placed on the packaging of every product certified under this evaluation report and shall not be used on any other product:

<https://www.westernblended.com/compliance>

6.0 SUBSTANTIATING DATA

6.1 Data in accordance with the ICC-ES Acceptance Criteria for Cementitious Exterior Wall Coatings (AC11), dated January 2013 (editorially revised May 2018)..

6.2 Manufacturer’s quality documentation, descriptive literature and installation instructions.

6.3 Reports of testing in accordance with ASTM E72, E136, G155, C926, C1063, C840, C1396, C1177, C834 and C920.

6.4 Reports of testing and analysis in accordance with NFPA 285.

6.5 Reports of fire-resistance testing in accordance with ASTM E119.



6.6 Test reports are from laboratories in compliance with ISO/IEC 17025.

the product’s certification. Products are manufactured at the locations noted in Section 2.7 of this report under a quality control program with periodic inspections under the surveillance of IAPMO UES.

7.0 STATEMENT OF RECOGNITION

This evaluation report describes the results of research completed by IAPMO Uniform Evaluation Service on Sacramento Stucco Co., Inc’s Western 1-Kote Exterior Stucco System to assess its conformance to the codes and standards shown in Section 1.0 of this report and documents

For additional information about this evaluation report please visit www.uniform-es.org or email at info@uniform-es.org

TABLE 3 – ALLOWABLE WIND LOADS

Wall Construction	Framing Minimum Specification	Backing	Maximum Framing Spacing ¹ (inches)	Maximum Load (psf)
Wood Framing ²	0.50 SG	Foam Plastic	24	28
		Gypsum	24	25
		Fiberboard or WSP ³	24	35
Steel Framing	No.20 gauge ⁴	Foam Plastic or any rigid sheathing	24	35
Concrete and Masonry	-	Direct	-	Limited by wall capacity

SI conversions: 1 inch = 25.4 mm; 1 psf = 47.9 N/m²

¹Supporting wall shall have a maximum deflection of L/240 of the span and be designed to support the design load.

²Tables 4 and 5 of this report provide for installation over wood structural sheathing using alternative fastener spacing.

³Wind pressures for WSP backing shall not exceed those set forth in IBC Table 2304.6.1 or IRC Table R602.3(3).

⁴The gauge thickness shall be minimum 0.035 inch.

TABLE 4 – STAPLE SPACING FOR ATTACHING LATH OVER FOAM PLASTIC BOARDS ^{1, 2, 3}

Foam Plastic Board Thickness (inches)		1/2	1	1/2	1	1/2	1	1/2	1	1/2	1	1/2	1
Wood Species	Specific Gravity	16ga		15ga		14ga		13ga		12ga		10ga	
Douglas Fir-Larch	0.50	6	-	6	-	6	-	6	-	6	-	6	-
Western Hemlock	0.47	6	6	6	6	6	6	6	6	6	6	6	6
Douglas Fir-South; Hem-Fir (North)	0.46	6	6	6	6	6	6	6	6	6	6	6	6
Hem-fir	0.43	5	5	6	5	6	6	6	6	6	6	6	6
Spruce-Pine-Fir	0.42	5	5	6	5	6	6	6	6	6	6	6	6
Western Woods	0.36	3	3	4	4	5	4	5	5	5	5	6	6

SI conversions: 1 inch = 25.4 mm

¹ Foam plastic insulation boards shall be installed over wood structural sheathing fastened to wood studs.

² Wood structural sheathing shall be attached to wood studs in accordance with the applicable code.

³ Staples shall penetrate a minimum of 1-inch into wood framing and sheathing combined.

⁴ Alternatively No.11-gauge roofing nails with minimum 3/8-inch-diameter heads may substitute for any staple gauge in this table.



TABLE 5 – FIRE-RESISTANCE-RATED WALL ASSEMBLIES

Assembly No.1	2x4 wood studs 24 inches on center with 5/8-inch Type X gypsum wallboard
<p>Construction¹ – 2-by-4 wood studs spaced at maximum 24 inches on center. Interior face has one layer of 5/8-inch-thick Type X gypsum wallboard applied vertically with all joints backed by framing and attached with 6d by 1 7/8-inch-long coated nails having 1/4-inch-diameter heads at 7 inches on center to studs, plates, and blocking. Nail heads and joints of wallboard shall be taped and treated with joint compound in accordance with IBC Section 2508.4, and either ASTM C840 or GA-216. Outside face has one layer of 5/8-inch-thick or greater, 48-inch-wide Type X gypsum sheathing board applied vertically, with all joints backed by framing and attached to wood studs using No.11 gauge by 1 3/4-inch-long galvanized roofing nails having 7/16-inch or 1/2-inch-diameter heads spaced 4 inches on center at edges and 7 inches on center at intermediate studs and top and bottom plates. The water-resistive barrier, lath, and stucco shall be applied as described in Sections 3.2.3 and 3.2.5 of this report.</p>	
<p>Axial (ASD) Loading shall be the lesser of:</p> <ol style="list-style-type: none"> 1. For studs with a slenderness ratio, le/d, greater than 33, the design stress shall be reduced to 78 percent of allowable F_c' (IBC); or 2. For studs with a slenderness ratio, le/d, not exceeding 33, the design stress shall be reduced to 78 percent of the adjusted stress F_c' calculated for studs having a slenderness ratio le/d of 33 (IBC). 	
Assembly No.2	2x4 or 2x6 wood studs 16 inches on center with 5/8-inch-thick Type X gypsum wallboard and mineral wool batts
<p>Construction¹ – 2x4 or 2x6 wood studs spaced at maximum 16 inches on center. The interior face has one layer of 5/8-inch-thick Type X gypsum wallboard with the long dimension applied horizontally, with all joints backed by framing and attached with No.13 gauge by 1 5/8-inch-long gypsum wallboard nails having 19/64-inch-diameter heads spaced at 6 inches on center to studs, plates, and blocking. Nail heads and wallboard joints shall be taped and treated with joint compound in accordance with IBC Section 2508.4 and either ASTM C840 or GA-216. Mineral wool batts, 3 1/2-inch or 5 1/2-inch-thick, 15-inch-wide R-13 having 1.72 pcf density and with a vapor barrier on one face, shall be placed between the studs and stapled to one face of the studs. One layer of 1/2-inch-thick gypsum sheathing board is applied vertically or horizontally to the outside face of wood studs with all joints backed by framing and attached with No.13 by 1 5/8-inch-long gypsum wallboard nails having 19/64-inch-diameter heads spaced 6 inches on center to studs, plates, and blocking. Nail heads and joints shall be taped and treated with joint compound in accordance with ASTM C840 or GA-216. The water-resistive barrier, galvanized wire fabric lath, and the stucco shall be applied in accordance with Sections 3.2.3 and 3.2.5 of this report.</p>	
<p>Axial (ASD) Loading shall be the lesser of:</p> <ol style="list-style-type: none"> 1. 1,100 pounds per stud for 2x4 construction. 2. 3,000 pounds per stud for 2x6 construction. 3. For 2x4 construction, a maximum of 54 percent of the load calculated in accordance with Sections 3.6 and 3.7 of the ANSI/AWC NDS (NDS). 4. For 2x6 construction, a maximum of 44.7 percent of the load calculated in accordance with Sections 3.6 and 3.7 of the NDS. 5. For studs with a slenderness ratio, le/d, greater than 33, the design stress shall be reduced to 78 percent of allowable F_c' (IBC); or 6. For studs with a slenderness ratio, le/d, not exceeding 33, the design stress shall be reduced to 78 percent of the adjusted stress F_c' calculated for studs having a slenderness ratio le/d of 33 (IBC). 	



TABLE 5 (Continued) – FIRE-RESISTANCE-RATED WALL ASSEMBLIES

Assembly No.3	2x4 or 2x6 wood studs 24 inches on center with 5/8-inch-thick Type X gypsum wallboard, fiberglass batt insulation, and water-resistant-core gypsum or OSB or plywood sheathing
<p>Construction¹ – 2-by-4 or 2-by-6 wood studs spaced at maximum 24 inches on center. Interior face has one layer of 5/8-inch-thick Type X gypsum wallboard applied horizontally to the interior face of wood studs with joints backed by framing and solid blocking installed horizontally at the wall mid-height and attached with 1 5/8-inch-long cupped-head gypsum wallboard nails having a 0.10-inch-diameter shank and 0.30-inch-diameter head spaced 8 inches on center to studs, plates, and blocking. Nail heads and board joints shall be taped and treated with joint compound in accordance with IBC Section 2508.4 and either ASTM C840 or GA-216. 3 1/2-inch-thick, R-11 Kraft-paper-faced fiberglass batt insulation, complying with Section 720 of the IBC or Section R302.10 of the IRC shall be placed between the studs. The outside face of the studs shall be covered with 1/2-inch-thick gypsum sheathing or 7/16-inch-thick wood structural panel sheathing attached in accordance with IBC Section 2304.6.1, as applicable. Exterior sheathing shall have the horizontal joints offset 24 inches from the horizontal joints of the interior gypsum wallboard. The water-resistive barrier, lath, and stucco shall be applied as described in Sections 3.2.3 and 3.2.5 of this report.</p>	
<p>Axial (ASD) Loading shall be the lesser of:</p> <ol style="list-style-type: none"> 1,100 pounds per stud for 2x4 construction. 3,000 pounds per stud for 2x6 construction. A maximum of 44.7 percent of the load calculated in accordance with Sections 3.6 and 3.7 of the NDS. For studs with a slenderness ratio, le/d, greater than 33, the design stress shall be reduced to 78 percent of allowable F_c' (IBC); or For studs with a slenderness ratio, le/d, not exceeding 33, the design stress shall be reduced to 78 percent of the adjusted stress F_c' calculated for studs having a slenderness ratio le/d of 33 (IBC). 	
Assembly No.4	2x4 or 2x6 wood studs 24 inches on center with 5/8-inch-thick Type X gypsum wallboard, fiberglass batt insulation and 7/16-inch-thick OSB sheathing
<p>Construction¹ – 2-by-4 or 2-by-6 wood studs spaced a maximum 24 inches on center. Interior face has one layer of 5/8-inch-thick Type X gypsum wallboard applied with the long dimension vertically and fastened with No.13 by 1 5/8-inch-long cupped-head gypsum wallboard nails having a 19/64-inch-diameter head spaced 8 inches on center to studs and plates. Nail heads and board joints shall be taped and treated with joint compound in accordance with ASTM C840 or GA-216. 3 1/2-inch-thick R-11 Kraft-paper-faced fiberglass batt insulation complying with Section 720.1 and 720.2 of the IBC or Section R302.10.1 of the IRC shall be placed between the studs. The exterior face has 7/16-inch-thick OSB attached in accordance with IBC Section 2304.6.1. A water-resistive barrier shall be installed over the sheathing. Foam plastic insulation, lath, and stucco shall be applied as described in Sections 3.2.3 and 3.2.5 of this report.</p>	
<p>Axial (ASD) Loading shall be the lesser of:</p> <ol style="list-style-type: none"> 1,100 pounds per stud for 2x4 construction. 3,000 pounds per stud for 2x6 construction. For 2x4 construction, a maximum of 47.5 percent of the load calculated in accordance with Sections 3.6 and 3.7 of the NDS. For 2x6 construction, a maximum of 44.7 percent of the load calculated in accordance with Sections 3.6 and 3.7 of the NDS. For studs with a slenderness ratio, le/d, greater than 33, the design stress shall be reduced to 78 percent of allowable F_c' (IBC); or For studs with a slenderness ratio, le/d, not exceeding 33, the design stress shall be reduced to 78 percent of the adjusted stress F_c' calculated for studs having a slenderness ratio le/d of 33 (IBC). 	
Assembly No.5	2x4 or 2x6 wood studs 24 inches on center with 5/8-inch-thick Type X gypsum wallboard and open stud exterior face
<p>Construction¹ – 2-by-4 or 2-by-6 wood studs spaced at maximum 24 inches on center. Interior face has one layer of 5/8-inch-thick Type X gypsum wallboard applied vertically and attached with No.13 by 1 5/8-inch-long cupped-head gypsum wallboard nails having a 19/64-inch-diameter head spaced 8 inches on center to studs and plates. Nail heads and board joints shall be taped and treated with joint compound in accordance with IBC Section 2508.4 and either ASTM C840 or GA-216. The spaces between studs shall be completely filled with 3 1/2-inch-thick R-11, kraft-paper-faced, fiberglass batt insulation. The insulation shall comply with IBC Section 720.1 and 720.2 or IRC Section R302.10.1. A water-resistive barrier shall be installed over the open studs. Foam plastic insulation, lath, and stucco shall be applied over the water-resistive barrier as described in Sections 3.2.3 and 3.2.5 of this report.</p>	
<p>Axial (ASD) Loading shall be the lesser of:</p> <ol style="list-style-type: none"> 1,100 pounds per stud for 2x4 construction. 3,000 pounds per stud for 2x6 construction. For 2x4 construction, a maximum of 47.5 percent of the load calculated in accordance with Sections 3.6 and 3.7 of the NDS. For studs with a slenderness ratio, le/d, greater than 33, the design stress shall be reduced to 78 percent of allowable F_c' (IBC); or For studs with a slenderness ratio, le/d, not exceeding 33, the design stress shall be reduced to 78 percent of the adjusted stress F_c' calculated for studs having a slenderness ratio le/d of 33 (IBC). 	



SI conversions: 1 inch = 25.4 mm; 1 lbs = 4.4 N; 1pcf = 16 kg/m³

¹ Supplemental information can be found at www.westernblended.com

TABLE 6 – NFPA 285 WALL ASSEMBLY WITH FOAM INSULATION

Framing	No.20-gauge [0.035 inch (0.889 mm)] (min.) by 3 5/8-inch-wide (92 mm) or deeper, non-load-bearing steel studs shall be spaced at 24 inches (610 mm) on center (max.). The steel gauge shall be adequate for the fasteners and accessories used. Wall openings shall be framed with minimum 0.125-inch-thick (3.18 mm) steel or tubular aluminum. Alternate Framing: 2x4 or deeper non-bearing Fire-Retardant-Treated Wood (FRTW) studs meeting the requirements of IBC Section 2303.2 and spaced at 16 inches on center (406 mm) (min.) or 24" oc (609 mm) (max.) may be used instead of steel studs where fire-resistance-rated construction is not required in accordance with Section 603.3 of the IBC.
Interior Panel	One layer of 5/8-inch-thick (15.9 mm) (min.) Type X gypsum wallboard shall be applied vertically on the interior side and attached with No.8 by 1¼-inch-long (31.8 mm) bugle-head screws spaced at 8 inches (203 mm) on center at board joints and 12 inches (305 mm) on center in the field. Gypsum wallboard fasteners and joints shall be taped and treated as set forth in Section 2508.4 of the IBC and either ASTM C840 or GA-216.
Optional Cavity Insulation	Any non-combustible insulation including non-combustible mineral fiber or fiberglass, faced or unfaced, may be used in the framing cavities. <i>No cavity insulation is an acceptable alternative.</i>
Optional Vapor Retarder	A thin plastic Class I or foil vapor retarder may be used.
Fireblocking¹	Fireblocking consisting of 1½" FRT lumber or 4 pcf (64 kg/m ³) density (min.) mineral fiber insulation shall be installed to block the wall stud spaces at the ceiling and floor levels in accordance with Section 718.2 of the IBC. The fiber insulation shall be nominally 4 inches (102 mm) thick (min.) and friction fit or clipped within the stud space.
Sheathing	The exterior side shall have one layer of ½-inch-thick (12.7 mm) (min.) gypsum sheathing applied horizontally and attached with No.8 by 1¼-inch-long (31.8 mm) bugle-head screws spaced at 8 inches (203 mm) on center along all framing. Alternate Sheathing: Fire-Retardant-Treated plywood sheathing, ½-inch-thick (12.7 mm), meeting the requirements of IBC Section 2303.2 may be used instead of gypsum sheathing. Use of FRTW sheathing shall comply with Section 603 of the IBC.
WRB¹	Fortifiber Super Jumbo Tex 60 Minute or other water-resistive barrier that is shown by ASTM E1354 testing (at 50kW/m ² min. heat flux) and analysis to be equivalent in flammability. The following WRBs were tested and shown to be equivalent: Dupont Tyvek CommercialWrap, CommercialWrap D, Fortifiber WeatherSmart (Commercial Housewrap, Drainable), Keene Driwall Air Weather Barrier (AWB) High Permeability (HP)
Exterior Insulation¹	Type II EPS (1.35 pcf max.) or Type IV XPS (1.55 pcf max.) foam plastic insulation may be used provided the insulation meets ASTM C578 and has maximum Total Heat (potential heat per inch x maximum thickness) of 6444 Btu/ft ² . <i>No exterior insulation or any non-combustible insulation such as unfaced mineral fiber may be used instead of the insulation described above.</i> Openings in assemblies that incorporate foam plastic insulation shall be finished using an opening nailing buck made-up of 3 layers of 1/2-inch-thick plywood to separate the openings from the wall assemblies at the headers, jams, and sills.
Stucco Substrate	½-inch-thick National Gypsum PermaBase Cement Board substrate. The joints in the PermaBase shall be taped using PermaBase fiberglass tape.
Optional Rainscreen	Keene Driwall rainscreen as described in Section 3.2.3.3 may be installed over the WRB or exterior insulation.
Lath	Woven-wire fabric lath, 20 gauge minimum, fastened in accordance with Section 3.2.1.3 or as required by code and type of substrate. Lath is not required for stucco over PermaBase.
Stucco	The stucco shall be applied at a thickness of ½ inch min. over ½-inch-thick the National Gypsum PermaBase substrate.

Note 1. Verification of compliance and equivalency is beyond the scope of this report and is determined by separate research report or as otherwise allowed by the building official.



TABLE 7 – NFPA 285 WALL ASSEMBLY WITHOUT FOAM INSULATION

Framing	No.20-gauge [0.035 inch (0.889 mm)] by 3 5/8-inch-wide (92 mm) non-load-bearing steel studs shall be spaced at maximum 16 inches (406 mm) on center. Wall openings shall be framed with minimum 0.125-inch-thick (3.18 mm) steel or tubular aluminum. Alternate Framing: 2x4 or deeper non-bearing Fire-Retardant-Treated Wood (FRTW) studs spaced at 16 inches (406 mm) (min.) or 24" oc (609 mm) (max.) on center meeting the requirements of IBC Section 2303.2 may be used instead of steel studs where fire-resistance-rated construction is not required in accordance with Section 603 of the IBC.
Interior	One layer of 5/8-inch-thick (15.9 mm) Type X gypsum wallboard shall be applied vertically on the interior side and attached with No.8 by 1¼-inch-long (31.8 mm) bugle-head screws spaced at 8 inches (203 mm) on center at board joints and 12 inches (305 mm) on center in the field. Gypsum wallboard fasteners and joints shall be taped and treated in accordance with Section 2508.4 of the IBC and either ASTM C840 or GA-216.
Fireblocking¹	Fireblocking consisting of 4 pcf (64 kg/m ³) density (min.) mineral fiber insulation shall be installed in the wall stud spaces at the ceiling and floor levels in accordance with Section 718.2 of the IBC. The fiber insulation shall be nominally 4 inches (102 mm) thick, 6 to 8 inches (152 mm to 203 mm) wide and sized to achieve a friction fit within the stud space.
Insulation	Any non-combustible insulation.
Sheathing	The exterior side shall have one layer of 5/8-inch-thick (15.9 mm) gypsum sheathing applied horizontally and attached with No.8 by 1¼-inch-long (31.8 mm) bugle-head screws spaced at 8 inches (203 mm) on center along all framing. Alternate Sheathing: Fire-Retardant-Treated plywood sheathing, ½-inch-thick (12.7 mm) (min.) meeting the requirements of IBC Section 2303.2 may be used instead of gypsum sheathing. Use of FRTW sheathing shall comply with Section 603 of the IBC.
WRB¹	Fortifiber Super Jumbo Tex 60 Minute or other water-resistive barrier that is shown by ASTM E1354 testing (at 50kW/m ² min. heat flux) and analysis to be equivalent in flammability. The following WRBs were tested and shown to be equivalent: Dupont Tyvek CommercialWrap, CommercialWrap D, Fortifiber WeatherSmart (Commercial Housewrap, Drainable), Keene Driwall Air Weather Barrier (AWB) High Permeability (HP)
Optional Rainscreen	Keene Driwall rainscreen as described in Section 3.2.3.3 may be installed over the WRB or exterior insulation.
Lath	Woven-wire fabric lath, 20 gauge minimum, fastened in accordance with Section 3.2.1.3 or as required by code and type of substrate.
Stucco	The stucco shall be applied in accordance with Section 3.2.5 of this report.

1. Verification of compliance and equivalency is beyond the scope of this report and is determined by separate research report or as otherwise allowed by the building official.

Figure 1 - Foam Plastic Tongue & Groove Horizontal Edge

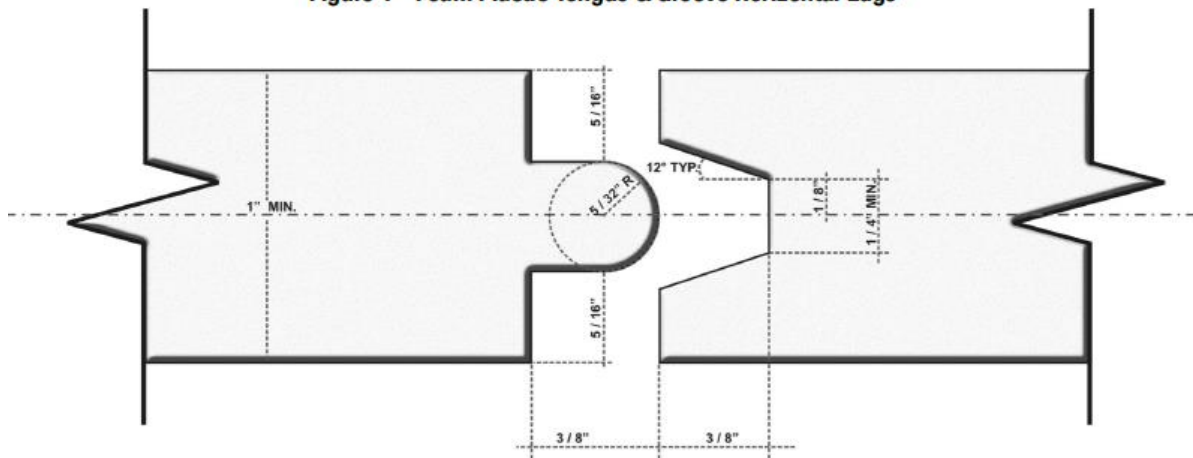


Figure 2 - Stucco System with Wood-Based Panels and Foam Plastic

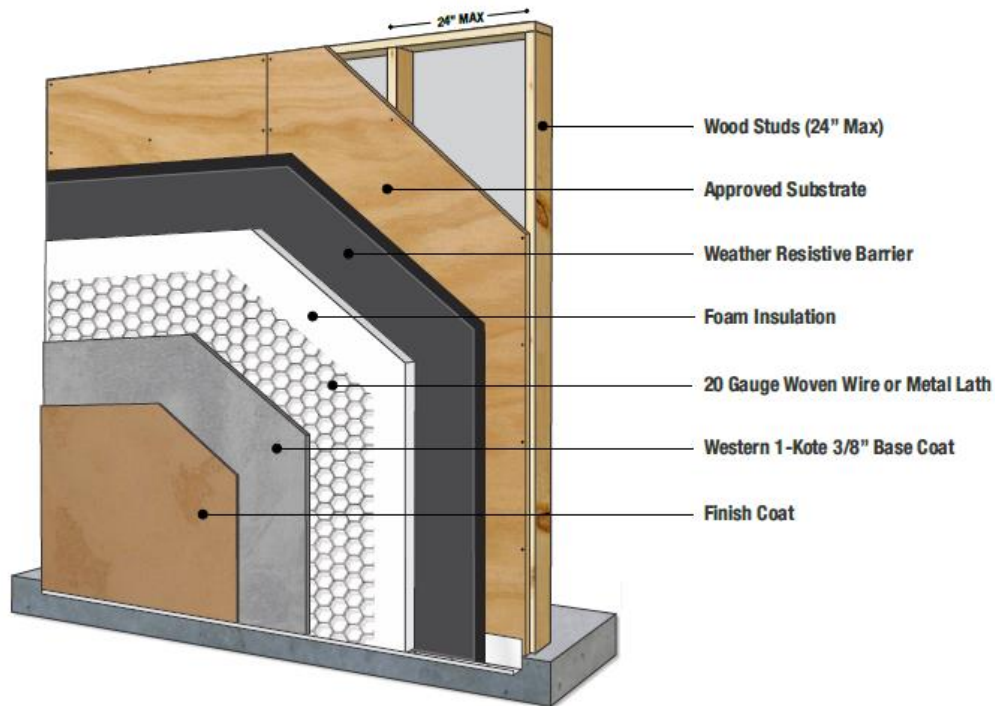


Figure 3 - System with Unbacked Foam Plastic

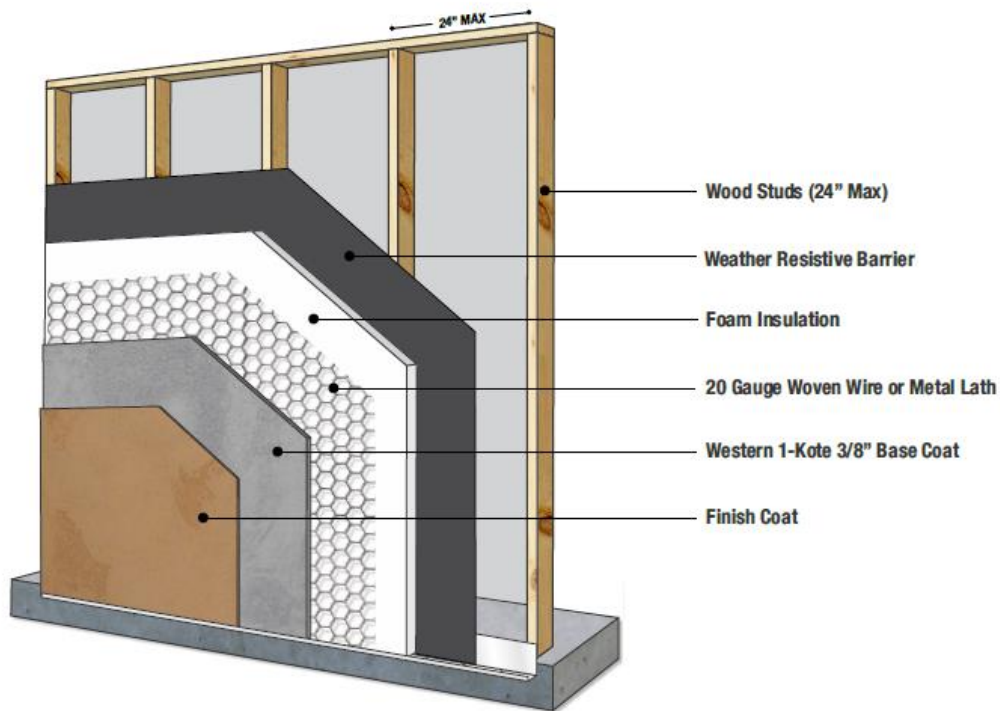


Figure 4 - Interface at Window Openings

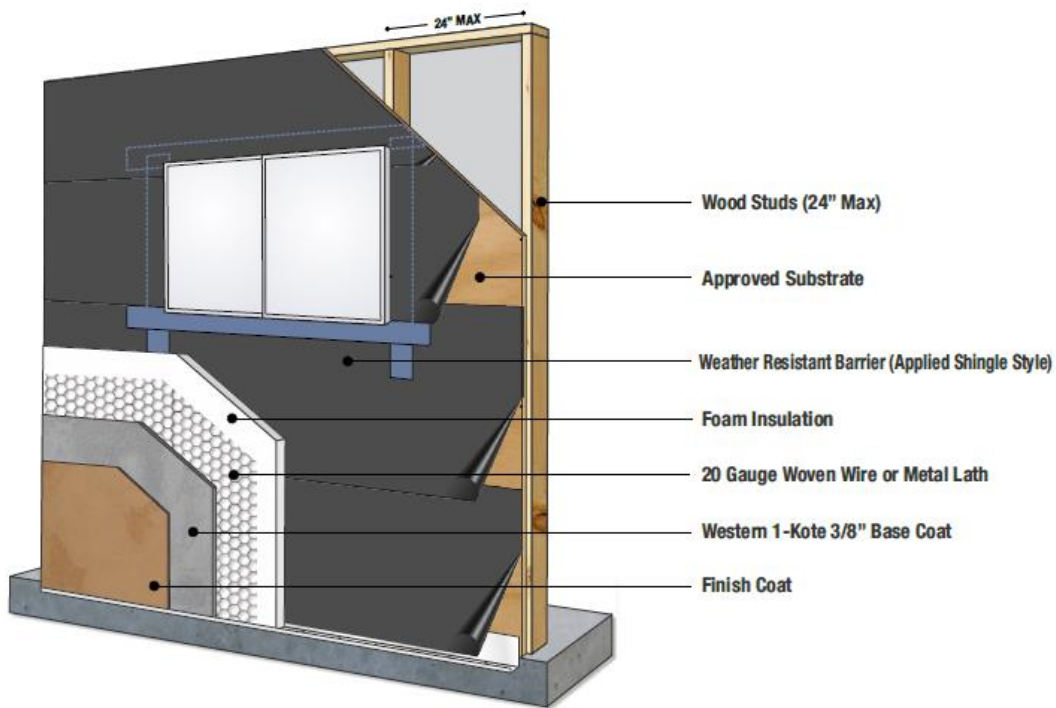


Figure 5 - Plaster Termination at Window with Integral Flange

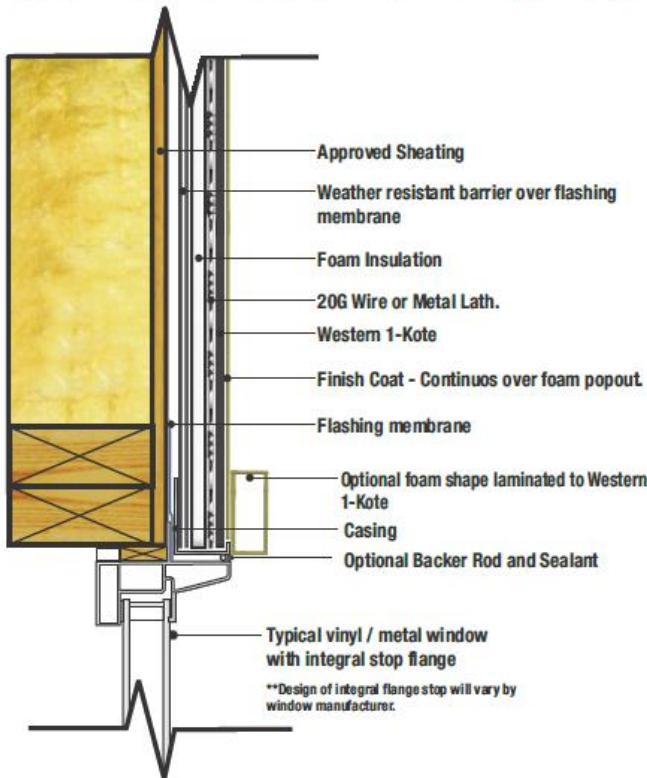


Figure 6 a - Corner Square Termination

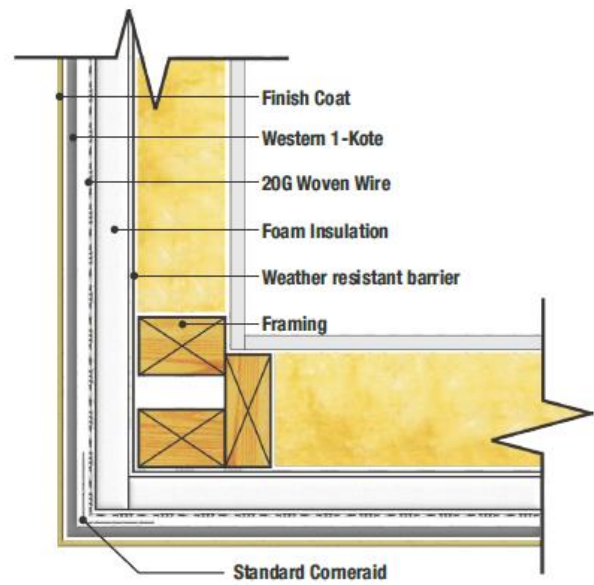


Figure 6 b - Corner Bullnose Termination

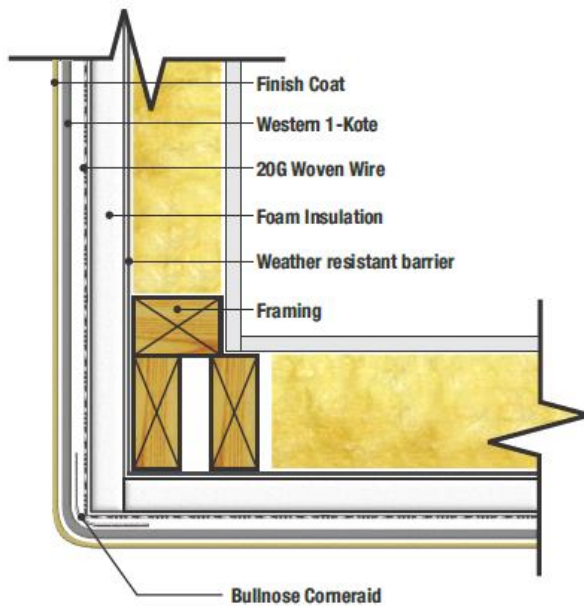


Figure 6 c - Corner with Reinforcement

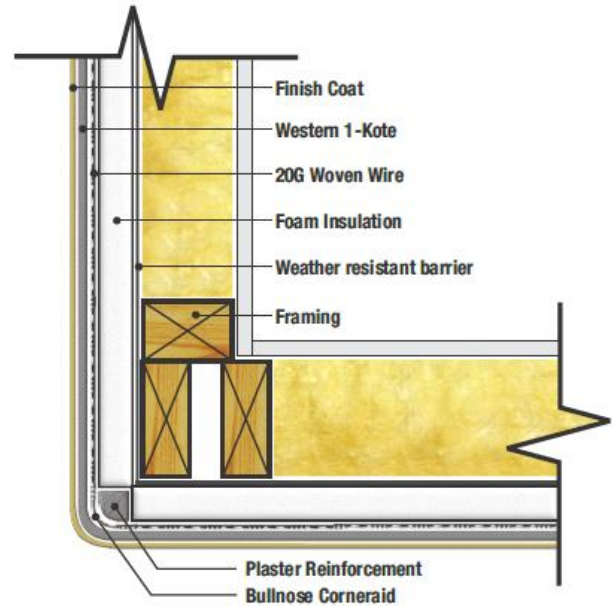


Figure 7 - One Hour Firewall Assembly No. 1

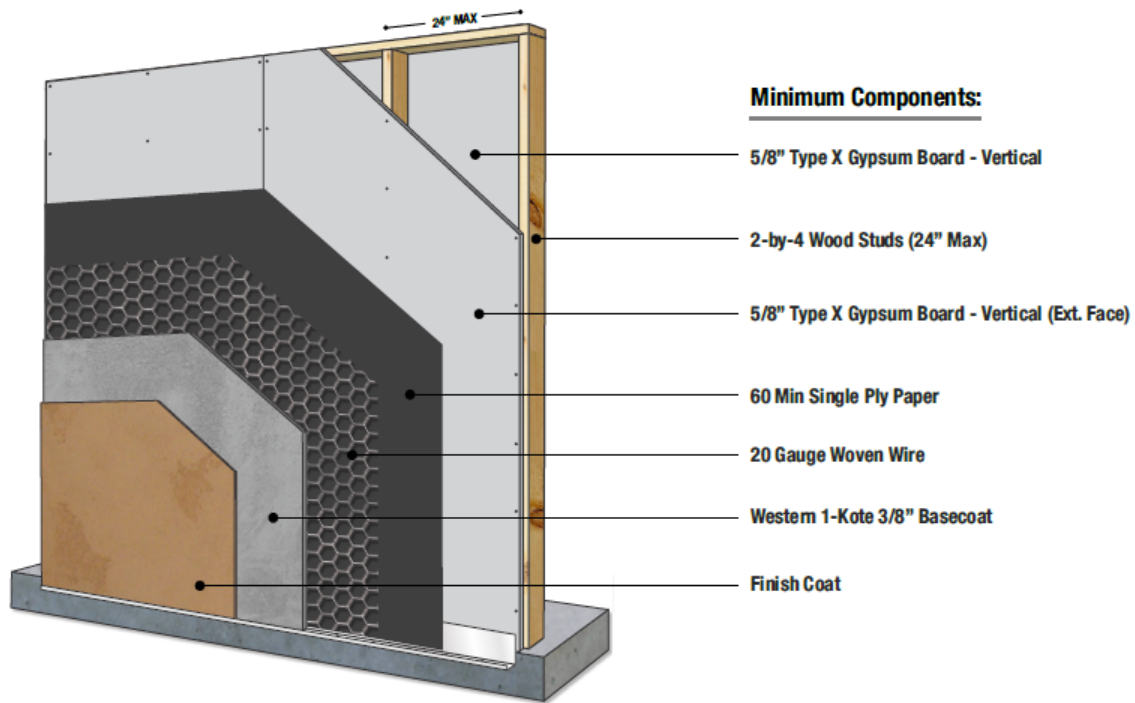


Figure 8 - One Hour Firewall Assembly No. 2

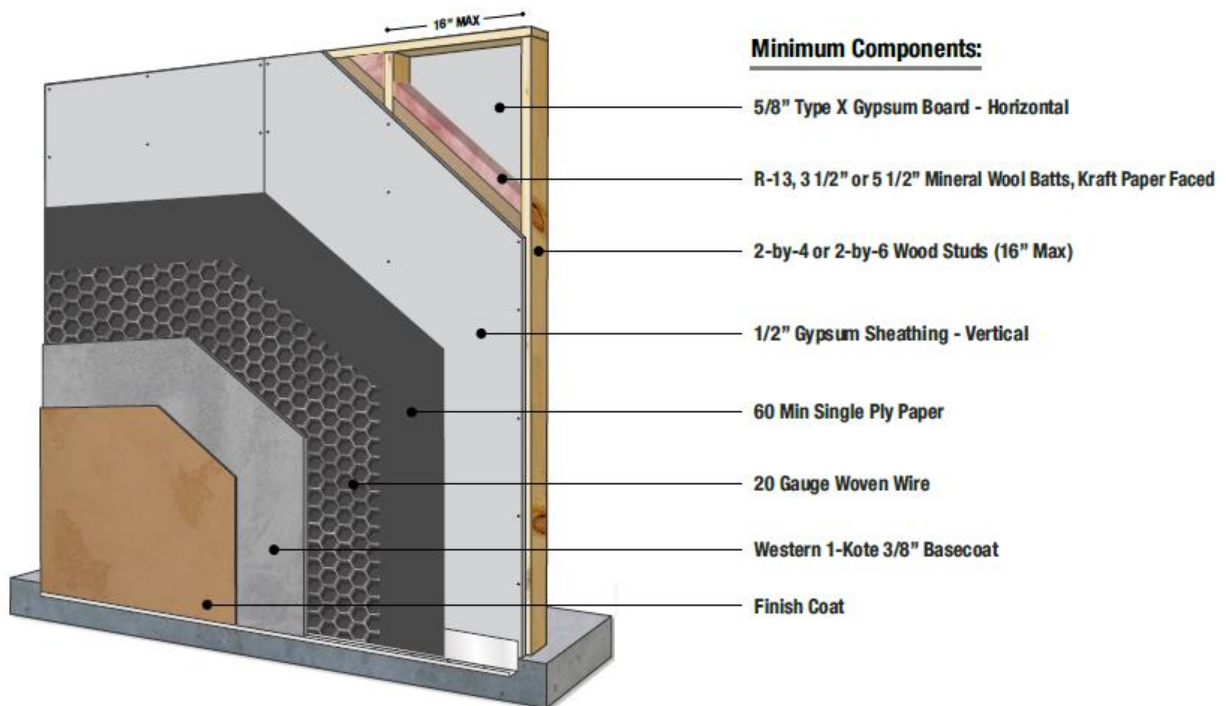


Figure 9 - One Hour Firewall Assembly No. 3

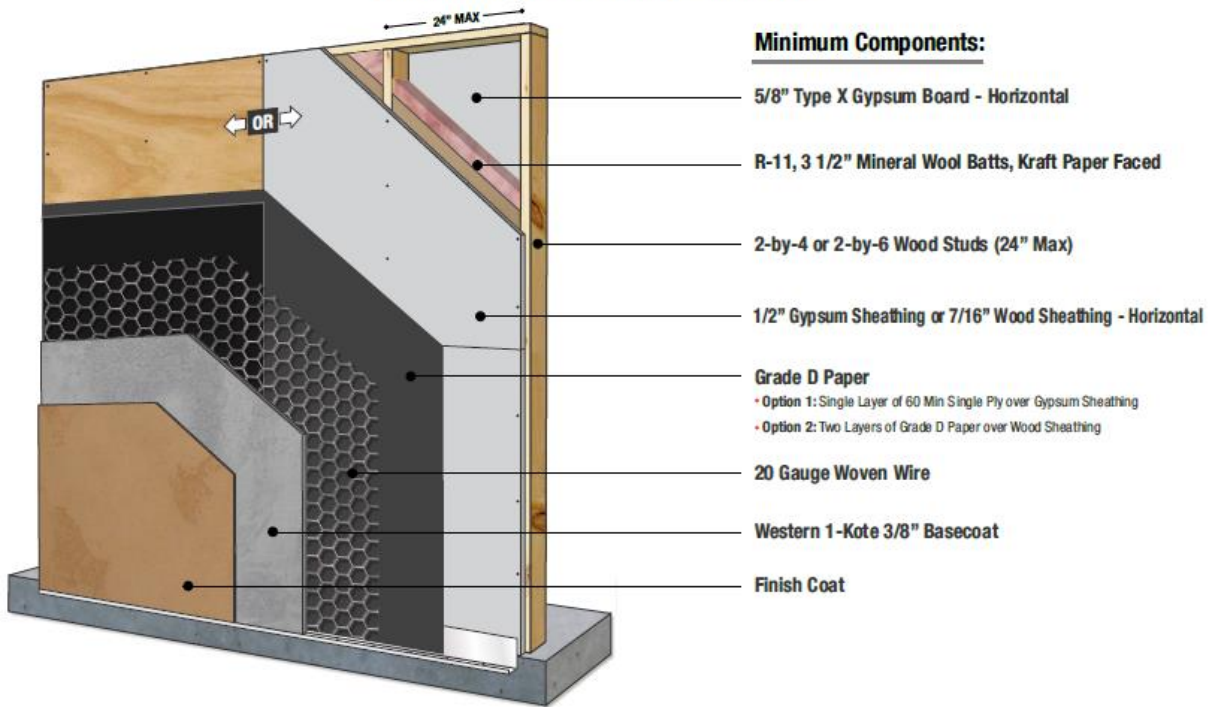


Figure 10 - One Hour Firewall Assembly No. 4

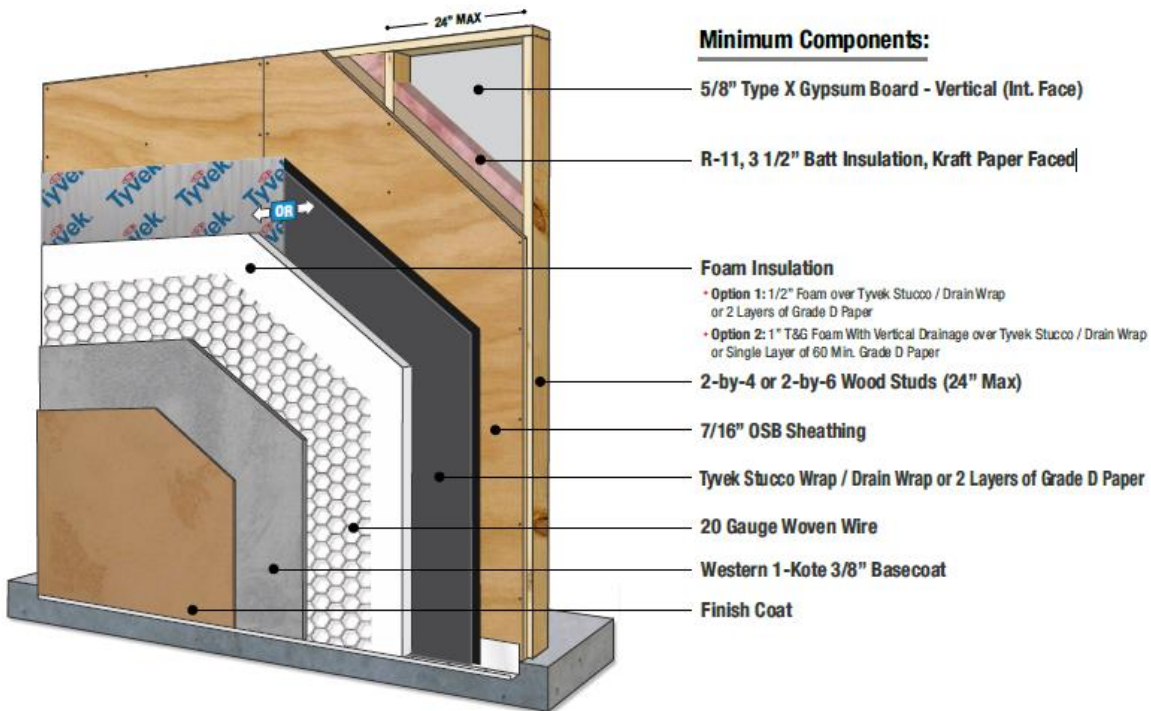
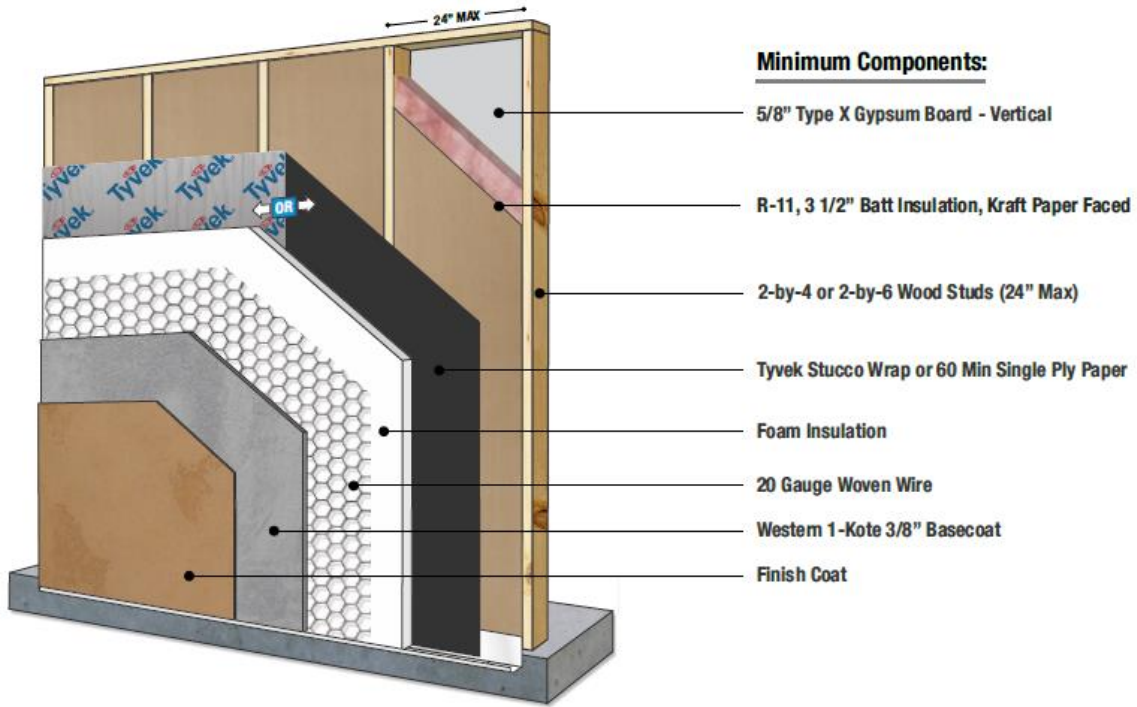


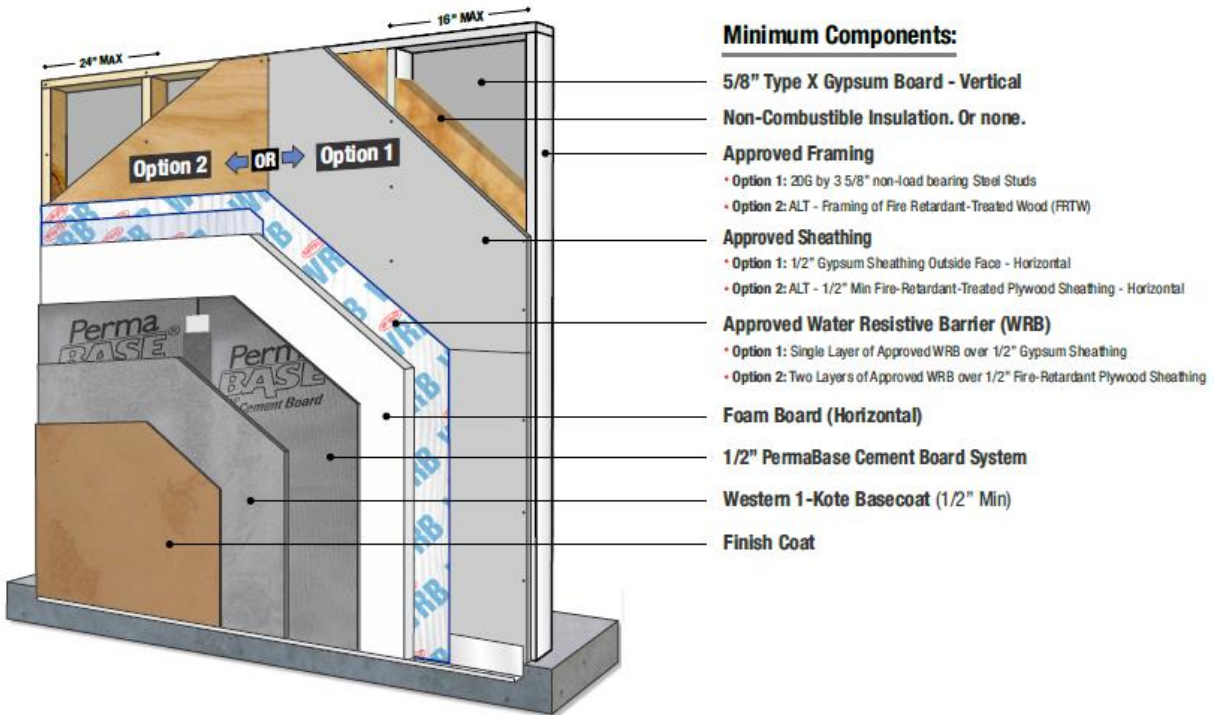
Figure 11 - One Hour Firewall Assembly No. 5



Minimum Components:

- 5/8" Type X Gypsum Board - Vertical
- R-11, 3 1/2" Batt Insulation, Kraft Paper Faced
- 2-by-4 or 2-by-6 Wood Studs (24" Max)
- Tyvek Stucco Wrap or 60 Min Single Ply Paper
- Foam Insulation
- 20 Gauge Woven Wire
- Western 1-Kote 3/8" Basecoat
- Finish Coat

Figure 12 - NFPA 285 Assembly with Foam Plastic Insulation (Table 6)



Minimum Components:

- 5/8" Type X Gypsum Board - Vertical
- Non-Combustible Insulation. Or none.
- Approved Framing
 - Option 1: 20G by 3 5/8" non-load bearing Steel Studs
 - Option 2: ALT - Framing of Fire Retardant-Treated Wood (FRTW)
- Approved Sheathing
 - Option 1: 1/2" Gypsum Sheathing Outside Face - Horizontal
 - Option 2: ALT - 1/2" Min Fire-Retardant-Treated Plywood Sheathing - Horizontal
- Approved Water Resistant Barrier (WRB)
 - Option 1: Single Layer of Approved WRB over 1/2" Gypsum Sheathing
 - Option 2: Two Layers of Approved WRB over 1/2" Fire-Retardant Plywood Sheathing
- Foam Board (Horizontal)
- 1/2" PermaBase Cement Board System
- Western 1-Kote Basecoat (1/2" Min)
- Finish Coat



Figure 13 - NFPA 285 Assembly without Foam Plastic Insulation (Table 7)

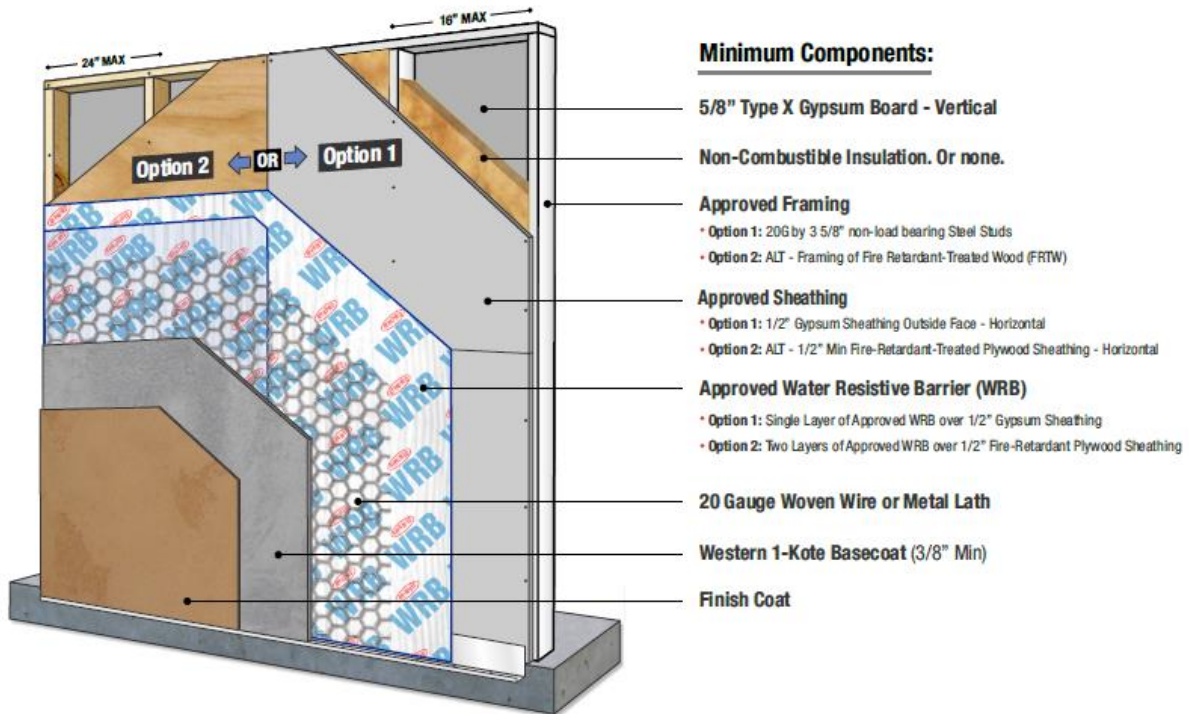




Figure 14 - Installation Card



INSTALLATION CARD

Western 1 Kote Exterior Stucco System
Sacramento Stucco Company



Job Address

IAPMO Evaluation Services
 Evaluation Report 382
 Date of Job Completion _____

Plastering Contractor
 Name: _____
 Address: _____
 Telephone No.: _____
 Approved contractor number as issued by coating manufacturer: _____

This is to certify that the exterior coating system on the building exterior at the above address has been installed in accordance with the evaluation report specified above and the manufacturer's instructions.

 Signature of authorized representative or plastering contractor Date

This installation card must be presented to the building inspector after completion of work and before final inspection



CALIFORNIA SUPPLEMENT

SACRAMENTO STUCCO CO., INC.

1550 Parkway Boulevard
Sacramento, California 95691
(916) 372-7442

www.westernblended.com

Western 1-Kote Exterior Stucco System

Additional Company and Product names recognized in this report:

- **ASH GROVE PACKAGING**, Ash Grove
10809 Executive Center Drive, Suite 321
Little Rock, Arkansas 72211
(501) 224-3372
ASH GROVE® 1-Kote Premix Stucco System
- **DRYVIT SYSTEMS, INC.**
One Energy Way
West Warwick, Rhode Island 02852
(401) 822-4100
Dryvit Commercial Cement Plaster (CCP) System
- **STO CORP.**
3800 Camp Creek Parkway SW
Building 1400, Suite 120
Atlanta, Georgia 30331
(800) 221-2397
StoPowerwall® Stucco System

CSI Sections: 09 25 00 Other Plastering

1.0 RECOGNITION

Western 1-Kote Systems evaluated in this report are satisfactory alternatives to the cement plaster stucco wall coverings prescribed in the following codes and regulations:

- 2019 California Building Code (CBC)
- 2019 California Residential Code (CRC)

2.0 LIMITATIONS

2.1 The Exterior Stucco Systems comply with Section 707A.3, Item 1 of the CBC, and may be used in the exterior design and construction of new buildings located within a Fire Hazard Severity Zone or Wildland-Urban Interface Fire Area in accordance with Section 701A.1 of the CBC when the additional provisions of Section 707A of the CBC are satisfied.

2.2 The Exterior Stucco Systems comply with Section R337.7.3, Item 1 of the CRC and may be used in the exterior design and construction of new buildings located within a Fire Hazard Severity Zone or Wildland-Urban Interface Fire Area in accordance with Section R337.1.1 of the CRC when the additional provisions of Section R337.7 of the CRC are satisfied.

2.3 Protection against condensation shall be provided in accordance with Section R703.1.1 of the CRC.

For additional information about this evaluation report please visit www.uniform-es.org or email at info@uniform-es.org