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1-KOTE EXTERIOR CEMENTITIOUS
ONE-COAT WALL COATING SYSTEM

CSI Section:  
09 24 00 Cement Plastering

1.0 RECOGNITION

Exterior Stucco Systems recognized in this report have been evaluated for use as an exterior wall covering in compliance with Chapters 14 and 25 of the IBC and Chapter 7 of the IRC. The Exterior Stucco System consists of cement plaster, metal or wire fabric lath, weather-resistant barrier, and backings of concrete, masonry, foam plastic insulation, gypsum board, fiberboard wood structural panel wall sheathing. The Exterior Stucco Systems have been evaluated for exterior durability, wind resistance, fire-resistance ratings, and installation on walls required to be of Types I, II, III, IV, or V construction. The Exterior Stucco Systems evaluated in this report are satisfactory alternatives to the following codes and regulations:

- ICC-ES AC11©
- 2019 California Building Code (CBC)- attached Supplement
- 2019 California Residential Code (CRC) - attached Supplement

2.0 LIMITATIONS

Use of the Exterior Stucco Systems recognized in this report is subject to the following limitations:

2.1 The Exterior Stucco Systems shall be installed in accordance with this report, the applicable code, and Kwik Kote’s installation instructions. In the event of a conflict between the manufacturer’s published installation instructions and this report, this report governs.

2.2 All inspections by the building official required in IBC Section 110 or IRC Section R109, including lath inspection, shall be completed.

2.3 Buildings shall be provided with braced wall lines or shear walls in accordance with the IBC or IRC.

2.4 The Kwik Kote Base Coat shall be moist-cured in accordance with the manufacturer’s installation instructions and the finish coat installation instructions, but no less than 48 hours.

2.5 Where foam plastic insulation is used, a thermal barrier complying with IBC Section 2603.4 or IRC Section R316 is required.

2.6 Where foam plastic insulation is used, installations shall comply with 2018, 2015, and 2009 IBC Section 2603.8 (2012 IBC Section 2603.9) or IRC Section R318.4, as applicable.

2.7 Where applied over a wood-based sheathing, installation shall include a water-resistive barrier conforming with IBC Section 2510.6 or IRC R318.3, 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 water-resistive barrier.

2.8 The Kwik-Kote Stucco Systems recognized in this report are produced in West Sacramento, CA.

3.0 PRODUCT USE

3.1 The Exterior Stucco Systems described in this report comply with Chapter 14 and Chapter 25 of the IBC and Chapter 7 of the IRC as an alternative exterior wall covering. The Exterior Stucco Systems also comply with Chapter 8 of the IBC and Chapter 7 of the IRC as an interior wall covering. The Exterior Stucco Systems may be used as standard ¾-inch thick first and second (scratch and brown) coats complying with ASTM C926 in accordance with Sections 2510.3 and 2512.1 of the IBC. When applied in accordance with Section 4.4.2 of this report, the Exterior Stucco Systems are a component of one-hour fire-resistance-rated exterior wall assemblies. The Exterior Stucco Systems are recognized for use in Type V construction in accordance with the prescriptive limitations of the code. The Exterior Stucco Systems may be applied on exterior walls of buildings of Types I, II, III, or IV construction as described in Section 4.4.3 of this report. The manufacturer’s published installation instructions shall be considered as part of this report. The manufacturer’s installation instructions shall be strictly adhered to and be available at the job site during application.

4.0 PRODUCT DESCRIPTION

4.1 The Exterior Stucco Systems addressed in this report comply with Chapter 14 and Chapter 25 of the 2018, 2015, 2012, and 2009 IBC, and IRC Chapter 7 as an alternative exterior wall covering. The Exterior Stucco Systems also comply with Chapter 8 of the IBC and Chapter 7 of the IRC as an interior wall covering. When applied in accordance with the specific sections of this report, the Exterior Stucco...
Systems are a component of one-hour fire-resistance-rated exterior wall assemblies and exterior walls of buildings on Type I, II, III, or IV construction, installation shall be as described in Sections 4.4.2 and 4.4.3 of this report.

4.2 Exterior Stucco System Components

4.2.1 Kwik-Kote Premix and Kwik Kote Premix Enhanced: The Concentrates are factory prepared, dry-blended, fiber-reinforced, modified Portland cement complying with ASTM C150, ASTM C595, ASTM C926, or ASTM C1157. The Kwik-Kote Premix and Kwik-Kote Premix Enhanced are packaged in 80 lb. (36.29 kg) bags. Kwik-Kote complies as noncombustible material in accordance with Section 703.5 of the IBC. Bags shall be kept indoors or, if stored outdoors, shall be adequately covered to keep dry, and shall be stored off the ground. Each bag of Kwik-Kote is mixed with two hundred pounds (approximately 16 #2 shovels) of sand and approximately 4 gallons of water. Each bag of Kwik-Kote Enhanced is mixed with 250 pounds (approximately 20 #2 shovels) of sand and approximately 5.6 gallons of water. The sand shall be clean and free of deleterious amounts of loam, clay, silt, soluble salts, and organic matter. Sampling and testing shall comply with ASTM C144 or C897. Aggregate shall be graded in accordance with ASTM C144 or C897. The Kwik-Kote Premix Enhanced are packaged in 80 lb. (36.29 kg) bags.

4.2.2 Kwik-Kote Sanded Premix: Kwik-Kote’s Sanded Premix is a factory-prepared, dry-blended, fiber-reinforced, modified Portland cement complying with ASTM C150, ASTM C595, ASTM C926, and ASTM C1157. The Kwik-Kote Sanded Premix is packaged in 80 lb. (36.29 kg) bags. The plaster complies as noncombustible material in accordance with Section 703.5 of the IBC. Bags shall be kept indoors or, if stored outdoors, shall be adequately covered to keep dry and shall be stored off the ground. Each bag of Kwik-Kote is mixed with two hundred pounds (approximately 16 #2 shovels) of sand and approximately 4 gallons of water. Each bag of Kwik-Kote Enhanced is mixed with 250 pounds (approximately 20 #2 shovels) of sand and approximately 5.6 gallons of water. The sand shall be clean and free of deleterious amounts of loam, clay, silt, soluble salts, and organic matter. Sampling and testing shall comply with ASTM C144 or C897.

The Kwik Kote enhanced, sand and water shall be mixed for a minimum of five minutes.

4.3 Foam Plastic Insulation

4.3.1 General Requirements: All foam plastic insulation shall have a flame spread index and smoke-developed index complying with Section 2603.5.4 of the IBC. Verification of compliance is beyond the scope of this report and may be determined by a separate research report, or as otherwise determined by the building official. Table 2 of this report provides information when foam plastic insulation is installed over sheathing or open studs.

<table>
<thead>
<tr>
<th>BACKING</th>
<th>CONFIGURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open framing</td>
<td>1.0” to 1.5” thick with ¼&quot;-inch high tongue and groove horizontal joints complying with Figure 1 of this report</td>
</tr>
<tr>
<td>Wood structural panel sheathing</td>
<td>1” thick, 2’ by 8’ Dow StyroFoam Tongue and Groove XPS with 4-sided tongue and groove edges installed according to ICC ESR-2142</td>
</tr>
<tr>
<td>Solid sheathing</td>
<td>0.5” thick minimum</td>
</tr>
<tr>
<td>Wood structural panel sheathing where foam plastic forms part of the weather-resistive barrier</td>
<td>1.0” thick minimum with ¼&quot;-inch high tongue and groove horizontal joints complying with Figure 1 of this report</td>
</tr>
</tbody>
</table>

4.3.1.1 The foam plastic board over open framing with tongue and groove horizontal joints shown in Table 2 of this report, may alternatively have square-cut horizontal edges provided the foam board is not required to perform as a WRB layer, and:

- The framing is maximum 24 inches on center
- The foam is minimum 1-inch-thick ASTM C578 Type II EPS having a nominal density of 1.5 pcf and 15 psi compressive strength
- The foam board is fastened per Section 4.6.9 of this report
- The joints are maximum ¼-inch-wide and closed on the exterior side using minimum 2 ½-inch-wide fiberglass mesh tape
- Lath is installed per Section 4.3.5 of this report.

4.3.2 Expanded Polystyrene (EPS) Foam Plastic Insulation Board: (EPS) foam plastic insulation boards shall be Type II as set forth in ASTM C578, with a minimum nominal density of 1.5 pcf (24 kg/m³).

<table>
<thead>
<tr>
<th>TABLE 2 – Foam Plastic Boards</th>
</tr>
</thead>
<tbody>
<tr>
<td>BACKING</td>
</tr>
<tr>
<td>Open framing</td>
</tr>
<tr>
<td>Wood structural panel sheathing</td>
</tr>
<tr>
<td>Solid sheathing</td>
</tr>
<tr>
<td>Wood structural panel sheathing where foam plastic forms part of the weather-resistive barrier</td>
</tr>
</tbody>
</table>

*As an alternative to the vertical drainage grooves, the EPS may be installed over Tyvek® Stuccowrap® or Tyvek® DrainWrap™ water-resistive barrier.

The Concentrates are factory prepared, dry-blended, fiber-reinforced, modified Portland cement complying with ASTM C150, ASTM C595, ASTM C926, and ASTM C1157. The Kwik-Kote Premix and Kwik-Kote Premix Enhanced are packaged in 80 lb. (36.29 kg) bags. Kwik-Kote complies as noncombustible material in accordance with Section 703.5 of the IBC. Bags shall be kept indoors or, if stored outdoors, shall be adequately covered to keep dry, and shall be stored off the ground. Each bag of Kwik-Kote is mixed with two hundred pounds (approximately 16 #2 shovels) of sand and approximately 4 gallons of water. Each bag of Kwik-Kote Enhanced is mixed with 250 pounds (approximately 20 #2 shovels) of sand and approximately 5.6 gallons of water. The sand shall be clean and free of deleterious amounts of loam, clay, silt, soluble salts, and organic matter. Sampling and testing shall comply with ASTM C144 or C897. Aggregate shall be graded in accordance with ASTM C144 or C897.
4.3.3 Extruded Polystyrene (XPS) Foam Plastic Insulation Board: Extruded polystyrene (XPS) foam plastic insulation boards shall be Type IV or Type V as set forth in ASTM C578, with a minimum nominal density of 1.5pcf (24 kg/m^3).

4.3.4 Polyisocyanurate Foam Plastic Insulation Board: Polyisocyanurate foam plastic insulation boards shall be Type II as set forth in ASTM C1289, with a minimum nominal density of 2.0 pcf (32 kg/m^3).

4.3.5 Lath: Lath shall be regular or self-furring wire fabric lath or metal lath and complying with the ICC-ES AC191. Verification of compliance with AC191 is beyond the scope of this report and may be determined by a separate research report, or as otherwise determined by the building official. The lath shall be corrosion-resistant and shall be self-furring or furred. Wire fabric lath shall be minimum No. 20 gauge [0.035 inch (0.89 mm)], 1-inch (25.4 mm), galvanized steel, woven-wire fabric. The furring distance of self-furring lath shall comply with IBC Section 2510.3, IRC 2018 and 2015 Section R703.7, and 2012 IRC Section R703.6, as applicable, or with the following requirements:

- Furred No. 20 gauge lath shall be used with the Kwik-Kote products up to ½-inch (12.7 mm) thick. For coating thicknesses greater than ½-inch (12.7 mm), furred No. 17 gauge 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 (3.2 mm) from the substrate after installation.

Exception: Unfurred lath is permitted over unbacked polystyrene boards.

4.3.6 Gypsum Board: Gypsum Boards shall be minimum ½-inch (12.7 mm) thick 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. In addition, Gypsum wallboard complying with ASTM C1396 is permitted on the interior side walls where specifically mentioned in this report. Verification of compliance is beyond the scope of this report and may be determined by a separate research report, as set forth in the IBC or IRC, or as otherwise determined by the building official.

4.3.7 Cellulosic Fiber Insulating Board: 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 be Type IV, Grade 1 or Grade 2 wall sheathing as set forth in ASTM C208, minimum ½-inch (12.7 mm) thick. Verification of compliance is beyond the scope of this report and may be determined by a separate research report, as set forth in the IBC or IRC, or as otherwise determined by the building official.

4.3.8 Wood Structural Panel Sheathing: Wood structural panel sheathing shall comply with Section 2303.1.5 of the 2018 and 2015 IBC (Section 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. Wood Structural Panel Sheathing includes exterior grade plywood complying with DOC PS-1 and Oriented strand board (OSB) Exposure 1 complying with DOC PS-2. Verification of compliance is beyond the scope of this report and may be determined by a separate research report, as set forth in the IBC or IRC, or as otherwise determined by the building official.

4.3.9 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.

4.3.10 Water-resistive Barrier: Water-resistive barriers shall comply with 2018 and 2015 IBC Sections 1404.2 and 2510.6, 2012 and 2009 IBC Sections 1405.2 and 2510.6, or IRC Section R703.2, or the ICC-ES Acceptance Criteria for Water-resistive Barriers (AC38). Verification of compliance is beyond the scope of this report and may be determined by a separate research report, as set forth in the IBC or IRC, or as otherwise determined by the building official.

4.3.11 Water-resistive Barrier Over Wood-based Sheathing: For installations over wood-based sheathing (Cellulosic Fiber Insulating Board or Wood Structural Panel Sheathing), the water-resistive barrier shall be in accordance with Section 2510.6 of the IBC or Section R703.6.3 of the IRC, as applicable. Alternatively, the water-resistive barrier shall be a minimum of one layer of water-resistive barrier.

4.3.12 Water-resistive Barrier Over Other Sheathing: For installations not over wood-based sheathing, the water-resistive barrier shall be a minimum of one layer of water-resistive barrier.

4.3.13 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. Verification of compliance is beyond the scope of this report and may be determined by a separate research report, as set forth in the IBC or IRC, or as otherwise determined by the building official.

4.3.14 Flashing: 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, and Section R703.8 of the 2012 and 2009 IRC, as applicable. Membrane flashing shall be self-adhering flexible rubberized asphalt and polyethylene 0.030 inch (0.76 mm) thick. Verification of compliance is beyond the scope of this report and may be
determined as set forth in the IBC or IRC, or as otherwise determined by the building official.

4.3.15 Foundation Weep Screed: Weep Screeds shall comply with Section 2512.1.2 of the IBC or Section R703.7.2.1 of the 2018 and 2015 IRC; Section R703.6.2.1 of the 2012 and 2009 IRC, and ASTM C1063. Verification of compliance is beyond the scope of this report and may be determined as set forth in the IBC or IRC, or as otherwise determined by the building official.

4.4 Documented Values

4.4.1 Wind Load: The maximum allowable wind loads on the stucco system are set forth in Table 3 of this report. Fastening of backing to framing and lath to framing shall comply with the applicable codes of this report.

<table>
<thead>
<tr>
<th>Wood Species</th>
<th>Specific Gravity</th>
<th>Staple Fastener - Gauge No. (inch)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>15 (0.0731)</td>
<td>14 (0.0775)</td>
</tr>
<tr>
<td>Western Hemlock</td>
<td>0.47</td>
<td>6</td>
</tr>
<tr>
<td>Douglas Fir-South; Hem-Fir (North)</td>
<td>0.46</td>
<td>6</td>
</tr>
<tr>
<td>Hem-fir</td>
<td>0.43</td>
<td>5</td>
</tr>
<tr>
<td>Spruce-Pine-Fir</td>
<td>0.42</td>
<td>5</td>
</tr>
<tr>
<td>Western Woods</td>
<td>0.36</td>
<td>3</td>
</tr>
</tbody>
</table>

4.4.2 Fire-Resistance-Rated Wall Construction: Fire-resistance-rated assemblies recognized for use with the Exterior Stucco Systems are described in Table 6 of this report. Assembly No.1 is based on GA File No. WP8105 referenced in The Gypsum Association Fire-resistance and Sound Control Design Manual (GA 600). Assemblies No. 2 through No.5 are recognized as complying with ASTM E119 and UL263 for fire-resistance from both faces based on ASTM E119 testing for 1-hr fire-resistance. Use of the tabulated FRR assemblies in Types I through V construction shall be in accordance with the provisions of Chapter 6 of the IBC. Use of the Exterior Stucco Systems in 2-hour fire-resistance-rated construction is outside the scope of this evaluation report. Approval of additional FRR assemblies shall be based on Section 703 of the IBC.

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

4.4.3.1 General: Exterior wall assemblies incorporating Kwik Kote Stucco Systems 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. In prescriptive assemblies of construction Type I through IV, any water-resistive barrier may be used, provided the WRB is the assembly’s only combustible component, and it 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. In Tables 7 and 8 of this report, for use in Types I through IV construction of buildings of any height, Fortiber Super Jumbo Tex 60 Minute or other WRB that is shown by ASTM E1354 testing (at 50 kW/m2 min. heat flux) and analysis to be equivalent in flammability shall be used.

4.4.3.2 Assemblies Based on NFPA 285 Testing: Tables 7 and 8 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. The use of components other than the allowable alternatives described in the tables is outside the scope of this report.

4.4.3.3 Keene Driwall Rainscreens: Keene Driwall Rainscreens, DWRS 10mm or DWRS 020, with Keene Easy-Fur, may be used in assemblies with Exterior Stucco Systems. The Keene Driwall or other approved 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. Verification of compliance and equivalency is beyond the scope of this report and is determined by separate research reports or as otherwise allowed by the building official.
TABLE 6 – Fire-resistance-rated Walls (continued on next two pages)

<table>
<thead>
<tr>
<th>Item</th>
<th>Material</th>
<th>Construction</th>
<th>Axial Loading (Allowable Stress Design)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Exterior Walls</td>
<td>2-by-4 wood studs spaced a maximum 24-inches (610 mm) on center. The interior face has one layer of ⅝-inch (16 mm) thick Type X gypsum wallboard applied vertically with all joints backed by framing and attached with 6d x 1⅞-inch (48 mm) long coated nails having ¼ inch diameter heads at 7 inches (178 mm) 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. The outside face has one layer of ⅝-inch (16 mm) thick or greater, 48-inch (1219 mm) wide Type X gypsum sheathing board shall be applied vertically with all joints backed by framing and attached with to wood studs using No. 11 gauge by 1¾-inch (44 mm) long galvanized roofing nails having 7/16-inch (11 mm) or ½-inch (12.7 mm) diameter heads spaced 4 inches (102 mm) on-center at edges and 7-inches (178 mm) on-center at intermediate studs and top and bottom plates. The water-resistive barrier, lath, and stucco shall be applied as described in Sections 4.3 and 4.6 of this report.</td>
<td>Lesser of: 2. “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)”</td>
</tr>
<tr>
<td>2</td>
<td>Exterior Walls</td>
<td>2x4 or 2x6 wood studs spaced a maximum 16 inches (406 mm) on-center. The interior face has one layer of ⅝-inch (15.9 mm) thick Type X gypsum wallboard with the long dimension applied horizontally with all joints backed by framing and attached with No. 13 gauge x 1⅞-inch (41 mm) long gypsum wallboard nails having 19/64 inch (7.5 mm) diameter heads spaced 6-inches (152 mm) 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, 3½-inch or 5 ½-inch (89 mm) thick, 15-inch (381 mm) wide, R-13, 1.72 pcf (28 kg/m³) 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 ⅝-inch (12.7 mm) 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 1-⅝-inch (41 mm) long gypsum wallboard nails having 19/64-inch (7.5 mm) diameter heads spaced 6-inches (152 mm) 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</td>
<td>Lesser of: 1.1,100 pounds (4,893 N) per stud for 2x4 construction; 2. 3,000 pounds (13 340 N) 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 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)”</td>
</tr>
</tbody>
</table>
the stucco shall be applied in accordance with Sections 4.3 and 4.6 of this report.

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)”

3 Exterior Walls

2-by-4 or 2-by-6 wood studs spaced a maximum 24-inches (610 mm) on center. The interior face has one layer of ⅝-inch (15.9 mm) 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 1¾-inch (41 mm) long cupped-head gypsum wallboard nails having a 0.10 inch (2.5 mm) diameter shank and 0.30 inch (7.6 mm) diameter head spaced 8 inches (203 mm) 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. 3½-inch (89 mm) 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 ½-inch (12.7 mm) thick gypsum sheathing or ⅜-inch (11 mm) 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 (610 mm) from the horizontal joints of the interior gypsum wallboard. The water-resistant barrier, lath, and stucco shall be applied as described in Sections 4.3 and 4.6 of this report.

Lesser of:
1. 1,100 pounds (4,893 N) per stud for 2x4 construction;
2. 3,000 pounds (13,340 N) per stud for 2x6 construction;
3. A maximum of 44.7 percent of the load calculated in accordance with Sections 3.6 and 3.7 of the NDS;
4. “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)”

4 Exterior Walls

2-by-4 or 2-by-6 wood studs spaced a maximum 24-inches (610 mm) on center. Interior face has one layer of ⅝-inch (15.9 mm) thick Type X gypsum wallboard applied with the long dimension vertically and fastened with No. 13, 1⅝-inch (41 mm) long cupped-head gypsum wallboard nails having a ⅜-inch (7.5 mm) diameter head spaced 8-inches (203 mm) 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. 3½-inch (89 mm) thick, R-11 Kraft-paper-faced fiberglass batt insulation complying with Sections 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 ⅜-inch (11.1 mm) thick OSB attached in accordance with IBC Section 2304.6.1. A water-resistant barrier shall be

Lesser of:
1. 1,100 pounds (4,893 N) per stud for 2x4 construction;
2. 3,000 pounds (13,340 N) per stud for 2x6 construction;
3. 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;
| 5 | Exterior Walls | 2-by-4 or 2-by-6 wood studs spaced a maximum 24-inches (610 mm) on-center. Interior face has one layer of ⅜-inch (15.9 mm) thick Type X gypsum wallboard applied vertically, and attached with No. 13, 1⅝-inch (41 mm) long cupped-head gypsum wallboard nails having a 19/64-inch (7.5 mm) diameter head spaced 8-inches (203 mm) 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 3½ inch (89 mm) thick, R-11, kraft-paper-faced, fiberglass batt insulation. The insulation shall comply with IBC Sections 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 4.3 and 4.6 of this report. |

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, \( le/d \), 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)”}

Lesser of:

1. 1,100 pounds (4,893 N) per stud for 2x4 construction;

2. 3,000 pounds (13 340 N) per stud for 2x6 construction;

3. 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;

4. “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

5. “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 7 – NFPA 285 WALL ASSEMBLY WITH FOAM INSULATION

| **Framing** | No.20-gauge [0.035 inch (0.889 mm)] (min.) by 3 3/8-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” on center (609 mm) (max.) may be used instead of steel studs where fire-resistance-rated construction is not required in accordance with Section 603 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 1 ¼-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. *No cavity insulation* is an acceptable alternative. |
| **Optional Vapor Retarder** | A thin plastic Class I or foil vapor retarder may be used. |
| **Fireblocking** | Fireblocking consisting of 1½” FRT lumber or 4 pcf (64 kg/m³) 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 1/2-inch-thick (12.7 mm) (min.) gypsum sheathing applied horizontally and attached with No.8 by 1 ¼-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. |
| **WRB** | Fortifiber Super Jumbo Tex 60 Minute or another water-resistive barrier that is shown by ASTM E1354 testing (at 50kW/m² 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 Insulation** | 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/ft². *No exterior insulation or any non-combustible insulation such as unfaced mineral fiber* may be used instead of the insulation described above. 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, jambs, 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 or other approved rainscreen as described in Section 4.4.3.3 may be installed over the WRB or exterior insulation. |
| **Lath** | Woven-wire fabric lath, 20 gauge minimum, fastened in accordance with Section 4.6.9 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. |

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**Note 1.** Verification of compliance and equivalency is beyond the scope of this report and is determined by separate research reports or as otherwise allowed by the building official.
TABLE 8 – NFPA 285 WALL ASSEMBLY WITHOUT FOAM INSULATION

| Framing | No.20-gauge [0.035 inch (0.889 mm)] by 3 7/8-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” on center (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. |
| Fireblocking | Fireblocking consisting of 4 pcf (64 kg/m³) 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. |
| WRB | Fortifiber Super Jumbo Tex 60 Minute or another water-resistive barrier that is shown by ASTM E1354 testing (at 50kW/m² 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 or another approved rainscreen as described in Section 4.4.3.3 may be installed over the WRB or exterior insulation. |
| Lath | Woven-wire fabric lath, 20 gauge minimum, fastened in accordance with Section 4.6.9 or as required by code and type of substrate. |
| Stucco | The stucco shall be applied in accordance with Section 4.6 of this report. |

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

4.5.1 General: Installation shall comply with this report. Additional requirements not mentioned herein shall comply with the IBC or IRC, ASTM C926, ASTM C1063, and the published instructions of Kwik Kote Corp., as applicable. Figures 2 to 6 in this report shall be referenced as needed.

4.5.2 Applicators: Installation shall be by a plastering contractor approved, by Kwik Kote Corp., as being qualified to perform such installations. A list containing the names and addresses of approved contractors shall be maintained by Kwik Kote Corp. and shall be made available to the building official. An installation card with a format as shown in Figure 7 of this report shall be completed by the plastering contractor and presented to the building official at the completion of each project.

4.5.3 Concrete or Masonry: Direct application of the exterior coating to concrete or masonry is permitted when this is done in accordance with ASTM C926 (IBC), or IRC Section R703.6. No bituminous, water-repellent coatings or other foreign matter shall exist on the masonry surface. Masonry surfaces shall be dampened to reduce excessive suction. The concrete surfaces shall be cleaned of foreign matter using acid solutions, solvents, or detergents. And then washed with clean water. Smooth concrete surfaces shall be roughened, and an approved bonding agent applied to block, concrete, or masonry surfaces.

4.5.4 Lathing: Lathing for wood or steel framed walls shall be in accordance with the following sequence:

4.5.5 Weep Screed: IBC or IRC and ASTM C1063.

4.5.6 Water-Resistive Barrier: 2018 IBC Section 1403.2 (2015, 2012, and 2009 IBC Section 1404.2) or IRC Section R703.2 or applicable research report.

4.5.7 Casing Beads and Corner Beads: ASTM C1063.

4.5.8 Flashing: 2018 IBC Section 1404.4 (2015, 2012, and 2009 IBC Section 1405.4) or 2018 and 2015 IRC Section R703.4 (2012 and 2009 IRC Section R703.8), and manufacturer’s instructions.

4.5.9 Foam Plastic Insulation: Foam plastic insulation shall be in accordance with Section 4.3 of this report. The boards are attached to wood framing using No. 11 gauge roofing nails or No. 16 gauge staples with 7/16 inch (11.1 mm) wide crowns complying with ASTM F1667 and penetrate no less than 1 inch (25.4 mm). Boards are attached to steel framing using No. 6 Type S screws and penetrate no less than ¼ inch (6.3 mm). Fastener spacing is 6 inches (152 mm) or less.

4.5.10 Metal Lath or Wire Fabric Lath: IBC Sections 2510 to 2512 or IRC Section R703, ASTM C1063, and Section 4.3.5 of this report. Fastening shall penetrate through foam plastic insulation and sheathing into the framing. The brown coat shall be hard floated to promote densification.

4.5.11 Control or Expansion Joints: Control or expansion joints shall be as specified by the designer, builder, or stucco manufacturer, in that order.

4.6 Plastering: ASTM C926. The base coat shall be ⅛ to ½ inch (9.5 to 12.7 mm) thick without cold joints. Finish coats may be applied in accordance with the finish coat application instructions after the base coat fully cures. The permitted air temperatures during application are 40°F to 110°F (4.4°C to 43°C).

4.7 Unbacked: Minimum 0.5 SG (Douglas Fir) wood framing or structural (load-bearing) steel framing with No. 20 gauge and greater thickness spaced 24 inches (610 mm) on center or less. The water-resistive barrier is installed directly to the framing. Where used, foam plastic insulation shall be installed on the exterior of the water-resistive barrier. Lapped joints between the boards shall be oriented so that water is diverted to the exterior. For Dow Styrofoam Tongue and Groove XPS, installation shall comply with Section 3 of this report and ICC ESR-2142. All foam plastic shall be covered by plaster or galvanized steel casing beads. Joints formed where the boards abut dissimilar materials such as at windows, door, and other penetrations shall be filled with caulk. Lathing and plastering shall comply with Sections 4.3.5 and 4.6 of this report.

4.7.1 Rigid Backing: Rigid backings include gypsum board, fiberboard, and wood structural panel sheathing. All backings shall be covered by plaster or galvanized steel casing beads. Joints formed where the backings abut dissimilar materials such as at windows, doors, and other penetrations shall be filled with caulk. The weather-resistive barrier shall be applied over the backing. Lathing and plastering shall comply with Sections 4.3.5 and 4.6 of this report.

4.7.2 Gypsum Board: The boards shall be installed to minimum 0.5 SG (Douglas Fir) wood framing at 16 inch (406 mm) or less spacings or structural (load-bearing) steel framing with at No. 20 gauge and greater thickness spaced 24 inches (610 mm) or less spacings in accordance with IBC Section 2508.2 and ASTM C1280.

4.7.3 Fiberboard: The boards shall be installed to minimum 0.5 SG (Douglas Fir) wood framing at 16 inch (406 mm) or less spacings in accordance with IBC Sections 2304.6 and 2304.10.1 of the 2018 and 2015 IBC (2304.9.1 of the 2012 and 2009 IBC), or IRC Table R602.3(1), as applicable.

4.7.4 Wood Structural Panel Sheathing: The OSB or plywood panels shall be installed to minimum 0.5 SG (Douglas Fir) wood framing at 24 inch (610 mm) or less spacings in accordance with IBC Section 2304.6.1 and Table 2304.6.1 or IRC Section R602.3 and Table R602.3(3).
4.8 Soffits: Installation to soffits shall comply with ASTM C1063 as for ceilings, except wire fabric lath is not permitted. Fasteners shall penetrate into the framing.

4.9 Sills: Installation to sills at windows or pop-outs may be done for walls where the sill is up to 6 inches wide. Wider sills require lumber or WSPS fastened to framing as set forth in IBC Section 2304.10.1 of the 2018 and 2015 IBC (2304.9.1 of the 2012 or 2009 IBC), or IRC Section R602.3. Lathing and plastering shall comply with Sections 4.3.5 and 4.6 of this report.

5.0 IDENTIFICATION

Product packaging shall include the company name or trademark, product name or model number, the name of the inspection agency (when applicable), and the Evaluation Report Number (ER-536) to identify the products recognized in this report. Either IAPMO UES Mark of Conformity may also be used as shown below:

IAPMO UES ER-536

The IAPMO UES Mark of Conformity and Evaluation Report Number may be linked to the certified product by the placement of the following web address on the packaging:

https://incidetechnologies.com/kwik-kote/

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.

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 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 fire-resistance testing in accordance with ASTM E119.

6.5 Data in accordance with IBC Sections 1402.5 and 2603.5.

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

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

7.0 STATEMENT OF RECOGNITION

This evaluation report describes the results of research completed by IAPMO Uniform Evaluation Service on Kwik Kote Co., Inc’s Kwik-Kote Exterior Cementitious One-Coat Wall Coating System to assess its conformance to the codes and standards shown in Section 1.0 of this report and documents the product’s certification. Products are manufactured at the location noted in Section 2.8 of this report under a quality control program with periodic inspections under the surveillance of IAPMO UES.

For additional information about this evaluation report please visit www.uniform-es.org or email us at info@uniform-es.org
FIGURE 1 – Foam Plastic Tongue and Groove Horizontal Edge

FIGURE 2 – Stucco System with Wood-Based Panels and Foam Plastic

Wood based structural panels.
2 Layers of "D" Paper or one Layer of 60 Min. Paper.
1" T & G Insulation Board
Woven Wire or Metal Lath.
Kwik Kote applied to a minimum thickness of 3/8". Available as a concentrate or a presanded basecoat.
Finish Coat.

Figure 2. System with foam and wood sheathing
FIGURE 3 – System with Unbacked Foam Plastic

Figure 3. System with foam over open studs

FIGURE 4 – Interface at Window Openings
Metal Head Flashing Optional

Figure 4. Typical paper and flashing detail at window
*Metal head flashing optional
FIGURE 5 – Plaster Termination at Window with Integral

Kwik Kote Exterior Stucco System with or without foam substrate.

Sheathing.

Weather resistant barrier over flashing membrane.

1” T&G Foam (optional).

Wire or Metal Lath.

Kwik Kote

Finish Coat - Continuous over foam popout.

Flashing membrane.

Optional foam shape laminated to Kwik Kote

Casing.

Optional Backer Rod and Sealant.

Typical vinyl / metal window with integral stop flange.

** Design of integral flange stop will vary by window manufacturer.
FIGURE 6 – Corner
FIGURE 7 – Typical Installation Card

INSTALLATION CARD
Kwik Kote Exterior Stucco System
Kwik Kote Corporation

Job Address
____________________________________
____________________________________

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

KWIK KOTE CO., INC.
525 Green Street
Martinez, CA 94553
510-741-8182
www.kenyonweb.com

1-KOTE EXTERIOR CEMENTITIOUS
ONE-COAT WALL COATING SYSTEM

CSI Section:
09 24 00 Cement Plastering

1.0 RECOGNITION

Kwik Kote Exterior Stucco System evaluated in IAPMO UES ER-536 is a satisfactory alternative to 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 Wildland-Urban Interface Fire Area” [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 Wildland-Urban Interface Fire Area” [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.

2.4 This supplement expires concurrently with ER-536.

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