ICC-ES Evaluation Report

ESR-3793

Reissued April 2025

Subject to renewal March 2027

This report also contains:

- CA Supplement
- FL Supplement w/ HVHZ

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DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION **Section: 07 44 16—Porcelain Enameled Faced Panels**	**REPORT HOLDER:** **STONEPEAK CERAMICS** **ADDITIONAL LISTEE:** **GRANITIFIANDRE S.P.A**	**EVALUATION SUBJECT:** **PORCELAIN TILES VENTILATED FAÇADE SYSTEM**	

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2021, 2018, 2015, and 2012 *International Building Code*® (IBC)

Properties evaluated:

- Physical properties
- Weather resistance
- Wind load resistance
- Noncombustible construction

2.0 USES

The Porcelain Tiles Ventilated Façade System is used as a nonload-bearing exterior wall covering on nonfire-resistance-rated buildings of any construction type under the IBC. The Porcelain Tiles Ventilated Façade System may be used on as a nonload-bearing exterior wall covering on nonfire-resistance-rated buildings of Type I, II, III or IV construction when installed in accordance with Section 4.4.

3.0 DESCRIPTION

3.1 General:

The Porcelain Tiles Ventilated Façade System is an open-jointed exterior wall covering system of porcelain panels with a substructure that allows air to circulate between the panels and the exterior face of the installed water-resistive barrier. The panels are mounted on the substructure of extruded aluminum attachment brackets, aluminum framing members and rivets, with stainless steel visible fixing clips (GHV exposed anchoring system) or Keil anchors (GHS concealed fastening system). The system with 8 mm thick (0.32-inch-thick) Porcelain panels weighs a maximum of 5.85 pounds per square foot (280 N/m^2). The system with 10 mm thick (0.40-inch-thick) Porcelain panels weighs a maximum of 7.31 pounds per square foot (350 N/m^2).

3.2 Components:

3.2.1 Porcelain Tiles: The porcelain panels comply with the requirements for rectified and porcelain panels in ANSI A137.1. The tiles measure nominally 2 feet wide by 4 feet long (610 mm by 1219 mm) and are nominally 8 millimeters thick (0.31 inch). The panels contain a 5.5 mm deep (0.22 inch) predrilled hole for the installation with the GHS anchoring system (concealed fastening system). The porcelain panels are classified as noncombustible in accordance with ASTM E136.

3.2.2 Substructure: The substructure is a system of aluminum T-profile and horizontal rail framing members with L-brackets and C-bracket attachment brackets. The T-profiles are 2.56 inches (65 mm) wide and have a 2.17-inch (55 mm) leg. The L-brackets are 1.57 inches (40 mm) wide by 1.97 inches (50 mm) deep. The C-brackets (top and bottom clamps) are 1.20 inches (30.4 mm) wide by 2.26 inches (57.3 mm) deep. See Figure 1.

3.2.3 Fastening Systems: The connection to the porcelain panels is made by either an exposed GHV anchoring system or a GHS Keil concealed undercut anchor.

3.2.3.1 Exposed Fastening System (GHV System): For the exposed anchoring system, the porcelain panels are attached to framing members using the GHV anchor hooks. There are three different GHV anchors; GHV cross exposed anchors, GHV vertical side anchors or GHV top or bottom anchors. See Figure 2.

3.2.3.2 Concealed Fastening System (GHS System): For the concealed anchoring system, C-brackets are attached to the panels through 5.5 mm (0.22-inch) pre-drilled holes in the panels with Keil anchors. Keil anchors consist of a crosswise slotted anchor sleeve with an M6 internal thread, at the upper edge of which a hexagon is formed to it and a respective hexagon screw with a tooth lock washer formed to it, made of stainless steel. See Figure 4.

4.0 DESIGN AND INSTALLATION

4.1 General:

The Porcelain Tiles Ventilated Façade System must be installed in accordance with the manufacturer's published installation instructions, the project-specific structural calculations and details, and this report. A copy of the installation instructions must be available on the jobsite during construction.

4.2 Design:

The allowable wind loads for the Porcelain Tiles Ventilated Façade System given in Table 1, are for the attachment of the substructure to the underlying wall, and must equal or exceed the design uniform transverse wind loads determined in accordance with IBC Chapter 16. The attachment of the brackets to the supporting structure or exterior wall framing to withstand gravity and transverse forces must be designed by a licensed design professional in accordance with the IBC, and the details must be submitted to the code official for approval. The allowable loads must be reduced to the capacity of the attachment system connections if these are less than the allowable load values in Table 1 for the wall cladding system.

4.3 Installation:

The Porcelain Tiles Ventilated Façade System must be installed over wall assemblies complying with 2021 and 2018 IBC Section 1402.3 (2015 and 2012 IBC Section 1403.3), capable of supporting the imposed loads, including, but not limited to, transverse wind loads. The substructure L-brackets must be securely fastened to the supporting wall with corrosion-resistant fasteners that are compatible with the substructure materials and wall assembly substrate.

Exterior wall assemblies on which the system is to be installed must include flashing, a water-resistive barrier, a means of draining water, and protection against condensation in accordance with 2021 and 2018 IBC Section 1402.2 (2015 and 2012 IBC Section 1403.2). When use is on buildings of Type I, II, III and IV construction in accordance with Section 4.4, the exterior wall must be covered with a water-resistive barrier recognized in a current ICC-ES evaluation report, that has a flame-spread rating of 25 or less and a smoke developed rating of 450 or less in accordance with ASTM E84 (UL723). The water-resistive barrier must be installed in accordance with the manufacturer's installation instructions.

4.3.1 Substructure System Installation: The system must be installed over wall assemblies complying with IBC Section 1403.3, using the substructure components described in Section 3.2.2 of this report. The L-brackets must be fastened to the building substrate according to the design at a maximum spacing of 32 inches (812 mm) on center, both vertically and horizontally. The vertical T-profiles must be attached to the L-brackets using $^{3}/_{16}$-inch-diameter-by-$^{1}/_{2}$-inch-long (4.8 mm by 12 mm) stainless steel rivets. The horizontal rails must be attached to the T-profiles at every intersection in accordance with the manufacturer's published installation instructions.

4.3.2 For the concealed fastening system, the aluminum C-brackets must be attached to the panels at a maximum spacing of 20 inches (508 mm) on center horizontally and 16 inches (406 mm) on center in the horizontal position and at a maximum of 16 inches on center horizontally and 20 inches (508 mm) on center vertically when the longest side of the tile is in the vertical position.

4.3.3 Panel Fastening:

4.3.3.1 Exposed Fastening System (GHV Anchors): For the exposed fastening systems, the porcelain panels must be attached to the substructure using GHV anchors. The appropriate GHV anchor is fastened to the vertical T-profile framing member using 1/8-inch-diameter stainless steel rivets and porcelain panels are attached to framing members using GHV anchors hooks. See Figure 3.

4.3.3.2 Concealed Fastening System (GHS Keil Anchor): For the concealed fastening systems the panels must be attached to the substructure using GHS Keil anchors. The C-brackets are attached to the back of the porcelain panels through the 5.5 mm (0.22-inch) pre-drilled holes in the panels with the Keil anchors. The top adjusting C-brackets with leveling screws must be installed in the upper holes of the panels and the bottom C-bracket must be installed into the lower holes of the panel. See Figure 5.

4.4 Exterior Wall Assemblies in Buildings of Types I, II, III and IV Construction:

4.4.1 Assembly 1: When installed in accordance with this Section 4.4.1, the Porcelain Tile Ventilated Façade System may be used on the exterior face of exterior walls in buildings of Type I, II, III or IV construction.

4.4.1.1 Interior Finish: One layer of 5/8-inch-thick (15.9 mm) National Gypsum Gold Bond® Fire-Shield® gypsum wallboard complying with ASTM C1396. The gypsum wallboard is fastened to the steel framing with No. 6 x 1¼-inch-long (31.8 mm), bugle head, self-drilling screws with a nominal spacing of 8 inches (203 mm) around the perimeter and 12 inches (305 mm) in the field of the wallboard. All joints are taped with USG Sheetrock® Brand paper joint tape and spackled with USG Sheetrock® Brand joint compound. All fastener heads are to be spackled with USG Sheetrock® Brand joint compound.

4.4.1.2 Steel Framing: The framing is minimum No. 16 gauge, minimum 6-inch-deep (152 mm), galvanized steel studs spaced every 16 inches (406.4 mm) on center and fastened to minimum No. 16 gauge, 6-inch-deep (152 mm) galvanized steel C-tracks with No 6 x ½-inch-long (12.7 mm) self-drilling, pan head fasteners per stud flange.

4.4.1.3 Exterior Sheathing: One layer of 5/8-inch-thick (15.9 mm) National Gypsum Gold Bond® eXP® exterior gypsum sheathing, complying with ASTM C117, installed horizontally. The gypsum sheathing is fastened to the steel framing with No. 6 x 1¼-inch-long (31.8 mm), bugle head, self-drilling screws with a nominal spacing of 8 inches (203 mm) around the perimeter and 12 inches (305 mm) in the field of the gypsum sheathing.

4.4.1.4 Water-resistive Barrier: One layer of 3M™ Air and Vapor Barrier 3015VP self-adhered vapor permeable membrane applied vertically over the exterior sheathing with 2-inch (51 mm) end laps. Extending 4-inches (102 mm) over the first layer, one additional layer of 3M™ Air and Vapor Barrier 3015 self-adhered vapor permeable membrane is applied at openings.

4.4.1.5 Substructure System: The Exposed Fastening System (GHV System), described in Section 3.2.3.1, must be installed in accordance with Section 4.3.2.1 or the Concealed Fastening System (GHS), described in Section 3.2.3.2, must be installed in accordance with Section 4.3.2.2.

Aluminum hat channels, measuring 1/8-inch-thick (3.2 mm) by 8 1/8-inch (206 mm) by 1-inch (25.4 mm) and 1/8-inch-thick (3.2 mm) by 4 3/4 inch (121 mm) by 1-inch (25.4 mm) are installed at metal framing locations as shown in Figure 6 or 7, and fastened with two No. 6, 3x32 HWH self-drilling screws.

The substructure system of aluminum T-Profile and horizontal rail framing members with L-Brackets and C-Brackets, with lengths matching the corresponding hat channels, are installed to the hat channels using ¼-inch by 1-inch HwH self-drilling screws. Aluminum T-Profiles, measuring 1/16-inch-thick (1.6 mm) with 2-9/16-inch (65 mm) leg, oriented vertically are aligned top to bottom with the rows of L-Brackets. The leg of the T-Profiles is secured to the L-Brackets using ¼-inch by 1-inch HWH self-drilling screws. Aluminum GHV Exposed Clips are riveted to the T-Profile using two FAR 4, 8x12x14 mm, stainless steel rivets per clip. GHV Exposed Double Clips are used at the top and bottom of the assembly and GHV Exposed Cross.

4.4.1.6 Window Opening: Window openings are framed with No. 16 gauge, minimum 6-inch-deep (152 mm), galvanized steel C-tracks fastened with No 6 x ½-inch-long (12.7 mm) self-drilling, pan head fasteners at each corner. Aluminum T-profiles, measuring 1/16-inch-thick (1.6 mm) by 3-inch-long (76 mm) with 2 9/16-inch face (65 mm) and 2 1/16-inch leg (52.4 mm), with the face parallel with the window header and sill, is fastened at the leg to T-Profiles that support the exterior cladding porcelain panels. Aluminum T-Profiles, measuring 1/16-inch-thick (1.6 mm) by 2 9/16-inch face (65 mm) by 2 1/16-inch leg (52.4 mm), are installed at the jambs with the face parallel with the jamb framing. The T-Profiles are fastened to aluminum L-brackets measuring 1/8-inch-thick (3.2 mm) by 2 15/16-inch-long (74.6 mm) by 3 15/16-inches (100 mm) by 1 9/16-inch (40 mm) spaced 9 inches (229 mm) from the ends of the T-Profiles. The L-Brackets are secured to the T-Profiles located adjacent to the window opening. Exposed panel clips are riveted with two FAR 4, 8x12x14

mm stainless steel rivets to each of the T-Profiles at the window opening header and sill. Exposed panel clips are riveted to the top and bottom of the T-Profiles at the window jambs with the clips resting on top of the porcelain panels at the header and sill.

4.4.1.7 Exterior Insulation: One layer of 2-inch-thick (51 mm) Rockwool Cavityrock® insulation is installed over the water-resistive barrier and aluminum hat channel. The insulation is held in place with Grip-Loc MW Plates bent flush against the surface of the insulation. Each plate is fastened at the steel framing locations with two $1^{3}/_{4}$-inch-long (44.5 mm) gasketed pancake head screws.

4.4.1.8 Exterior Cladding: The Porcelain ventilated façade system must be installed as described in Section 4.3, with the Substructure System (Section 4.4.1.5) and panel fastening using either the GHV Exposed Anchor System (described in Section 4.4.1.5) or the GHS Concealed Anchor System (Section 4.3.2.2).

4.4.2 Assembly 2: StonePeak Ceramics Porcelain panels have been tested in accordance with ASTM E136 and comply with 2021 IBC Section 703.3 [2018, 2015 and 2012 IBC Section 703.5 and 2009 IBC Section 703.4]. The panels are classified as noncombustible building construction materials and may be installed on buildings of Type I, II, III and IV construction. When the panels are installed on exterior wall assemblies consisting of noncombustible materials and a combustible water-resistive barrier, the building height is limited to 40 feet (12.2 m) above grade, unless the water-resistive barrier complies with Exception 2 of 2021 and 2018 IBC Section 1402.5 [2015 IBC Section 1403.5] in which case the building height is unlimited.

5.0 CONDITIONS OF USE:

The Porcelain Tiles Ventilated Façade System described in this report complies with, or is a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 Installation must comply with this report, the manufacturer's published installation instructions and the applicable code. If there is a conflict between the manufacturers' published installation instructions and this report, this report governs.

5.2 The underlying substructure and wall must be adequate to resist the design positive and negative transverse wind loads and the gravity loads of the system.

5.3 Drawings, design details and calculations verifying compliance with this report and adequacy of the connections to the substrate, must be submitted to the code official for approval. The drawings and calculations must be prepared by a registered design professional where required by the statues of the jurisdiction in which the project is constructed.

5.4 The maximum allowable wind pressures for the Porcelain Tiles Ventilated Façade System are shown in Table 1. The design wind pressures must not exceed the allowable capacities shown in Table 1. The capacity of the supporting wall and substrate, and the capacity of the connections used to attach the system to the wall, must exceed the demands of gravity forces and design wind pressure.

5.5 A water-resistive barrier complying with IBC Section 1404.2 must be installed behind the wall cladding system.

5.6 The panels are manufactured in Crossville, Tennessee under a quality control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

6.1 Data in accordance with the Acceptance Criteria for Façade and Wall Cladding Systems with Porcelain, Ceramic or Terra Cotta Panels, (AC504) dated October 2018, (editorially revised March 2021).

6.2 Reports of panel noncombustibility testing in accordance with ASTM E136.

6.3 Report of testing in accordance with NFPA 285-19 with supporting engineering analysis.

7.0 IDENTIFICATION

7.1 The ICC-ES mark of conformity, electronic labeling, or the evaluation report number (ICC-ES ESR-3793) along with the name, registered trademark, or registered logo of the report holder (and/or listee) must be included in the product label.

7.2 In addition, the StonePeak Ceramics Porcelain Tiles Ventilated Façade System panels are labeled with the manufacturer's name (StonePeak Ceramics) or the name of the additional listee (GranitiFiandre S.P.A.), the product name (Porcelain Tiles Ventilated Façade System), the panel punch number, production year, and the evaluation report number (ESR-3793).

7.3 The report holder's contact information is the following:

STONEPEAK CERAMICS
314 WEST SUPERIOR AVENUE
CHICAGO, ILLINOIS 60654
(312) 506-2800
www.stonepeakceramics.com

7.4 The Additional Listee's contact information is the following:

GRANITIFIANDRE S.P.A
VIA RADICI NORD, 112
42014 CASTELLARANO (REGGIO EMILIA) ITALY
+39 0536 819611
www.granitifiandre.com

TABLE 1—MAXIMUM SPACING AND ALLOWABLE TRANSVERSE LOAD

FASTENING SYSTEM TYPE	PANEL THICKNESS	MAXIMUM FASTENER SPACING	ALLOWABLE TRANSVERSE LOAD[1] (psf)	
			POSITIVE	NEGATIVE
Kiel Anchor (Concealed)	8 mm or 10 mm	20 inches	78	62
GHV (Exposed)	8 mm or 10 mm	20 inches	73	37

For SI: 1 inch = 25.4 mm; 1 psf=0.0479 kPa

Notes:
[1]Design of the attachment to the building structure must be in accordance with Section 4.3 of this report.

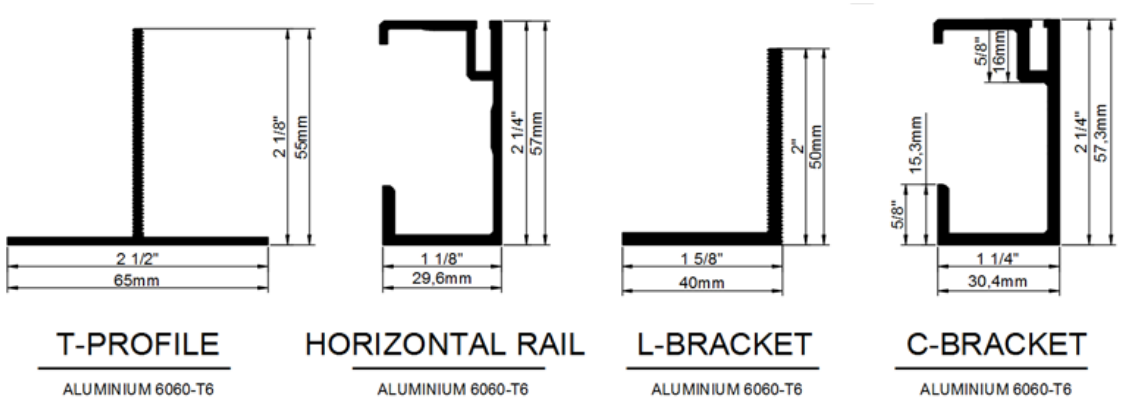
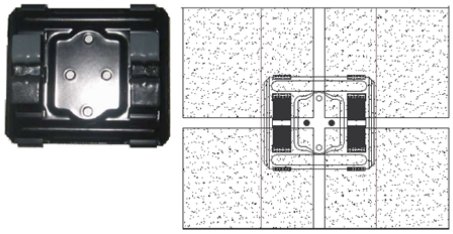
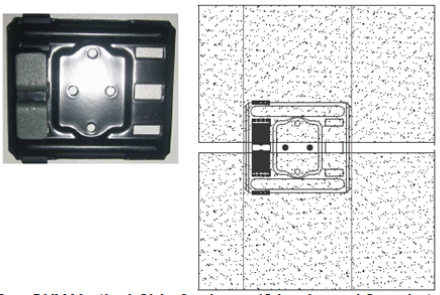


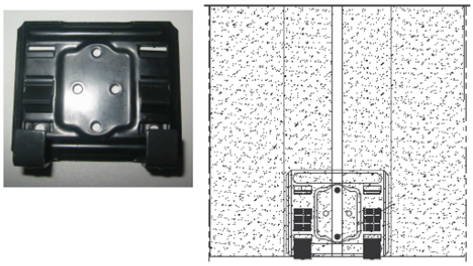
FIGURE 1—ALUMINUM SUBSTRUCTURE COMPONENTS



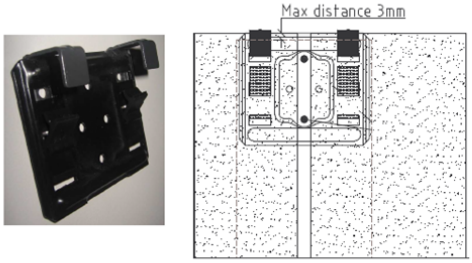
1. GHV Cross Exposed Anchors: (4 Hooks and 4 Gaskets)



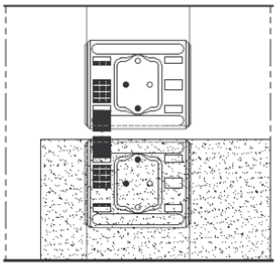
2. GHV Vertical Side Anchors: (2 hooks and 2 gaskets)



Double Bottom Anchor (2 Hooks and 2 Gaskets)



Double Top Anchor (2 Hooks and 2 Gaskets)



Single Bottom and Single Top Anchors (1 Hook and 1 Gasket) – Joint Side Position

3. GHV Exposed Top and Bottom (Start and Finish) Anchors

FIGURE 2—GHV EXPOSED ANCHORING SYSTEM COMPONENTS

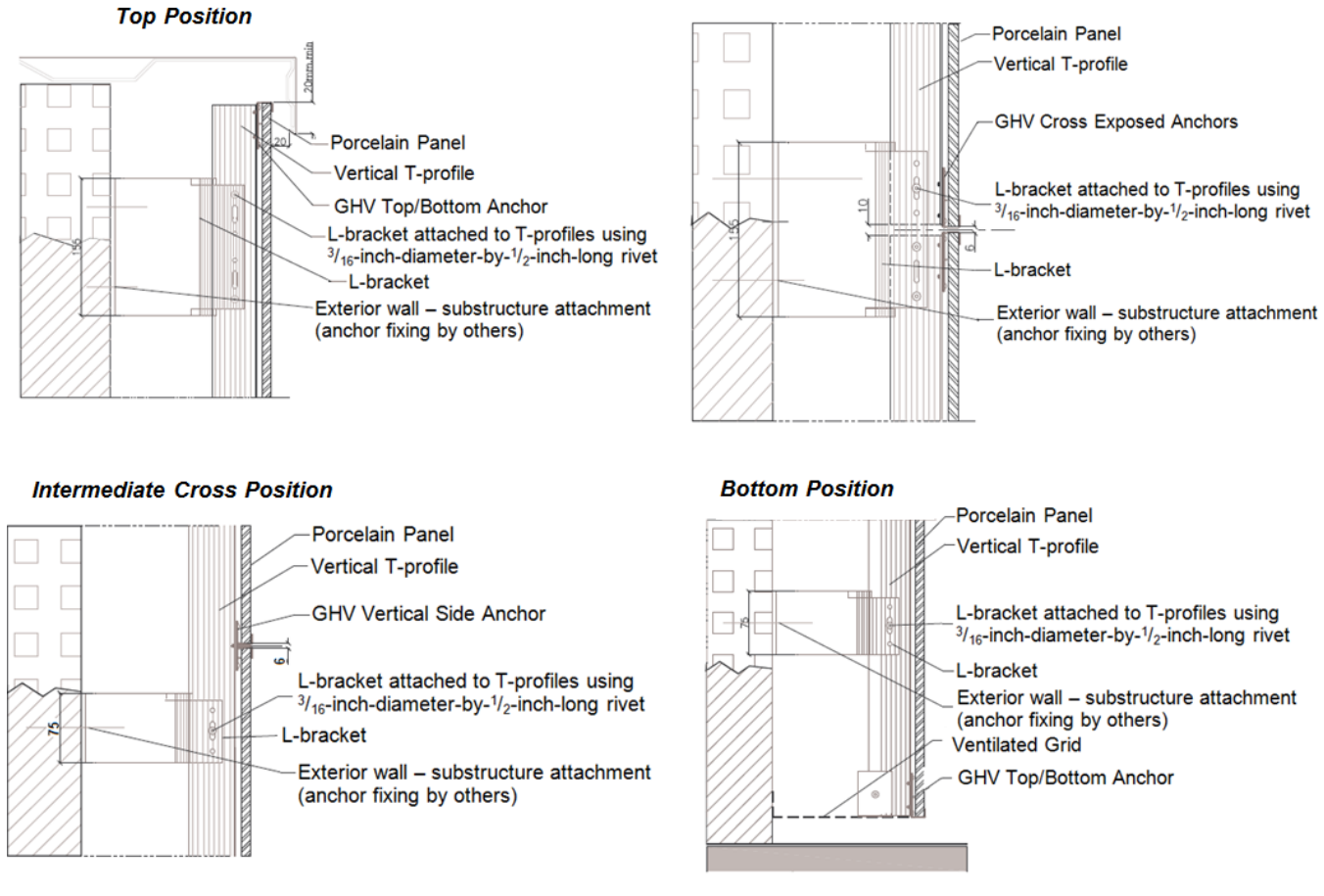


FIGURE 3—GHV EXPOSED ANCHORING SYSTEM TYPICAL SYSTEM INSTALLATION DETAILS

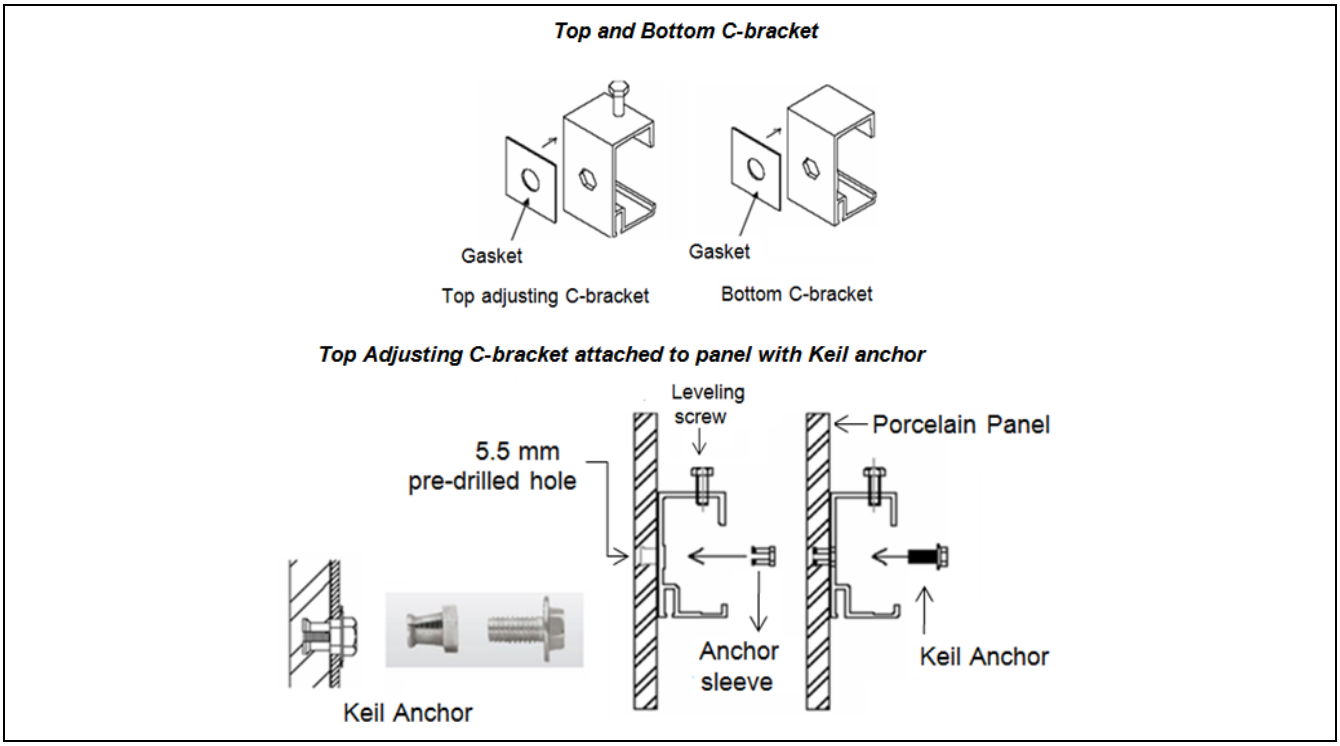


FIGURE 4—GHS CONCEALED ANCHORING SYSTEM KEIL ANCHOR ASSEMBLY

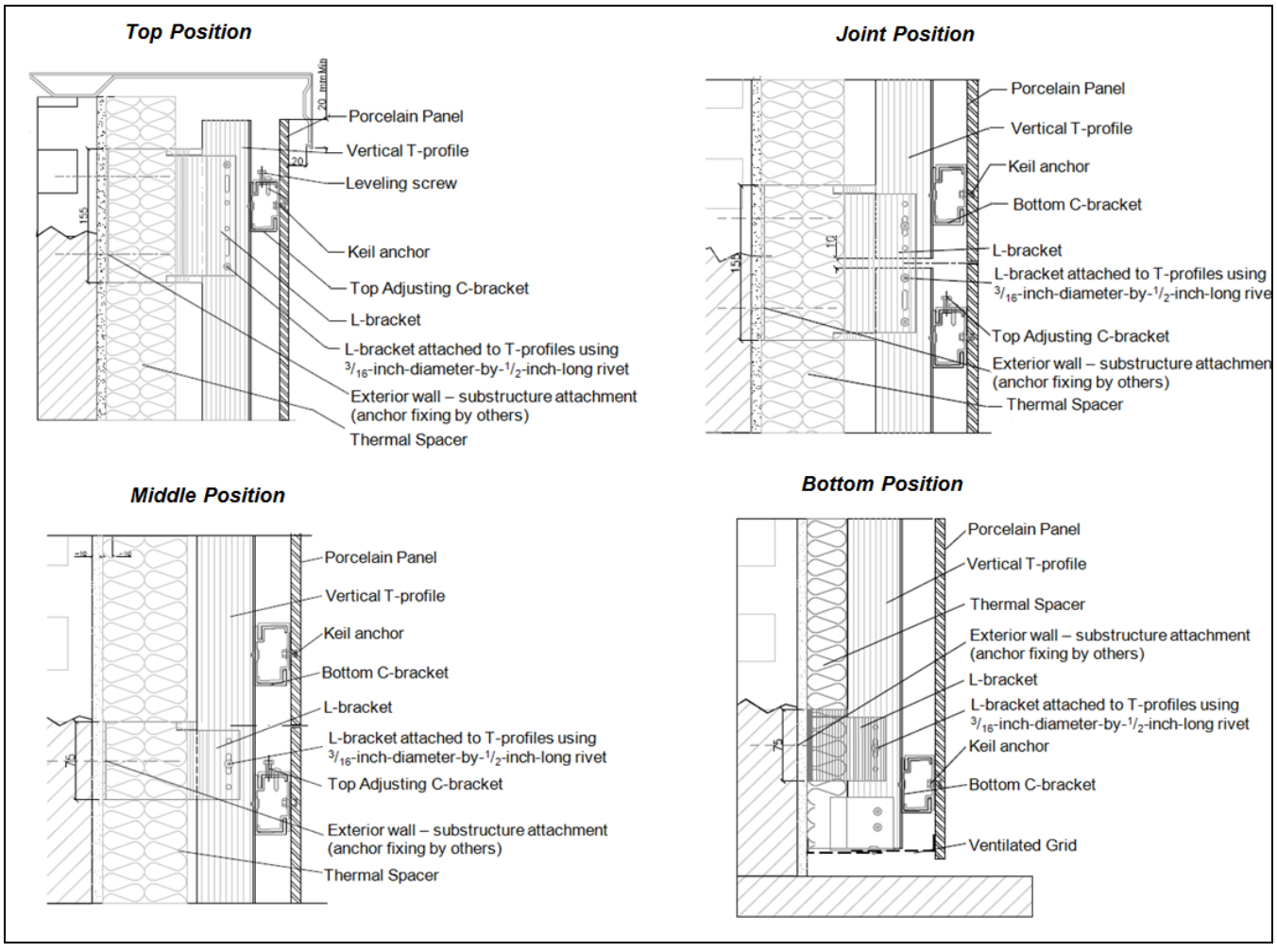


FIGURE 5—GHS CONCEALED ANCHORING SYSTEM TYPICAL SYSTEM INSTALLATION DETAILS

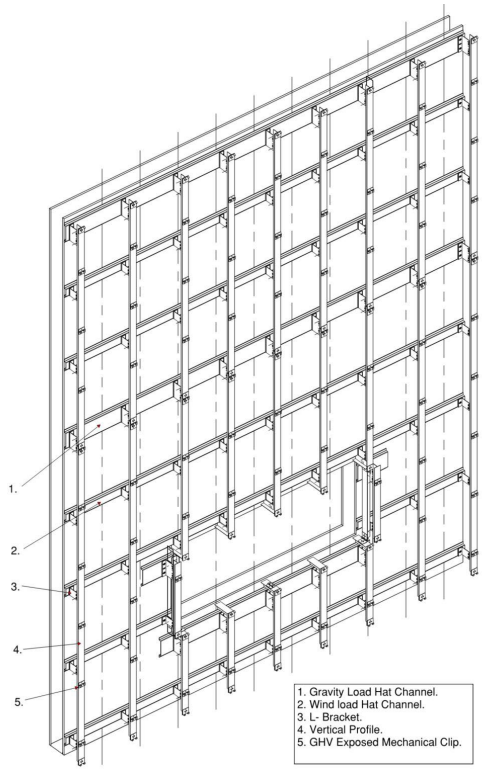


FIGURE 6—GHV EXPOSED CLIP STRUTURE – HAT CHANNEL SETUP

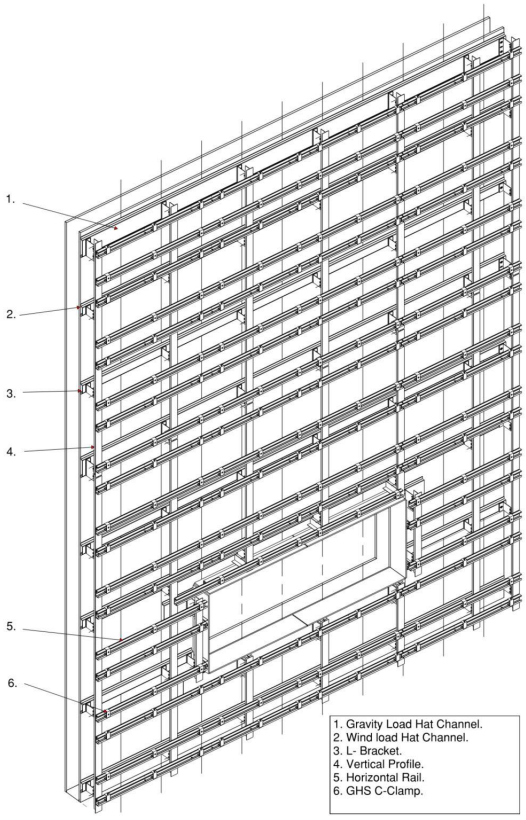


FIGURE 7—GHS CONCEALED CLIP STRUTURE – HAT CHANNEL SETUP

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
Section: 07 44 16—Porcelain Enameled Faced Panels

REPORT HOLDER:

STONEPEAK CERAMICS

EVALUATION SUBJECT:

PORCELAIN TILES VENTILATED FAÇADE SYSTEM

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that the Porcelain Tiles Ventilated Façade System, described in ICC-ES evaluation report ESR-3793, has also been evaluated for compliance with the code noted below.

Applicable code editions:

- 2022 *California Building Code* (CBC)

For evaluation of applicable chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) AKA: California Department of Health Care Access and Information (HCAI) and the Division of State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

2.0 CONCLUSIONS

2.1 CBC:

The Porcelain Tiles Ventilated Façade System, described in Sections 2.0 through 7.0 of the evaluation report ESR-3793, complies with CBC Chapter 14, provided the design and installation are in accordance with the 2021 *International Building Code*® (IBC) provisions noted in the evaluation report and the additional requirements of CBC Chapters 14 and 16, as applicable.

2.1.1 OSHPD:

The applicable OSHPD Sections and Chapters of the CBC are beyond the scope of this supplement.

2.1.2 DSA:

The applicable DSA Sections of the CBC are beyond the scope of this supplement.

This supplement expires concurrently with the evaluation report, reissued April 2025.

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
Section: 07 44 16—Porcelain Enameled Faced Panels

REPORT HOLDER:

STONEPEAK CERAMICS

EVALUATION SUBJECT:

PORCELAIN TILES VENTILATED FAÇADE SYSTEM

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that Porcelain Tiles Ventilated Façade System, described in ICC-ES evaluation report ESR-3793, have also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2023 and 2020 *Florida Building Code—Building*

2.0 CONCLUSIONS

The Porcelain Tiles Ventilated Façade System, described in Sections 2.0 through 7.0 of ICC-ES evaluation report ESR-3793, comply with the *Florida Building Code—Building*. The design design requirements must be determined in accordance with the *Florida Building Code—Building*. The installation requirements noted in ICC-ES evaluation report ESR-3793 for the 2021 and 2018 *International Building Code®* meet the requirements of the *Florida Building Code—Building*, subject to the following conditions:

1. Clearance between the exterior wall covering and final earth grade must be in accordance with Section 1403.8 of the *Florida Building Code—Building.*
2. Flashing must be in accordance with Section 1405.4 of the *Florida Building Code—Building.*

Use of the Porcelain Tiles Ventilated Façade System has also been found to be in compliance with the High-Velocity Hurricane Zone provisions of the *Florida Building Code—Building* with the following conditions:

- The allowable negative design wind load must not exceed 77 psf (3686 Pa).
- The system must be installed on a CMU base wall or a steel stud base wall constructed as follows:

  CMU base wall:

  - The wall panel system must be installed on minimum 8-inch (203 mm) thick solid concrete mansonry wall. The wall must be secured to the steel frame at the jambs with ¼-inch x 2 inches (6.35 mm x 51 mm) Tapcon anchors located 3 inches (76.2 mm) from each end and spaced 8 inches (203 mm) o.c.
  - L-bracket must be fastened to the CMU wall with $^3/_8$" (9.53 mm) diameter bolt per bracket utilizing a thermal isolator between the CMU wall and bracket.
  - Vertical profile must be fastened to the L-bracket using two #10 x $^3/_4$" (19.05 mm) self-tapping screws.
  - The horizontal upper and lower profile must be fastened to the vertical profile using two large heads stainless steel rivets per vertical profile on the upper and one rivet on the lower profile.
  - The 10 mm (0.40 inch) porcelain panels must be attached to upper profile and lower C-Clamp using two GHS Keil Anchors.

Steel stud base wall:

- The wall panel system must be installed on minimum $^{5}/_{8}$-inch-thick (15.9 mm) solid plywood structural sheathing complying with DOC PS-1.
- Maximum support/span spacing shall be no more than 16 inches (406.4 mm) o.c.
- L-brackets must be fastened to the steel stud wall using one #10 x $^{3}/_{4}$" (19.05 mm) self-tapping screw per bracket.
- Hat channels must be fastened to the steel studs with two $^{1}/_{4}$" x 1-$^{3}/_{4}$" (6.35 mm x 44.45 mm) Elco Bi-Flex self-tapping screws per stud.
- Vertical profile must be fastened to the L-bracket using two #10 x $^{3}/_{4}$" (19.05 mm) self-tapping screws.
- The horizontal upper and lower profile must be fastened to the vertical profile using two large heads stainless steel rivets per vertical profile on the upper and one rivet on the lower profile.
- The 10 mm (0.40 inch) porcelain panels must be attached to upper profile and lower C-Clamp using two GHS Keil Anchors.

In addition to the data noted in Section 6.0 of the evaluation report ESR-3793, data in accordance with *Florida Building Code* Test Protocols for High-Velocity Hurricane Zones; TAS 202 and TAS 203 was submitted.

For products falling under Florida Rule 61G20-3, verification that the report holder's quality assurance program is audited by a quality assurance entity approved by the Florida Building Commission for the type of inspections being conducted is the responsibility of an approved validation entity (or the code official when the report holder does not possess an approval by the Commission).

This supplement expires concurrently with the evaluation report, reissued April 2025.