ICC-ES Evaluation Report

ESR-1942

Reissued March 1, 2012

This report is subject to renewal in two years.

www.icc-es.org | (800) 423-6587 | (562) 699-0543 *A Subsidiary of the International Code Council®*

DIVISION: 04 00 00—MASONRY
Section: 04 71 00 —Manufactured Brick Masonry
Section: 04 73 00—Manufactured Stone Masonry

REPORT HOLDER:

DUTCH QUALITY STONE, INC.
POST OFFICE BOX 308
MOUNT EATON, OHIO 44659
(877) 359-7866
www.dutchqualitystone.com

EVALUATION SUBJECT:

DUTCH QUALITY STONE ADHERED VENEER

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2006 *International Building Code*® (IBC)
- 2006 *International Residential Code*® (IRC)

Properties evaluated:

- Veneer strength and durability
- Thermal resistance

2.0 USES

Dutch Quality Stone Adhered Veneer is used as an adhered, nonload-bearing, exterior veneer on nonfire-resistance-rated wood-framed or light gage steel stud walls, concrete walls or masonry walls.

3.0 DESCRIPTION

The veneer is a precast concrete product made to resemble natural stone in color and in texture. The veneer is composed of portland cement, aggregate, sand, water, admixtures and mineral oxide coloring. The veneer units are molded and cured at the plant. Recognized patterns are:

Patterns	Brick-Stone, Cobbled Limestone, Castle Stone, Drystack, Fieldstone, Ledgestone, Limestone, Split Granite, River Rock, Stackstone, Weather Ledge, Stack Ledge
Accessories	Row Locks 4x5, Row Locks 5.7, Half Brick, Full Brick, Flat Window Trim, Jack Arch Wings, Receptacle Block, Light Block, Water Hydrant

The veneer units are of various thicknesses, with an average thickness for each pattern from $1^{1}/_{8}$ to $1^{5}/_{8}$ inches (16 to 45 mm). The average saturated weight of the veneer units does not exceed 15 pounds per square foot (73.2 kg/m^2).

The veneer units have a thermal resistance (*R*-value) of 0.71 °F ft^2 h/Btu when tested in accordance with ASTM C 518 at a thickness of 1.08 inches (27 mm).

4.0 INSTALLATION

4.1 General:

Installation of the veneer must comply with this report, the manufacturer's published installation instructions, and the applicable code. The manufacturer's published installation instructions must be available at the jobsite at all times during installation.

The veneer may be applied over backings of cement plaster, concrete, brick or concrete masonry units (CMUs).

4.2 Preparation of Backings:

4.2.1 Cement Plaster Backings: Cement plaster backings may be applied over plywood, OSB or gypsum sheathing supported by wood or steel studs; and over concrete walls when installed as described in Sections 4.2.1.1 and 4.2.1.2.

4.2.1.1 Installation over Sheathing: The cement plaster backing must be installed over a water-resistive barrier complying with IBC Sections 1404.2 and 2510.6 or IRC Sections R703.2 and R703.6.3, as applicable. Also, flashing must be installed as required by IBC Section 1405.3 or IRC Section R703.8, as applicable, and weep screeds must be installed at the bottom of the veneer. The weep screeds must comply with, and be installed in accordance with, IBC Section 2512.1.2 or IRC Section R703.6.2.1, as applicable. In addition, the weep screeds must have holes with a minimum diameter of $^{3}/_{16}$ inch (4.8 mm) spaced at a maximum of 33 inches (838 mm) on center, as required by Section 6.1.5.2 of ACI 530/ASCE 5/TMS 402, which is referenced in IBC Section 1405.9.

Studs must be spaced no more than 16 inches (406 mm) on center. Lath must be corrosion-resistant, 2.5 lb/yd^2 (1.4 kg/m^2), diamond-pattern metal lath complying with ASTM C 847. The lath must be lapped in accordance with Section 7.8 of ASTM C 1063. The lath must be fastened to each of the wall studs at 6 inches (152 mm) on center, vertically. For wood studs, fasteners must be galvanized nails or staples complying with Section 7.10.2 of ASTM C 1063 (IBC) or IRC Section R703.6.1, as applicable, and of

sufficient length to penetrate the studs a minimum of 1 inch (25.4 mm). For steel studs, fasteners must be corrosion-resistant, self-tapping screws with a head diameter of $^{7}/_{16}$ inch (11.1 mm) and sufficient length to penetrate the studs a minimum of $^{3}/_{8}$ inch (9.5 mm).

A scratch coat of Type N or S mortar (cement plaster) complying with IBC Section 2103.8 or IRC Section R607.1, as applicable, $^{3}/_{8}$ to $^{5}/_{8}$ inch thick (9.5 to 15.9 mm), must be applied over the lath and allowed to cure in accordance with IBC Section 2512.6, before the veneer units are applied.

4.2.1.2 Installation over Concrete: For concrete walls, corrosion-resistant metal lath complying with ASTM C 847 must be installed in accordance with Section 7.10.4 of ASTM C 1063, and IRC Section R703.6.1, as applicable, with fasteners having a 1-inch (25.4 mm) minimum embedment, at 6 inches (152 mm) on center, horizontally and vertically. The gravity load (shear) capacity and negative wind load (pull out) capacity of these proprietary fasteners must be justified to the satisfaction of the code official. The scratch coat must be applied as described in Section 4.2.1.1.

4.2.2 Masonry Backings: Brick and concrete masonry walls must be prepared in accordance with Section 5.2 of ASTM C 926 and IBC Section 2510.7, as applicable.

4.3 Application of Veneer Units:

A $^{1}/_{2}$-inch-thick (12.7 mm) coat of Type N or S mortar is applied to the back of each piece of veneer and the veneer is pressed in place over the scratch coat. Joints between veneer units are to be grouted and tooled in accordance with the manufacturer's published installation instructions.

5.0 CONDITIONS OF USE

The Dutch Quality Stone adhered veneer 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. In the event of a conflict between the manufacturer's published installation instructions and this report, this report governs.

5.2 The use of the precast stone veneer is limited to installation on wood-framed, light-gage-steel-framed, concrete or masonry walls.

5.3 Expansion or control joints used to limit the effect of differential movement of supports are to be specified by the architect, designer or veneer manufacturer, in that order. Consideration must also be given to movement caused by temperature change, shrinkage, creep and deflection.

5.4 In jurisdictions adopting the IBC, the supporting wall framing must be designed to support the additional weight of the cement plaster backing, stone veneer and mortar setting bed. Additionally, supporting members must be designed to limit deflection to $^{1}/_{600}$ of the span of the supporting members.

5.5 In jurisdictions adopting the IRC, where the seismic provisions of Section R301.2.2 apply, the average weight of the wall supporting the precast stone veneer, including the weight of the veneer system, must be determined. When this weight exceeds the applicable limits of IRC Section R301.2.2.2.1, an engineered design of the wall construction must be performed in accordance with IRC Section R301.1.3.

5.6 The veneer must be installed not less than 4 inches (102 mm) above finished grade or 2 inches (51 mm) above paved surfaces.

6.0 EVIDENCE SUBMITTED

6.1 Data in accordance with the ICC-ES Acceptance Criteria for Precast Stone Veneer (AC51), dated February 2008.

6.2 Report of testing in accordance with ASTM C 518.

7.0 IDENTIFICATION

Each package of veneer is labeled or stamped with the manufacturer's name (Dutch Quality Stone), the product name, pattern name and the evaluation report number (ESR-1942).