Code Compliance Research Report
CCRR-0290

Issue Date: 11-13-2018
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DIVISION: 07 00 00 -THERMAL AND MOISTURE PROTECTION
Section: 07 45 00 – Fiber-reinforced Cementitious Panels

REPORT HOLDER:
Nichiha USA Inc.
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Johns Creek, Georgia 30097
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REPORT SUBJECT:
Nichiha™ KuraStone™ Fiber-Cement Veneer Panels

1.0 SCOPE OF EVALUATION

1.1 This Research Report addresses compliance with the following Codes:

- 2018, 2015, and 2012 *International Building Code®* (IBC)
- 2018, 2015, and 2012 *International Residential Code®* (IRC)
- 2017 *Florida Building Code* – Building (FBC) and Residential (FRC) (see Section 9)
- 2016 *California Building Code* – Building (CBC) and Residential (CRC) (see Section 9)

NOTE: This report references 2018 Code sections with [2015] code sections shown in brackets.

1.2 The Nichiha KuraStone veneer panels described in this report have been evaluated for the following properties (see Table 1):

- Physical properties
- Surface burning characteristics
- Noncombustibility
- Weather protection
- Wind resistance

1.3 The Nichiha KuraStone veneer panels have been evaluated for the following uses (see Table 2):

- Use as an exterior wall covering in accordance with IBC Section 1403.10 and IRC Section R703.10.
- Use on exterior walls permitted to be of Types I through IV construction.
- Use on exterior walls permitted to be of Type V construction.

2.0 STATEMENT OF COMPLIANCE

The Nichiha KuraStone veneer panels recognized in this report comply with the Codes listed in Section 1.1, for the properties stated in Section 1.2, and uses stated in Section 1.3, when installed as described in this report, including the Conditions of Use stated in Section 6.

3.0 DESCRIPTION

3.1 Nichiha KuraStone Veneer Panels:

The veneer panels are used as siding. A description of the veneer panels, their dimensions and their intended application is in Table 2.

4.0 PERFORMANCE CHARACTERISTICS

4.1 Physical Properties: The veneer panels comply with ASTM C1186, Type A, Grade I, in accordance with IBC Section 1403.10 and IRC Section R703.10.

4.2 Surface Burning Characteristics: The veneer panels have a flame spread index of 0 and a smoke-developed index of 0, when tested in accordance with ASTM E84

4.3 Noncombustibility: The veneer panels are noncombustible building construction materials complying with IBC Section 703.5 as determined by testing in accordance with ASTM E136.

4.4 Wind Resistance: The maximum allowable wind pressure for each of the veneer panels is described in Tables 3 and 4.

5.0 INSTALLATION

5.1 General:

The veneer panels must be installed in accordance with the Nichiha USA Inc., published installation instructions, the applicable Code, and this Research Report. A copy of the manufacturer's instructions must be available on the jobsite during installation.

5.2 Application:

Under the IBC, the veneer panels must be installed over a water-resistive barrier complying with Sections 1403.2 and 1402.5 and must be attached as described for the specific assembly in Table 3.

Under the IRC, the veneer panels must be installed over a water-resistive barrier complying with Section R703.2. The veneer panels must be installed as described in Table 3.

5.3 Use on Exterior Walls of Types I, II, III and IV Construction:

The veneer panels may be used where noncombustible materials are required.

When the veneer panels are used in Types I, II, III or IV construction, fire-retardant-treated sheathing must be used, as permitted in IBC Sections 602.3, 602.4 or 603.1 (1), as applicable.

When the assembly includes a combustible water-resistive barrier, use of the veneer panels is limited to a maximum of 40 feet above grade except where data is presented to the satisfaction of the building official demonstrating compliance with IBC Section 1402.5 [2015 IBC - 1403.5].

When the assembly includes foam plastic insulation, data must be presented to the satisfaction of the building official demonstrating compliance with IBC Section 2603.5.

CONDITIONS OF USE

6.1 Installation must comply with this Research Report, the manufacturer's published installation instructions, and the applicable Code. In the event of a conflict, this report governs.

6.2 When allowable wind speed is determined in accordance with Table 3, the allowable wind speed must be equal to or greater than the design wind speed calculated in accordance with the applicable Code.

6.3 Use in Types I, II, III or IV construction must be as described in Section 5.3.

6.4 The Nichiha KuraStone veneer panels are produced under a quality control program with inspections by Intertek Testing Services NA, Inc.

7.0 SUPPORTING EVIDENCE

5.2 Reports of tests in accordance with ASTM C1186, ASTM E84, ASTM E136, ASTM E330, TAS 202, and TAS 203.

5.3 Data in accordance with applicable sections of ICC-ES Acceptance Criteria for Fiber Cement Siding Used as Exterior Wall Siding (AC90), dated June 2012 (editorially revised September 2015).

5.4 Intertek Listing Report "Nichiha KuraStone Veneer" on the Intertek Directory of Building Products.

5.5 Documentation of an Intertek approved quality control system for the manufacturing of products recognized in this report.

8.0 IDENTIFICATION

The Nichiha KuraStone veneer panels are identified with the Nichiha USA Inc., name, and address, the product name, the Intertek Mark as shown below, and the Code Compliance Research Report number (CCRR-0290).

9.0 OTHER CODES

9.1 California Building Code

9.1.1 Scope of Evaluation:

The Nichiha KuraStone veneer panels were evaluated for compliance with the 2016 California Building Code, including Chapter 7A. The siding products are noncombustible materials as defined in CBC Section 202 and as permitted for use on exterior walls in CBC Section 707A.3.

9.1.2 Conclusion:

The veneer panels, described in Sections 2.0 through 7.0 of this report, comply with the 2016 California Building Code, subject to the conditions noted in Section 6.0 of this report. Section numbers for the CBC – Building and Residential correspond to the 2015 IBC and IRC section numbers.

9.2 Florida Building Code

9.2.1 Scope of Evaluation:

The Nichiha KuraStone veneer panels were evaluated for compliance with the 2017 *Florida Building Code – Building, Florida Building Code – Residential* and *Florida Building Code – Energy Conservation.*

9.2.2 Conclusion:

The veneer panels described in Sections 2.0 through 7.0 of this report, comply with the 2017 *Florida Building Code – Building, Florida Building Code – Residential* and *Florida Building Code – Energy*, subject to the following conditions:

- Use of the veneer panel for compliance with the High-Velocity Hurricane Zone provisions of the 2017 *Florida Building Code – Building* and the *Florida Building Code – Residential* are described in Table 4 of this Research Report.
- Based on Miami-Dade Checklist #0215 for fiber cement siding and soffits (Note #1), dated 08-01-17, the product is exempt from impact and positive pressure tests because the product is to be installed over CBS construction or 5/8" (5-Ply) plywood supported by 2x studs or 2 × 6-18 gage metal studs, each at 16 inches on center.
- Section numbers for the FBC – Building and Residential correspond to the 2015 IBC and IRC section numbers.
- Intertek is a Florida State Product Evaluation Entity.

10.0 CODE COMPLIANCE RESEARCH REPORT USE

10.1 Approval of building products and/or materials can only be granted by a building official having legal authority in the specific jurisdiction where approval is sought.

10.2 Code Compliance Research Reports shall not be used in any manner that implies an endorsement of the product by Intertek.

10.3 Reference to the https://bpdirectory.intertek.com is recommended to ascertain the current version and status of this report.

TABLE 1 – PROPERTIES EVALUATED

PROPERTY	2018, 2015 & 2012 IBC SECTION[1]	2018, 2015 & 2012 IRC SECTION[1]	2017 FBC – Building	2017 FBC – Residential	2016 CBC
Physical properties	1403.10	R703.10	1404.10	R703.10	1404.10
Surface burning characteristics	1403.10	R703.10	1404.10	R703.10	1404.10
Noncombustibility	703.5	NA	703.5	NA	202, 703.5
Wind resistance	1404.16	R703.16	1405.16	703.1.2	1405.16
Weather resistance	1403.2	R703.2	1404.2	R703.2	1404.2
Types I and II construction	603.1 (1)	NA	603.1 (1)	NA	603.1 (1)
Type III construction	602.3	NA	602.3	NA	602.3
Type IV construction	602.4	NA	602.4	NA	602.4
Installation over foam plastic insulation	2603.5	NA	2603.5	NA	2603.5

[1] Section numbers may be different for earlier versions of the International (2015 and 2012) Codes.

TABLE 2 – NICHIHA KURASTONE VENEER PANEL DESCRIPTIONS

Product Name	Nominal Thickness (in.)	Siding Dimensions (in.)	Intended Use	Description[2]
KuraStone StackedStone veneer panels	1 3/8	Height: 6 Widths: 10¼ (small), 15 3/8 (medium) & 25 5/8 (large)	Veneer siding	Color Options: Desert or Mountain
KuraStone StackedStone exterior corner veneer	1 3/8	Height: 6 Legs: 6½ × 13	Veneer siding	Color Options: Desert or Mountain
KuraStone LedgeStone veneer panels	1 3/8	Height: 6 Widths: 10¼ (small), 15 3/8 (medium) & 25 5/8 (large)	Veneer siding	Color: Buff
KuraStone LedgeStone exterior corner veneer	1 3/8	Height: 6 Legs: 6½ × 13	Veneer siding	Color: Buff
KuraStone Sill-Chiseled exterior veneer trim	2 3/8	Tapered Height: 1½ (front) × 1¾ (back) Width: 23 5/8	Veneer siding	Color Options: Grey or Tan

[2]KuraStone veneer panels are designed with no dedicated top or bottom. Grooves on all 4 sides permit the clips and starter track to be inserted into any side. The pieces can be rotated for random patterns of installation. StackedStone and LedgeStone veneer panels come in bundles of 3 large, 2 medium, and 2 small pieces. Sill-Chiseled veneer is grooved on the top and bottom only, is packaged with 6 pieces per pack and includes dedicated clips.

Table 3 - Design Loads for Negative ASTM E330 Transverse Load[3]

KuraStone Veneer Panel Siding	Siding Clip/Fastener	Design Load (psf)
StackedStone Panel	JE720CA Clip System with #8 x ¾" long × 0.314" head diameter, corrosion-resistant, pan head screws	37
LedgeStone Panel	JE720CA Clip System with #8 x ¾" long × 0.314" head diameter, corrosion-resistant, pan head screws	33

[3]Notes:

- **KuraStone** veneer panels may only be installed on vertical walls.
- The veneer panels must be installed over minimum 7/16-in. thick rated structural use panels (sheathing) complying with PS-1 or PS-2, attached to framing spaced at a maximum 16-inches on center.
- The perimeter of the sheathing must be supported by framing members.
- The values in this table are based on testing in accordance with ASTM E330, and represent the ultimate capacity of the sheathing to resist fastener pull-through and/or fastener failure using a 3.0 Safety Factor. The withdrawal resistance of fasteners from framing is different due to several factors including but not limited to fastener type, fastener length, and framing properties. The specification of framing and sheathing fasteners is the responsibility of the designer of record.
- Framing and bracing are beyond the scope of this CCRR.
- The allowable values in this table are for short term wind loads.
- The rule used for clip placement is 1 at each joint, center of the bottom edge of each piece in the next course, and a clip must be located within 3 inches of the end of a course.

Table 4 - Design Loads for Negative TAS 202 AND TAS 203 Transverse Load (Florida Building Code)[4]

KuraStone Veneer Panel Siding	Siding Clip/Fastener	Design Load (psf)
StackedStone Panel	JE720CA Clip System with #8 × ¾" long × 0.314" head diameter, corrosion-resistant pan head screws set into the center hole of the clip	85
LedgeStone Panel	JE720CA Clip System with #8 × ¾" long × 0.314" head diameter, corrosion-resistant pan head screws set into the center hole of the clip	85

[4]Notes:

- **KuraStone** veneer panels may only be installed on vertical walls.
- The veneer panels must be installed over minimum 5/8-in. thick (5-ply) APA 40/20 rated plywood (sheathing), supported by 2x studs or 2 × 6-18 gage metal studs, spaced a maximum of 16 inches on center.
- The perimeter of the sheathing must be supported by framing members and the sheathing is fastened to the framing with 8d nails 6 inches on center around the perimeter and 12 inches on center along the field studs.
- The rule used for clip placement is 1 clip at the top of each joint, 1 clip center of the bottom edge of each piece in the next course, and a clip must be located within 5 inches of the end of a course.