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Nichiha U.S.A.
6465 East Johns Crossing, Suite 250
Johns Creek, GA 30097

RESEARCH REPORT: RR 26081
(CSI # 072500)

Attention: David Hohenstern
(770) 805 9466

Expires: July 1, 2020
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Code: 2017 LABC

GENERAL APPROVAL – Technical Modification - Nichiha Architectural Wall Panels EX Series

DETAILS

The Nichiha Architectural Wall Panels (AWP), EX Series, used as exterior wall coverings, are commercial grade panels made of proprietary components and Portland cement. The panels comply with ASTM C1186, Type A and are produced in two standard sizes (AWP-1818 and AWP-3030). The panels incorporate a hidden fastening installation system creating a 10 mm closed-jointed rain screen.

Panel edges of the AWP Panels are ship-lapped and a factory sealant gasket is included on the top and right (concealed) edges of AWP-1818 (top edge only for AWP-3030). Thus when factory edges are fit together, the joints are sealed. AWP attachment hardware engages the top and bottom panel edges, holding the panels off the substrate surface by 10mm. To account for the overall Nichiha system thickness, add this 10mm to the appropriate panel thickness.

AWP-1818 must only be installed horizontally but can be laid out in either a stacked or staggered/running pattern. AWP-3030, which have flat 455mm side edges, may be installed horizontally or vertically, without any staggering.

Installation Hardware:

Ultimate Clip II's (JEL778/788) with included Joint Tab Attachments (for AWP-1818), Ultimate Horizontal Starter Track (FA700), and Ultimate Vertical Starter Track (FA710T) are primary installation hardware components, supporting the weight of the panels and resisting wind loads, as described below:

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- i) Ultimate Clips are 26 inches wide and feature pre-punched fastener holes as well as weep holes on the top and bottom. The weeps maintain the 10mm deep continuous air and drainage plane behind AWP. JEL 778's are for 16mm (5/8") panels and JEL 788's are for 18mm (3/4") and 21mm (7/8") thick panels. Each AWP-1818 long edge is 1818mm (71-9/16") and two -and -a- half- clips are needed for a full width edge. Each AWP-3030 long edge is 3030mm (119-5/16") and four clips are needed for a full-width edge. For horizontal panel configurations, the clips are fastened at each framing member with each clip covering at least two studs. For vertical panel configurations utilizing attachment to wood sheathing only, use four screws per clip.
- ii) Ultimate Horizontal Starter Track is used at the base of a new section of horizontally installed AWP, providing foundational support while also greater ease of installation. The bottom, factory edge of AWP features a groove that sits on the J-like shape of the bottom portion of the Horizontal Starter Track. Like the Ultimate clips, the Starter has pre-punched fastener holes and rain screen weep holes. Horizontal Starter Track is fastened to framing at 12-16" o.c.
- iii) Ultimate Vertical Starter Track is used to provide the primary dead load support of AWP-3030 in vertical applications. The flat 455mm edge of the panel sits on the shelf-like Vertical Starter Track. Vertical Starter Track is fastened to structure every 6" to 9" o.c.
- iv) Fasteners: corrosion resistant *minimum* #10-16 x 1-1/4" Pan head screws. The screws must be of sufficient length to penetrate steel framing members by a minimum 1/2" or three threads, or at least 1" into wood framing.

Framing and Sheathing

- i) Metal Studs: 18 and 16 gauge with a spacing not greater than 16" on center for horizontal installations. In addition, minimum 18 gauge with spacing not greater than 16" for vertical installations with minimum 7/16" OSB or plywood sheathing. Vertical panels may also be installed with fasteners applied to custom stud (or furring) spacing of 17-7/8" o.c.
- ii) Wood Studs: minimum 2x4 with a spacing of not greater than 16" on center.
- iii) Sheathing: a minimum 7/16"-OSB or plywood sheathing is required for vertical installation when studs are spaced at 16" o.c. or less.

The AWP EX Series panels described above are approved subject to the following conditions of Approval:

1. The products are installed in accordance with the 2017 LABC and the manufacturer's published installation instructions.

2. The wall framing and sheathing must be covered with an approved water-resistive barrier in accordance with the 2017 LABC
3. The panels must be mechanically attached to walls that are braced in accordance with the 2017 LABC.
4. Complete plans and calculations, signed and stamped by a civil or structural engineer registered in the State of California, shall be submitted to the Structural Plan Check for their approval for each job.
5. The design loads to be resisted by the AWP EX Series panels must be determined in accordance with the 2017 City of Los Angeles Building Code.
6. Negative Wind Design pressures for approved panel sizes are shown in Table 1 of this report.
7. The AWP EX Series wall panels are manufactured in Japan under Nichiha U.S.A. Inc. Quality Manual – Iwaki, copy of which is available with LADBS Research Section.

Table 1: Allowable Wind Pressures

Panel Type & Orientation	Panel Sizes	Sheathing	Stud Spacing	Clip	Allowable Load, psf
AWP-1818, 3030 (Horizontal)	5/8", 3/4", 7/8" x 17-7/8" x 71-9/16"/119-5/16"	none	16" o.c. 18 gauge	JEL778	48.4
AWP-1818, 3030 (Horizontal)	5/8", 3/4", 7/8" x 17-7/8" x 71-9/16"/119-5/16"	none	16" o.c. 16 gauge	JEL778	60.5
AWP-1818, 3030 (Horizontal)	5/8", 3/4", 7/8" x 17-7/8" x 71-9/16"/119-5/16"	none	16" o.c. 2x lumber	JEL778	63.6
AWP-3030 (Vertical)	5/8" x 17-7/8" x 119-5/16"	7/16" OSB	16" o.c. 18 gauge	JEL778	57.6
AWP-3030 (Vertical)	5/8" x 17-7/8" x 119-5/16"	3/4" Plywood	16" o.c. 2x lumber	JEL778	89.5
AWP-3030 (Vertical)	5/8" x 17-7/8" x 119-5/16"	5/8" Glass-mat	17-7/8" o.c. 16 gauge	JEL778	77.4

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DISCUSSION

The technical modification is to capture new clip, Ultimate Clip II's (JEL778/788), for horizontal and vertical panel attachments.

The report is in compliance with the 2017 Los Angeles City Building Code.

The approval was based on tests in accordance with ICC- ES Acceptance Criteria for Fiber Cement Siding Used as Exterior Wall Siding (AC 90), dated June 2012, and editorially revised September 2015.

Addressee to whom this Research Report is issued is responsible for providing copies of it, complete with any attachments indicated, to architects, engineers and builders using items approved herein in design or construction which must be approved by Department of Building and Safety Engineers and Inspectors.

This general approval of an equivalent alternate to the Code is only valid where an engineer and/or inspector of this Department has determined that all conditions of this approval have been met in the project in which it is to be used.

QUAN NGHIEM, Chief
Engineering Research Section
201 N. Figueroa St., Room 880
Los Angeles, CA 90012
Phone- 213-202-9812
Fax- 213-202-9943

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Attachment 3pgs