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201 NORTH FIGUEROA STREET
LOS ANGELES, CA 90012

—
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EXECUTIVE OFFICER

—
ASC Steel Deck
A Division of ASC Profiles, LLC
2110 Enterprise Boulevard
West Sacramento, CA 95691

Attn: Brian Gough
(916) 376-2862

RESEARCH REPORT: RR 23783
(CSI #05 31 00)

BASED UPON ICC-ES EVALUATION
REPORT No. ESR-1414

REEVALUATION DUE
DATE: October 1, 2017
Issued Date: March 1, 2016
Code: 2014 LABC

GENERAL APPROVAL –Technical Modification / Reevaluation - ASC Steel floor and roof deck products, steel decks and horizontal diaphragms using steel deck sections with and without concrete fill.

DETAILS

The above assemblies and/or products are approved when in compliance with the use, description, design, installation, conditions of use, and identification of Evaluation Report No. ESR-1414 reissued October 1, 2014, revised December 2014, of the ICC Evaluation Service, Incorporated. The report in its entirety is attached and made part of this general approval.

The parts of Evaluation Report No. ESR-1414 marked by the asterisks are deleted or revised by the Los Angeles City Building Department from this approval.

The approval is subject to the following conditions:

1. Deck units for each job shall be identified by the manufacturer's name and deck designation. The material thickness and amount of galvanizing shall also be indicated.
2. When requested by the Department, test data by the mill or by an approved testing agency shall be submitted to verify the deck material is as specified in the attachment.
3. Where exposed to the weather, the deck units shall be galvanized.

RR 23783
Page 1 of 4

ASC Profiles, Inc.

RE: ASC Steel Floor and Roof Deck Products, Steel Decks and Horizontal Diaphragms Using Steel Deck Sections With and Without Concrete Fill.

4. The sizes of puddle welds specified are the fused sizes. For ½" round puddle welds, the top or appearance size is approximately ¾" round.
5. For each job where the deck units are specified, the following information shall be indicated on the plans to be reviewed by the Department: (a) Cross-section details of the deck units; (b) fastener details, including deck welding or other fasteners at supports, at diaphragm boundaries parallel to flutes, at shear transfer elements, and at side seams if such fasteners are required; (c) minimum length of deck units; and (d) design shears.
6. Spacing of attachments parallel to flutes and at side seams shall be as required but shall not be greater than 3 feet at boundaries parallel to flutes nor greater than 4 feet at side seams if attachments are required.
7. Any change of deck units from those specified on the approved plans shall be approved by the design engineer of the building and by Structural Plan Check of the Department. The proprietary nature of the data in this report precludes their use for deck units by other manufacturers.
8. The number of "puddle welds" specified in the tables is required at each support for each deck unit.
9. For diaphragm construction, the use of deck units less than the full width shall be designed to transfer all shear loads.
10. Continuous inspection by deputy building inspectors shall be provided for welding of the deck units for diaphragms, and for the mixing and placing of the concrete for the topping.
11. Deck welding shall be performed by Los Angeles City certified light gage welders. Prior to proceeding with the welding, the welders shall demonstrate to the Deputy Inspectors their ability to produce the prescribed weld satisfactorily. A sample of the deck material shall be welded to steel simulating the framing. The sample specimen shall then be twisted, and if the deck material tears or if the weld in torsion indicates the proper fusion area, the weld shall be considered satisfactory.
12. Admixtures containing calcium chloride or other corrosive materials shall not be used in the concrete fill for the deck units.
13. Temperature reinforcement shall be provided in the concrete fill approximately 1" below top surface of concrete. The ratio of reinforcing area to cross section area of concrete above top of steel deck units shall be not less than .001 each way, nor shall the reinforcement be less than 6 x 6 - W1.4 x W1.4 W.W.F. (This requirement is not applicable to insulating concrete fill).
14. Welding of cellular panels shall be performed in an approved Los Angeles City licensed fabricators shop.

ASC Profiles, Inc.

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16. See the Department Information bulletin P/BC 2011-46 for composite design and construction of steel beams or girders connected to concrete filled steel decks.
17. Allowable loads in the tables are not applicable to concentrated loads or to predominantly vibratory loads.
18. Diaphragm shear values in the tables shall not be increased one-third for seismic or wind loading.
19. Use of the roof decks in fire-resistive construction shall be in accordance with a separate Los Angeles City Research Report.
20. The design base-metal thicknesses for all steel panels are indicated in Table 1 of ICC-ESR 1414. The thickness delivered to the jobsite must be at least 95% of the thickness noted in the tables.

DISCUSSION

The technical modification is to verify the latest changes to the ICC-ESR 1414.

The report is in compliance with the 2014 Los Angeles City Building Code.

The diaphragm design criteria are based on tests and analyses.

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.

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This general approval will remain effective provided the Evaluation Report is maintained valid and unrevised with the issuing organization. Any revisions to the report must be submitted to this Department, with appropriate fee, for review in order to continue the approval of the revised report.

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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Attachments: ICC-Evaluation Report No. ESR-1414 (68 Pages)