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RESEARCH REPORT: RR 24930
(CSI #06430)

Expires: November 1, 2018
Issued Date: November 1, 2016
Code: 2014 LABC

GENERAL APPROVAL – Renewal - Old English Milling and Woodworks Prefabricated Wood Winding Stairways for interior use

DETAILS

The wood winding stairways are supported by two laminated plywood stringers. The stringers are fabricated of 1/4-inch thick, Structural II, Grade C.D. Plywood, laminated together with CR-583/FM-390F glue manufactured by the Borden Chemical Company.

The winding stairways included in this approval shall comply with the following constraints:

5-FOOT WIDE STAIR WAY:

Minimum Inside Radius	60-inches
Minimum Outside Radius	120-inches
Stair Width	60-inches
Minimum Step Rise	6½-inches
Maximum Step Run ¹	11-inches
Maximum Total Rise of Stair	12-feet
Maximum Unsupported Internal Angle	142-degrees
Outboard Girder	
Net Size	5¾" x 12_"
Maximum Horizontal Span	24.5-feet
Inboard Girder	
Net Size	4¼" x 10½"
Maximum Horizontal Span	12.0-feet
Allowable Live Load	100 psf

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4-FOOT WIDE STAIR WAY:

Minimum Inside Radius	36-inches
Minimum Outside Radius	84-inches
Stair Width	48-inches
Minimum Step Rise	6½-inches
Maximum Step Run ¹	11-inches
Maximum Total Rise of Stair	12-feet
Maximum Unsupported Internal Angle	210-degrees
Outboard Girder	
Net Size	5¾" x 15½"
Maximum Horizontal Span	25.5-feet
Inboard Girder	
Net Size	4¼" x 12½"
Maximum Horizontal Span	11.0-feet
Allowable Line Load	100 psf

The approval of the system is subject to the following requirements:

1. Butt joints of stringer laminations shall be staggered at intervals no less than 36-inches for adjacent laminations and no less than 6-inches apart for any subsequent laminations.
2. The clamps holding the laminations of the stringer together shall not be removed for a minimum of 36-hours for room temperatures between 50 and 80 degrees Fahrenheit and 12 hours for room temperatures maintained at 80 degrees Fahrenheit or greater. In addition, the excess glue forced to the surface during pressing must have cured to a hard and crystalline state before the clamps may be removed. Glue lines shall be 0.005-inch ± 0.001-inch thick.
3. The stairways shall be fabricated in the shop of a Department licensed fabricator. Each stairway shall bear the permanent identification of the manufacturer. Fabrication in unlicensed shops will invalidate this approval.
4. Installation connections and supports for stringers and posts, and landing construction details are not part of this approval. Locations and details of stairs must be submitted to the structural plan check engineer for review and approval. The stairways design must meet the requirements of Section 91.1009 of the 2014 Building of Los Angeles Building Code
5. Plywood for the system shall bear a grade stamp of approved plywood grading agency indicating that the plywood conforms to United States Product Standard PS 1-83 for Grade C-D. Glue shall conform to ASTM Standard D3024.

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6. Use of the stairways shall be limited to the interior of dwelling units.
7. Periodic quality control tests shall be conducted on the materials and finished products to ensure their adequacy.
8. Random quality control inspections will be conducted by the Materials Control Section to ensure compliance with Old English Milling and Woodworks Quality Control Manual and applicable parts of Section 91.2304 of the 2014 City of Los Angeles Building Code.
9. The oak newel post is approved when installed with 8-inch spacing between anchors at base, 2-inch edge distance between lower anchor and bottom of post, and 2-inch space from top anchor, at base, to edge of the notch in the post which overhangs and mounts flush with top of stair tread. The post will withstand a horizontal load of 67 pounds applied 29½-inches from edge of post which mounts flush with top of stair tread. The post shall not be less than 2-inch diameter, except the base (bottom 12-inches of post) may be 1¾-inches by 3½-inches.
10. The attachment of the oak newel posts to the laminated stringers are not a part of this approval.

DISCUSSION

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

The approval is based on tests and analyses.

The stairways were designed to conform to Section 91.1009 of the 2014 City of Los Angeles Building Code.

Standard Plan approval should be secured through Building Plan Check (Room 880, 201 N. Figueroa Street) to facilitate plan checking clearance when applying for a building permit. No additional substantiation is required for those items covered by this approval.

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.

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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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RR24930/Word.2010
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