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Issue Date: October 3, 2018

Letter Report No: H6968.01-117-14

Shawn Callahan
Metwood Inc.
819 Naff Road
Boones Mill, VA 24065

Subject: Summary Review Letter for Metwood 2810HR CCRR-0279

Dear Mr. Callahan,

Intertek has received supporting documentation from Metwood to address requirements of the 2015 International Building and Residential Codes. The documentation reviewed to-date is listed below.

I. Intertek Evaluation Plan for 2810HR Joist Reinforcer, H0997.01-117-38, dated 6/30/2017

Method of evaluation involves comparison of 2x10 framing strength with and without holes. Framing members with holes are reinforced with the Metwood 2810HR joist reinforce.

II. Intertek Test Report No. H9231.02-106-31, dated 10/3/2018 (ASTM D198 Testing)

The structural performance of the 2810HR joist reinforcer installed on 2x10 No.2 grade dimensional lumber (SYP and SPF) with a 6 inch hole was evaluated for comparison to 2x10 No.2 grade dimensional lumber (SYP and SPF) without holes or with code permitted holes. Fifteen foot and six foot test spans were selected to evaluate bending strength and stiffness and, shear strength, respectively.

Consistent with wood framing design values, evaluation of strength properties uses lower 5% exclusion values. Stiffness evaluation is based on average values with load at L/360 deflection data.

i. For evaluating bending strength and stiffness, 2x10 dimensional lumber was tested at a 15 foot span for both with and without the 2810HR joist reinforcer for each wood species. Summary of the bending test data analysis is below.

Product	Specimen Quantity	Strength (ultimate, lbf)		Stiffness (L/360, lbf)		
		min - max	Lowest 5%	min - max		Average
2x10 SYP	28	2020 - 4820	1890	320 - 1,180		705
2x10 SYP with 2810HR	23	1950 - 4830	2226	482 - 1,190		801
2x10 SPF	28	1920 - 4060	1696	497 - 876		649
2x10 SPF with 2810HR	12	2110 - 3230	2155	629 - 786		690

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The data was reviewed and concludes the bending strength and stiffness performance for the 2x10 dimensional lumber with a 6 inch hole, reinforced with the 2810HR joist reinforcer, is comparable to 2x10 dimensional lumber.

ii. For evaluating shear strength, 2x10 dimensional lumber was tested at a 6 foot span for both with and without the 2810HR joist reinforcer for each wood species. Summary of the shear test data analysis is below.

Product	Specimen Quantity	Shear (lbf)		
		min	max	Lowest 5%
2x10 SYP	22	3,820	10,900	5,110
2x10 SYP with 2810HR	22	6,080	11,200	5,519
2x10 SPF	17	4,350	8,030	4,202
2x10 SPF with 2810HR	17	3,620	7,330	4,063[1]

(1) The 2x10 SPF with the 2810HR joist reinforcer yielded results less than the 2x10 SPF without the joist reinforcer, however the difference (3%) is insignificant and deemed comparable.

(2) The 2810HR joist reinforcers are installed no less than 12 inches from the edge of the joist reinforcer to the closest support.

The data was reviewed and concludes the shear strength performance for the 2x10 dimensional lumber with a 6 inch hole, reinforced with the 2810HR joist reinforcer, is comparable to 2x10 dimensional lumber.

III. Structural Analysis – 14 Gauge Galvanized Metwood Joist Reinforcer, prepared by Lakdas/Yohalem Engineering, Inc. Consulting Engineers, 7/27/2016

IV. Factory Audit Manual No. H6973.01-117-38, dated 5/10/2018

The intent of this letter is to provide you with a current summary of our review. Our evaluation has been completed and the data satisfies the evaluation requirements for recognition of the 2810HR Joist Reinforcer in an Intertek CCRR.If you have any questions regarding this letter report, please do not hesitate to contact the undersigned.

Sincerely,

INTERTEK TESTING SERVICES NA, INC.

Reported by:

Digitally Signed by: Kendall A. Leaman

Kendall A Leaman
Project Engineer

Digitally Signed by: Craig H. Wagner

Craig H Wagner, PE
Chief Engineer

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