

BURMON BUILDING PRODUCTS TEST REPORT

SCOPE OF WORK

LOAD TESTING OF ADJUSTABLE ICF JOIST HANGER

REPORT NUMBER

R0462.01-119-42 R0

TEST DATE

04/24/24

ISSUE DATE

06/06/24

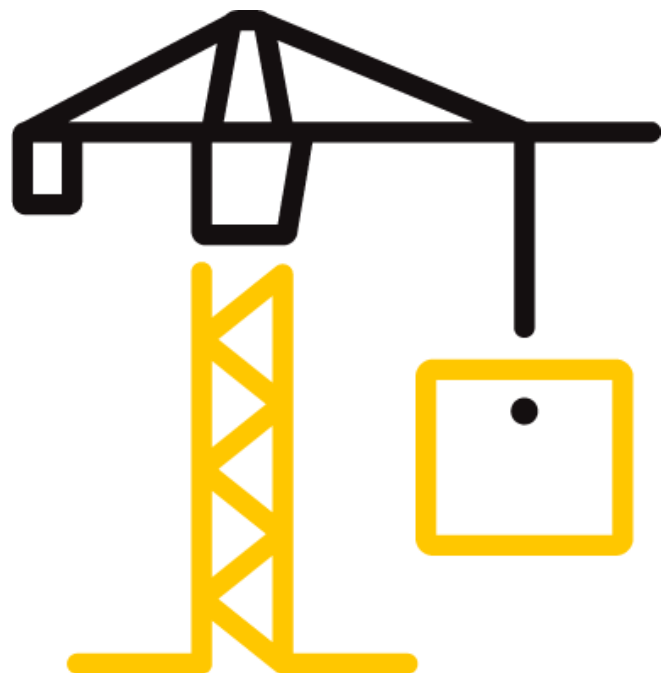
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TEST REPORT FOR BURMON BUILDING PRODUCTS

Report No.: R0462.01-119-42 R0

Date: 06/06/24

REPORT ISSUED TO

BURMON BUILDING PRODUCTS

10 Eliot Drive

Stapylton, Queensland 4207

Australia

SECTION 1

SCOPE

Architectural Testing, Inc. (an Intertek company), dba Intertek Building & Construction (B&C) was contracted by Burmon Building Products to perform load testing in accordance with ASTM D7147 on their Adjustable ICF Joist Hanger assembly. Results obtained are tested values and were secured by using the designated test method. Testing was conducted at the Intertek B&C test facility in York, PA.

Intertek B&C in York, Pennsylvania has demonstrated compliance with ISO/IEC International Standard 17025 and is consequently accredited as a Testing Laboratory (TL-144) by International Accreditation Service, Inc. (IAS). Unless differently required, Intertek reports apply the "Simple Acceptance" rule also called "Shared Risk approach," of ILAC-G8:09/2019, Guidelines on Decision Rules and Statements of Conformity.

Intertek B&C will service this report for the entire test record retention period. The test record retention period ends four years after the test date. Test records, such as detailed drawings, datasheets, representative samples of test specimens (where required by Certification or Accreditation bodies), or other pertinent project documentation, will be retained for the entire test record retention period.

For INTERTEK B&C:

COMPLETED BY:	Scott T. Gladfelter
TITLE:	Senior Project Engineer
SIGNATURE:	
DATE:	06/06/24

STG:vtm/aas

REVIEWED BY:	V. Thomas Mickley, Jr., P.E.
TITLE:	Senior Staff Engineer
SIGNATURE:	
DATE:	06/06/24

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SECTION 2

SUMMARY OF TEST RESULTS

ADJUSTABLE ICF JOIST HANGER ^{1,2}	Direct Vertical Load (Downward): Average Load at 1/8 in Displacement - 6340 lbf Average Ultimate Load - 14882 lbf
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¹ Test/Ultimate loads are for a four-bracket (two pair) assembly. Noted values shall be divided by 2 to determine the load applied to a two-bracket (one pair) connector.

² Test/Ultimate loads should not be used as design loads or safe working loads.

SECTION 3

TEST METHOD

The specimens were evaluated for vertical downward load in accordance with the following:

ASTM D7147-21, *Standard Specification for Testing and Establishing Allowable Loads of Joist Hangers*

SECTION 4

MATERIAL SOURCE/INSTALLATION

All components used for the testing reported herein were supplied by Burmon Building Products and were not independently sampled or selected by a third-party inspection agency. Specimens were assembled by an Intertek technician.

SECTION 5

LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Eric J. Beaudoin	Intertek B&C
Scott T. Gladfelter	Intertek B&C

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TEST SPECIMEN DESCRIPTION

The Adjustable ICF Joist Hanger assembly was comprised of four 14 gauge, 2-9/16 in wide by 8 in tall by 3-1/4 in deep Burmon Adjustable galvanized steel joist hangers (two hangers at each joist end), two 24 in wide by 31-1/2 in tall by 9 in deep poured concrete ICFs, and three 1-3/4 in wide by 9-1/2 in deep by 24 in long pieces of laminated veneer lumber (LVL) joists. Two joist hangers were centered on each ICF. The parts were secured as noted in the Fastening Schedule below.

Fastening Schedule

The following fastening schedule was used during the connection portion of the test program.

CONNECTION	NUMBER AND TYPE OF FASTENERS
Adjustable ICF Joist Hanger Bracket to ICF	Two 1 in diameter anchors with threaded inserts were inserted into the concrete ICF. A 1/2-13 by 3/4" Grade 5 hex bolt with accompanying 1-3/8 in wide by 2-3/8 in high by 0.116 in thick steel washer was installed into the threaded insert of each anchor
Adjustable ICF Joist Hanger Bracket to LVL Joist	Seven (five on the side and two in the bottom) 10d by 1-1/2" hot-dipped galvanized steel joist hanger nails

Photographs are included in Section 9 and drawings are included in Section 10 to verify the overall dimensions and other pertinent information of the tested product, its components, and any constructed assemblies.

SECTION 7

TEST PROCEDURE

Specimens were mounted in a computer-monitored and -controlled INSTRON, Model 5989 Universal Testing Machine for testing. A vertical load was applied to the bearing block through a load cell attached to the testing machine crosshead. Test speed was 0.200 in/min. Displacement was taken with two dial indicators, attached to the ICF wall panels, which were zeroed at zero load. Ultimate load was the maximum load the test assembly could carry. See photographs in Section 9 for typical test set-up.

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SECTION 8

TEST RESULTS

Test/Ultimate loads are for a four-bracket (two pair) assembly. Noted values shall be divided by 2 to determine the load applied to a two-bracket (one pair) connector. Test/Ultimate loads should not be used as design loads or safe working loads.

Specimen No. 1

Test Date: 04/24/24

LOAD (lbs)	INDICATOR NO.		
	A	B	AVERAGE
	DEFLECTION (in)		
1945	0.020	0.020	0.020
3521	0.040	0.040	0.040
4879	0.060	0.058	0.059
6098	0.080	0.075	0.078
6909	0.100	0.092	0.096
7611	0.120	0.110	0.115
8217	0.140	0.129	0.135
8769	0.160	0.150	0.155
9351	0.180	0.164	0.172
9837	0.200	0.187	0.194

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Specimen No. 2

Test Date: 04/24/24

LOAD (lbs)	INDICATOR NO.		
	A	B	AVERAGE
	DEFLECTION (in)		
1001	0.020	0.020	0.020
1611	0.040	0.038	0.039
2340	0.060	0.056	0.058
3080	0.080	0.074	0.077
3997	0.100	0.091	0.096
4802	0.120	0.109	0.115
5620	0.140	0.127	0.134
6380	0.160	0.145	0.153
7054	0.180	0.162	0.171
7760	0.200	0.181	0.191

Specimen No. 3

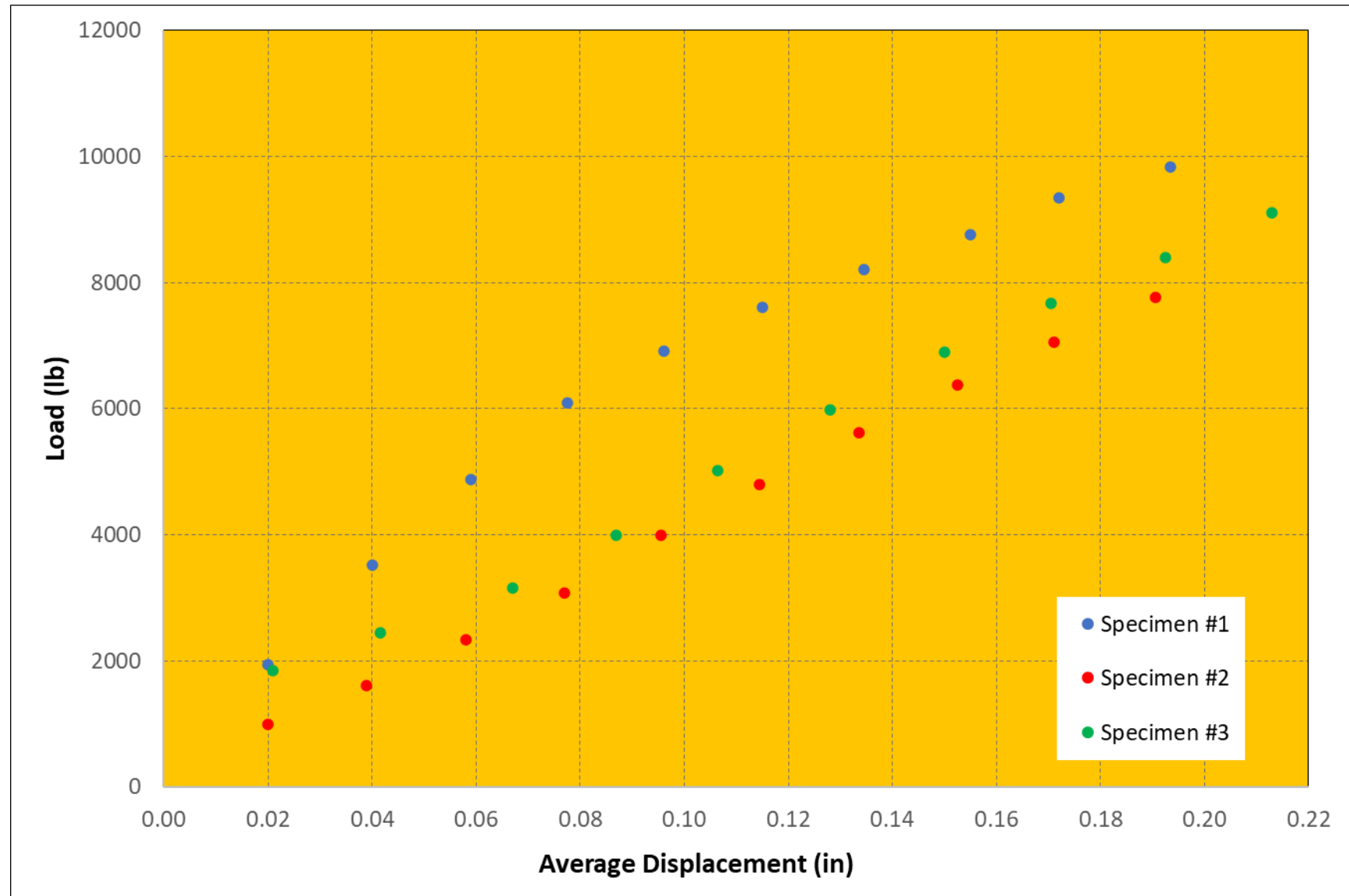
Test Date: 04/24/24

LOAD (lbs)	INDICATOR NO.		
	A	B	AVERAGE
	DEFLECTION (in)		
1842	0.020	0.022	0.021
2451	0.040	0.043	0.042
3162	0.060	0.074	0.067
4000	0.080	0.094	0.087
5014	0.100	0.113	0.107
5980	0.120	0.136	0.128
6905	0.140	0.160	0.150
7677	0.160	0.181	0.171
8405	0.180	0.205	0.193
9109	0.200	0.226	0.213

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Test Summary

SPECIMEN NO.	ULTIMATE LOAD ¹ (lbf)	DEVIATION FROM AVERAGE	LOAD @ 1/8 in DISPLACEMENT ¹ (lb)	MODE OF FAILURE
1	14871	-0.1%	7922	Bending of the bracket, flaring of the LVL, and rotation of the bracket
2	14370	-3.4%	5254	
3	15404	3.5%	5845	
Average:		Average:	6340	
		Standard Deviation:	1401	
		Coefficient of Variation:	22%	

¹ Test/Ultimate loads are for a four-bracket (two pair) assembly. Noted values shall be divided by 2 to determine the load applied to a two-bracket (one pair) connector.

SECTION 9 PHOTOGRAPHS

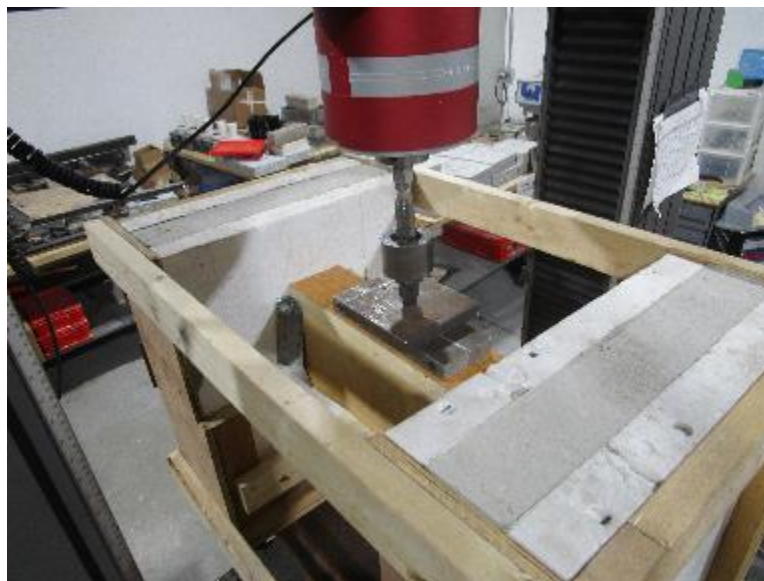


Photo No. 1
Typical Test Setup

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Photo No. 2
Typical Test Setup



Photo No. 3
Typical Adjustable ICF Joist Hanger Failure

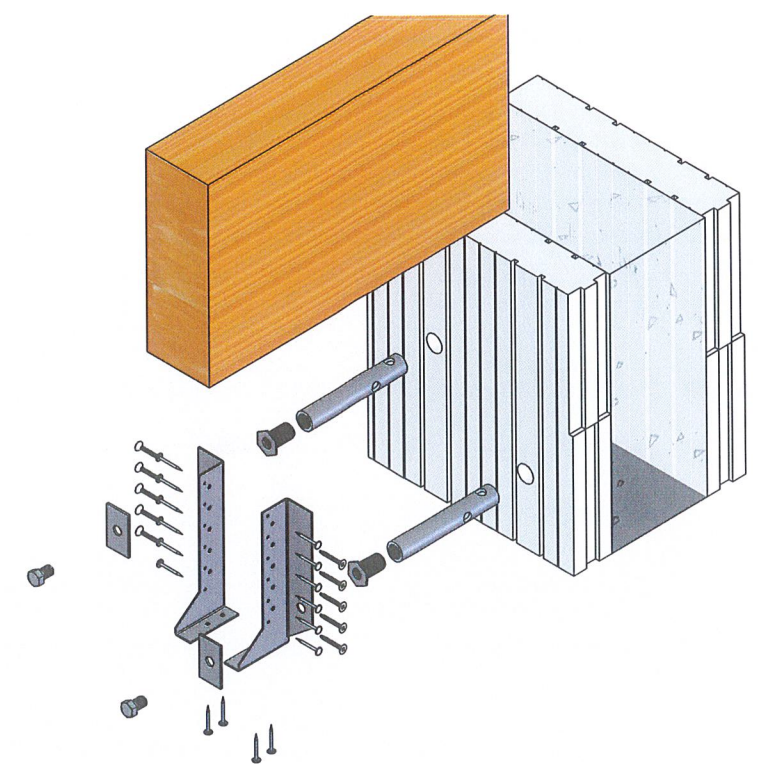
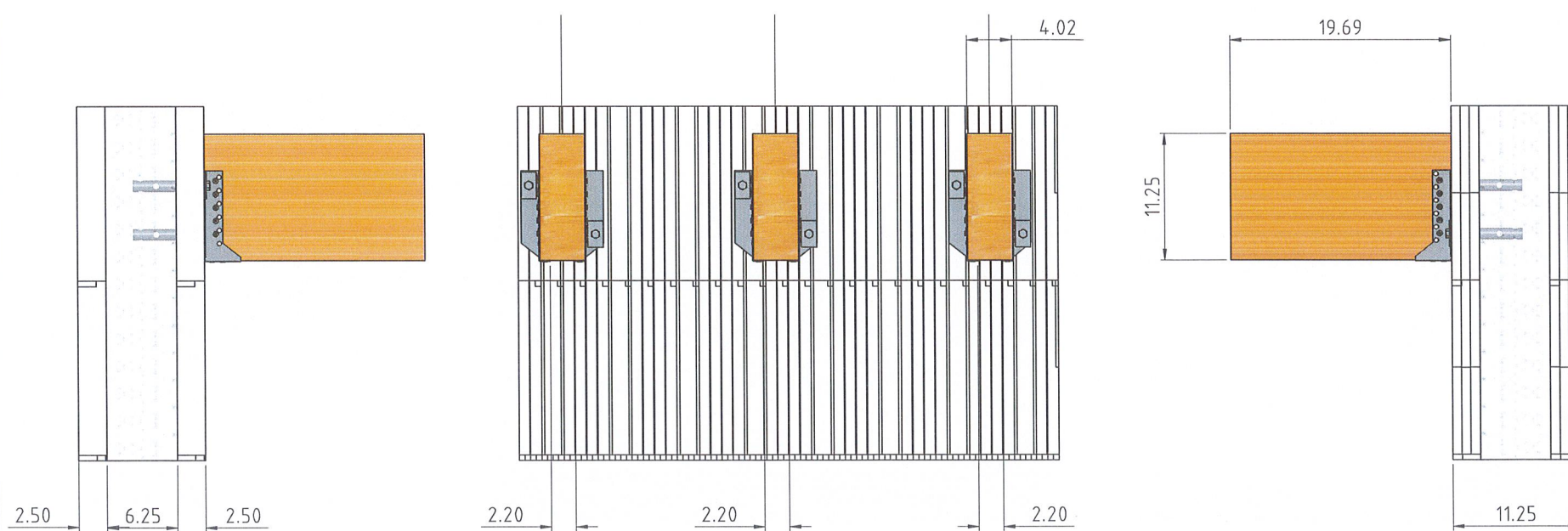
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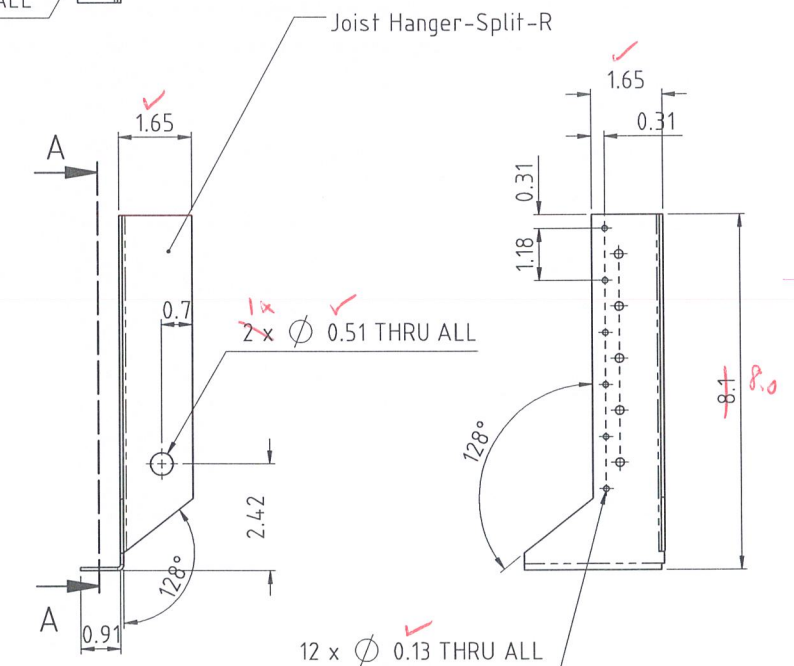
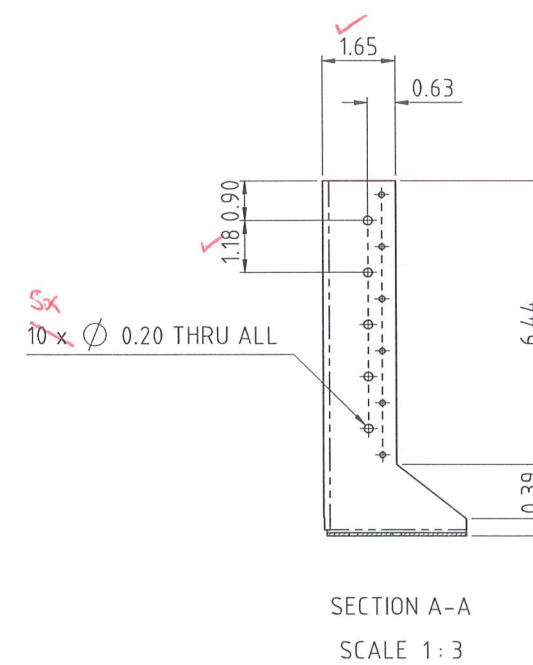
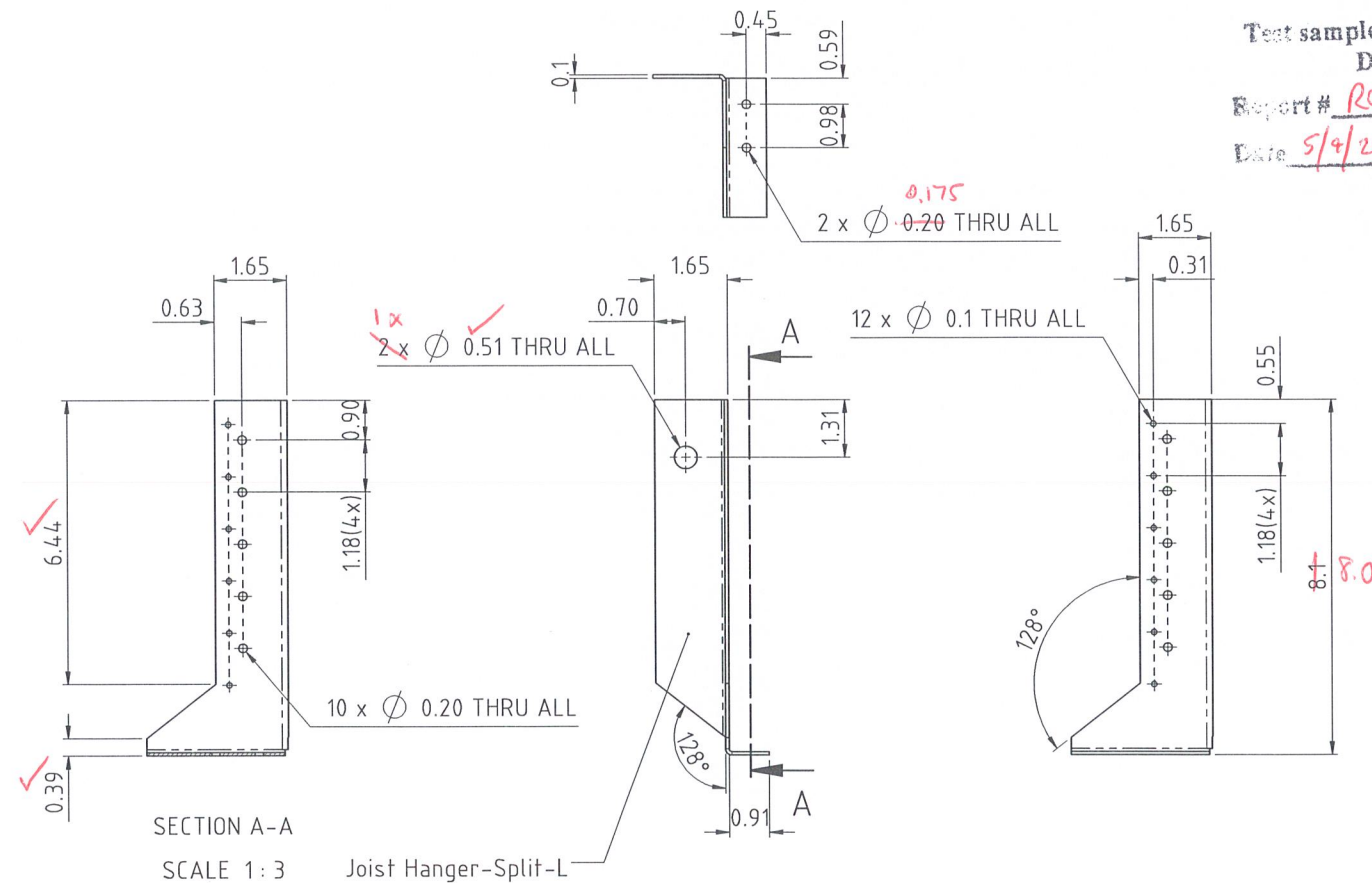
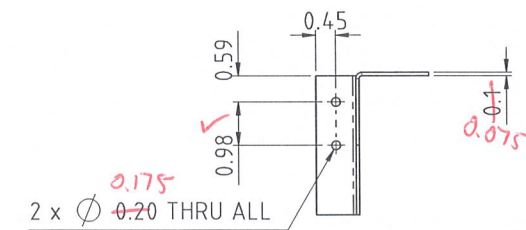
**Photo No. 4****Typical Adjustable ICF Joist Hanger Failure****SECTION 10****DRAWINGS**

The "As-Built" drawings for the Adjustable ICF Joist Hanger, which follow, have been reviewed by Intertek B&C and are representative of the project reported herein. Project construction was verified by Intertek B&C per the drawings included in this report. Any deviations are documented herein or on the drawings.



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Test sample complies with these details.
Deviations are noted.
Report # R0462.01-119512
Date 5/4/24 Tech STG-



GENERAL ROUGHNESS #	UNIT inch	✓ ∇ ∇ ISO 1302 ..Ra In μ m	TOLERANCES UNLESS OTHERWISE STATED DIMENSION \pm # ANGLE \pm #°	ISO 1101 A A	weight: 707.5204kg
SCALE 1:10	PROJ. AMERICAN	MATERIAL Material <not specified>	thickness: - / -	DRWN: - / -	CHK'D: - / - / -
CLASS.NO.		Adjustable Joist Hanger			
		(-)			
DATE: YYYY-MM-DD	REF. DRW: -	1	TOTAL SHEET NUMBER	Sheet1	A2



Total Quality. Assured.

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SECTION 11

REVISION LOG

REVISION #	DATE	PAGES	REVISION
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