

METAL PLUS LLC

TEST REPORT

SCOPE OF WORK

STATIC STRENGTH TESTING OF *UNIVERSAL SAFETY ANCHOR*

REPORT NUMBER

J7341.01-119-42 R0

TEST DATES

05/20/19

ISSUE DATE

06/05/19

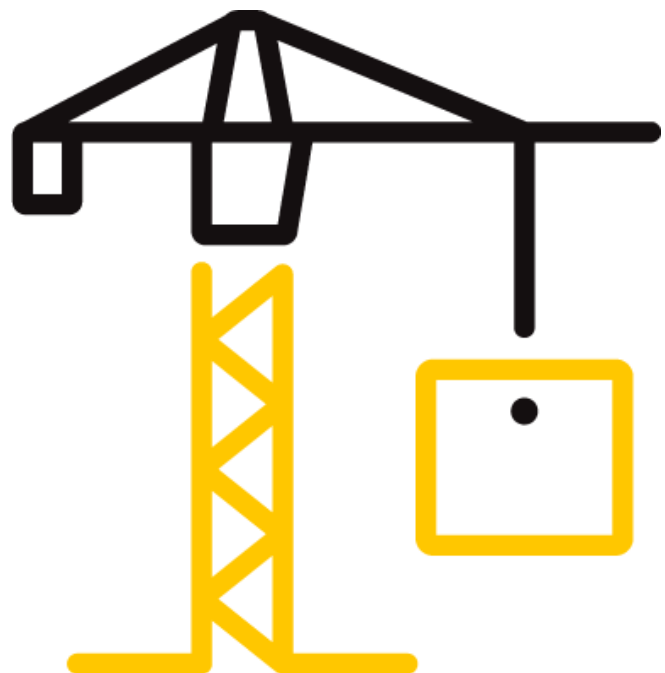
PAGES

14

DOCUMENT CONTROL NUMBER

GFT-OP-10c (AUGUST 27, 2018)

© 2017 INTERTEK



TEST REPORT FOR METAL PLUS LLC

Report No.: J7341.01-119-42 R0

Date: 06/05/19

REPORT ISSUED TO

METAL PLUS LLC

214 Wallens Hill Road

Winsted, CT 06098

SECTION 1

SCOPE

Intertek Building & Construction (B&C) was contracted by Metal Plus LLC to perform testing in accordance with OSHA 1910.140 Personal Fall Protection Systems, on their *Universal Safety Anchor*. 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, Pennsylvania.

This report does not constitute certification of this product nor an opinion or endorsement by this laboratory. 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, or other pertinent project documentation, will be retained for the entire test record retention period.

For INTERTEK B&C:

COMPLETED BY: Robert Spayd

TITLE: Technician II

SIGNATURE:

DATE: 06/05/19

REVIEWED BY: V. Thomas Mickley, Jr., P.E.

TITLE: Senior Staff Engineer

SIGNATURE:

DATE: 06/05/19

RGS:vtm/aas

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample(s) tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

TEST REPORT FOR METAL PLUS LLC

Report No.: J7341.01-119-42 R0

Date: 06/05/19

SECTION 2

TEST METHOD

The specimens were evaluated in accordance with Sections (c) (7) and (c) (8) of the following:

OSHA 1910.140, *Personal Fall Protection Systems*

SECTION 3

MATERIAL SOURCE/INSTALLATION

Test samples were provided by the client. Representative samples of the test specimens will be retained by Intertek B&C for a minimum of four years from the test completion date.

Specimens were individually mounted on 0.020 in thick / 24 gauge painted steel standing seam roof deck attached to a 32 in by 32 in Southern Yellow Pine (SYP) and plywood buck with square drive, countersunk pan head screws. The wood buck was rigidly fastened to the concrete floor for the testing

SECTION 4

TEST SPECIMEN DESCRIPTION

A two-piece hinged aluminum mechanism 2-1/2 in wide by 3-1/2 in tall by 8 in long. Each piece is 5/8 in thick and is held together with a 0.391 in diameter hinge pin. The inside dimensions when closed are 1-1/4 in wide by 2-1/2 in tall. The safety D-ring is 304 stainless steel with an outside diameter of 2.104 in and an inside diameter of 1.243 in. The anchor is secured with three 1/2 in by 3-1/2 in long square head bolts (3.833 in overall length, 0.491 in major diameter, 0.425 in minor diameter, 0.738 in head diameter, die point) with an accompanying nut, lock washer, and washer. See Section 10 for photographs and Section 11 for drawings.

SECTION 5

EQUIPMENT

ASSET NO.	DESCRIPTION	CALIBRATION DUE
63162	Mule	09/05/19
62414	Load Cell	03/22/20
INT00972	Stop Watch	02/12/20

SECTION 6

LIST OF OFFICIAL OBSERVERS

NAME	COMPANY
Robert Spayd	Intertek B&C
Scott T. Gladfelter	Intertek B&C

TEST REPORT FOR METAL PLUS LLC

Report No.: J7341.01-119-42 R0

Date: 06/05/19

SECTION 7

TEST PROCEDURE

Six specimens were individually installed onto the seam of the standing seam roof and each bolt was torqued to 70 ft-lbs. A hydraulic cylinder with a load cell capable of reading 25,000 lbs. was attached to the safety D-ring of the anchor. Section (c) (8) of OSHA 1910.140 specifies that “D-rings, snaphooks, and carabiners must be proof tested to a minimum tensile load of 3,600 pounds without cracking, breaking, or incurring permanent deformation,” therefore, three specimens were loaded to 3,600 lbs., perpendicular to the direction of the standing seam roof, and three specimens were loaded parallel to the direction of the standing seam roof. Section (c) (7) of OSHA 1910.140 specifies that “D-rings, snaphooks, and carabiners must be capable of sustaining a minimum tensile load of 5,000 pounds,” therefore, one specimen, in each direction, was also loaded to 5,000 lbs. The load was then released, and observations were noted. See photographs in Section 10 and drawings in Section 11 for more information.

SECTION 8

TEST RESULTS

Loading Perpendicular to Direction of Standing Seam Roof

SPECIMEN NO.	TARGET LOAD (lbs.)	OBSERVATIONS
1	3,600	Achieved load equal to or greater than 3,600 lbs. without any signs of cracking, breaking or permanent deformation
	5,000	Achieved load equal to or greater than 5,000 lbs.
2	3,600	Achieved load equal to or greater than 3,600 lbs. without any signs of cracking, breaking or permanent deformation
3		

Loading Parallel to Direction of Standing Seam Roof

SPECIMEN NO.	TARGET LOAD (lbs.)	OBSERVATIONS
1	3,600	Achieved load equal to or greater than 3,600 lbs. without any signs of cracking, breaking or permanent deformation
	5,000	Achieved load equal to or greater than 5,000 lbs.
2	3,600	Achieved load equal to or greater than 3,600 lbs. without any signs of cracking, breaking or permanent deformation
3		

TEST REPORT FOR METAL PLUS LLC

Report No.: J7341.01-119-42 R0

Date: 06/05/19

SECTION 9

CONCLUSIONS

The *Universal Safety Anchor* test specimens meet the requirements of Sections (c) (7) and (c) (8) of OSHA 1910.140. When installed on the seam of a 0.020 in thick / 24 gauge painted steel standing seam roof deck attached to a 32 in by 32 in Southern Yellow Pine (SYP) and plywood buck, the *Universal Safety Anchor* was capable of resisting both the 3,600 lbs. proof load and 5,000 lbs. tensile load both parallel and perpendicular to the direction of the standing seam.

SECTION 10

PHOTOGRAPHS

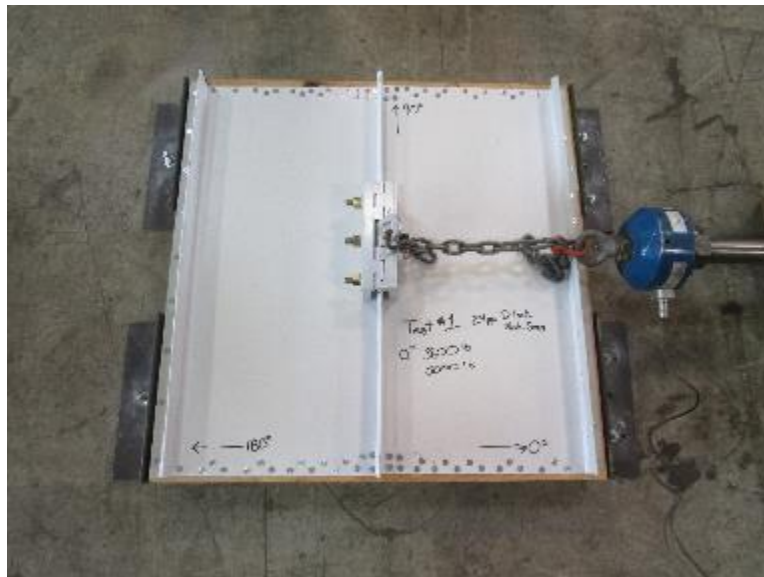


Photo No. 1

Typical Setup for Test Perpendicular to Direction of Standing Seam Roof

TEST REPORT FOR METAL PLUS LLC

Report No.: J7341.01-119-42 R0

Date: 06/05/19



Photo No. 2

Typical Setup for Test Parallel to Direction of Standing Seam Roof



Photo No. 3

Specimen at 3,600 lbs. Perpendicular to Direction of Standing Seam Roof

TEST REPORT FOR METAL PLUS LLC

Report No.: J7341.01-119-42 R0

Date: 06/05/19

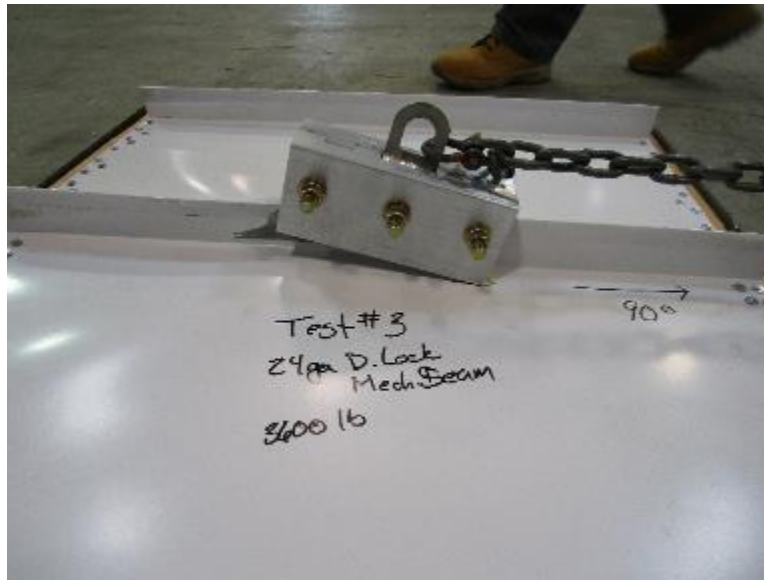


Photo No. 4

Specimen at 3,600 lbs. Parallel to Direction of Standing Seam Roof

SECTION 11

DRAWINGS

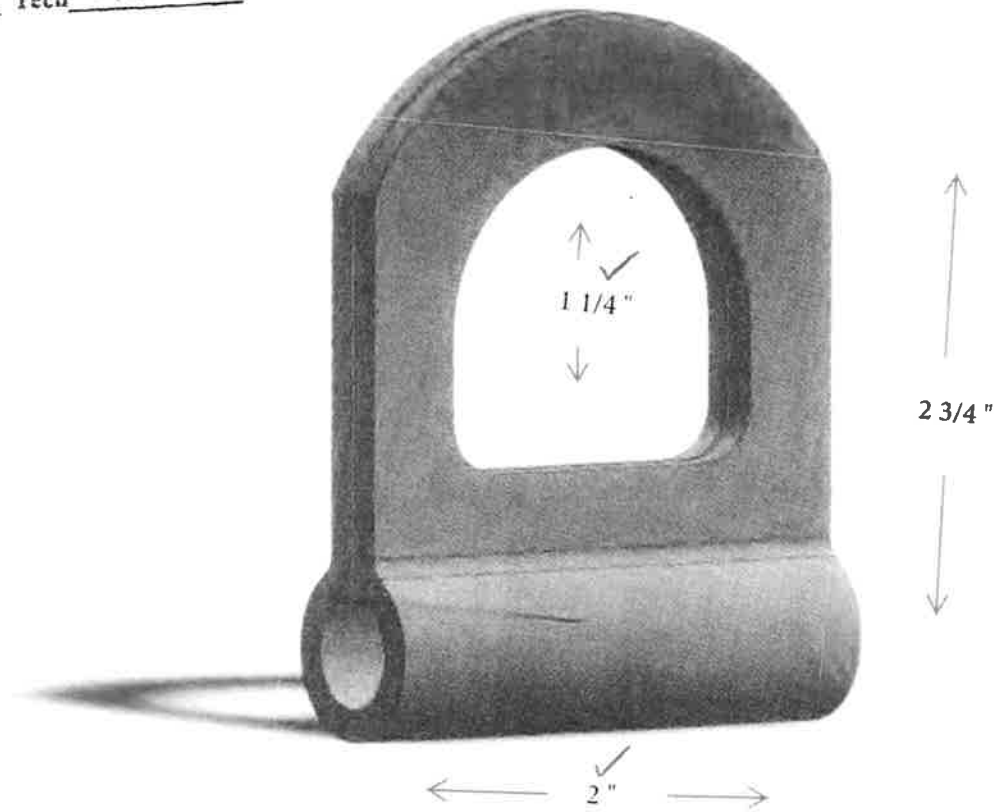
The drawings for the *Universal Safety Anchor*, which follow have been reviewed by Intertek B&C and are representative of the project reported herein. Project construction was verified by Intertek B&C per the drawings included in this report. Any deviations are documented herein or on the drawings.

intertek

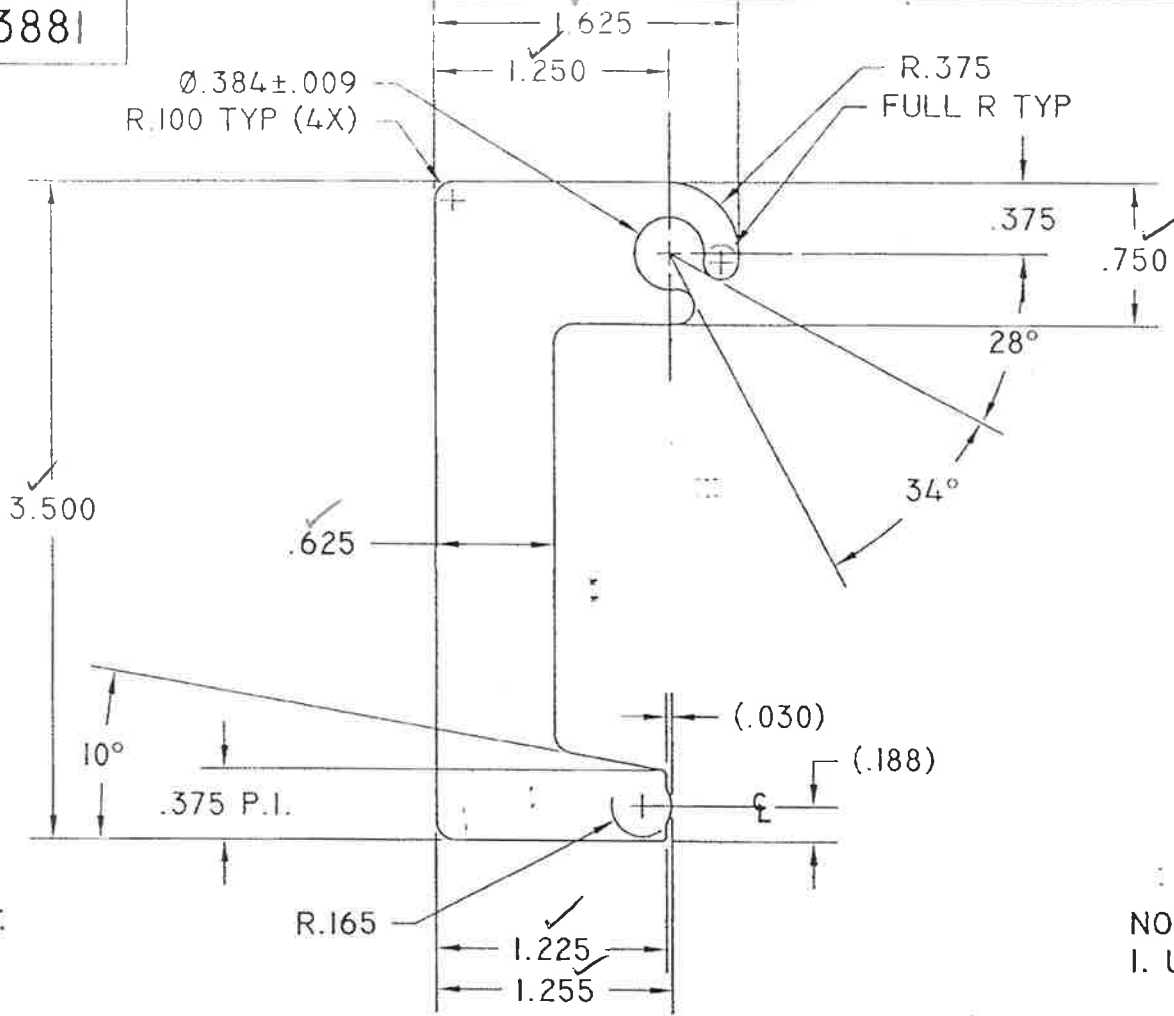
Test sample complies with these details.
Deviations are noted.

Report # 57341.01-119-42

Date 6/4/19 Tech STG



903881



REV.	DATE	ECN	APPV'D
A	01-08-19	RELEASED TO MFG	<i>Carl Megerhofer</i>

intertek

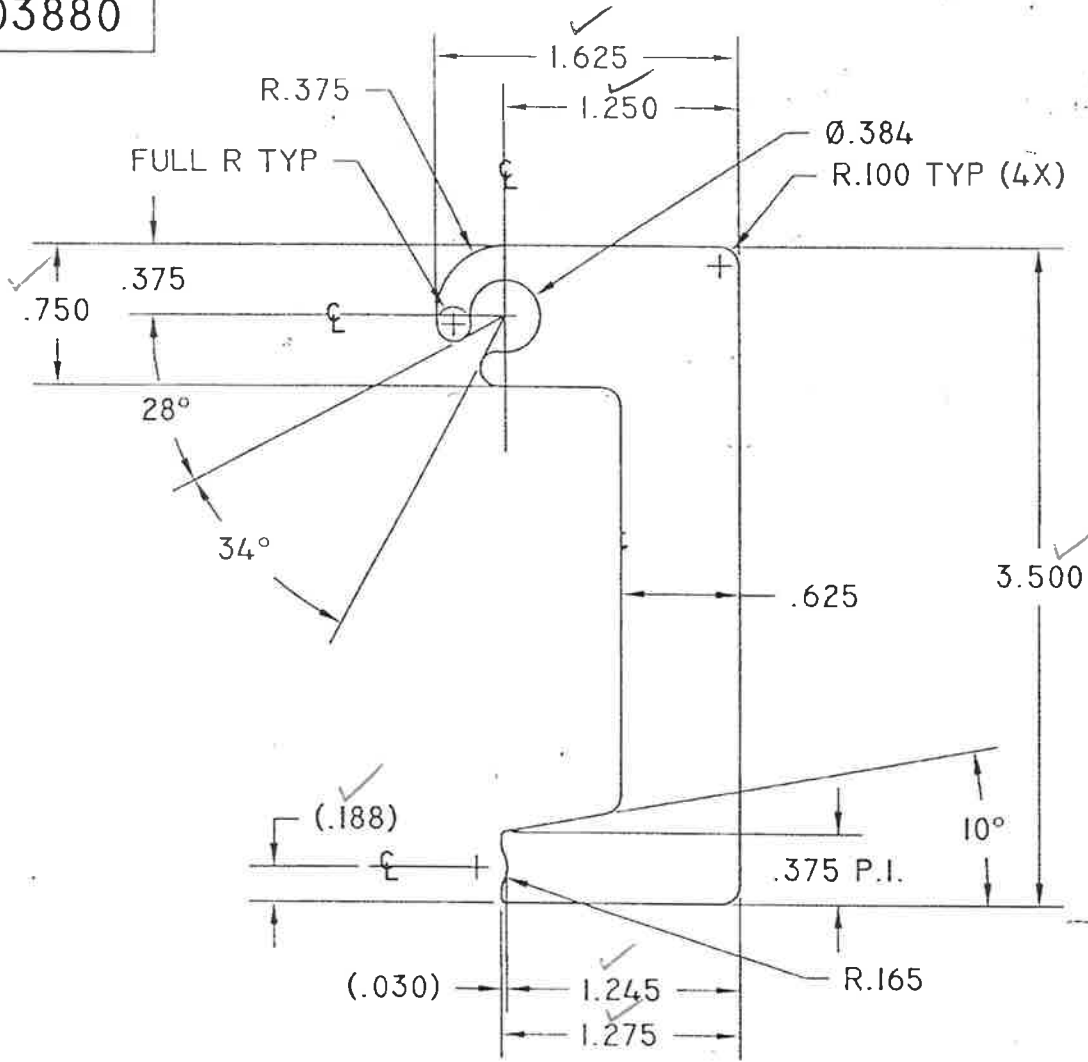
Test sample complies with these details.
 Deviations are noted.
 Report # J7341.01-1A-42
 Date 6/4/19 Tech STC

NOTES:
 I. UNLESS OTHERWISE SPECIFIED:
 STANDARD ALUM. ASSOC. TOLERANCES APPLY
 BREAK SHARP CORNERS R.025 MAX.
 UNSPECIFIED RADII = .025

AREA: 2.983	CUSTOMER: METAL PLUS	
PERIM: 11.946	PART NAME: FALL PROTECTION MALE	DATE: 01-03-19
OUTSIDE PERIMETER: 11.946		DWN BY: MRB
WT./FT. 3.579	CUST DWG /REV FALL PROTECTION MALE	SCALE: 1 : 1
MAT'L: 6061-T6	SECTION No. 903881	CHK:

903880

REV.	DATE	ECN	APPV'D
A	01-08-19	RELEASED TO MFG	<i>Carl Meyerhofer</i>



intertek

Test sample complies with these details.
Deviations are noted.

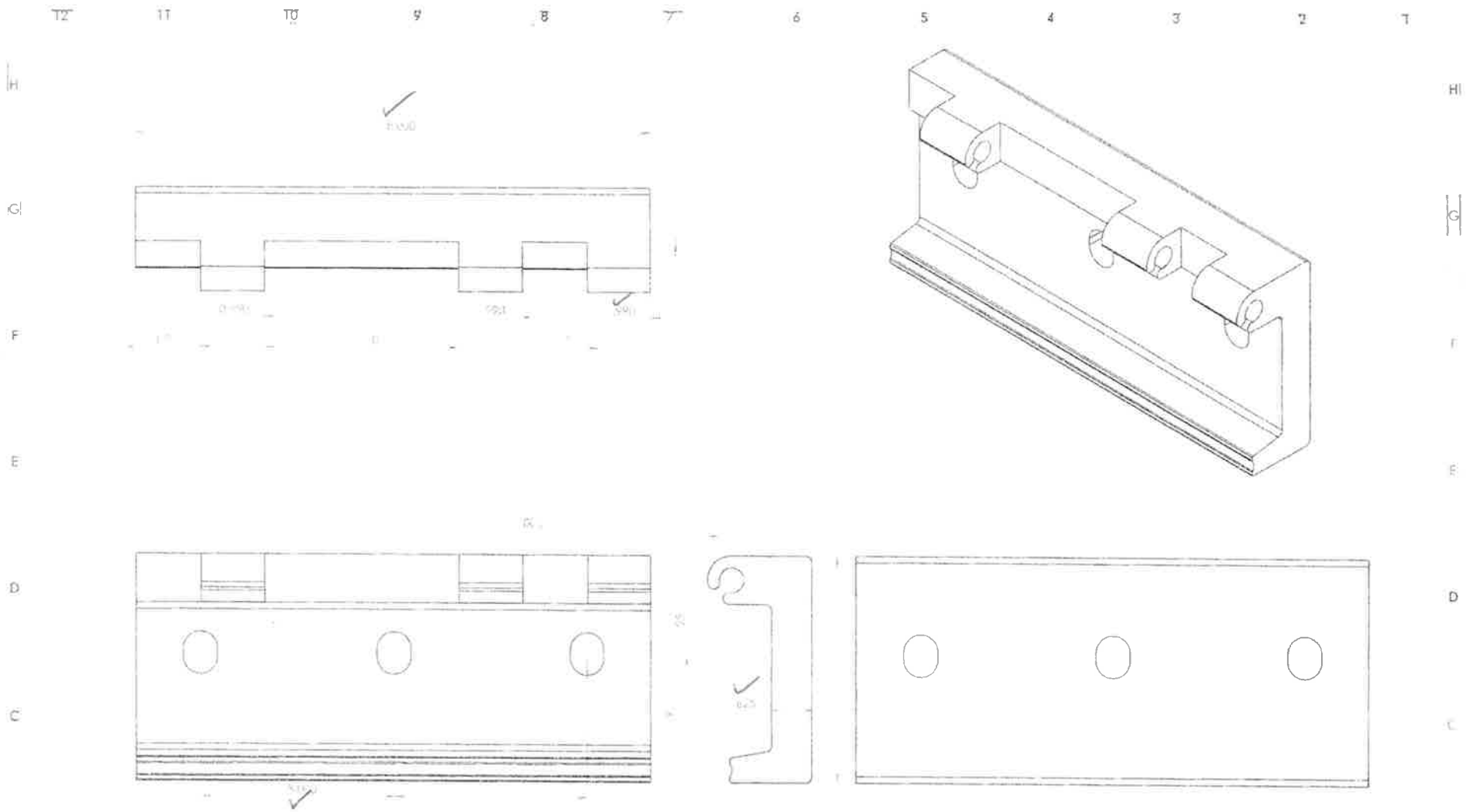
Report # J734101-119-42

Date 6/4/19 Tech STG

NOTES:

- I. UNLESS OTHERWISE SPECIFIED:
STANDARD ALUM. ASSOC. TOLERANCES APPLY
BREAK SHARP CORNERS R.025 MAX.
UNSPECIFIED RADII = .025

AREA: 2.999	CUSTOMER: METAL PLUS		
PERIM: 12.038	PART NAME: FALL PROTECTION FEMALE	DATE: 01-03-19	
OUTSIDE PERIMETER: 12.038		DWN BY: MRB	
WT./FT. 3.599	CUST DWG /REV FALL PROTECTION FEMALE	SCALE: 1 : 1	
MAT'L: 6061-T6	SECTION No. 903880	CHK:	



intertek

Test sample complies with these details.

Deviations are noted.

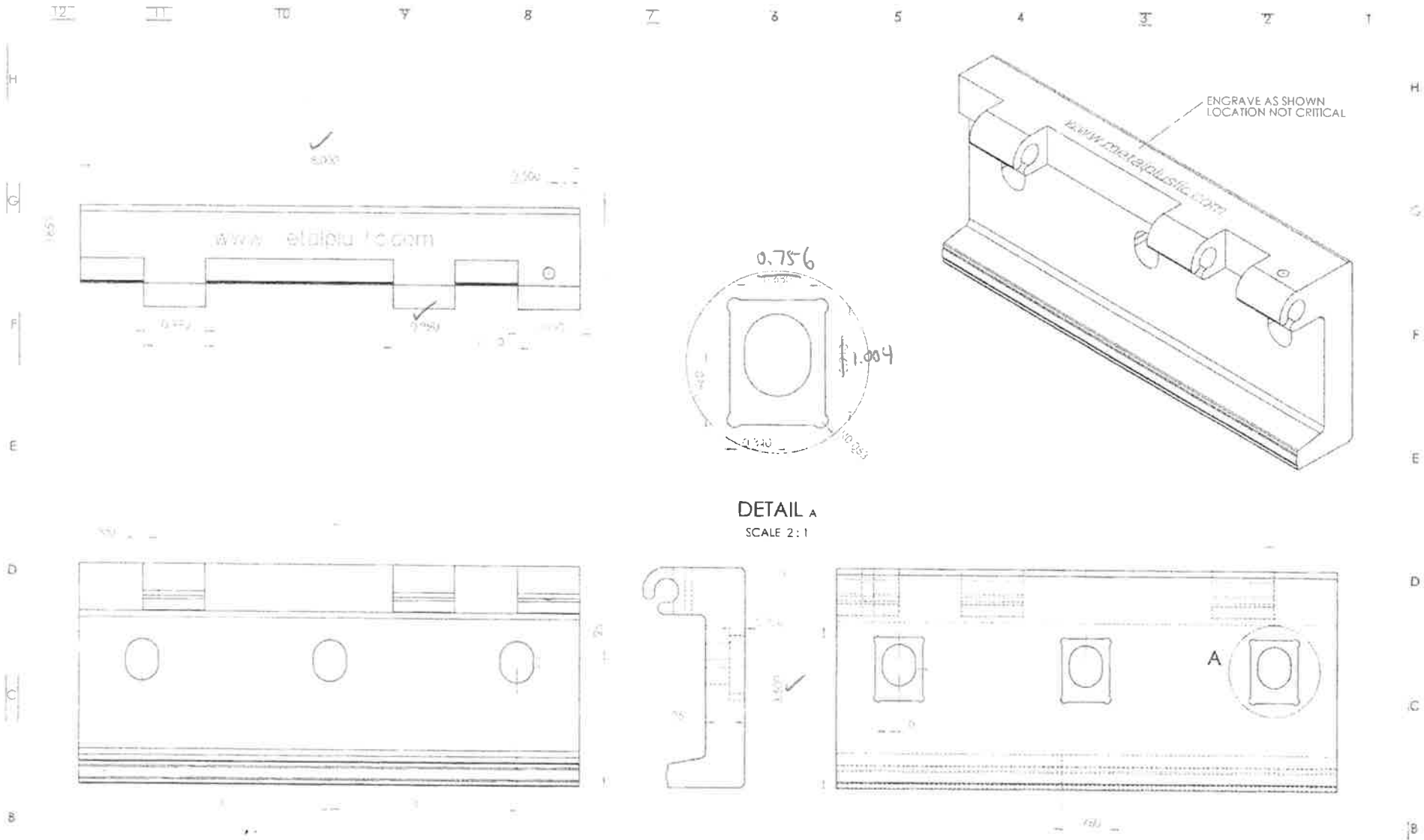
Report # JK341.01-119-42

Date 6/4/19 **Tech** STG

**METAL PLUS
FALL PROTECTION**

Extrusion 1

A2



DETAIL A
SCALE 2:1

intertek

**Test sample complies with these details.
Deviations are noted.**

Report # J7341.01-119-42
Date 6/4/19 Tech STG

METAL PLUS FALL
PROTECTION
Extrusion 2 A2

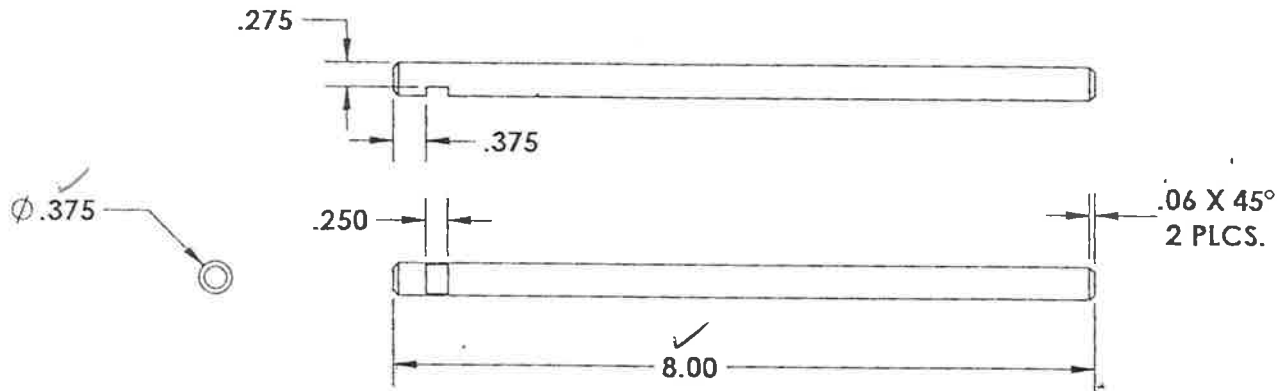
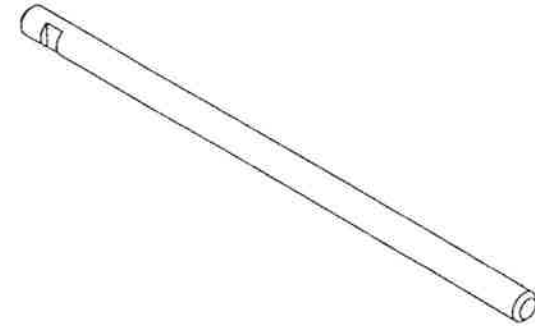
intertek

Test sample complies with these details.
Deviations are noted.

Report # J73411-01-119-42

Date 6/4/19 Tech STG

SIZE	DWG NO	REV
A	Hinge Pin 1	1
REV	DESCRIPTION	DATE
1	DESIGN STAGE	9/5/2017
		APPROVED
		XXX



MATERIAL	303 SST	MODEL	SKIP	9/5, 2017	TITLE METAL PLUS FALL PROTECTION		
FINISH	..	DRAWING	SKIP	9/5, 2017			
BEND TOOLING	..	CHECKED					
MADE FROM	..	APPROVED					
DATE:	9/5/2017	UNLESS OTHERWISE SPECIFIED: UNITS IN INCHES TOLERANCES: FORM/FIT/ASSEMBLY: XXX - DIA/XX - ROD FLAT PARTS (HOLE XXX - DUG/CR - DIA) ANGLES (X - 2)			SIZE	DWG NO	REV
SHEETMETAL DEPARTMENT		A	Hinge Pin 1	1	PROJECT	SHEET 1 OF 1	



Total Quality. Assured.

130 Derry Court
York, Pennsylvania 17406

Telephone: 717-764-7700
Facsimile: 717-764-4129
www.intertek.com/building

TEST REPORT FOR METAL PLUS LLC

Report No.: J7341.01-119-42 R0

Date: 06/05/19

SECTION 12

REVISION LOG

REVISION #	DATE	PAGES	REVISION
0	06/05/19	N/A	Original Report Issue