

# Infinity Testing Solutions

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## Clevis Pivot Assembly Strength Test

**Report Number: 21010062 Revision 1**

Report for: **Conqueror Building Materials Inc.**  
3392 Colonial Drive  
Mississauga, ON L5L 5B9

Attention: Reuben Massey

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Report Date: February 19, 2021

## 1.0 INTRODUCTION

At the request of Conqueror Steel Inc., Infinity Testing Solutions (ITS) conducted strength testing of a clevis pivot assembly as per ITS SOP 9 rev.3 test procedure.

The sample was assigned an ITS sample number as follows:

ITS Sample Number	Sample Description
21010062-1	Clevis pivot assembly

Sample was received on February 18<sup>th</sup>, 2021.

Testing was performed on February 19<sup>th</sup>, 2021.

## 2.0 TEST PROCEDURE

### 2.1 Test Setup and Procedure

Testing was performed using a load frame equipped with a hydraulic actuator and load cell. The test was controlled and monitored using a LabVIEW-based control program.

Sample consisted of two clevises securing together via a 3/4" hardened alloy shoulder screw/pin with a Rockwell C32 hardness in a double shear setup. The sample was placed on the heavy-duty test bed and sandwiched between four securing plates to locate the sample beneath the load frame/actuator and prevent samples' base clevis from shifting during test. As shown in Figure 1 and Figure 2.

A compression load was applied at a rate of 2,500 lbf/minute until sample reached a point near its yield point without compromising the samples. Load and position data were recorded continuously a rate of 10 Hz.

### 2.2 Measurement Instruments

Instrument Name	ID	Range	Serial Number	Calibration Due
Eaton 3156-100k Load Cell	M0218	100,000 lbf	2442	2021-08-06
Buster 9243 Signal Conditioner	M0219	10 V	261313	2021-08-06

**3.0 RESULTS**

Sample Number	Achieved Load	Observations
21010056-1	43,000 lbf (191.3 kN)	Minimum deflection of clevis plate holes. Pin still easily removed

Setup and post-test photos are shown in Figures 1 through 4.

Load-deflection chart is shown in Figure 5.

**4.0 OBSERVATIONS**


Based on the observed load vs deflection curve during testing and signs that the sample could reach a yield point causing the sample to shear through the clevis plates. Under ITS advisement and clients’ decision, testing was concluded at the achieved load and after a hold time of 1 min to verify sample had not reached a yield point yet.

**Infinity Testing Solutions Inc.**

Reported by:

  
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*This report refers only to the particular samples provided, and is limited by the test and/or analysis performed. Similar articles may not be of like quality, and other testing and/or analysis methods might give different results.*

**4.0 RECORD OF REVISIONS**

Revision	Revised Sections	Revision Date
Original	N/A	February 19, 2021
Revision 1	- Adjustments to Clients company information	February 19, 2021

**Figures**  
(3 pages)



Figure 1: Test setup



Figure 2: Sample during maximum load (43,000 lbf)



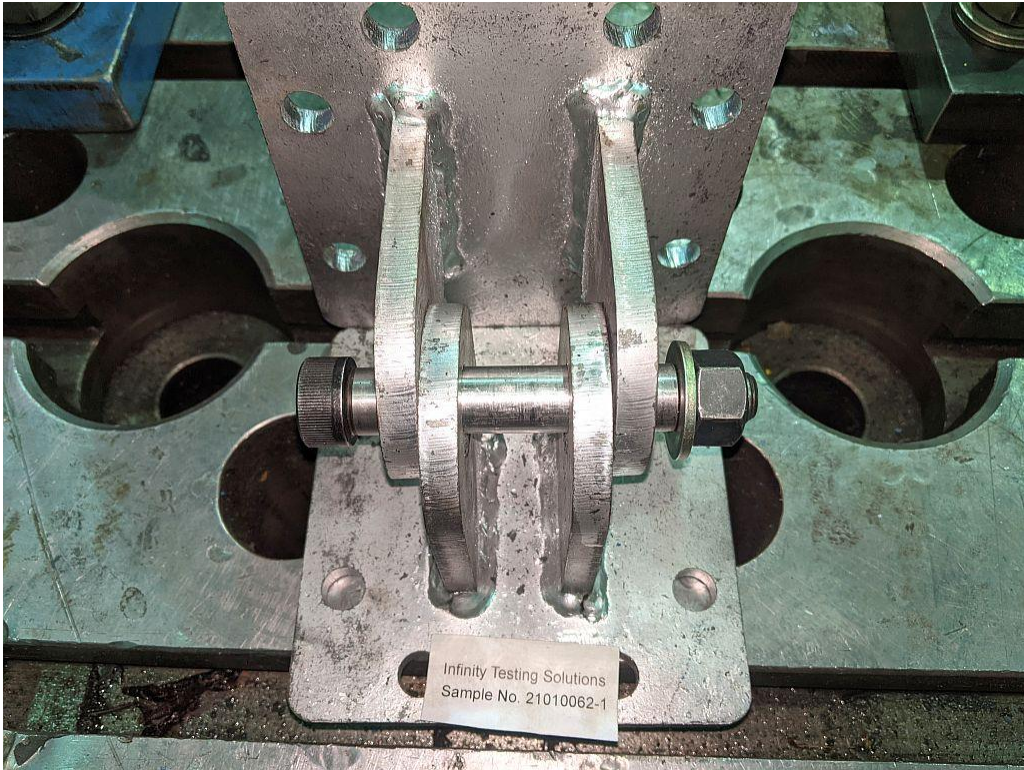


Figure 3: Clevis pivot assembly after testing

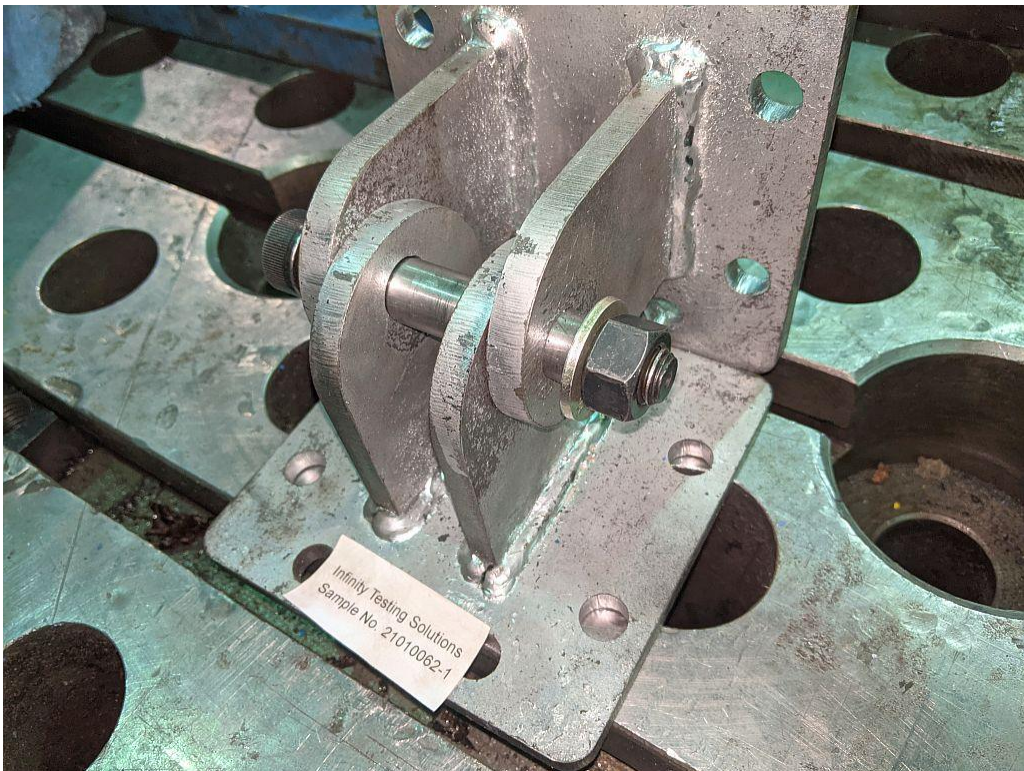


Figure 4: Clevis pivot assembly after testing

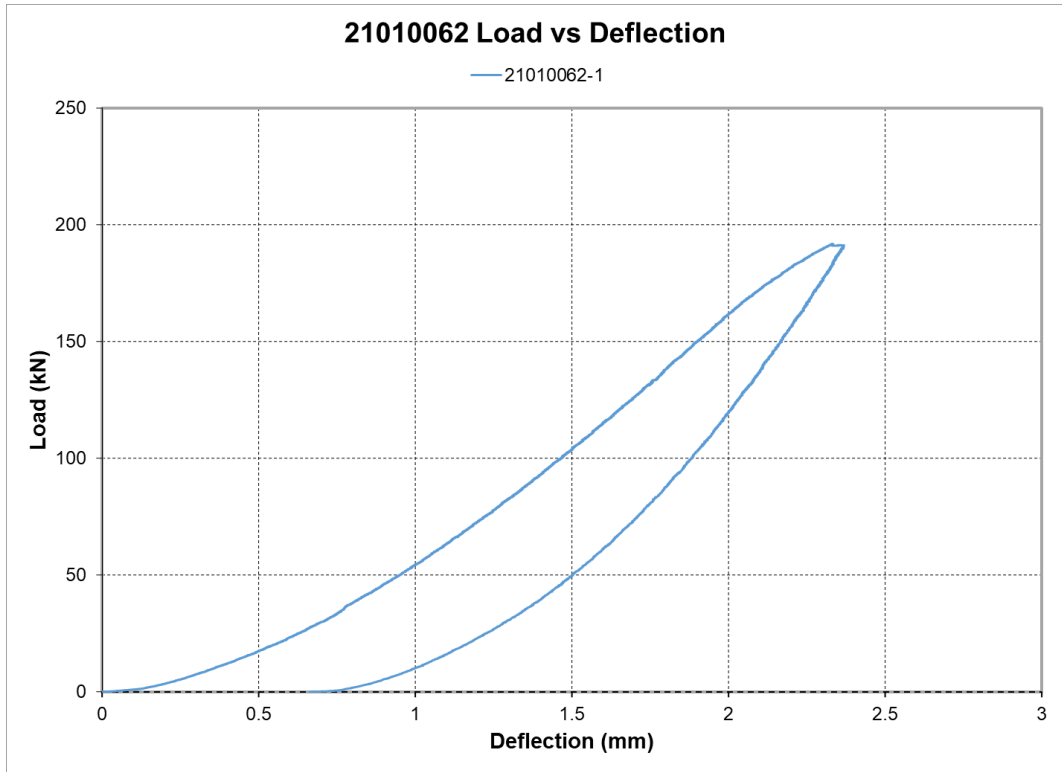


Figure 5: Load vs deflection chart