

**Subject:** Cleveland Process Audit

**Date:** July 10, 2015

**Completed By:** Steve Busicnki

On July 10, 2015, work order CLV 56584 was ran on the CR2 for Versa Fab. Tag 214715 was verified prior to loading and use of the coil. The overall coil width was measured at the beginning of the job. One of the first sheets was measured for length, width, square, flatness, wave and gauge was checked with a micrometer at both edges and the crown. On the third skid produced, one of the first sheets was checked for length, width, square, flatness and wave. The last sheet of the fifth bundle was also checked for length, width, square, flatness, and wave. Based on the gauge report, 99.4% of the material was within specification with an average thickness of 0.0990. This average is within the customers specification of 0.0966 – 0.1126.

# Part Spec/PO Audit Form

Cust #	9409	Customer	Versa Fab	Grp/Sz/Grd/Width	POS / .0956 / CSB / 57.0000
Equip/Plant	PWC CR2	Work Order #	CLV 56584	Part No.	12GA 57 X 102 HRPO
		Date	7/10/2015		
Work Order Information		Material to be Used		Actual	
		Tag #1	214715	Gauge #1	.099 / .100 / .099
		PO#	21429-001	% Gauge In Spec	99.40%
Gauge Range	0.0966 - 0.1126	Gauge Min	.0956 Min	Low/High Gauge	0.0956 / 0.1007
Width Range	57.0000 - 57.9999	Width	57.0000"	Average	0.099
Length Range	102.0000 - 102.2500			Width	57.7500
Rockwell		Rockwell		Length	102.0930
Tensile				Rockwell	Rockwell
Yield				Square	0.062
% Elongation				Flatness	< .120
Chem Rqmts					
Other Rqmts					
Wave	0.00 - 0.12			Other	
Flatness	0.00 - 0.12				
Square	0.00 - 0.63				
Summary					
Actions					
Final Status					

## Quality Checklist

Machine # 5

**Ordered RB:**

	Gauge Tolerance			Width Tol:	Length Tol:	Square Tol:	Flatness Tol:		
	C960	9186		± .049	± .05 SO	- .03	- .10		
Skid Tag#	Edge	Crown	Edge	Width	Length	Square	Flatness	Inspected By	Date
48391	C99	120	C97	57-75	102-103	.002	< .120	Jamie	7-10
Last piece of 1st bundle	C99	100	C99	57-75	102-.093	.002	< .120	Jamie	7-10

[illegible]

Skid Tag#	Edge	Crown	Edge	Width	Length	Square	Flatness	Inspected By	Date
40327	C99	100	C99	57.607	41.093	C63	2.00	Johnnie	7-10
Last piece of last bundle	C99	100	C99	57.607	41.093	C63	2.00	Johnnie	7-10

# AGT400 Coil Summary Report

## Jemison Metals -- 75 Inch Red Bud CTL Line

Work Order: 56584 Coil Number: 214715

Customer Name: VERSA FAB Heat Number: GLTC73911 Vendor: WORTHINGTON S

Product: H.R.P.O. Steel Jul-10-15 12:36 PM to 1:12 PM (clock 36.3 min/ run 12.0 min) Shift: 1

### Average Thickness and Tolerance Data

Target 0.1043 in Average\* 0.0990 in Average - Target -0.0053 in (-5.08%)  
Standard Deviation\* 0.0017 in (1.04%)

Length 1077 ft Above High Limit 0.1126 in 3 ft (0.0%)  
Width 57.750 in In Tolerance 1077 ft (100.0%)  
Weight 20988 lbs Below Low Limit 0.0960 in 6 ft (0.6%)

Max Thickness 0.1007 in at 54 ft Min Thickness 0.0956 in at 394 ft  
Head Scrap 9 ft Tail Scrap 2 ft

### Statistical Process Control Data

Upper Control Limit 0.1022 in Upper Tolerance Limit 0.1126 in  
X Double Bar 0.0990 in R Bar 0.0032 in  
Lower Control Limit 0.0958 in Lower Tolerance Limit 0.0960 in

CR 39.0% (Capability Ratio %, 100/CP)

CP 2.562 (Process Capability, HiLim-LoLim/6\*Sigma)

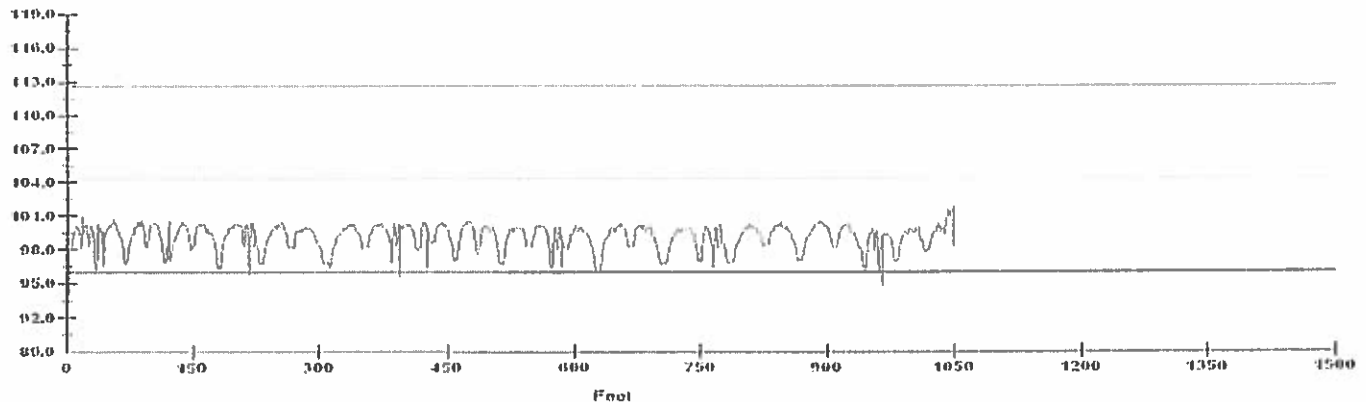
CPK 0.926 (Capability vs Limits) TMW Ratio 0.970 (Low Limit/Avg)

### Thickness Distribution Relative to the Target

+0.0100	0.0%
+0.0090	0.0%
+0.0080	0.0%
+0.0070	0.0%
+0.0060	0.0%
+0.0050	0.0%
+0.0040	0.0%
+0.0030	0.0%
+0.0020	0.0%
+0.0010	0.0%
+0.0000	0.0%
-0.0010	0.0%
-0.0020	0.0%
-0.0030	0.0%
-0.0040	0.0%
-0.0050	51.6%
-0.0060	21.7%
-0.0070	12.9%
-0.0080	9.7%
-0.0090	1.2%
-0.0100	0.0%

0.0% is within  $\pm 0.0020$  in of the target 54.5% is within  $\pm 0.0050$  in of the target  
100.0% is within  $\pm 0.0100$  in of the target 100.0% is within  $\pm 0.0200$  in of the target

Thickness vs Length (Coil Number 214715)



Gauge readings provided by Advanced Gauging Technologies, L.L.C. Plain City, OH 43064 USA Tel:(614) 873-6691