

Process/Product Audit Checklist

Cust #: <u>6941</u> Customer: <u>Lozier</u> GRP/Size/GRD/Width: <u>CAS/20L/CSB/48</u>				
PWC: <u>CA2</u> W/O#: <u>70755</u> Date: <u>11/27/18</u> Part #(s): <u>88720-00</u> Auditor: <u>Patrick Macies</u>				
Gauge Range: <u>.037-.039</u> Actual Gauge: <u>.033</u> Width Range: <u>46-48.25</u> Width Actual: <u>48.053</u>				
Length Range: <u>97.825-98.125</u> Length Actual: <u>98</u> Other: <u>8.040</u> Other Actual: <u>0-.125</u>				
Other: <u>Bow .125</u> Other Actual: <u><.125</u> Other: _____ Other Actual: _____				
Item	YES	NO	N/A	Comments/Action Taken (Required for NO)
Process Inspection Sheets filled out according to <u>frequency</u> and <u>sampling</u> required?	✓			
Correct raw material type and size?	✓			Tag(s) to use: <u>235521/235522</u> Tag(s) used: <u>235521</u> <u>235522</u>
Setup performed according to W/O?	✓			
Product is acceptable according to customer-specific requirements? [Fab: Is the Part Print Present & the correct Revision? Are required measurements documented?]	✓			SO. Spec of .125" OK Based on customer Drawing [Fab: Print Rev: _____, W/O Rev: _____, Part Spec Rev: _____] (Leave blank if non-Fab audit)
Packaging is acceptable according to customer-specific requirements?	✓			
Visual Inspection performed and product meets requirements?	✓			
Out of spec noted, with actions taken?	✓			SO Spec of .125" OK Based on CUS Drawing Difference in Design
Non-conforming material put into reject warehouse and physically put into non-conforming area?			✓	
Required gages available & functional?	✓			
All Gages Calibrated (List in Comments)	✓			Gages Observed (list last calibration and when due) Tape 14 9/16 Due 9/19 Step ST2 3/17 Due 3/19 Measuring Table 11/22/18 Due 11/22/19
Housekeeping: Machine/Floor clean? Loose tags & paperwork cleaned up?	✓			
Required PPE being worn?	✓			
Forms are the latest revision per Quality Intranet?	✓			List Forms (Observed Rev vs Intranet Rev) JDM 13 - Rev 7/Rev 7
Hardcopy Controlled Documents are listed on Quality Intranet by location?	✓			List Documents and their Location: CIV RB 002 Rev 4

CLV-RB-002

Redbud Procedure

Redbud Procedure

- ✓ 1. Print out of pick list or Redbud schedule to be used to stage coils in order of use. If lineup is changed, Production Planner or Plant Manager will notify CRB Operator and correct schedule.
- ✓ 2. Skid list is created per schedule and given to appropriate personnel.
- ✓ 3. Using W/O's "Order spec" sections to determine sizes and leveler settings that will be input into CRB.
- ✓ 4. Coil loaded onto CRB by appropriate personnel, tag is given to operator to verify correct coil is fed up per W/O.
- ✓ 5. Operator loads the gauge range from the "Job Specifications" section of the Work Order into Gamma Computer.
- NA 6. If slitting and leveling, Operator checks knife clearance. If clearance is good, material is fed through the knives. If clearance is incorrect, necessary adjustments are made.

Frequency of Quality Measurements (BURR, WIDTH, CAMBER, FLATNESS, LENGTH, SQUARE) Record on JDM13

<u>Tolerance Type</u>	<u>Minimum Inspection Frequency</u>
TIGHT TOLERANCE +/- 0.062" or tighter for LENGTH, WIDTH, or SQUARE 1/8" or less for FLATNESS	CHECK SAMPLE PRIOR TO PUTTING LINE IN RUN + CHECK PIECE ONCE LINE RUN IS ESTABLISHED + LAST PIECE OF 1ST BUNDLE + LAST PIECE OF SKID AFTER EVERY 7,000 LBS + LAST PIECE OF RUN
STOCK TOLERANCE Greater than +/- 0.062" for LENGTH, WIDTH, or SQUARE Greater than 1/8" for FLATNESS	CHECK PIECE ONCE LINE RUN IS ESTABLISHED + LAST PIECE OF 1ST BUNDLE + LAST PIECE OF SKID EVERY 14,000 LBS + LAST PIECE OF RUN

- ✓ 7. Operator manually checks gauge (edge-crown-edge) on first and last bundle produced as well as monitoring the Gamma. Rockwell (if required) from first bundle only. All other measurements are taken according to the table above by Operator & Helper.
- ✓ 8. Visual inspection for BURR, WIDTH, CAMBER, FLATNESS, LENGTH, SURFACE QUALITY, SHAPE Performed on every bundle, not recorded.
- ✓ 9. Width of master coil, at entry side of knives checked per Inspection Checkpoints 8.3.3.
- NA 10. If any check does not meet the Customer Part Specification/Job Requirements, QA is notified and will contact sales.
- NA 11. Sales to contact customer for deviation (if OK, this is noted on work order). Also, on occasion, based on knowledge of sales or customer needs, sales may also OK without notifying customer. If not OK'd by customer, Production Planner is notified so coil can be replaced. Status of removed coil to be determined at this time. (Typical dispositions include: placing in reject warehouse for MRB disposition, or application to another customer.)
- ✓ 12. Product is packaged according to W/O & Part Specification, weighed, tagged, and moved to appropriate warehouse. Packaging and final inspection results recorded on JDM5.
- ✓ 13. At packaging, appropriate personnel will write tag number on bundle to be visible where tag is hung.

Revision History

<u>Revision Date</u>	<u>Revision Level</u>	<u>Changes Made</u>
11/8/16	4	Added Step 13.
03/07/13	3	#5 Clarified data input for Gamma Computer
06/13/12	2	Adjusted Inspection Frequency
09/30/11	1	Adjusted tolerances in the chart from 0.030" to 0.062"
03/23/11	0	Original Version

AGT400 Coil Summary Report

Jemison Metals -- 75 Inch Red Bud CTL Line

Work Order: 70755 Coil Number: 235521

Customer Name: LOZIER Heat Number: NLMLNK1763828 Vendor: NLMK

Product: Cold-Rolled Steel Nov-27-18 11:10 AM to 12:32 PM (clock 82.0 min/ run 2.3 min) Shift: 1

Average Thickness and Tolerance Data

Target 35.9 mil Average* 33.4 mil Average - Target -2.5000 mil (-6.96%)
Standard Deviation* 0.3000 mil (0.84%)

Length	138 ft	Above High Limit	38.9 mil	0 ft (0.0%)
Width	48.093 in	In Tolerance		136 ft (98.4%)
Weight	756 lbs	Below Low Limit	32.9 mil	2 ft (1.6%)

Max Thickness	34.0 mil at	34 ft	Min Thickness	32.7 mil at	112 ft
Head Scrap	16 ft		Tail Scrap	25 ft	

Statistical Process Control Data

CR 30.0% (Capability Ratio %, 100/CP)
CP 3.333 (Process Capability, HiLim-LoLim/6*Sigma)
CPK 0.556 (Capability vs Limits) TMW Ratio 0.985 (Low Limit/Avg)

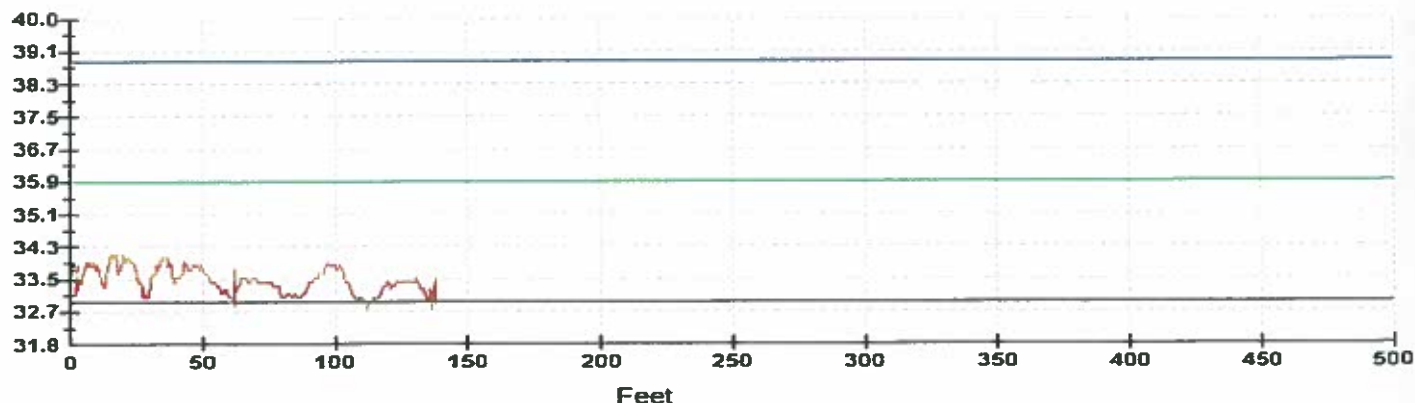
Thickness Distribution Relative to the Target

+++	0.0%
+ 5.0	0.0%
+ 4.5	0.0%
+ 4.0	0.0%
+ 3.5	0.0%
+ 3.0	0.0%
+ 2.5	0.0%
+ 2.0	0.0%
+ 1.5	0.0%
+ 1.0	0.0%
+ 0.5	0.0%
+ 0.0	0.0%
--0.5	0.0%
--1.0	0.0%
--1.5	0.0%
--2.0	5.2% *****
--2.5	56.2% *****>
--3.0	37.0% *****>
--3.5	1.6% ---
--4.0	0.0%
--4.5	0.0%
--5.0	0.0%
---	0.0%

0 3 6 9 12 15 18 21 24 27 30 33 %

0.0% is within ± 1.0000 mil of the target 61.4% is within ± 2.5000 mil of the target
100.0% is within ± 5.0000 mil of the target 100.0% is within ± 10.0000 mil of the target

Thickness vs Length (Coil Number 235521)



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

PROCUREMENT SPECIFICATION

GENERAL:
COLD ROLLED CS-B COMMERCIAL STEEL CLASS 1 PRIME
MATERIAL TO MEET ASTM SPEC. A366 UNLESS OTHERWISE NOTED.
THICKNESS AS ORDERED: 0.032 MIN. -0.000 +0.006
WEIGHT: 1.4278 LBS/SQ. FT. • THICKNESS: .035
CARBON: .10 MAX.
HARDNESS: 60 RB MAX.
FINISH: MATTE SURFACE FINISH, LIGHT OIL

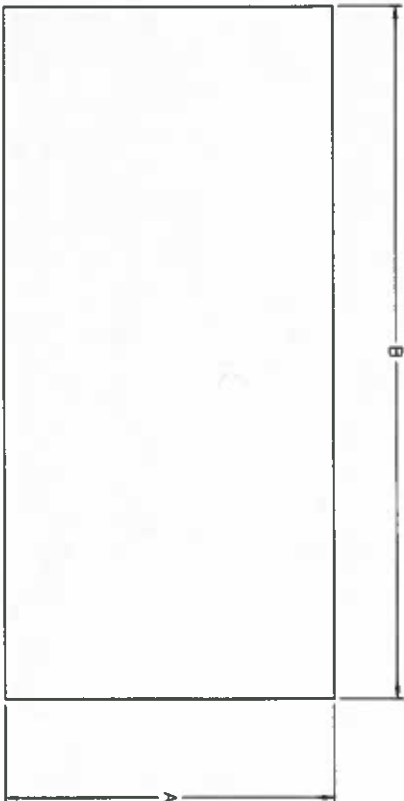
BLANK TOLERANCES:
THICKNESS: +.004
-.000

BLANK TOLERANCE = WIDTH: ±.020
LENGTH: ±.020

SQUARENESS: MAXIMUM ALLOWABLE TOTAL DEVIATION ON
DIAGONALS = 0.040°
SHIP ON PALLET - MAXIMUM WEIGHT OF 3,400 POUNDS.

FOR 48 X 96 BLANKS TOLERANCES ARE:

LENGTH: +/- 1/8
WIDTH: +/- 1/4
SQUARENESS: +/- 1/16



20 GA CRS	96.000	48.000	8097120-063
20 GA CR	29.688	22.750	8097120-062
20 GA CR	7.500	23.453	8097120-061
20 GA CR	18.875	26.844	8097120-060
20 GA CR	23.875	35.000	8097120-059
20 GA CR	26.844	18.875	8097120-058
20 GA CR	21.688	20.125	8097120-057
20 GA CR	24.000	36.875	8097120-056
20 GA CR	36.938	7.938	8097120-055
20 GA CR	44.063	20.875	8097120-054
20 GA CR	35.875	7.563	8097120-053
20 GA CR	37.250	24.656	8097120-052
20 GA CR	39.625	25.438	8097120-051
20 GA CR	17.875	18.750	8097120-050
20 GA CR	5.563	29.000	8097120-049
20 GA CR	4.656	29.000	8097120-048
20 GA CR	93.000	50.000	8097120-047
20 GA CR	60.000	50.000	8097120-046
20 GA CR	56.000	48.000	8097120-045
20 GA GALV	48.000	48.000	8097120-044

20 GA	36.484	20.875	8097120-043
20 GA SS	96.000	48.000	8097120-042
20 GA GALV	96.000	48.000	8097120-041
20 GA	23.875	7.563	8097120-040
20 GA	5.679	19.750	8097120-039
20 GA	47.875	47.563	8097120-038
20 GA	47.875	39.563	8097120-037
20 GA	35.938	24.938	8097120-036
20 GA	47.563	35.875	8097120-035
20 GA	35.875	39.563	8097120-034
20 GA	47.563	29.875	8097120-033
20 GA	39.563	29.875	8097120-032
20 GA	28.968	24.938	8097120-031
20 GA	25.250	24.625	8097120-030
20 GA	24.875	24.000	8097120-029
20 GA	47.563	23.875	8097120-028
20 GA	39.563	23.875	8097120-027
20 GA	40.484	20.875	8097120-026
20 GA	33.625	20.875	8097120-025
20 GA	28.438	20.875	8097120-024

20 GA	28.188	20.875	8097120-023
20 GA	24.750	20.875	8097120-022
20 GA	20.125	19.875	8097120-021
20 GA	47.563	14.875	8097120-020
20 GA	39.563	14.875	8097120-019
20 GA	24.938	9.719	8097120-018
20 GA	24.938	7.938	8097120-017
20 GA	24.938	4.563	8097120-016
20 GA	20.313	8.000	8097120-015
20 GA	29.375	2.875	8097120-014
20 GA	24.938	7.344	8097120-013
20 GA	24.813	7.250	8097120-012
20 GA	23.625	3.688	8097120-011
20 GA	23.875	16.063	8097120-010
20 GA	23.875	14.063	8097120-009
20 GA	20.312	10.063	8097120-008
20 GA	85.875	47.875	8097120-007
20 GA	32.375	2.875	8097120-006
20 GA	47.563	27.875	8097120-005
20 GA	39.375	24.813	8097120-004

Topper
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TOLERANCES UNLESS SPECIFIED:
WIRE PRODUCTS USE: ES-38
DECIMAL: XXX ±.010
DECIMAL: XX ±.03
FRACTIONAL: ± 1/32" ANGULAR: ± 5° (BENDS)
METRIC: ± 1MM

INSPECTION DIMENSION

68992	W	ADDED -070	
68706	V	ADDED -069	
65888	U	ADDED -068	
65100	T	ON -065 DIM A WAS 22.4375, ON -066 DIM A WAS 22.781 ON -067 DIM A WAS 16.125 & DIM B WAS 28.125	
PCO	REV		
TITLE: 20 GA, BLANK			
REVISION DESCRIPTION			
8097120	W	DRAWING NO.	REV
PAGE 1 OF 2			
1W	DF	BH	
2W	DF	BH	
3W	DF	BWO	
4W	DF	BWO	
5W	DF	BWO	
6W	DF	BWO	
7W	DF	BWO	
8W	DF	BWO	
9W	DF	BWO	
10W	DF	BWO	
11W	DF	BWO	
12W	DF	BWO	
13W	DF	BWO	
14W	DF	BWO	
15W	DF	BWO	
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92W	DF	BWO	
93W	DF	BWO	
94W	DF	BWO	
95W	DF	BWO	
96W	DF	BWO	
97W	DF	BWO	
98W	DF	BWO	
99W	DF	BWO	
100W	DF	BWO	

8097120	W
DRAWING NO.	REV
PAGE 2 OF 2	



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TITLE:
20 GA, BLANK

TOLERANCES UNLESS SPECIFIED:
WIRE PRODUCTS USE: E3-38

DECIMAL: XXX = ±.010
DECIMAL: XX = ±.03
FRACTIONAL: ± 1/32"
METRIC: ± 1MM

INSPECTION
DIMENSION
ANGULAR: ± 3° (BENDS)
± 1° (ALL OTHERS)

20 GA	98.000	48.000	8097120-070
20 GA CRS	48.875	48.250	8097120-069
20 GA	49.950	23.166	8097120-068
20 GA	16.125	22.718	8097120-067
20 GA	28.125	22.718	8097120-066
20 GA	28.75	22.250	8097120-065
20 GA	47.188	24.594	8097120-064
MATERIAL	B	A	PART NUMBER