Production Part Approval Process (PPAP)

Marion Body Works, Inc.

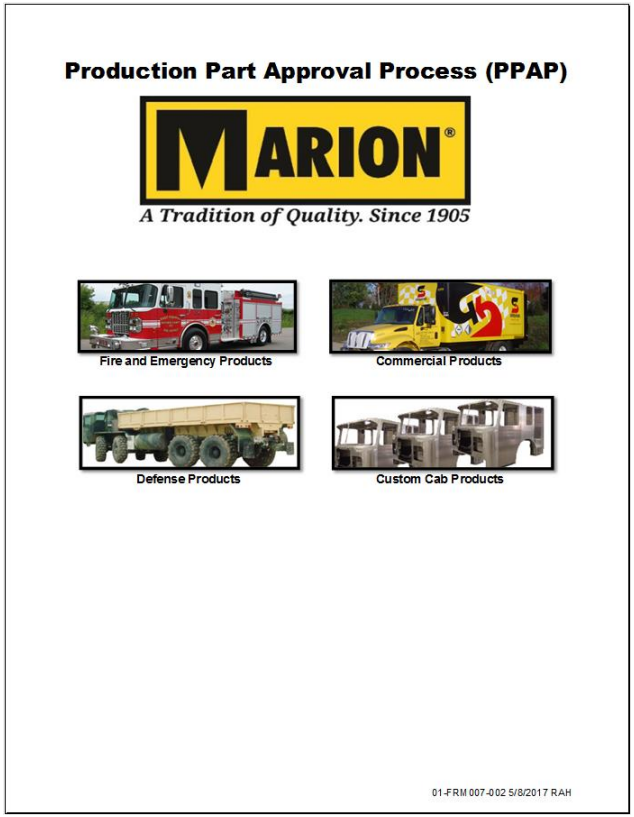
Training Guide

Production Part Approval Process (PPAP)

The purpose of PPAP is to determine if all customer engineering design record and specification requirements are properly understood by the Suppliers and that the manufacturing process has the capability to produce product consistently meeting these requirements during an actual production run at the quoted production rates.

MBW PPAP Level Definitions

Level 1 PPAP:
• Part Submission Warrant (PSW) - One page document that "warrants" the part meets the design requirements
Level 2 PPAP: Includes Level 1 PPAP requirements PLUS…
• Part Submission Warrant
• Dimensional Results – 1 piece
• Design Records (Bubble Print)
• PPAP Samples – First production order / upon request prior to production order
• Print Notes (Attach copy of Raw Material Certification / Performance Test Report / Surface Finish / Labeling, Paint Process, Welding)
• Supplier Change Request – if applicable
Level 4 PPAP
• Part Submission Warrant (PSW)
• Dimensional Results – 1 piece
• Design Records (Bubble Print)
• PPAP Samples

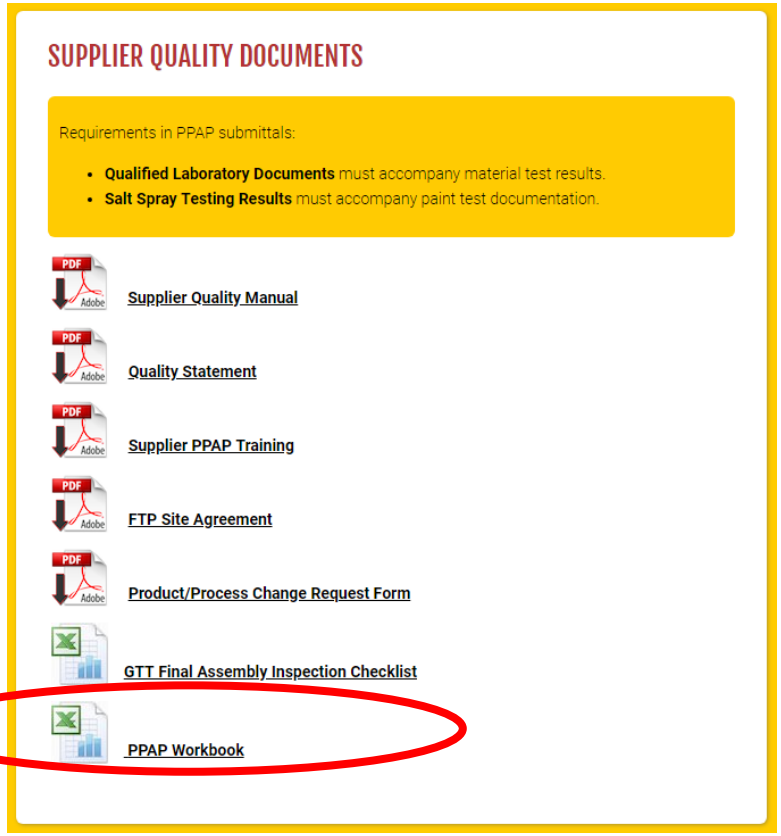


Accessing MBW PPAP Workbook

http://www.marionbody.com/supplier-quality-information

To access the Marion Body Works PPAP workbook, click on the hyperlink above and select “Production Part Approval Process.”

All required pages of the PPAP workbook must be filled out entirely.



Submitting PPAP Documentation

PPAP documentation must be supplied to Marion via the FTP site.
File name should be formatted as follows

MBW PART NUMBER_SUPPLIER NAME_MMDDYYYY_REV

IMPORTANT:
DO NOT SUBMIT ANY PPAP DOCUMENTATION VIA EMAIL OR WITH THE PARTS SHIPMENT

Submitting PPAP Documentation

If you have access to the Marion FTP site, follow the below instructions for uploading PPAP documentation.

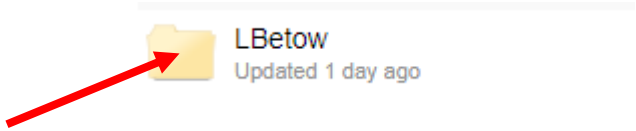
If you do not have access, please follow the instructions on slide eight of this training.

Access the Marion Body Works FTP site:
https://marionbody.exavault.com/login

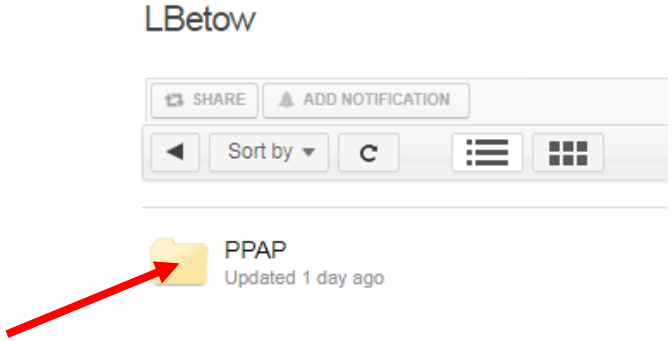
Submitting PPAP Documentation

Example:

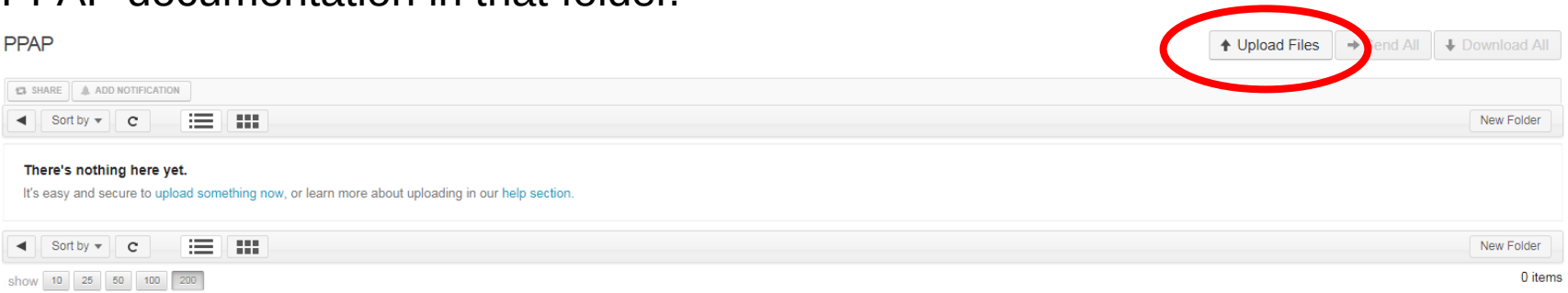
Select your supplier folder.



Once inside the folder you will see a folder labeled PPAP.



Select the PPAP folder and upload all PPAP documentation in that folder.



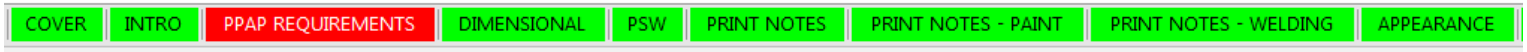
Submitting PPAP Documentation

If you do not have access to the Marion Body Works FTP site, please fill out the agreement located on the Marion Body Works website:

http://www.marionbody.com/supplier-quality-information

And return to Lisa Betow—Materials Manager
lbetow@marionbody.com

PPAP Workbook – Level 2 Requirements



INTRO:

Type in Part / Supplier Information, this will be transferred throughout the workbook.

PPAP REQUIREMENTS:

This outlines the PPAP submission requirements. (Informational only)

PSW:

This documents the warrant that the Part Meets the design Intent. This will be used to communicate back to the supplier the acceptance or rejection of the PPAP.

DIMENSIONAL:

This is used in conjunction with a “bubble print” to document the actual dimensions of the PPAP part.

PRINT NOTES:

This is used to document all the remaining notes on print (Attach copy of Raw Material Certification / Performance Test Report / Surface Finish / Labeling, Paint Process, Welding)

Required where applicable:

PRINT NOTES – Performance Tests:

This is optional depending if there are Print Notes specifying performance requirements.

PRINT NOTES – Defense PAINT:

This is optional depending if there are Print Notes specifying paint requirements for Defense Product.

PRINT NOTES – Plating:

This is optional depending if there are Print Notes specifying coating requirements.

PRINT NOTES – APPEARANCE:

This is optional depending if there are Print Notes specifying paint requirements for non-Defense Product.

PRINT NOTES – WELDING:

This is optional depending if there are Print Notes / Welding requirements specified.

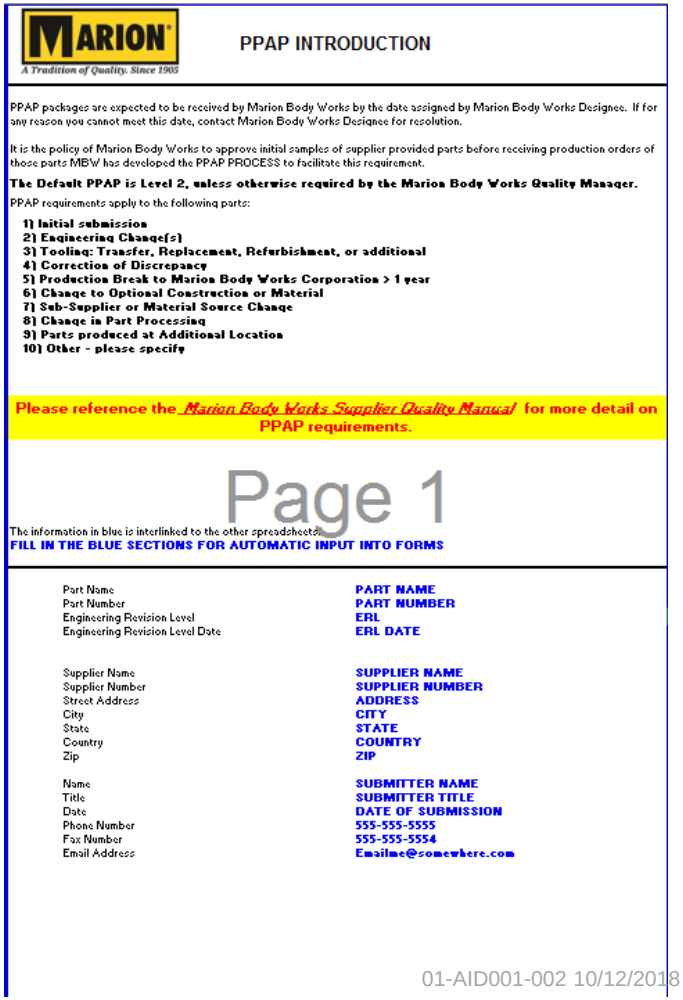
PPAP Workbook – Intro Tab

COVER | INTRO | PPAP REQUIREMENTS | DIMENSIONAL | PSW | PRINT NOTES | PRINT NOTES - PAINT | PRINT NOTES - WELDING | APPEARANCE

Fill in all of the blue information. This will automatically populate all like fields throughout the workbook.

Part Information

Supplier Information



MARION
A Tradition of Quality. Since 1905

PPAP INTRODUCTION

PPAP packages are expected to be received by Marion Body Works by the date assigned by Marion Body Works Designee. If for any reason you cannot meet this date, contact Marion Body Works Designee for resolution.

It is the policy of Marion Body Works to approve initial samples of supplier provided parts before receiving production orders of those parts MBW has developed the PPAP PROCESS to facilitate this requirement.

The Default PPAP is Level 2, unless otherwise required by the Marion Body Works Quality Manager.

PPAP requirements apply to the following parts:

1) Initial submission
2) Engineering Change(s)
3) Tooling: Transfer, Replacement, Refurbishment, or additional
4) Correction of Discrepancy
5) Production Break to Marion Body Works Corporation > 1 year
6) Change to Optional Construction or Material
7) Sub-Supplier or Material Source Change
8) Change in Part Processing
9) Parts produced at Additional Location
10) Other - please specify

Please reference the *Marion Body Works Supplier Quality Manual* for more detail on PPAP requirements.

Page 1

The information in blue is interlinked to the other spreadsheets.
FILL IN THE BLUE SECTIONS FOR AUTOMATIC INPUT INTO FORMS

Part Name	PART NAME
Part Number	PART NUMBER
Engineering Revision Level	ERL
Engineering Revision Level Date	ERL DATE
Supplier Name	SUPPLIER NAME
Supplier Number	SUPPLIER NUMBER
Street Address	ADDRESS
City	CITY
State	STATE
Country	COUNTRY
Zip	ZIP
Name	SUBMITTER NAME
Title	SUBMITTER TITLE
Date	DATE OF SUBMISSION
Phone Number	555-555-5555
Fax Number	555-555-5554
Email Address	Emailme@somewhere.com

PPAP Submission Requirements

COVER | INTRO | PPAP REQUIREMENTS | DIMENSIONAL | PSW | PRINT NOTES | PRINT NOTES - PAINT | PRINT NOTES - WELDING | APPEARANCE

Level 2 PPAP is the default submission level and should be used unless otherwise specified by MBW.

The list of what is required is based on the submission level requested.

Any deviation from MBW requirements (specifications, material, print notes, etc.) must be approved by the use of the deviation form prior to PPAP submission.

MARION
A Tradition of Quality. Since 1905

MARION BODY WORKS
PPAP Part Submission Requirements

Part Number:	PART NUMBER	Part Description:	PART NAME
Revision Level:	ERL	Revision Date:	
Supplier Name:	SUPPLIER NAME	Purchase Order No.	
Supplier Number:	SUPPLIER NUMBER	Reason for Request:	
Date Issued:		Submission Due Date:	

ALL PPAP CRITERIA MUST CONFORM TO Specifics defined in the Marion Body Works Supplier Quality Manual

UNLESS OTHERWISED SPECIFIED IN WRITING BY MARION BODY WORKS:

Default PPAP Submission Level 2 - Unless Otherwise Specified by Marion Body Works
(Segment Specific Requirements may vary)
S = Supplier Must Send Items to MBW for Approval
* = Supplier to Send items to MBW Upon Request
N/R= Documents are not required for development or submission

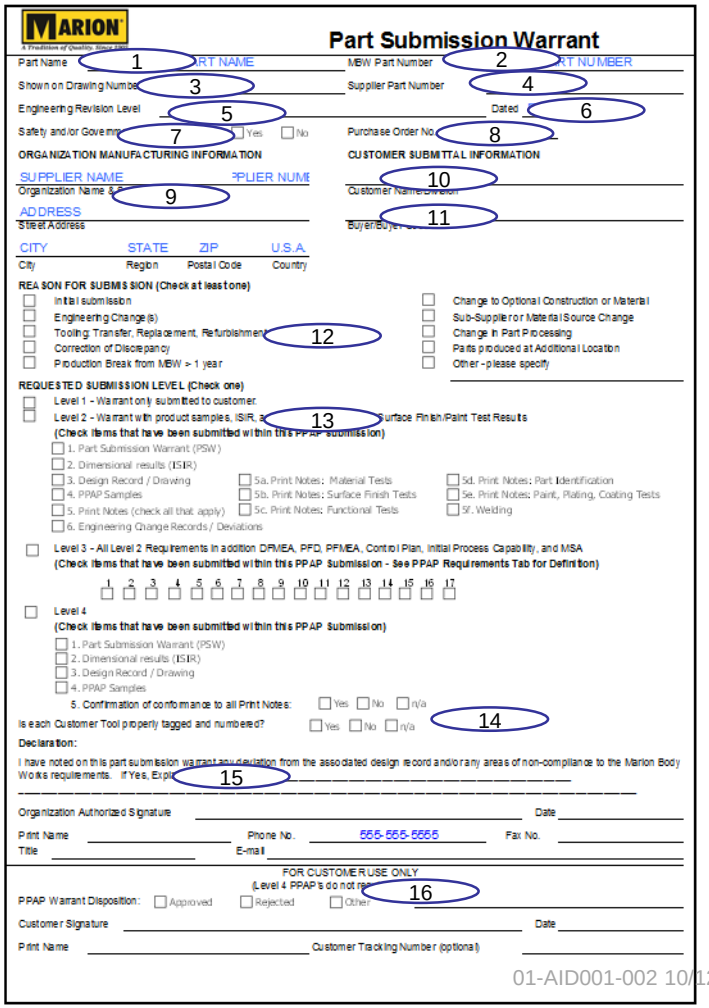
PPAP Submission Requirements and Detail Description	Submission Level 1	2	3	4
1.) Part Submission Warrant (PSW)	S	S	S	S
2.) Dimensional Results	*	S	S	S
3.) Design Records (Bubble Print)	*	S	S	S
4.) PPAP Samples - *first production order / upon request prior to production order*	*	S	S	S
5.) Print Notes: (Attach copy of Raw Material Certification / Performance Test Report / Surface Finish / Labelling, Paint Process, Welding)	*	S	S	*
6.) Supplier Change Request Form- *if applicable*	*	S	S	N/R
7.) Design Failure Modes effects Analysis (DFMEA) - *if supplier is design responsible*	*	*	S	N/R
8.) Process Flow Diagram (PFD)	*	*	S	N/R
9.) Process Failure Modes Effects Analysis (PFMEA)	*	*	S	N/R
10.) Initial Process Capability - *for major / critical characteristics*	*	*	S	N/R
11.) Measurement System Analysis (MSA) - *for major / critical characteristics*	*	*	S	N/R
12.) Process Control Plan	*	*	S	N/R
13.) Appearance Approval Report (AAR) - *if applicable*	*	*	S	N/R
14.) Checking Aids (Fixture, gage, template, etc) - if applicable	*	*	S	N/R
15.) Records of Compliance with Customer Specific Requirements - if applicable	*	*	S	N/R
16.) Master Sample Photo Documentation of PPAP parts	*	*	S	N/R
17.) Tooling Photo Documentation - if applicable	*	*	S	N/R

Additional Submission Instructions below:

PSW – Part Submission Warrant

COVER | INTRO | PPAP REQUIREMENTS | DIMENSIONAL | PSW | PRINT NOTES | PRINT NOTES - PAINT | PRINT NOTES - WELDING | APPEARANCE

1.) Name of part on drawing
2.) MBW part number on PO/drawing
3.) MBW part number on drawing
4.) Supplier part number if applicable (n/a if not)
5.) Engineering change level (ex. Rev B, this will be on the drawing / PO)
6.) Engineering date (ex. 4/7/11, this will be on the drawing / PO)
7.) Is this is Safety / Government regulation (ex. Drawing will indicate if it is FMVSS, or other industry standard safety regulation.)
8.) PO number from MBW driving demand for this part / PPAP.
9.) This section requires all applicable Supplier location information.
10.) Marion Body Works
11.) Buyer Name
12.) Check the reason for the PPAP submission
13.) Check the Level of PPAP that was requested by MBW and check what documents in the PPAP have been submitted that are applicable for this component.
14.) If Supplier has MBW owned tooling document here.
15.) Supplier Point of Contact Information ***Electronic Signatures Are Acceptable***
16.) MBW quality department will complete this section and send back to the Supplier Point of Contact.


MARION

Part Submission Warrant

Part Name 1 RT NAME | MBW Part Number 2 RT NUMBER

Shown on Drawing Numbe 3 | Supplier Part Number 4

Engineering Revision Level 5 | Dated 6

Safety and/or Governm 7 Yes No | Purchase Order No 8

ORGANIZATION MANUFACTURING INFORMATION

SUPPLIER NAME PLIER NUM

Organization Name & 9

ADDRESS

Street Address

CITY STATE ZIP U.S.A.

City Region Postal Code Country

CUSTOMER SUBMITTAL INFORMATION

10

Customer Name/Division

11

Buyer/Buyer

REASON FOR SUBMISSION (Check at least one)

- Initial submission
- Engineering Change(s)
- Tooling: Transfer, Replacement, Refurbishment 12
- Correction of Discrepancy
- Production Break from MBW > 1 year
- Change to Optional Construction or Material
- Sub-Supplier or Material Source Change
- Change in Part Processing
- Parts produced at Additional Location
- Other - please specify

REQUESTED SUBMISSION LEVEL (Check one)

- Level 1 - Warrant only submitted to customer
- Level 2 - Warrant with product samples, ISIR, a 13 Surface Finish/Paint Test Results

(Check items that have been submitted within this PPAP submission)

1. Part Submission Warrant (PSW)
2. Dimensional results (ISIR)
3. Design Record / Drawing
4. PPAP Samples
5. Print Notes (check all that apply)
6. Engineering Change Records / Deviations
- 5a. Print Notes: Material Tests
- 5b. Print Notes: Surface Finish Tests
- 5c. Print Notes: Functional Tests
- 5d. Print Notes: Part Identification
- 5e. Print Notes: Paint, Plating, Coating Tests
- 5f. Welding

- Level 3 - All Level 2 Requirements in addition DFMEA, PFD, PFMEA, Control Plan, Initial Process Capability, and MSA

(Check items that have been submitted within this PPAP Submission - See PPAP Requirements Tab for Definition)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

- Level 4

(Check items that have been submitted within this PPAP Submission)

1. Part Submission Warrant (PSW)
2. Dimensional results (ISIR)
3. Design Record / Drawing
4. PPAP Samples
5. Confirmation of conformance to all Print Notes: Yes No n/a

Is each Customer Tool properly tagged and numbered? Yes No n/a 14

Declaration:

I have noted on this part submission warrant any deviation from the associated design record and/or any areas of non-compliance to the Marion Body Works requirements. If Yes, Expl 15

Organization Authorized Signature Date

Print Name Phone No. 555-555-5555 Fax No.

Title E-mail

FOR CUSTOMER USE ONLY

(Level 4 PPAP's do not re 16

PPAP Warrant Disposition: Approved Rejected Other

Customer Signature Date

Print Name Customer Tracking Number (optional)

DO NOT LEAVE ANY SECTIONS BLANK. N/A IS OK WHERE NECESSARY
BLANK SECTIONS WILL RESULT IN REJECTION OF THE PPAP

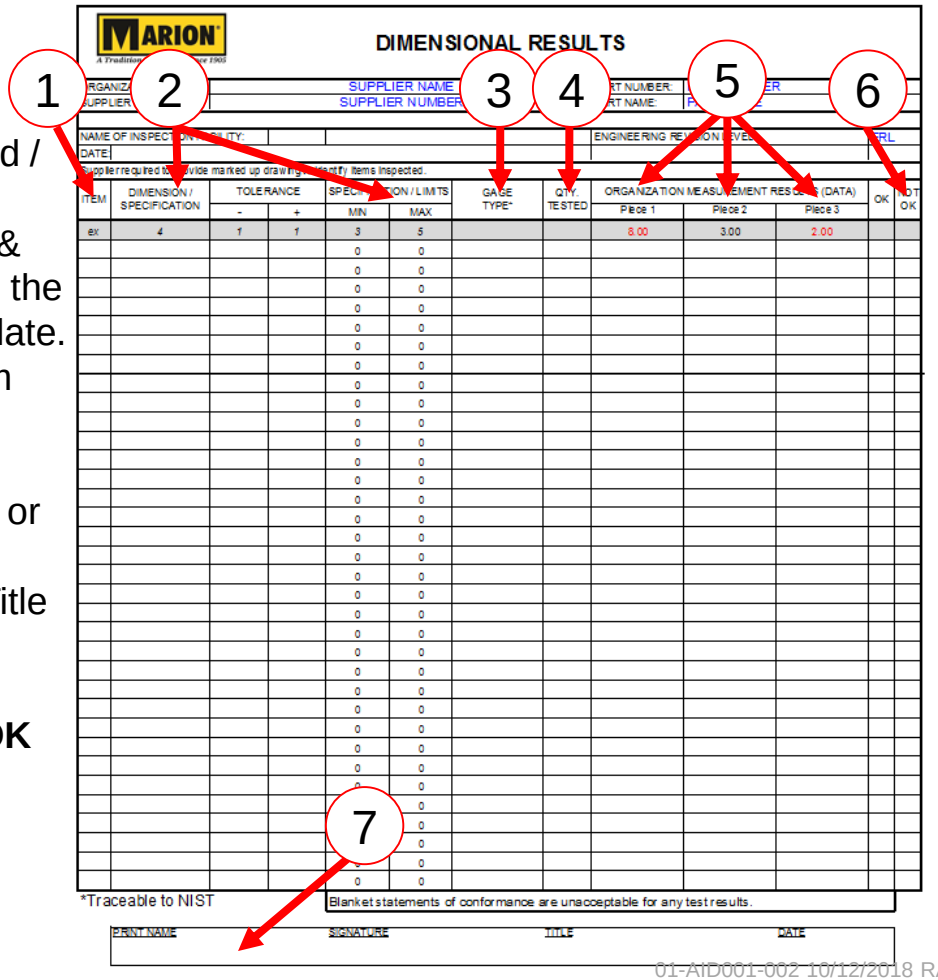
PPAP – Dimensional Results

COVER | INTRO | PPAP REQUIREMENTS | DIMENSIONAL | PSW | PRINT NOTES | PRINT NOTES - PAINT | PRINT NOTES - WELDING | APPEARANCE

1. **ITEM:** Numbering needs to matches Design Record / “Bubble Print”
2. **DIMENSION / SPECIFICATION:** Enter dimension & Tolerance from print. When you enter the tolerance in the Spreadsheet the specification will automatically populate.
3. **GAGE TYPE:** Mark the gage used to measure item
4. **QTY TESTED:** Mark how many parts measured
5. **DATA:** Mark actual results
6. **OK / NOT OK:** Check each measurement as good or bad by marking OK / NOT OK appropriately
7. **SIGNATURE SECTION:** Fill in Name, Signature, Title and Date for supplier sign off

All dimensions on the print must be verified as OK By the Supplier prior to submission!

****Key Note****
(1) Piece required for Level 2
(3) Pieces required for Level 3

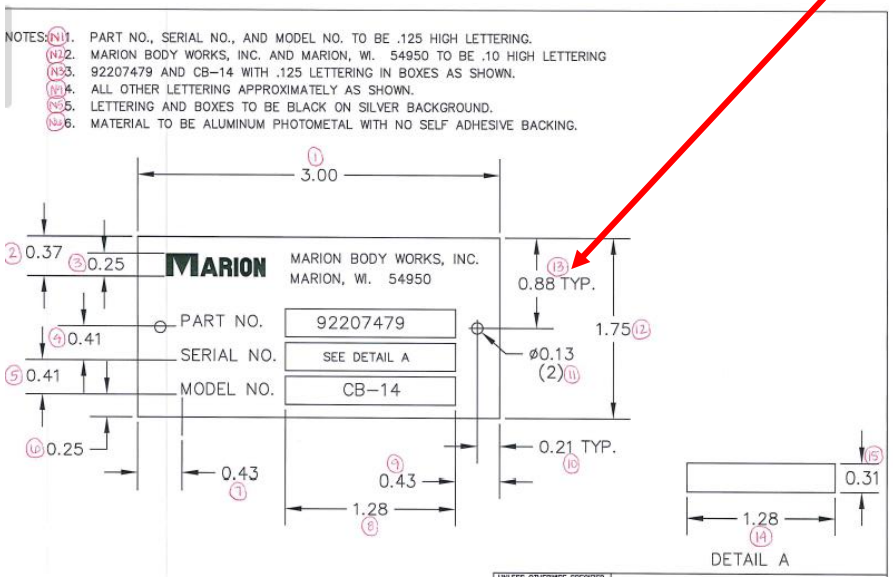


PPAP - Dimensional Results/Bubble Print

COVER | INTRO | PPAP REQUIREMENTS | DIMENSIONAL | PSW | PRINT NOTES | PRINT NOTES - PAINT | PRINT NOTES - WELDING | APPEARANCE

If populated correctly, the measurement results will show "red" when out of tolerance.

Anywhere on the print where "TYP" or an amount of dimensions are called out, be sure to have the corresponding amount of measurements recorded on the dimensional results.



DIMENSIONAL RESULTS

ORGANIZATION:	MARION BODY WORKS	PART NUMBER:	86200451
SUPPLIER NUMBER:	86200451	PART NAME:	PLATE DATA CB 14 NAVISTAR
NAME OF INSPECTION FACILITY:	MBW	ENGINEERING REVISION LEVEL	A
DATE:	8/15/2017		

Supplier required to provide marked up drawing to identify items inspected.

ITEM	DIMENSION / SPECIFICATION	TOLERANCE -	TOLERANCE +	SPECIFICATION / LIMITS MIN	SPECIFICATION / LIMITS MAX	GAGE TYPE*	QTY. TESTED	ORGANIZATION MEASUREMENT RESULTS (DATA) Piece 1	Piece 2	Piece 3	OK	NOT OK
ex	4	1	1	3	5			3.00	3.00	2.00		
1	3	0.06	0.06	2.94	3.06	TAPE MEASURE	1	3.00			X	
2	0.37	0.06	0.06	0.31	0.43	CALIPER	1	0.37			X	
3	0.25	0.06	0.06	0.19	0.31	CALIPER	1	0.25			X	
4	0.41	0.06	0.06	0.35	0.47	CALIPER	1	0.41			X	
5	0.41	0.06	0.06	0.35	0.47	CALIPER	1	0.41			X	
6	0.25	0.06	0.06	0.19	0.31	CALIPER	1	0.25			X	
7	0.43	0.06	0.06	0.37	0.49	CALIPER	1	0.43			X	
8	1.28	0.06	0.06	1.22	1.34	CALIPER	1	1.28			X	
9	0.43	0.06	0.06	0.37	0.49	CALIPER	1	0.43			X	
10	0.21	0.06	0.06	0.15	0.27	CALIPER	1	0.21			X	
	0.21	0.06	0.06	0.15	0.27	CALIPER	1	0.21			X	
11	0.13	0.06	0.06	0.07	0.19	CALIPER	1	0.13			X	
	0.13	0.06	0.06	0.07	0.19	CALIPER	1	0.13			X	
12	1.75	0.06	0.06	1.69	1.81	CALIPER	1	1.75			X	
13	0.88	0.06	0.06	0.82	0.94	CALIPER	1	0.88			X	
	0.88	0.06	0.06	0.82	0.94	CALIPER	1	0.88			X	
14	1.28	0.06	0.06	1.22	1.34	CALIPER	1	1.28			X	
15	0.31	0.06	0.06	0.25	0.37	CALIPER	1	0.31			X	
				0	0							
				0	0							
				0	0							
				0	0							
				0	0							
				0	0							

*Traceable to NIST

Blanket statements of conformance are unacceptable for any test results.

PRINT NAME	SIGNATURE	TITLE	DATE
RACHEL HEINEMAN	Rachel Heineman	QUALITY TECHNICIAN	8/9/2017

Make sure the design record (bubble print) matches the numbering on the dimensional results.

PPAP – Print Notes

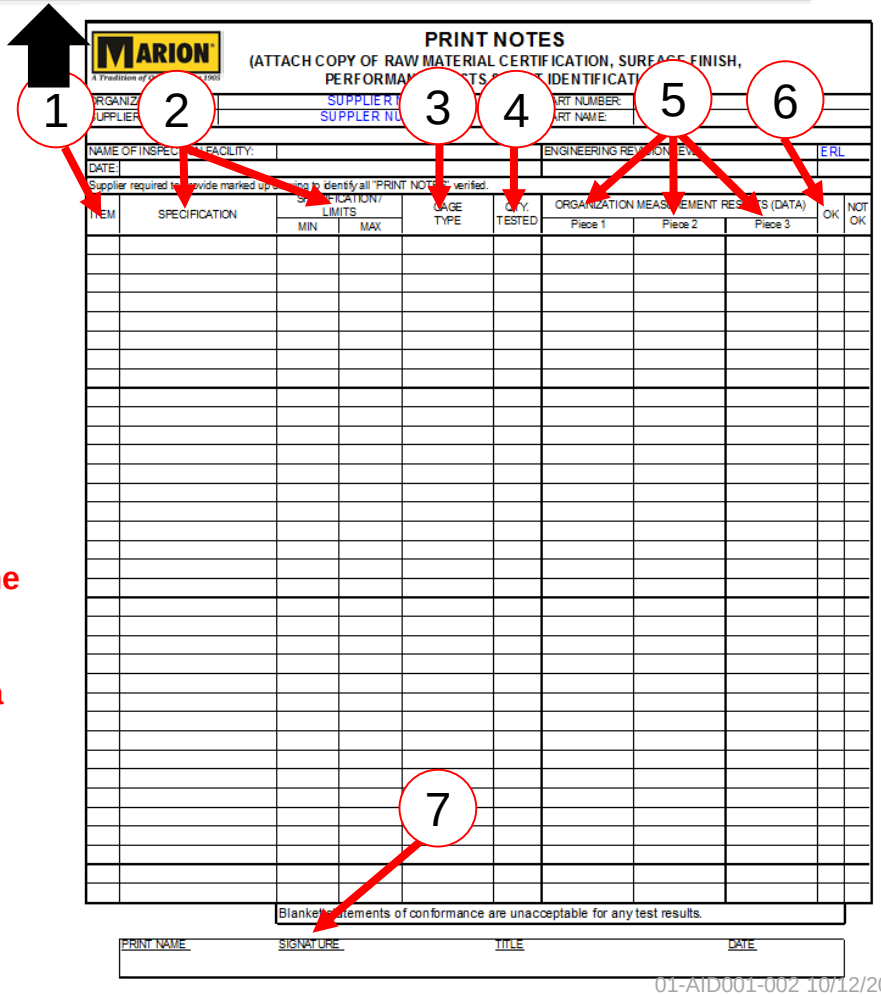
COVER | INTRO | PPAP REQUIREMENTS | DIMENSIONAL | PSW | PRINT NOTES | PRINT NOTES - PAINT | PRINT NOTES - WELDING | APPEARANCE

1. **ITEM:** Numbering needs to matches Design Record / “Bubble Print”
2. **DIMENSION / SPECIFICATION:** Mark the low & high values in the MIN / MAX respectively
3. **GAGE TYPE:** Mark the gage used to measure item
4. **QTY TESTED:** Mark how many parts measured
5. **DATA:** Mark actual results
6. **OK / NOT OK:** Check each measurement as good or bad by marking OK / NOT OK appropriately
7. **SIGNATURE SECTION:** Fill in Name, Signature, Title and Date for supplier sign off

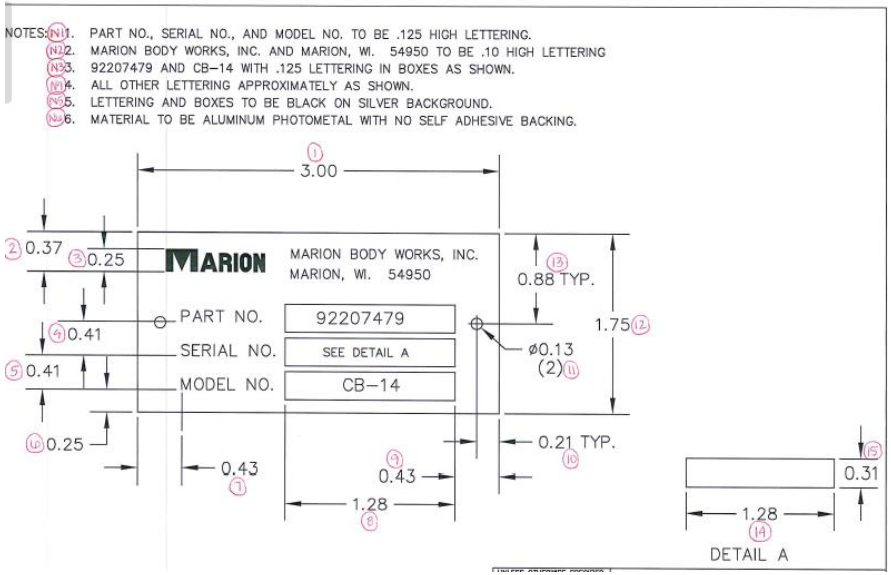
All dimensions on the print must be verified as OK by the Supplier prior to submission!

Cell size can be reformatted to fit all information from a note in one cell.

Note: This sheet to be used to document all Print Note requirements via the “bubble print” and reference any applicable Test report numbers in the PPAP Package.



PPAP – Print Notes/Bubble Print



Make sure the design record (bubble print) matches the numbering on the dimensional results.

MARION
A Tradition of Quality Since 1965

PRINT NOTES
(ATTACH COPY OF RAW MATERIAL CERTIFICATION, SURFACE FINISH, PERFORMANCE TESTS & PART IDENTIFICATION)

ORGANIZATION:	MARION BODY WORKS	PART NUMBER:	86200451
SUPPLIER NUMBER:	86200451	PART NAME:	PLATE DATA CB14 NAVISTAR
NAME OF INSPECTION FACILITY:	MBW	ENGINEERING REVISION LEVEL	A
DATE:	8/15/2017		

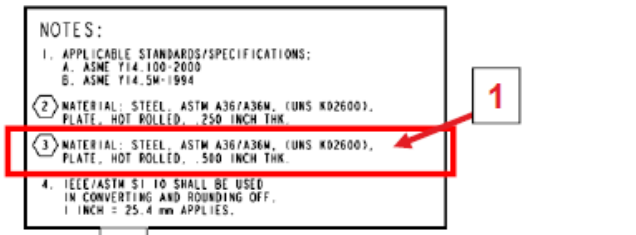
Supplier required to provide marked up drawing to identify all "PRINT NOTES" verified.

ITEM	SPECIFICATION	SPECIFICATION / LIMITS MIN	SPECIFICATION / LIMITS MAX	GAGE TYPE	QTY. TESTED	ORGANIZATION MEASUREMENT RESULTS (DATA) Piece 1	Piece 2	Piece 3	OK	NOT OK
N1	PART NO., SERIAL NO., AND MODEL NO. TO BE .125 HIGH LETTERING.	NA	NA	VISUAL/CALIPER	1	ACKNOWLEDGED			X	
N2	MARION BODY WORKS, INC. AND MARION, WI. 54950 TO BE .10 HIGH LETTERING	NA	NA	VISUAL/CALIPER	1	ACKNOWLEDGED			X	
N3	92207479 AND CB-14 WITH .125 LETTERING IN BOXES AS SHOWN.	NA	NA	VISUAL/CALIPER	1	ACKNOWLEDGED			X	
N4	ALL OTHER LETTERING APPROXIMATELY AS SHOWN	NA	NA	VISUAL	1	ACKNOWLEDGED			X	
N5	LETTERING AND BOXES TO BE BLACK ON SILVER BACKGROUND	NA	NA	VISUAL	1	ACKNOWLEDGED			X	
N6	MATERIAL TO BE ALUMINUM PHOTOMETAL WITH NO SELF ADHESIVE BACKING.	NA	NA	MATERIAL CERT	1	ACKNOWLEDGED			X	

Blanket statements of conformance are unacceptable for any test results.

PRINT NAME	SIGNATURE	TITLE	DATE
RACHEL HEINEMAN	Rachel Heineman	QUALITY TECHNICIAN	8/9/2017

PPAP – Print Notes SAMPLE



NOTES:

1. APPLICABLE STANDARDS/SPECIFICATIONS:
   A. ASME Y14.100-2000
   B. ASME Y14.5M-1994
2. MATERIAL: STEEL, ASTM A36/A36M, (UNS K02600), PLATE, HOT ROLLED, .250 INCH THK.
3. MATERIAL: STEEL, ASTM A36/A36M, (UNS K02600), PLATE, HOT ROLLED, .500 INCH THK.
4. IEEE/ASTM SI 10 SHALL BE USED IN CONVERTING AND ROUNDING OFF. 1 INCH = 25.4 mm APPLIES.

1

2

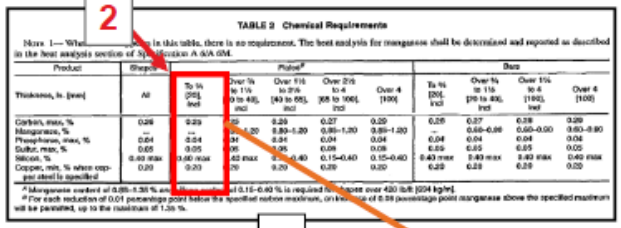
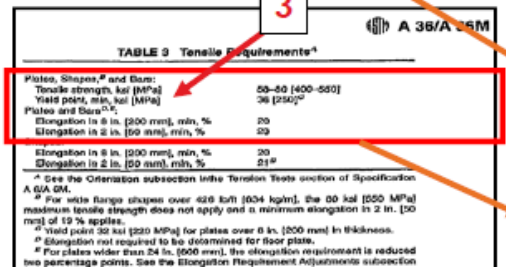


TABLE 2 Chemical Requirements

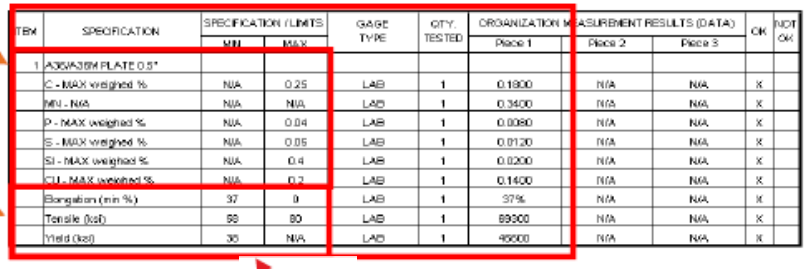
3



A 36/A 36M

TABLE 3 Tensile Requirements

Plates, Shapes, and Bars:	
Tensile strength, ksi [MPa]	58–80 [400–550]
Yield point, min, ksi [MPa]	36 [250]
Plates and Bars:	
Elongation in 8 in. [200 mm], min, %	20
Elongation in 2 in. [50 mm], min, %	23
Elongation in 8 in. [200 mm], min, %	20
Elongation in 2 in. [50 mm], min, %	21

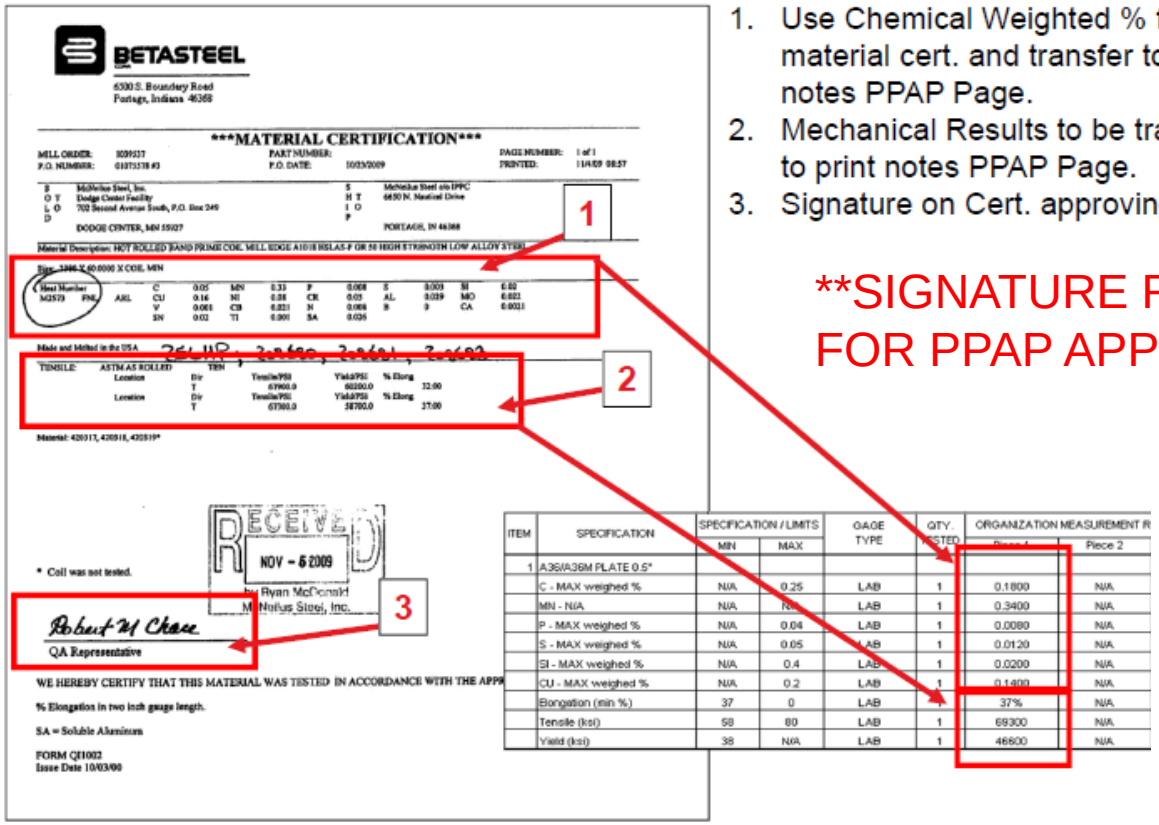


ITEM	SPECIFICATION	SPECIFICATION LIMITS MIN	SPECIFICATION LIMITS MAX	GAGE TYPE	QTY. TESTED	ORGANIZATION MEASUREMENT RESULTS (DATA) Place 1	Place 2	Place 3	OK	NOT OK
1	A36/A36M PLATE 0.5"									
	C - MAX weighed %	N/A	0.25	LAB	1	0.1800	N/A	N/A	X	
	MN - N/A	N/A	N/A	LAB	1	0.3400	N/A	N/A	X	
	P - MAX weighed %	N/A	0.04	LAB	1	0.0080	N/A	N/A	X	
	S - MAX weighed %	N/A	0.05	LAB	1	0.0120	N/A	N/A	X	
	SI - MAX weighed %	N/A	0.4	LAB	1	0.0200	N/A	N/A	X	
	CU - MAX weighed %	N/A	0.2	LAB	1	0.1400	N/A	N/A	X	
	Elongation (min %)	37	0	LAB	1	37%	N/A	N/A	X	
	Tensile (ksi)	58	80	LAB	1	69300	N/A	N/A	X	
	Yield (ksi)	36	N/A	LAB	1	46000	N/A	N/A	X	

4

1. Design Record Requirement
2. ASTM Chemical Requirement
3. ASTM Mechanical Requirement
4. PPAP document to outline requirement and actual's per the print and Industry standard (ASTM)

PPAP – Print Notes SAMPLE CERT PROVIDED



BETASTEEL

6300 S. Boundary Road
Portage, Indiana 46368

MATERIAL CERTIFICATION

MILL ORDER: 1039537 PART NUMBER: PAGE NUMBER: 1 of 1
P.O. NUMBER: 0107535S #3 P.O. DATE: 10/15/2009 PRINTED: 11/4/09 08:57

S O T L O D — McNichols Steel, Inc. Dodge Center Facility 702 Second Avenue South, P.O. Box 249 DODGE CENTER, MN 55927

S H I P — McNichols Steel c/o IPPC 6650 N. Nautical Drive PORTAGE, IN 46368

Material Description: HOT ROLLED BAND PRIME COIL MILL EDGE A1018 HSLAS-F OR 50 HIGH STRENGTH LOW ALLOY STEEL

Size: 3300 X 60.0000 X COIL MIN

Heat Number			C	0.05	MN	0.33	P	0.008	S	0.003	SI	0.02
M2573	FNL	ARL	CU	0.16	NI	0.08	CR	0.03	AL	0.039	MO	0.022
			V	0.001	CB	0.021	N	0.008	B	9	CA	0.0021
			SN	0.02	TI	0.001	SA	0.026				

Made and Melted in the USA

TENSILE:	ASTM AS ROLLED		TEN				
	Location	Dir	Tensile/PSI	Yield/PSI	% Elong		
		T	67900.0	60200.0	32.00		
	Location	Dir	Tensile/PSI	Yield/PSI	% Elong		
		T	67300.0	58700.0	27.00		

Material: 420313, 420518, 420519*

RECEIVED NOV – 5 2009 by Ryan McDonald McNichols Steel, Inc.

* Coil was not tested.

Robert M Chase
QA Representative

WE HEREBY CERTIFY THAT THIS MATERIAL WAS TESTED IN ACCORDANCE WITH THE APP

% Elongation in two inch gauge length.

SA = Soluble Aluminum

FORM QE1002
Issue Date 10/03/00

ITEM	SPECIFICATION	SPECIFICATION / LIMITS MIN	SPECIFICATION / LIMITS MAX	GAGE TYPE	QTY. TESTED	ORGANIZATION MEASUREMENT R Piece 1	Piece 2
1	A36/A36M PLATE 0.5"						
	C - MAX weighed %	N/A	0.25	LAB	1	0.1800	N/A
	MN - N/A	N/A	N/A	LAB	1	0.3400	N/A
	P - MAX weighed %	N/A	0.04	LAB	1	0.0080	N/A
	S - MAX weighed %	N/A	0.05	LAB	1	0.0120	N/A
	SI - MAX weighed %	N/A	0.4	LAB	1	0.0200	N/A
	CU - MAX weighed %	N/A	0.2	LAB	1	0.1400	N/A
	Elongation (min %)	37	0	LAB		37%	N/A
	Tensile (ksi)	58	80	LAB	1	69300	N/A
	Yield (ksi)	38	N/A	LAB	1	46600	N/A

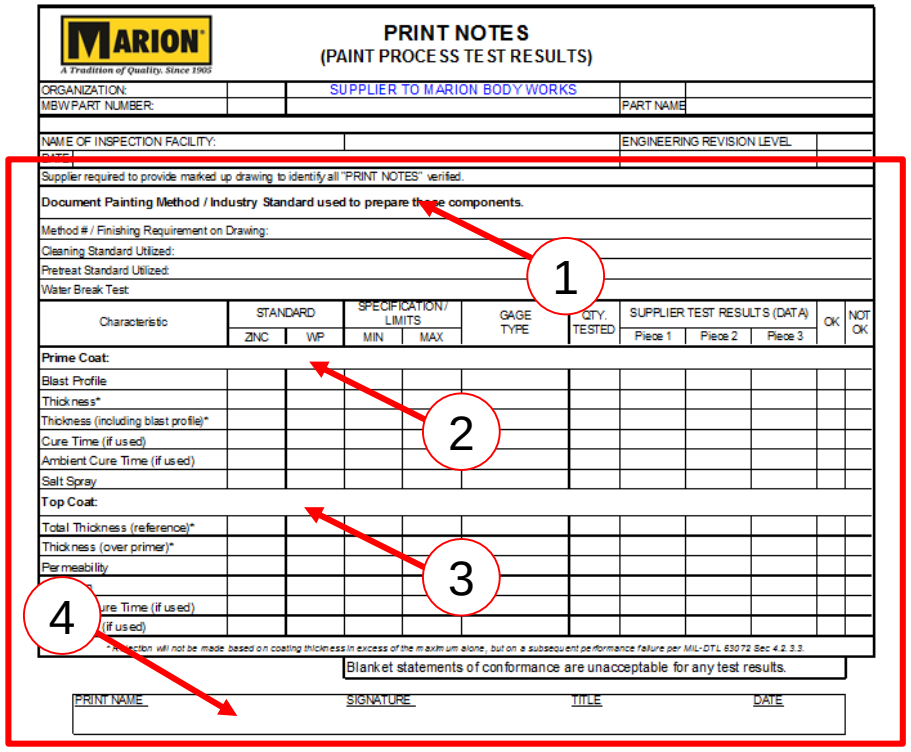
1. Use Chemical Weighted % from material cert. and transfer to print notes PPAP Page.
2. Mechanical Results to be transferred to print notes PPAP Page.
3. Signature on Cert. approving material

SIGNATURE REQUIRED FOR PPAP APPROVAL

PPAP – Print Notes PAINT

(Includes Paint & Coating Test Results)

COVER | INTRO | PPAP REQUIREMENTS | DIMENSIONAL | PSW | PRINT NOTES | PRINT NOTES - PAINT | PRINT NOTES - WELDING | APPEARANCE



MARION
A Tradition of Quality. Since 1905

PRINT NOTES
(PAINT PROCESS TEST RESULTS)

ORGANIZATION:		SUPPLIER TO MARION BODY WORKS	
MBW PART NUMBER:		PART NAME	
NAME OF INSPECTION FACILITY:		ENGINEERING REVISION LEVEL	
DATE			

Supplier required to provide marked up drawing to identify all "PRINT NOTES" verified.

Document Painting Method / Industry Standard used to prepare these components.

Method # / Finishing Requirement on Drawing:
Cleaning Standard Utilized:
Pretreat Standard Utilized:
Water Break Test:

Characteristic	STANDARD		SPECIFICATION / LIMITS		GAGE TYPE	QTY. TESTED	SUPPLIER TEST RESULTS (DATA)			OK	NOT OK
	ZINC	WP	MIN	MAX			Piece 1	Piece 2	Piece 3		
Prime Coat:											
Blast Profile											
Thickness*											
Thickness (including blast profile)*											
Cure Time (if used)											
Ambient Cure Time (if used)											
Salt Spray											
Top Coat:											
Total Thickness (reference)*											
Thickness (over primer)*											
Permeability											
ure Time (if used)											
(if used)											

* A rejection will not be made based on coating thickness in excess of the maximum alone, but on a subsequent performance failure per MIL-DTL 63072 Sec 4.2.3.3.

Blanket statements of conformance are unacceptable for any test results.

PRINT NAME	SIGNATURE	TITLE	DATE

1. Document what print standard, Industry Standard, & Process Steps that were used to coat the part

2. Prime Coat Verification: Permeability, Adhesion, Thickness Salt Spray Results, Ambient Cure Time & Oven Cure Time

3. Top Coat Verification: Permeability, Adhesion, Thickness Salt Spray Results, Ambient Cure Time & Oven Cure Time

4. Supplier Sign Off

PPAP – Print Notes PAINT: SAMPLE

COVER | INTRO | PPAP REQUIREMENTS | DIMENSIONAL | PSW | PRINT NOTES | PRINT NOTES - PAINT | PRINT NOTES - WELDING | APPEARANCE

6. ALL WELDS SHALL BE IAW MIL-STD-1261, CLASS 2, OR AWS D1.1/D1.1M.

7. UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS WITHOUT TOLERANCE SHALL BE ±1 mm.

8. FINISH: FINAL PROTECTIVE FINISH IAW 12420325 METHOD 4 OR 1.

9. DIMENSIONAL LIMITS APPLY BEFORE PAINTING.

1

MARION *A Tradition of Quality. Since 1905*

PRINT NOTES
(PAINT PROCESS TEST RESULTS)

ORGANIZATION:		SUPPLIER TO MARION BODY WORKS										
MBW PART NUMBER:						PART NAME						
NAME OF INSPECTION FACILITY:						ENGINEERING REVISION LEVEL						
DATE:												
Supplier required to provide marked up drawing to identify all "PRINT NOTES" verified.												
Document Painting Method / Industry Standard used to prepare these components.												
Method # / Finishing Requirement on Drawing:												
Cleaning Standard Utilized:												
Pretreat Standard Utilized:												
Water Break Test:												
Characteristic	STANDARD		SPECIFICATION / LIMITS			QTY. TESTED	SUPPLIER TEST RESULTS (DATA)			OK	NOT OK	
	ZINC	WP	MIN	MAX			Piece 1	Piece 2	Piece 3			
Prime Coat:												
Blast Profile												
Thickness*												
Thickness (including blast profile)*												
C sed)												
A me (if used)												
S												
Top Coat:												
Total Thickness (reference)*												
Thickness (over primer)*												
Permeability												
Adhesion												
Ambient Cure Time (if used)												
Cure Time (if used)												

** Rejection will not be made based on coating thickness in excess of the maximum alone, but on a subsequent performance failure per MIL-DTL 53072 Sec 4.2.3.3.*

Blanket statements of conformance are unacceptable for any test results.

PRINT NAME	SIGNATURE	TITLE	DATE

2

3

4

5

1. Print Note Paint Note Requirement

2. Document what print standard or Industry Standard the part has been painted to.

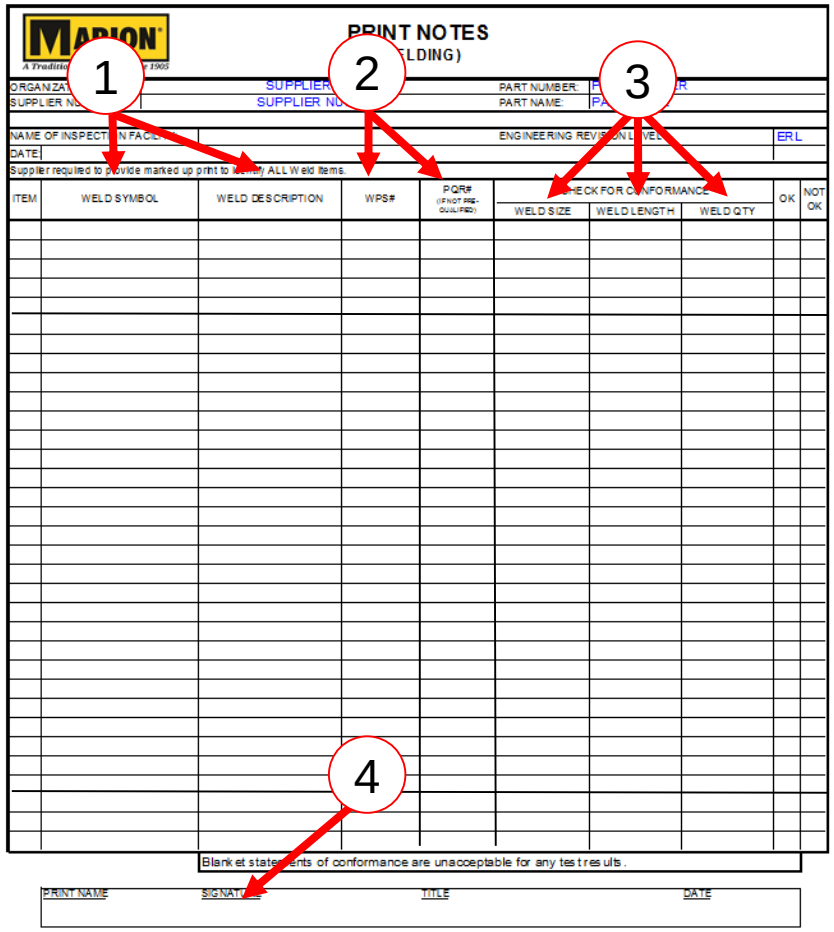
3. Prime Coat Verification
    1. Reference standard for each process step
    2. Document blast profile
    3. Document actual thickness including profile
    4. Ensure that the thickness spec includes blast *(1.0mil blast profile + 1.3 mil primer = 2.3 min thickness including blast profile)*

4. Top Coat Verification

5. Supplier Sign Off

PPAP – Welding Specification

COVER | INTRO | PPAP REQUIREMENTS | DIMENSIONAL | PSW | PRINT NOTES | PRINT NOTES - PAINT | PRINT NOTES - WELDING | APPEARANCE



1. Document the Welding Symbol / Weld Description from “bubble print”.

2. Document WPS / PQR (if not prequalified)

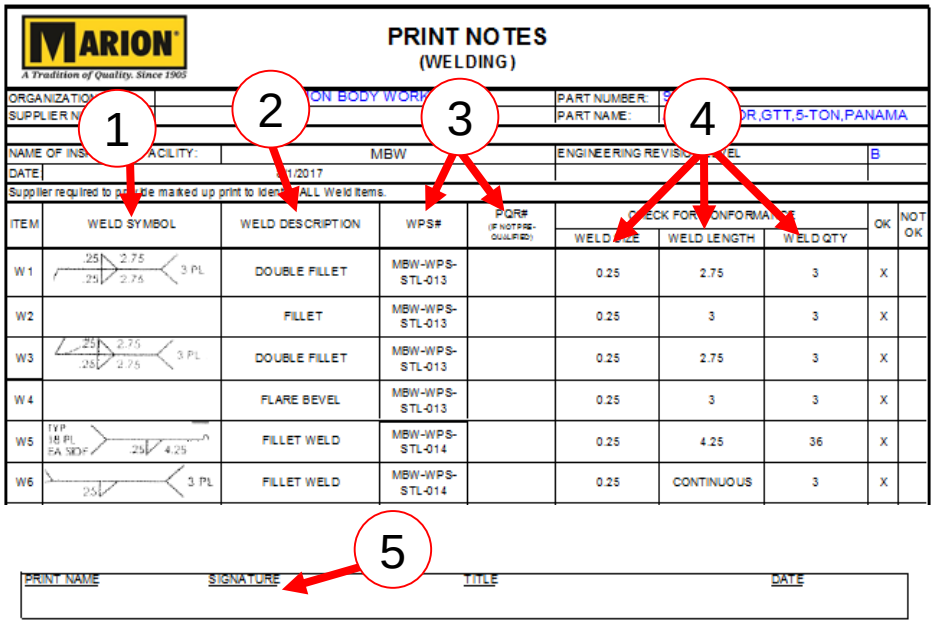
3. Document visual verification of weld size, Weld length, Weld Quantity.

4. Supplier Sign Off

Note: WPS’s, PQR’s and welder certifications may be requested and must be provided upon request.

PPAP – Welding Specification: SAMPLE

COVER | INTRO | PPAP REQUIREMENTS | DIMENSIONAL | PSW | PRINT NOTES | PRINT NOTES - PAINT | PRINT NOTES - WELDING | APPEARANCE



MARION
A Tradition of Quality. Since 1905

PRINT NOTES
(WELDING)

ORGANIZATION: ...ON BODY WORK | PART NUMBER: 9...
SUPPLIER N... | PART NAME: ...DR,GTT,5-TON,PANAMA
NAME OF INS... ACILITY: MBW | ENGINEERING REVISION LEVEL: B
DATE: ...1/2017
Supplier required to p...ide marked up print to Ident... ALL Weld Items.

ITEM	WELD SYMBOL	WELD DESCRIPTION	WPS#	PQR# (IF NOT PRE-QUALIFIED)	CHECK FOR CONFORMANCE: WELD SIZE	WELD LENGTH	WELD QTY	OK	NOT OK
W1	.25 2.75 .25 2.75 3 PL	DOUBLE FILLET	MBW-WPS-STL-013		0.25	2.75	3	X	
W2		FILLET	MBW-WPS-STL-013		0.25	3	3	X	
W3	.25 2.75 .25 2.75 3 PL	DOUBLE FILLET	MBW-WPS-STL-013		0.25	2.75	3	X	
W4		FLARE BEVEL	MBW-WPS-STL-013		0.25	3	3	X	
W5	TYP 18 PL EA SIDE .25 4.25	FILLET WELD	MBW-WPS-STL-014		0.25	4.25	36	X	
W6	.25 3 PL	FILLET WELD	MBW-WPS-STL-014		0.25	CONTINUOUS	3	X	

PRINT NAME | SIGNATURE | TITLE | DATE

1. Document the Welding Symbol / Weld Description from “bubble print”.

2. Document the Welding Specification /Weld Symbol from “bubble print”.

3. Document WPS / PQR (if not prequalified)

4. Document visual verification of weld size, Weld length, Weld Quantity.

5. Supplier Sign Off

Note: WPS’s, PQR’s and welder certifications must be provided upon request.

Make sure the design record (bubble print) matches the numbering on the dimensional results.

PPAP – Questions, Comments or Concerns

For any questions, comments or concerns regarding PPAP documentation, please contact:

ppap@marionbody.com

01-AID001-002 10/12/2018 RAH