PPAP REQUIREMENTS FOR ACTIA
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PPAP Purpose

PPAP Benefits

When is PPAP required?

Significant production run

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What is PPAP?

• PPAP stands for “Production Part Approval Process”
• Standard used to formally reduce risks prior to product or service release, in a team oriented manner using well established tools and techniques
• Initially developed by AIAG (Auto Industry Action Group) in 1993 with input from the Big 3 - Ford, Chrysler, and GM
• AIAG’s 4th edition is effective since June 1\textsuperscript{st}, 2006. For latest version available check at \url{www.aiag.org}
• PPAP has now spread to many different industries beyond automotive
PPAP purpose

• To provide the evidence that all customer engineering design record and specification requirements are properly understood by the manufacturing organization.

• To demonstrate that the manufacturing process has the potential to produce product that consistently meets all requirements during an actual production run at the quoted production rate.
PPAP Benefits

- Forces formal part conformance and approval
- Ensures formal quality planning
- Helps to maintain design integrity
- Identifies issues early for resolution
- Reduces warranty charges and prevents costs because of poor quality
- Assists with managing supplier changes
- Prevents use of unapproved and nonconforming parts
- Identifies suppliers that need more development
- Improves the overall quality of the product & customer satisfaction
When is PPAP required?

- New part
- Engineering change(s)
- Tooling: transfer, replacement, refurbishment, or additional tooling
- Correction of discrepancy
- Tooling inactive for more than one year (12 months)
- Change to optional construction or material
- Sub-supplier or material source change
- Change in part processing
- Parts produced at a new or additional location

PPAP is required with any significant change to product or process!
Significant Production run

- PPAP data must be submitted from a production run using:
  - Production equipment and tooling
  - Production employees
  - Production rate
  - Production process

All data reflects the actual production process to be used at start-up!
Level and elements of PPAP

- PPAP submission requirements are called Elements
- The PPAP Submission Level will determine which Element(s) are required for submission.
- ACTIA requests PPAP submission Level 1, 2, 3, 4, 4a, 4b, 5. Level 4a and 4b are predetermined levels defined by ACTIA. Level 4 will be defined by ACTIA during the PPAP request.
- ACTIA will indicate the required PPAP submission level on the Purchase Order.
### Level and elements of PPAP

- Here below is the list of elements to be submitted in accordance with the PPAP Level required:

<table>
<thead>
<tr>
<th>Element Order</th>
<th>PPAP Requirements</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Level 4a</th>
<th>Level 4b</th>
<th>Level 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Part Submission Warrant (PSW)</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>*</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>2</td>
<td>Design Records &amp; Bubbled part print(s).</td>
<td>X</td>
<td>X</td>
<td>*</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Authorized Engineering Change Documentation</td>
<td>X</td>
<td>X</td>
<td>*</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Customer Engineering Approvals</td>
<td>X</td>
<td>*</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Design FMEA,</td>
<td>X</td>
<td>*</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Process Flow Diagrams</td>
<td>X</td>
<td>*</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
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<tr>
<td>7</td>
<td>Process FMEA</td>
<td>X</td>
<td>*</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>8</td>
<td>Control Plan</td>
<td>X</td>
<td>*</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Measurement System Analysis Studies</td>
<td>X</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
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<td>10</td>
<td>Dimensional Results</td>
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<td>X</td>
<td>*</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Material Test Results &amp; Performance Test Results and related design Notes</td>
<td>X</td>
<td>X</td>
<td>*</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Initial Process Study (Cpk) Capability Studies</td>
<td>X</td>
<td>*</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Qualified Laboratory Documentation</td>
<td>X</td>
<td>X</td>
<td>*</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Appearance Approval Report</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>*</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Sample Product Parts</td>
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<td>X</td>
<td>*</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Master Samples</td>
<td>*</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Checking aids</td>
<td>*</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Customer specific requirements</td>
<td>*</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
PPAP Process

PPAP process flow

<table>
<thead>
<tr>
<th>Actia</th>
<th>Supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>PO issued “PPAP required”. Including designated level submission.</td>
<td>Check on the PPAP Workbook the required elements according to the PPAP submission level requested.</td>
</tr>
<tr>
<td>Run production and complete PPAP</td>
<td>Run production and complete PPAP</td>
</tr>
<tr>
<td>Send PPAP via email at <a href="mailto:PPAP@actia.com">PPAP@actia.com</a> Ship parts to Actia</td>
<td>Send PPAP via email at <a href="mailto:PPAP@actia.com">PPAP@actia.com</a> Ship parts to Actia</td>
</tr>
<tr>
<td>Approve/ Reject PPAP. Sign PSW</td>
<td>Approve/ Reject PPAP. Sign PSW</td>
</tr>
<tr>
<td>Approve/ Reject PPAP. Sign PSW</td>
<td>Approve/ Reject PPAP. Sign PSW</td>
</tr>
<tr>
<td>Scan/Archive PPAP. Send PSW signed to Supplier if PPAP approved</td>
<td>Scan/Archive PPAP. Send PSW signed to Supplier if PPAP approved</td>
</tr>
<tr>
<td>Part approved for Mass production. Supplier allowed to ship future POs.</td>
<td>Part approved for Mass production. Supplier allowed to ship future POs.</td>
</tr>
</tbody>
</table>
ACTIA PPAP Workbook

What is the ACTIA PPAP Workbook?
- An Excel spreadsheet containing templates of the documents suppliers are required to submit to ACTIA

Why use the PPAP Workbook?
- Simplifies the process for suppliers by serving as a “checklist” of what needs to be submitted to ACTIA
- Enables the SQE to quickly see if anything is missing
- Provide templates to supplier for the required elements of PPAP

Requirements on PPAP Elements format
- The following form is mandatory for submission to ACTIA:
  1) ACTIA PSW (Part Submission Warrant)
- For the remaining elements, the organization is free to use its own format as long as it meets AIAG and ACTIA requirements.
HOW to complete PPAP Workbook?
1. Fill out the “PPAP Intro” tab

- This information will be transferred to all “like” fields in this PPAP Workbook.
2.1 Part Submission Warrant (PSW)

- List all authorized engineering changes not yet incorporated in the design record but which are incorporated in the part.
- Show the change level and date of the design record.
- If requested by ACTIA, enter the checking aid number, its change level and date.
- Enter actual weight in Kilograms to four decimal places unless otherwise specified by the customer.

ALL fields within the PSW are required to be filled.
2.2 Part Submission Warrant (PSW)

Check the appropriate box(es). For bulk materials, in addition to checking the appropriate box, check “Other” and write “Bulk Material” in the space provided.

REASON FOR SUBMISSION
- Initial Submission
- Engineering Change(s)
- Tooling: Transfer, Replacement, Refurbishment, or additional
- Correction of Discrepancy
- Tooling Inactive > than 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 (and for designated items, an Appearance Approval Report) submitted
- Level 2 - Warrant with product samples and limited supporting data submitted to customer.
- Level 3 - Warrant with product samples and complete supporting data submitted to customer.
- Level 4 - Warrant and other requirements as defined by customer. Include Level (4a) and (4b) predefined in ACTIA procedure.
- Level 5 - Warrant with product samples and complete supporting data reviewed at supplier’s manufacturing location.

If Level 4, 4-x is required, please tick the appropriate element boxes to indicate the PPAP elements submitted. Elements required for PPAP level 4-x are indicated in the ACTIA PPAP workbook in the worksheet “Submission Level guide.”

Identify the submission PPAP level requested by ACTIA.
2.3 Part Submission Warrant (PSW)

Enter the number of pieces manufactured during 8 hours production time.

Check the appropriate boxes for dimensional, material tests, performance tests, appearance evaluation and statistical data.

If production part will be produced from more than one cavity, mold, tool die etc..; the organization shall identify the “Mold/Cavity/Production process” in which dimensions were taken.

Provide any explanatory comments on the submission results or any deviation from the declaration. Attach additional information if appropriate.

Leave blank.
3. Design Records Bubbled

- Must be a clean and legible “Bubble” print
- Must be correct ACTIA Part # and Revision level
- Each requirement must have a separate bubble.
  - Dimensions
  - Notes
  - Referenced specifications
4. Dimensional Result.

All dimensions and any related design record notes must be listed in this worksheet.

Each item must be identified with the bubble number indicated on the ballooned drawing record.

Dimensional result must be performed on parts from each cavity.

---

### Dimensional Result

<table>
<thead>
<tr>
<th>Bubble #</th>
<th>Gauge Type</th>
<th>Specification</th>
<th>Low. tol.</th>
<th>Upp. tol.</th>
<th>Actual measurements</th>
<th>Insp Pts</th>
<th># out of tol</th>
<th>Result</th>
<th>comr</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Sample 1</td>
<td>Sample 2</td>
<td>Sample 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Part finish</td>
<td></td>
<td></td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>3</td>
<td>Ok</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Part identification</td>
<td></td>
<td></td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>3</td>
<td>Ok</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td>All Radii are 0.125&quot;</td>
<td></td>
<td></td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>3</td>
<td>Ok</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>3° draft typical</td>
<td></td>
<td></td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>3</td>
<td>Ok</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>Logo detail geometry</td>
<td></td>
<td></td>
<td>OK</td>
<td>OK</td>
<td>NOT OK</td>
<td>3</td>
<td>Not Ok</td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>Thru bored insert</td>
<td></td>
<td></td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>3</td>
<td>Ok</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>Suggested QC dim</td>
<td></td>
<td></td>
<td>OK</td>
<td>OK</td>
<td>OK</td>
<td>3</td>
<td>Ok</td>
</tr>
<tr>
<td>10</td>
<td>CMM</td>
<td>0.150</td>
<td>0.010</td>
<td>0.010</td>
<td>0.132</td>
<td>0.153</td>
<td>0.154</td>
<td>3</td>
<td>Ok</td>
</tr>
<tr>
<td>11</td>
<td>CMM</td>
<td>0.375</td>
<td>0.010</td>
<td>0.010</td>
<td>0.15</td>
<td>0.35</td>
<td>0.381</td>
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<tr>
<td>12</td>
<td>CMM</td>
<td>0.125</td>
<td>0.010</td>
<td>0.010</td>
<td>0.11</td>
<td>0.17</td>
<td>0.115</td>
<td>3</td>
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</tr>
<tr>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.268</td>
<td>3</td>
<td>2</td>
<td>Not Ok</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
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<td></td>
<td></td>
<td>0.385</td>
<td>3</td>
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<td>15</td>
<td></td>
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<td></td>
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<td>3.064</td>
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<td></td>
</tr>
<tr>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.03</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>17.1</td>
<td>CMM</td>
<td>0.414</td>
<td>0.005</td>
<td>0.005</td>
<td>0.41</td>
<td>0.41</td>
<td>0.41</td>
<td>3</td>
<td>Ok</td>
</tr>
<tr>
<td>17.2</td>
<td>CMM</td>
<td>0.414</td>
<td>0.005</td>
<td>0.005</td>
<td>0.41</td>
<td>0.41</td>
<td>0.41</td>
<td>3</td>
<td>Ok</td>
</tr>
<tr>
<td>18.1</td>
<td>CMM</td>
<td>0.147</td>
<td>0.005</td>
<td>0.005</td>
<td>0.147</td>
<td>0.145</td>
<td>0.145</td>
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<td>Ok</td>
</tr>
<tr>
<td>18.2</td>
<td>CMM</td>
<td>0.147</td>
<td>0.005</td>
<td>0.005</td>
<td>0.148</td>
<td>0.145</td>
<td>0.145</td>
<td>3</td>
<td>Ok</td>
</tr>
</tbody>
</table>

Notes result shall be recorded as “OK” or “NOT OK”.

---
4. Dimensional Result.

- Multiples dimensions shall be measured in each places as defined in the drawing.
- Each measured place shall be recorded on the dimension report.
- Based on the above examples, you shall list measured places with: 17.1, 17.2 and 18.1, 18.2.
5. Material Test Results and Drawing Notes

- List the test performed on the parts and product material when chemical, physical, or metallurgical requirement are specified on the design record.

- Each item must be identified with the bubble number indicated on the ballooned drawing record.

### Production Part Approval

**Material Test Results and related Design record Notes**

<table>
<thead>
<tr>
<th>Bubble</th>
<th>MATERIAL SPEC. NO. / REV. / DATE</th>
<th>SPECIFICATION / LIMITS</th>
<th>TEST DATE</th>
<th>QTY TESTED</th>
<th>SUPPLIER TEST RESULTS (DATA)</th>
<th>OK</th>
<th>NOT OK</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>GP ABS. Material meet spec FMVSS 302</td>
<td></td>
<td>2/5/11</td>
<td>1</td>
<td>Provided Material certificate</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>3</td>
<td>Part color: Grey</td>
<td></td>
<td></td>
<td></td>
<td>Provided Material certificate</td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
6. Performance test result

- List the performance or functional test performed on the parts and product material when performance or functional requirements are specified by the design record.
- Each item must be identified with the bubble number indicated on the ballooned drawing record.
7. Process Flow Diagram

- Process flow must identify each step in the process
- Should include abnormal handling processes
  - Scrap
  - Rework
- Process flow must include all phases of the process
  - Receiving of raw material
  - Part manufacturing
  - Offline inspections and checks
  - Assembly
  - Shipping
- The Organization is free to use its own process flow format
8. ACTIA Special requirement - Bill Of Material review

- This PPAP element is only required for PCA suppliers.
- Each component of the Bill Of Material shall be bubbled and identified with a number.
- The form shall list all PCA component; identified using the bubble number indicated on the Bill Of Material.
Shipping Instructions

- Samples used to complete PPAP elements **MUST** be labeled as follows: “PPAP Sample 1, PPAP Sample 2, PPAP Sample 3”.
- PPAP samples **MUST** be identified and segregated from the rest of the shipment.
- This label **MUST** be completed and affixed on the box/carton that contain the PPAP samples.
- This label is available in the PPAP workbook and shall be printed in color.
Electronic Submission Requirements

• ACTIA requires that all PPAP’s be submitted electronically via email in pdf or native format.

• All PPAP documents should be sent to:
  PPAP@ACTIA.com

• The size of the attachment cannot exceed 5Mb
  ✓ Please send in several emails indicating the email number if this occurs.

• ACTIA part number MUST be indicated in the subject line of the email

• Electronic submission MUST be received prior to the PPAP due date.
Submission Status

The PPAP submission will be reviewed and a disposition given with one of the following submission statuses:

- **Approved**: A formal acceptance of the submission within the guidelines of any and all criteria set forth by ACTIA.

- **Rejected**: The provision is not acceptable and needs to be corrected and resubmitted for approval.
  
  *(Note: Submission to the wrong revision level or part number will constitute an automatic rejection.)*

- **Other (Approved under condition)**: PPAP is approved under certain conditions that need to be approved by ACTIA. This case will require a deviation and corrective action to be set up in order to meet requirements for the future.
If you have additional questions concerning the PPAP requirements, please contact your ACTIA buyer or Quality Engineer.

52765 Bridger Court
Elkhart, IN 46514-7603
(574) 264-2373

PPAP@ACTIA.com