

PPAP

Production Part Approval Process

Submission Requirements

Quick Reference

(For Internal Cooper use Only)

Note: This document is meant to be a desk reference for Cooper Industries PPAP submissions. Complete guidelines and definition are provided in the Cooper Industries PPAP manual. Application and defined requirements are at the discretion of your Cooper Divisional Quality Representative. Contact them with any additional questions.

Item Order	PPAP Requirements Add PPAP Fourth Edition	Required Documents	Additional Comments and Clarity				
	Required: Submit your documents in this order						
	Level 1	Level 2	Level 3	Level 4	Level 5		
1	Part Submission Warrant (PSW)				AR	Cooper PSW only	Cooper PSW is required for all submissions and required on all Cooper designed parts.
2	Design Records & Bubbleed part prints(s).				AR	Cooper Divisional Part Print	Include one clean copy of the current approved revision print with all dimensions, applicable specifications, and notes, bubbleed (circle with corresponding number) on the print for reference to dimensional report.
3	Approved Engineering Change Documentation				AR	Various engineering documentation	Any formal documentation that is not reflected in the current released print such as un-released marked up prints, formal engineering changes and any pertinent engineering correspondence.
4	Customer Engineering Approvals					Not Required for Cooper Submissions	Not used with Cooper Industries submissions.
5	Design FMEA,				AR	Can be Cooper FMEA Form or an ASAG compliant DFMEA.	Required only if supplier is responsible for part design.
6	Process Flow Diagrams				AR	Any standard flowchart format.	Identifies all process steps from receiving to shipping/warehouse operations. Must include all offline and in process inspections and testing including ongoing routine performance checks such as annual dimensional layouts. Process steps must match PFMEA and Control Plan steps.
7	Process FMEA				AR	Can be Cooper PFMEA Form or an ASAG compliant PFMEA.	PFMEA must be ASAG or comparable format that contains the same information as the ASAG form. Process steps must match Process Flow Chart, Control Plan and address all characteristics associated with each operation. RPN numbers must be in accordance with ASAG guidelines with critical processes and inspections identified. Recommended Actions for high RPN items are required.
8	Control Plan				AR	Can be Cooper Control Plan or ASAG compliant format.	Control Plan must be ASAG or comparable format that contains the same information. Must match the Flow Chart/FMEA, process steps and describe the actions of each phase of the manufacturing process from receiving to shipping/warehouse. All CTQ's and SPC items must be addressed within the corresponding process step. Any dedicated check/testing features that are used will be identified along with the numbered characteristics if measures/verifies/feeds on the print. All CTQ's must be identified in the control plan.
9	Measurement System Analysis Studies				AR	Cooper GRR format or any statistical package format for gage RMR.	Require an analysis of the capability of all measuring tools identified in the Control Plan (in process or offline) used in the decision making process of normal production. As a minimum gauge RMRs, using percent of total tolerance must be included for all process tools used in determining acceptability of equipment measurement capability.
10	Dimensional Results				AR	Must be on Cooper Dimensional report format	Cooper Dimensional Data Sheet is only acceptable format.
11	Material, Performance Test Results				AR	Industry Standard reports or test result formats designated by Cooper Industries.	Certificates of Analysis for all primary raw materials such as chemicals, plastic resins and rubber. Chemical composition lab reports for all metals and controlled substances. Performance life testing results such as salt spray, impact testing, heat, humidity, electrical performance, etc. when required either by print, specification or specific request by Cooper representative to be submitted on ASAG forms (CPG-1004, CPG-1005, or equivalent). For Catalog Parts Generic or family data maybe substituted with prior approval. AEC Qualification testing or equivalent is required for semiconductor devices. Any gaps between supplier qualification testing and AEC qualification testing requirements should be documented and approved by Cooper Prior to submission.
12	Initial Process Study (Cpk) Capability Studies				AR	Process Capability Study using any statistical package or Cooper Capability Data Forms.	A short term study of process control capability (Cpk), must come from one continuous significant production run. At least 100 individual samples must be used for Cpk calculations. Multi-cavity tools would require a separate study per cavity. Supplier must have minimum Cpk value of 1.33 on all CTQ's. No attribute data will be accepted for any PPAP submissions for Initial Process Study. If CTQ's are NOT identified on the print, the supplier will identify a minimum of two characteristics that have a direct effect on fit, form, or function and perform Initial Process Studies on them.
13	Qualified Laboratory Documentation				AR	Lab Scope and outside lab proof of accreditation.	A Quality Record that contains the specific test/evaluation/calibrations that your facility performs, a list of your personnel's competency to perform these tests/evaluations/calibrations, a list of all measuring equipment used during production, and a list of methods and standards used to calibrate those tools. NOTE: All outside calibration or testing labs are required to show proof of certification.
14	Appearance Approval Report				AR	ASAG format AAR	Needed only if part has color, grain, or some other cosmetic appearance requirement specified on the part print, or if specifically requested by Cooper to clarify a cosmetic requirement not clearly identified on a print. Format is ASAG form CPG-1002.
15	Sample Product Parts				AR	Parts tagged in accordance with Cooper PPAP reference manual	The organization shall provide 3 sample parts WITH EVERY submission unless otherwise requested. Multi-cavity tools require 1 part per cavity.
16	Master Samples					Required only for level 5.	Not required for submission but must be maintained by the supplier.
17	Checking aids				AR	Checking and design prints and GRR for checking fixtures.	Any part specific fixture, gauge, model or template. Tooling/gauges/fixtures must include design prints and a 3rd party layout confirming conformity to print.
18	Customer Specific Requirements					Documents as specified by Cooper Industries	
a	Tooling Information Form				AR	Specific Cooper Document	Applies to all Cooper owned tooling. Typical application includes information and pictures on production tools such size, maximum cycles, ownership etc.
b	Packaging Form				AR	Specific Cooper Document	Used to outline and verify both external and internal packaging requirements including any related testing.
c	Inspection Plan (Add Inspection copy)				AR	Specific ASG Format	Specific format used by many ASG suppliers to document quality inspections
d	Specification Deviation Form				AR	Specific Cooper Document	Used for any requirement that is non-conforming and requires review by Cooper to provide for approval of the PPAP submission. The supplier must provide a recommended action plan for any issue identified on the Specification Deviation Form.
e	Supplier PPAP Checklist				AR	Specific Cooper Document	To be submitted with every submission level except level 1 and must be signed by supplier representative. Used as both a reference/checklist tool as well as a verification that the right documentation is provided at the time of submission.

Cooper Industries PPAP Submission Levels (in compliance with ASAG Fourth Edition PPAP March 2006 release)

**Level 1:** Warrant only and Appearance Approval Report as requested submitted to the customer. **Applied to:** "non-critical" parts, "non critical" rework, material or catalog commodity parts for electrical applications, and re-certification of existing parts previously approved by Cooper at levels 3, 4 or 5. Also used for Self Certification.

**Level 2:** Warrant with product samples and limited supporting data submitted to the customer. **Applied to:** Critical Bulk products such as Plastic/Powder/Chemicals, critical fasteners, simple material changes, simple revision level only changes or simple print updates not affecting form-fit-function. This level can also be applied to low and medium risk parts within a product family.

**Level 3:** Warrant with product samples and complete supporting data submitted to customer. **Default Cooper Industries Submission Level** **Applied to:** All new parts on Cooper programs. All changes affecting form-fit-function, reliability, or performance. All product resources to new suppliers, initial production parts, existing high risk parts undergoing a part number change.

**Level 4:** Warrant and other requirements as defined by the customer. This level is reserved for special applications only. **Applied to:** This level can only be applied with prior approval from the designated divisional Cooper Quality PPAP representative.

**Level 5:** Warrant with product samples and complete supporting data reviewed at the supplier's manufacturing location. **Applied to:** On site review as requested by each Cooper Division

Required for PPAP submission

Not required

Documents on a case by case basis are marked AR for "As Requested"

AR

If Applicable

AR

# Aiag Ppap Manual For Forms And Instructions

**Robert Pfannerstill**



## **Aiag Ppap Manual For Forms And Instructions:**

**Qs-9000 Registration and Implementation** Naroola,1996-09-04 Focuses on the improvement of quality customer satisfaction and profitability The text provides a proven step by step method for achieving QS 9000 registration economically and efficiently TAP PDSA Train Analyze and Plan Plan Do Study Act It delineates successful registration efforts conducted by the author using the TAP PDSA approach      **The QS-9000 Answer Book** Radley M. Smith,1996 No one s better qualified to explain QS 9000 than Radley Smith the co author of the QS 9000 standard The QS 9000 Answer Book explains in clear concise language what QS 9000 is how it works and how it will affect your organization Smith walks readers through QS 9000 s three sections and provides insight into common audit problems and how to avoid them In addition common QS 9000 questions are answered      *Practical Auditing Techniques for ISO/TS-16949* Raymond Ness,2003 A pragmatic approach to the field of auditing for automotive industry auditors This book is also helpful to educate internal auditors and anyone who is involved with automotive production worldwide The contents are to the international specification from Geneva Switzerland IOS The book is aimed for those personnel in the technical field It is a step by step format with anecdotal references to actual occurrences from real experience in the auditing field      *Quality Improvement Through Statistical Methods* Bovas Abraham,2012-12-06 This book is based on the papers presented at the International Conference Quality Improvement through Statistical Methods in Cochin India during December 28 31 1996 The Conference was hosted by the Cochin University of Science and Technology Cochin India and sponsored by the Institute for Improvement in Quality and Productivity IIQP at the University of Waterloo Canada the Statistics in Industry Committee of the International Statistical Institute ISI and by the Indian Statistical Institute There has been an increased interest in Quality Improvement QI activities in many organizations during the last several years since the airing of the NBC television program If Japan can why can t we Implementation of QI meth ods requires statistical thinking and the utilization of statistical tools thus there has been a renewed interest in statistical methods applicable to industry and technology This revitalized enthusiasm has created worldwide discussions on Industrial Statistics Research and QI ideas at several international conferences in recent years The purpose of this conference was to provide a forum for presenting and ex changing ideas in Statistical Methods and for enhancing the transference of such technologies to quality improvement efforts in various sectors It also provided an opportunity for interaction between industrial practitioners and academia It was intended that the exchange of experiences and ideas would foster new international collaborations in research and other technology transfers      **Advanced Product Quality Planning** D. H. Stamatis,2018-11-12 This book defines develops and examines the foundations of the APQP Advanced Product Quality Planning methodology It explains in detail the five phases and it relates its significance to national international and customer specific standards It also includes additional information on the PPAP Production Part Approval Process Risk Warranty GD T Geometric Dimensioning and Tolerancing and the role of leadership as they apply to the

continual improvement process of any organization Features Defines and explains the five stages of APQP in detail Identifies and zeroes in on the critical steps of the APQP methodology Covers the issue of risk as it is defined in the ISO 9001 IATF 16949 the pending VDA and the OEM requirements Presents the role of leadership and management in the APQP methodology Summarizes all of the change requirements of the IATF standard Production Part Approval Process (PPAP) ,2000 **Aerospace America** ,2002 **The Progressive Audit** Robert Pfannerstill,2005-06-30 The Progressive Audit is a book that anyone involved with auditing should read This book is not just about auditing but also about management strategy employee involvement and raising the level of the organizational quality culture An audit must provide an understanding of the level at which the quality culture exists so management can implement improvements It must uncover the various sub systems that exist within organizations and also raise the level of understanding in the workforce This book outlines a six step methodology to implement a sound internal audit program including how to get employees to actively participate how to drive quality system concepts throughout all levels in the organization and how to manage it so you re not doing all the work

**Automotive Audits** D. H. Stamatis,2021-03-16 This book addresses the essentials of an automotive audit which is required by all automotive suppliers world wide They are based on customer specific requirements ISO standards and Industry specifications This book covers both the mandated documents and records that are necessary for compliance with an extensive discussion on Layered Process Audits and distance auditing The book addresses the six standards for certification in one volume It explains why and how an effective audit should be carried out It identifies the key indicators for a culture change with an audit explains the process audit at length discusses the rationale for Layered Process audits and summarizes all the mandatory documents and records for all standards and requirements The book covers the issue of risk in auditing and emphasizes the role of a checklist in the preparation process This book is for those that conduct audits those that are interested in auditing and those being audited It specifically addresses automotive OEMs and their supplier base but is also of interest to anyone wanting information on auditing *Automotive Engineering* ,1995 *EDN* ,2008

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