

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/tests 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/evaluations/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	AR	AR	Specific ASG Format	Specific format used by many ASG suppliers to document quality inspections
d	Specification Deviation Form		AR	AR	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 4th Edition

**Harvey Fred Walker,Donald W.
Benbow**



Aiag Ppap Manual 4th Edition:

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 *Lean Six Sigma Orange Belt - English version* ir. H.C. Theisens, 2021-10-14 This book is intended for those who want to get started with carrying out improvement projects on the shop floor or in their own work environment In addition this book is intended for anyone who participates as a team member in a larger Lean or Six Sigma Green or Black Belt project The structure of this book is based on the Continuous Improvement Maturity Model CIMM The CIMM framework connects various improvement methods such as Agile Kaizen Lean and Six Sigma and lists the most commonly applied techniques in the field of continuous improvement and quality management The framework also connects the so called hard and soft elements of the transformation process that organizations have to deal with if they want to implement continuous improvement more firmly The CIMM framework is discussed in section In terms of structure this book follows the LSSA syllabus for Lean Six Sigma Orange Belt All techniques mentioned in this syllabus are covered in this book It is advised to also use the accompanying exercise book Those wishing to obtain their certification are advised to read the information in Appendix A Those who wish to apply Lean or Six Sigma at a Yellow Green or Black Belt level are advised to read one of the other books in the series Climbing the Mountain and use the corresponding exercise book *Lean Six Sigma Green Belt - English version* ir. H.C. Theisens, 2021-10-14 The structure of this book is based on the LSSA Skill set for Lean and Six Sigma Green Belt All of the techniques described in these Skill set will be reviewed in this book The Lean elements will be discussed in chapter 1 to 6 The Six Sigma elements will be discussed in chapters 7 and 8 This book can be used for two purposes Firstly it acts as a guide for Green Belts undertaking a Lean or Six Sigma project following the DMAIC roadmap Define Measure Analyze Improve Control Secondly this book serves to determine where the organization stands and what the best strategy is to get to a higher CIMM level **Global Standards and Publications Edition 2023 - 2024** Van Haren Publishing, 2023-02-05 Van Haren Publishing is the world s leading publisher in best practice methods and standards within IT Management Project Management Enterprise Architecture and Business Management We are the official publisher for some of the world s leading organizations and their frameworks including BIAN CATS DID Foundation Half Double Institute Agile Consortium IACCM IAOP IPMA ISM LSSA Nederlandse AI

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The ASQ Certified Quality Technician Handbook Harvey Fred Walker, Donald W. Benbow, 2025-01-05 Designed to aid candidates in preparing for ASQ Certified Quality Technician CQT certification exam this fourth edition aligns with the 2024 ASQ CQT Body of Knowledge BoK It also serves as an ideal reference for quality professionals responsible for implementing quality concepts and tools on the job The editors have included statistical techniques calibration and metrology procedures inspection and testing techniques and corrective and preventive action as well as examples with algebra based math throughout the book to show practical application of the material

Lean Six Sigma Yellow Belt - English version ir. H.C. Theisens, 2021-10-14 This book is intended for those who want to get started with carrying out improvement projects on the shop floor or in their own work environment In addition this book is intended for anyone who participates as a team member in a larger Lean or Six Sigma Green or Black Belt project In terms of structure this book follows the LSSA syllabus for Lean Six Sigma Yellow Belt All techniques mentioned in this syllabus are covered in this book It is advised to also use the accompanying exercise book

Lean Six Sigma Black Belt ir. H.C. Theisens, 2021-10-14 The structure of this book is based on the LSSA Skill set for Lean and Six Sigma Green Belt All of the techniques described in these Skill set will be reviewed in this book The Lean elements will be discussed in chapter 1 to 6 The Six Sigma elements will be discussed in chapters 7 and 8 This book can be used for two purposes Firstly it acts as a guide for Green Belts undertaking a Lean or Six Sigma project following the DMAIC roadmap Define Measure Analyze Improve Control Secondly this book serves to determine where the organization stands and what the best strategy is to get to a higher CIMM level

Quality Planning and Assurance Herman Tang, 2021-11-23 QUALITY PLANNING AND ASSURANCE Discover the most crucial aspects of quality systems planning critical to manufacturing and service success In Quality Planning and Assurance Principles Approaches and Methods for Product and Service Development accomplished engineer Dr Herman Tang delivers an incisive presentation of the principles of quality systems planning The book begins with an introduction to the meaning of the word quality before moving on to review the principles of quality strategy and policy management The author then offers a detailed discussion of customer needs and the corresponding quality planning tasks in design phases as well as a treatment of the design processes necessary to ensure product or service quality Readers will enjoy explorations of advanced topics related to proactive approaches to quality management like failure modes and effects analysis FMEA They'll discover discussions of issues like supplier quality management and the key processes associated with

quality planning and execution The book also includes A thorough introduction to quality planning including definitions discussions of quality system and an overview of the planning process A comprehensive exploration of strategic planning development including strategic management risk management and analysis and pull and push strategies Practical discussions of customer centric planning including customer oriented design quality function deployment and affective engineering In depth examinations of quality assurance by design including the design review process design verification and validation and concurrent engineering Perfect for senior undergraduate and graduate students in technology and management programs Quality Planning and Assurance will also earn a place in the libraries of managers and technical specialists in a wide range of fields including quality management

Probabilistic Design for Optimization and Robustness for Engineers Bryan Dodson,Patrick Hammett,Rene Klerx,2014-07-21 Probabilistic Design for Optimization and Robustness Presents the theory of modeling with variation using physical models and methods for practical applications on designs more insensitive to variation Provides a comprehensive guide to optimization and robustness for probabilistic design Features examples case studies and exercises throughout The methods presented can be applied to a wide range of disciplines such as mechanics electrics chemistry aerospace industry and engineering This text is supported by an accompanying website featuring videos interactive animations to aid the readers understanding

Lean Six Sigma Green Belt - Dutch version ir. H.C. Theisens,2021-10-14 Dit boek kan worden gebruikt voor twee doeleinden Enerzijds fungeert dit boek als een richtlijn voor de Green Belt om een Lean of Six Sigma verbeterproject te doorlopen Anderzijds fungeert dit boek om te bepalen waar de organisatie staat en wat de beste strategie is om op een hoger CIMM niveau te komen De structuur van dit boek is gebaseerd op het CIMM raamwerk en volgt de LSSA syllabus voor Lean Six Sigma Green Belt Alle technieken die in deze syllabus worden benoemd zullen in dit boek worden behandeld Dit boek kan gebruikt worden voor diegenen die Kaizen en Lean willen toepassen en voor diegenen die naast Lean ook Six Sigma willen gaan toepassen Voor de eerste groep volstaat het om hoofdstuk 1 tot en met 6 te lezen Six Sigma wordt behandeld in hoofdstuk 7 Het wordt geadviseerd om ook gebruik te maken van het bijbehorende oefenboek Diegenen die hun certificering willen behalen wordt geadviseerd om de informatie in Bijlage A en B te lezen Diegenen die Lean of Six Sigma willen toepassen op een Yellow Belt of Black Belt niveau wordt geadviseerd om een van de andere boeken van de reeks De Beklimming of Climbing the Mountain te lezen en gebruik te maken van het bijbehorende oefenboek

Aiag Ppap Manual 4th Edition Book Review: Unveiling the Magic of Language

In an electronic era where connections and knowledge reign supreme, the enchanting power of language has be much more apparent than ever. Its ability to stir emotions, provoke thought, and instigate transformation is truly remarkable. This extraordinary book, aptly titled "**Aiag Ppap Manual 4th Edition**," compiled by a highly acclaimed author, immerses readers in a captivating exploration of the significance of language and its profound impact on our existence. Throughout this critique, we shall delve to the book is central themes, evaluate its unique writing style, and assess its overall influence on its readership.

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