

SP-Q-SG 002 Supplier Guidelines for the APCB Production Part Approval Process (PPAP)

These supplier guidelines complement and clarify the requirements defined in the AIAG PPAP manual and the APCB Customer Specific Requirements for use with ISO/TS 16949.

General APCB PPAP Expectations

A part or raw material can only be submitted for PSW disposition if:

- The part/material meets all drawing and specification (material and ES) requirements.
- All necessary outside approvals are obtained (e.g., appearance, design, etc.).
- The part is produced on production process at a rate which supports the RFQ volumes.

See guidance note below if PSW conditions are not met.

APCB requires suppliers to use the PPAP process as defined in the current edition of the AIAG Production Part Approval Process (PPAP), as modified by the APCB Customer Specific Requirements for use with ISO/TS 16949 (primarily section 7.3.6.3V) with the additional APCB clarifications below. PPAP applies to all active production and service supplier sites. PPAP also applies to all supplier sites shipping bulk materials to APCB.

Term	Acronym	Definition
APCB Homepage		Web Portal used to access applications and documents previously accessible from the APCB Supplier Portal.
Bulk Material		A substance (e.g., non-dimensional solid, liquid, gas) such as adhesives, sealants, chemicals, coatings, fabrics, lubricants, etc.
Engineering Sample Evaluation Report	ESER	APCB terminology / form used for Engineering (Design) Approval
Functional Check Report	FCR	The process by which APCB Manufacturing Facilities approve functionality of incoming samples prior to first production shipments
International Material Data System	IMDS	Comprehensive database in which material information is stored. Link to IMDS system
Manufacturing Site		A site which manufactures product or, for some special commodities like electronics, the site that has quality and PPAP ownership for product
Measurement System Analysis	MSA	The analysis of the complete process and assumptions used to quantify a unit of measure or fix assessment to the feature characteristic being measured

Packaging Information Collection System	PICS	Online tool used by suppliers to obtain APCB review and approval of packaging Form V1271. The tool is accessible under APCB Supplier Portal.
Product Development	PD	Product Development – generic term used for all production development / engineering activities
Production Part Approval Process	PPAP	Production Part Approval Process – The process based upon AIAG requirements to determine if all customer engineering design record and specification requirements are properly understood by the organization and that the manufacturing process has the potential to produce product consistently meeting these requirements during an actual production run at the quoted production rate
Part Submission Warrant	PSW	Part Submission Warrant - An industry-standard document required for all newly-tooled or revised products in which the supplier confirms that inspections and tests on production parts show conformance to customer requirements
Request For Quotation	RFQ	Purchasing request for a supplier to quote on a part
Supplier Portal		APCB Supplier Portal, supplier quality and delivery performance monitoring database. Link for suppliers to access Supplier Portal
Special Characteristic Identification Form	SCIF	Document for recording agreement of APCB Special (Critical and Significant) Characteristics
Supplier Change Request	SCR	A documented proposal process used to communicate a request by a supplier to the responsible APCB Program Management, Product Group, Supplier Performance Engineering, Purchasing and Manufacturing activities for the purpose of seeking feasibility and concurrence for design or process-related changes on post-PSW parts. This process pertains to all post-PSW changes and applies to all suppliers (e.g., commodity, full-service, customer-directed, etc.)
Start Of Production	SOP	Start date of serial production
Supplier Performance Engineer	SPE	Supplier Performance Engineer – APCB engineer managing current model production parts and/or new model parts from initial sourcing to Start of Production (SOP) + 90 days
TRU Centrix	TRU Centrix	Site providing secure, reliable, easy electronic data transfer between APCB and its business partners. Link to APCB TRU Centrix system
Temporary Change	TC	The process required to authorize shipment of parts into APCB for production purposes that either do not have an approved PPAP, do not conform to part specification requirements, are modified, or are at a different design level than current production release requirements. Temporary Changes (formerly known as Alerts) authorizes shipment and receipt of such product for a defined period of time not to exceed 90 days per approval.

1. General Guidelines

a) Supplier is to submit a PSW package per the PPAP submission level of the manufacturing site as is shown on the Supplier Portal site summary screen unless instructed to use a different PPAP submission level by the SPE (e.g., for a given part submission the PPAP level 4 may be requested as opposed to a PPAP level 1 as listed in Supplier Portal). The use of a different PPAP submission level might be required due to program or APCB end customer specific requirements. PPAP submission levels are also applicable to supplier sites shipping bulk materials to APCB.

Level 1 suppliers must submit full PPAP level 4 content with their PSW. The PSW will remain supplier self-certified. APCB will retain the full PPAP level 4 content for reference and for level 1 audits.

- b) The APCB Part Submission Warrant (PSW) for Suppliers is available on APCB Supplier Portal, <http://apc-berlin.com/> and must be used. The part weight on the PSW must be entered to four decimal places (i.e., x.xxxx) and be the average weight resulting from measurements of 10 parts.
- c) Suppliers must include a PPAP Checklist, available on APCB Supplier Portal. The Checklist can be used to modify the default submission requirements and must be approved by the SPE prior to PPAP submission. The default submissions requirements can also be modified by the requirements identified by the SPE in an approved Supplier Change Request (SCR).
- d) Suppliers must include a Sub-Supplier PSW for all Sub-Suppliers and a Sub-Supplier PPAP Checklist for applicable Sub-Suppliers.
- e) Deviations to requirements as stated in these guidelines are not permissible unless authorized and documented by the SPE. The PPAP requirements for bulk materials may be modified or waived if authorized and documented by APCB SPE.
- f) Other APCB Customer Specific PPAP Requirements may be but not limited to the following. These will be confirmed by the SPE approving the PPAP.
- Safe Launch Plans, approved by APCB
 - APCB OEM customer imposed requirements
- g) All data (e.g., ES Test results, material certifications, layout and capability data) submitted in the PPAP Package must be less than 1-year-old.
- h) All APCB Suppliers are required to maintain completed PPAP packages, including sub-supplier PSWs for the defined record retention period (typically: active part life + ten calendar years), and have them readily available for review when required. Suppliers must also maintain proof of functional check approval/waiver.
- i) IMDS submission status must be checked indicated and a copy of the IMDS acceptance screen included in the PSW package.
- j) Suppliers may ship non-PSW parts to APCB only if they receive a Temporary Change from APCB prior to shipment. SPE does not grant PSW approval to temporary changes.
- k) The supplier shall forward a copy of the APCB SPE-approved PSW (or the complete PSW package upon request) within 24 hours of receiving approval.
- l) Family PSW are acceptable in certain circumstances, example a family of passive electronic components. SPE can advise on applicability of a family PSW. A part matrix detailing all APCB part numbers and supplier part references must be attached to the PSW. If a new APCB part number for a family part not previously supplied is generated, the supplier must update the parts matrix (with issue date), obtain approvals for the new part (IMDS, customer engineering approval (if appropriate) etc). A PSW for the new part(s) is to be raised, a 'family new part PSW' with explanation comment to reference the original family PSW, and approved. The family new part PSW with updated parts matrix and approvals is to be kept with / as part of the original family PPAP / PSW.

- m) Approved APCB packaging form, typically an 1121 form. See the online Packaging Information Collections System (PICS) available under APCB Supplier Portal.
- n) Bulk material PPAP requirements are defined by a completed Bulk Material Requirements Checklist (AIAG) and the accompanying Design Matrix (AIAG).
- o) Suppliers must include evidence of compliance to CQI-9, 11 and 12, where applicable.
- p) All PPAP packages must be submitted per e-mail or electronically to APCB as per TRU Centrix. If documentation is missing or not legible the PPAP will be rejected, this will delay APCB downstream processes, for example supplier tooling payments. All PPAP submission process and status questions should be directed to the SPE.

2. Design Records

- a) PPAP package submissions must include APCB approved, updated design records (including dimensions) reflecting the latest change level.
- b) Drawings / Prints may have legible handwritten changes, but must have an engineering notice # or customer equivalent, APCB approval signature and date (must be less than 1 year old) from the appropriate APCB Engineer. It must be released in APCB Share Point system.
- c) APCB Engineering has the authority to temporarily waive certain engineering requirements using a Temporary Change. Suppliers must receive an approved Temporary Change from APCB prior to any shipments of non-PSW approved components. SPE does not grant PSW approval to temporary changes.
- d) Concurred Supplier Characteristic Identification Form (SCIF) must be included in PPAP package.
- e) If the part is an industry standard (e.g., passive electronic components, connectors, fasteners, etc.), the supplier's specification must be included.
- f) For a family PSW (e.g., a passive electronic component family) a part correlation matrix between APCB and the supplier reference is to be include plus a direct print out / copy from the supplier MRP system (production control system) showing supplier part references and descriptions.
- g) All data submitted in the PPAP documentation must use the same units as on the design record (e.g., dimensional, material testing, and performance testing results).

3. Dimensional Results

- a) Dimensional layout results must include a minimum of 6 pieces. All parts measured must be representative of parts from a significant production run. (Refer to the AIAG sampling requirements) For multiple cavity tools, unless otherwise specified,
 - 100% layout for 6 parts for a single line process minimum
 - 100% layout for 6 parts for each cavity if the process has 2 cavities per tool minimum
 - 100% layout for 3 parts for each cavity if the process has 3, 4 or 5 cavities per tool minimum
 - 100% layout for 1 part for each cavity if the process has 6 or more cavities per tool minimum

Drawing numbered to correlate with submitted dimensional results and drawing notes

Note:

- Any surrogate data must be approved by APCB's SPE
- Number of layouts may be modified with approval from APCB. Attach approval if applicable

4. Material, Performance Test Results

- a) Suppliers must provide actual results of performance and material test results.
- b) The AIAG Test Result form or equivalent must be used to submit results.
- c) Include evidence of test laboratory status in relation to ISO17025

5. Measurement System Analysis Studies

a) All gauges, including those used for in-process testing, must have MSAs completed as described in the AIAG MSA guidelines.

6. Functional Check Approval

a) The Functional Approval process is an event managed by APCB and is a separate event to the PPAP / PSW approval.

b) The Supplier is not authorized to ship production quantities to APCB until they receive an FCR approval or waiver from APCB. The supplier must attach a copy of the APCB approved (PPAP level 4 & 5) or self-certified (PPAP level 1) Part Submission Warrant to the parts submitted for Functional Approval.

Guidance When Conditions for PSW are Not Met

If a supplier cannot achieve PSW by the required date, then the supplier must:

- Inform the appropriate APCB buyer at the earliest opportunity
- Determine a recovery action plan

APCB Engineering has the authority to temporarily waive certain engineering requirements using a Temporary Change to authorize the shipment of product. Similarly, a Temporary Change can be requested for insufficient capacity.

PPAP Submission Levels

APCB assigns a PPAP submission level to every manufacturing site.

The PPAP level for a manufacturing site is displayed in the APCB Supplier Portal.

APCB defines PPAP submission level 4 as 'submission with complete supporting data without parts (as per approved SCR or PPAP checklist), the same as the PPAP level 3 defined in the AIAG PPAP brochure, but without parts.

APCB assigns suppliers to either PPAP level 1 (self certifying, submission of reference copy of complete PPAP package, no parts), level 4 (full submission, no parts) or level 5 (on site review).

Occasionally APCB's customer requires all APCB supplier PSW's to be approved (signed) by APCB. For PPAP level 1 submissions, the APCB approver's signature only confirms the suppliers PPAP level status is level 1.

For PPAP level 4 submissions, the supplier shall submit the complete PSW package at least 10 working days prior to the sample promise date (sometimes referred to as supplier PPAP MRD - material required date).

For PPAP level 5 submissions, the supplier shall arrange a mutually convenient date for the APCB SPE engineer to review the PSW package at the suppliers manufacturing site. The SPE engineer will conduct spot checks of the production process, measurement data and test results to verify the accuracy of the data submitted in the PSW package. They will also verify run at rate and confirm capacity capability for the PSW package, if required.

Criteria used to assign the default PPAP level for a manufacturing site

- A new supplier will be assigned to PPAP level 5 or 4 by the SPE engineer depending on the results of the supplier audit (survey) and an internal APCB risk evaluation.
- When a supplier demonstrates the ability to produce good quality PPAP submissions to APCB requirements, the SPE can reassign the default PPAP level, example from PPAP level 5 to level 4 or from PPAP level 4 to level 1. Typically, a supplier PPAP level will be reviewed and may be revised after three separate satisfactory initial submissions.
- If a supplier's quality performance per APCB Supplier Portal data is poor (quality rating is yellow or red) the supplier's site PPAP submission level will be reviewed with consideration of downgrading the site's PPAP level, e.g., revising them from PPAP level 1 to PPAP level 4. The supplier will remain at the downgraded PPAP level until their quality rating and the quality of their PPAP submissions are satisfactory.

Monitoring Quality of PPAP level 1 Suppliers Submissions

The SPE engineer will routinely review a supplier's PPAP level 1 package for acceptability as part of their general supplier management activities.

- Minimum of one package per year will be reviewed to the same criteria as a PPAP level 4 submission
- Inclusion of APCB approvals in the PSW package will be especially checked including but not limited to:
 - IMDS entry and acceptance (or equivalent)
 - SCR Approval (if applicable)
 - Appearance Approval (if applicable)
 - Engineering Approval (if applicable)
 - SPE approval of control plan and an FMEA for control items
- If the general quality of the PSW package is not satisfactory, the PPAP submission level will be revised to PPAP level 4 or 5 as appropriate.

Clarification of Annual PSW

Suppliers are required to complete annual layout of parts (ISO/TS16949). Once the annual layout data has been obtained the supplier is to complete a new PSW with specific directions as follows:

- Reason for submission – other: annual layout
- On Explanation/Comment line, write 'Annual layout confirmation'
- Supplier quality representative is to approve (sign) PSW as a true statement
- Store the annual layout package with the original PSW package for reference
- Annual layouts PSWs are to be available to APCB on request.
- Annual PSW's may be reviewed by the APCB SPE on a random audit basis.

If a request for a copy of a PSW is received for a part where the original approved PSW is over one year old, the supplier shall submit a copy of the original approved PSW along with a copy of the last annual PSW (less than one year old) as evidence that the part still conforms to all drawing requirements. The annual layout requirement is not applicable to supplier sites shipping bulk materials to APCB.

Supplier Change Request

The Supplier Change Request guidance is as follows:

- A documented proposal process used to communicate a request by a supplier to the responsible APCB Program Management, Product Group, Supplier Performance Engineering, Purchasing and Manufacturing activities for the purpose of seeking feasibility and concurrence for design or process-related changes on post-PSW parts. This process pertains to all post-PSW changes and applies to all suppliers (e.g., commodity, full-service, customer-directed, etc.)
- SCR is mandatory for all post PSW process and product changes initiated by the supplier and are also applicable to bulk material changes.
- The combination of approved PSW and Functional Check Report (or waiver) and the initial shipping release is the authorization for shipment of the changed part, not the SCR approval itself.

Other

The working language of APCB is English. PPAP submissions must be in English.

Apart from the APCB PSW and SCR, APCB does not mandate any specific forms for the PPAP package. AIAG PPAP manual forms and supplier equivalents which contain the same information in a logical easy reviewable layout are acceptable. The acceptability of a particular form should be checked with the SPE before the PPAP documents are submitted for approval, if there is any doubt.

APCB will retain a reference copy of all supplier PPAP documents for APCB use only. It is expected that a concurred logistics route, including logistics for returnable / re-useable packaging, is in place and it has been verified by the appropriate activity before PSW submission.

Certain commodities have developed specific PPAP submission criteria – e.g., electronic components (semiconductors) require component engineering approval of reliability data. The SPE will advise suppliers when these specific requirements apply and are to be recorded in PPAP checklist.

References:

- AIAG, Production Part Approval Process (PPAP) Current Edition
- AIAG, Measurement Systems Analysis (MSA) Current Edition
- PSW for Suppliers
- Production Part Approval Process Tracker / Checklist (optional document for supplier use to manage compilation of PPAP package content)
- Supplier & Sub-Supplier PPAP Checklist

Record of Revision:

Date	Description of Change
01.08.2016	First Version