

Terms and Conditions

Clause Number: Q017

Effective: 11/03/2023

Page 1 of 3

ADVANCED PRODUCT QUALITY PLANNING (APQP) AND PRODUCTION PART APPROVAL PROCESS (PPAP)

Applicability

Compliance with Aerospace Standard AS9145 latest revision (*Aerospace Series – Requirements for Advanced Product Quality Planning and Production Part Approval Process*), is required for all indicated line items in this Contract.

Production Part Approval Process (PPAP) referenced in AS9145 is the output of the APQP process. The following elements from AS9145 are the artifacts under this contract that shall be required per the applicable tables below as determined by the Buyer:

Table 1 Buyer Designed

Artifacts			Supplier Type
Production Part Approval Process (PPAP) Element		APQP Phase	Buyer Designed
3	Process Flow Diagram	3	R
4	Process Failure Mode and Effects Analysis (PFMEA)	3	R
5	Control Plan	3/4	R
6	Measurement Systems Analysis (MSA)*	4	AR
7	Initial Process Capability Studies**	4	AR
8	Packaging, Preservation, and Labelling Approvals	3	AR
9	First Article Inspection Report (FAIR)	4	AR
11	PPAP Approval Form (or equivalent)	4	R

Table 2 Seller Designed

Artifacts			Supplier Type
Production Part Approval Process (PPAP) Element		APQP Phase	Seller Designed
1	Design Records	2	R
2	Design Risk Analysis (e.g., DFMEA)	2	R
3	Process Flow Diagram	3	R
4	Process Failure Mode and Effects Analysis (PFMEA)	3	R
5	Control Plan	3/4	R
6	Measurement Systems Analysis (MSA)*	4	AR
7	Initial Process Capability Studies**	4	AR
8	Packaging, Preservation, and Labelling Approvals	3	AR
9	First Article Inspection Report (FAIR)	4	AR
11	PPAP Approval Form (or equivalent)	4	R

Terms and Conditions

Clause Number: Q017
Effective: 11/03/2023
Page 2 of 3

Table 3 Developmental Programs

Artifacts			Supplier Type
Production Part Approval Process (PPAP) Element		APQP Phase	Developmental Only Programs
1	Design Records	2	R
2	Design Risk Analysis (e.g., DFMEA)	2	R
3	Process Flow Diagram	3	AR
4	Process Failure Mode and Effects Analysis (PFMEA)	3	AR
5	Control Plan	3/4	AR
6	Measurement Systems Analysis (MSA)*	4	AR
7	Initial Process Capability Studies**	4	AR
11	PPAP Approval Form (or equivalent)	4	R

R= Required, and AR=As Required

*An MSA at a minimum shall be performed for all Product and Process Key Characteristics (KCs) identified in the Control Plan.

**An Initial process capability studies shall be completed for (KCs) identified within the design record and the Control Plan at a minimum.

Seller and Seller's Subcontractors shall maintain and retain APQP PPAP element records per the retention of records requirements of this Purchase Order.

Approval

Seller shall provide all required PPAP elements to the Buyers Authorized Procurement Representative or APQP Supplier Quality Specialist/Engineer upon request

Seller shall notify the Buyers Authorized Procurement Representative and APQP Supplier Quality Specialist/Engineer of product and/or process changes (as defined by the AS9102 latest revision) to determine the requirements for resubmission.

Buyer reserves the right to conduct surveillance on Seller's AS9145 compliance. Buyer reserves the right to make final determination of seller's compliance to AS9145 aerospace standard including for all PPAP elements. Buyer also reserves the right to require PPAP element submittal, approval, and resubmittal. When Buyer engagement is required, Buyer will communicate and coordinate with Seller to schedule APQP activity and any as required elements from the applicable tables above prior to the start of related procurement, manufacturing and/or processing. In these instances, Seller shall have written approval of PPAP elements for all required contract line items prior to first part shipment, unless otherwise directed by Buyer.

Terms and Conditions

Clause Number: Q017

Effective: 11/03/2023

Page 3 of 3

Buyer will provide Boeing's PPAP form X39160.

Seller will be notified by Buyer when the Seller is required to complete an APQP Maturity Matrix.

Seller can obtain a copy of AS9145 Aerospace Standard for APQP/PPAP from the following source:

SAE International (formally known as Society of Automotive Engineers), *AS9145 Aerospace Series – Requirements for Advanced Product Quality Planning and Production Part Approval Process*.

Seller is encouraged to use the APQP Checklists, Templates and Maturity Matrix, from the following source:

International Aerospace Quality Group (IAQG), Supply Chain Management Handbook (SCMH)