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AUTHOR PUR	Section 8: Engineering and PPAP Sample Process	ED./AMEND. 1/1	ISSUE DATE 6/5/09	

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Effective Date	Change History
6/5/09	Updated in line with PUR PLP
30/12/08	Updated to bring in line with current
9/8/04	New Instruction

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1 INTRODUCTION

This instruction is to provide information on the processes of supplying engineering and PPAP samples. Included also is explanation of the documents and agreements related to the PPAP process

1.1. Purpose

To improve supplier understanding of the Engineering and PPAP sample requirements

1.2. Applicability

This instruction applies to all externally sourced products.

1.3. Definitions


RBAU :	Robert Bosch (Australia) Pty. Ltd.
Engineering Sample	Non production parts used for prototype sample or evaluation
APQP:	Advanced Product Quality Planning
IP:	Inspection Plan at goods receiving
PLP:	Purchasing Launch Plan
PGQP:	Purchased Goods Quality Plan
PPAP:	Production Part Approval Process
PUR-Q:	Supplier Quality Engineer
PUR-Q MET:	Purchasing Quality Metrology
ISIR :	Initial Samples Inspection Report

2. PROCEDURE FOR ENGINEERING SAMPLES

2.1. Engineering samples

Engineering Samples must be as representative of production parts as is possible at the time of supply. Engineering samples are required to be accompanied with a comprehensive ISIR or test report and material test certificate unless otherwise directed by RBAU.

Parts are to be delivered to stores against the provided purchase order number. Delivery Dockets are to be clearly marked with the words "Engineering Samples".

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Packing Details required on the delivery docket are:

- RBAU Part Number, if applicable.
- Part Description.
- Quantity Supplied.
- Purchase Order number.
- Name & department of RBAU recipient

Delivery documentation for each sample lot must be raised **separately**, segregated from other sample lots or standard production stock.

All documentation supplied with Engineering Samples must be in accordance with RBAU requests as stated in the purchase order.

3. PROCEDURE FOR SUBMITTING PPAP PARTS

3.1. PPAP submission

Production Part Approval Process by RBAU is always required before the first production shipment of product for situations specified in line with relevant automotive quality standards.

It is the responsibility of the Supplier to notify the RBAU Supplier Quality Engineer when any of the changes requiring submission will occur or have occurred without prior instruction from RBAU. The supplier will be advised by RBAU of the resulting obligation for PPAP submission.

3.2. Submission of PPAP


The PLP (refer PLP Instruction) and PPAP order is used to initiate the PPAP submission. It is sent to the supplier providing all details of the PPAP submission requirements.

If specified in the PLP, a PGQP (refer PGQP Instruction) is to be agreed upon by RBAU & Supplier to ensure the necessary controls are in place for the quality manufacture of production stock.

The PPAP Submission is to be compiled by the supplier in accordance with the PLP Checklist. If the samples or documentation do not comply fully with RBAU specifications and/or the PLP Checklist, the supplier must correct or obtain a written acceptance from RBAU via the Supplier Quality Engineer. This acceptance must be submitted with PPAP.

The supplier is to pack PPAP Samples & Documentation together but separate from other deliveries. This package is to be clearly marked "PPAP Submission", and the PPAP Order Number is to be quoted on all delivery documentation.

Confirmation of the PPAP disposition will be via letter from PUR. Production parts are only to be delivered to RBAU after the PPAP has been approved, or with a prior approved RBAU concession to authorise shipment from supplier.

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3.3. PLP

The PLP is used to convey the important PPAP information and requirements to the supplier including order details, submission checklist, PPAP reason and supplier declaration

The supplier is required to submit the completed PLP form with the PPAP submission unless otherwise by the relevant Supplier Quality Engineer. The supplier shall only submit PPAP against a PPAP order number. The PPAP samples and documents must be marked "PPAP Submission".

The supplier shall fill in the "Sup" column of the PPAP checklist using the symbols provided in the legend to indicate which items have been provided. These Items shall be the same as indicated by the RBAU Supplier Quality Engineer. Any differences must be pre-approved by RBAU and an updated PLP issued.


Production parts must never be delivered before PPAP acceptance or without an appropriate approved concession.

Refer to sample PLP for more information.

3.3.1. PPAP Submission Checklist & Explanatory Notes

3.3.1.1. Requirements:

1. Warrant:
Warrant Form.
2. Sample Product:
The supplier is to provide production level parts as requested in the PPAP order (a minimum of three parts per cavity if multiple cavities are used). Parts must be from a minimum production run of 300 units unless otherwise agreed with RBAU.
3. Design Records:
A copy of the RBAU part drawings and associated specifications for the submitted part.
4. Change Documents:
Written authorisation from RBAU when a PPAP submission occurs before the design record is updated i.e. part drawing updated to latest level.
5. Dimensional Results:
Dimensional inspection must be done for all parts and product materials with dimensional requirements to determine conformance with all design record specifications. It is the supplier's responsibility to provide dimensional measurement results. If a third party inspection service has been used, this must be stated on the results sheet. Measurement results may be reported on PPAP or FAPM format report sheets.
If multiple cavities are used to produce the part, minimum three samples per cavity are to be measured, unless otherwise agreed with RBAU. A minimum of one referenced and dated master sample must be retained by the supplier for each part submission at the time of PPAP submission preparation. An


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itemised drawing must be supplied with the PPAP referring to measured results.

6. **Checking Aids:**
Equipment used for inspection or testing (including fixtures, models, templates, etc. specific to the part being submitted).
7. **Functional Test Results:**
All performance, durability and material test results specified in the design record i.e. tests specified on the part drawing, Bosch Y specifications, or any other Bosch requirement.
8. **Process Flow Diagram:**
A flow chart of the production process for the part.
9. **Process FMEA:**
Current document reflecting the submission level of the part and in line with PPAP process.
10. **Design FMEA:**
Design FMEA is required if the supplier is responsible for design.
11. **Control Plan:**
A Control Plan for manufacture of the submitted part should include reference to all special characteristics as indicated on the part drawing if applicable.
12. **Process Capability:**
Characteristics for study are specified on the PGQP Form and/or in the comments section of the PLP. RBAU targets a value of >1.67 for Ppk & Cpk. The minimum requirement for A-items Ppk>2.00, Cpk>1.67.
13. **Gauge R & R:**
Measurement system analysis is to understand how measurement error is affecting the measured values. To be done for the measuring, gauging or test equipment, used to produce the Process Capability Studies.
14. **Annual requalification (TS16949 Requirement):**

Verification of all dimensions not measured as part of PGQP to be requalified on an annual basis and must be retained by supplier for review upon RBAU request.
15. **Purchased Goods Quality Plan (PGQP):**
Completed and Approved PGQP form. Refer PGQP Supplier Instruction under useful downloads.
16. **Material Test Certificate:**
Authorised certificate stating that the materials satisfy specification. The material certificate must be traceable to the parts included in the part submission.
17. **Appearance Approval Report (AAR):**

AAR typically applies only for parts with colour, grain or surface appearance requirements. A completed AAR is to be submitted with the parts.

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18. International Material Data System (IMDS):

The supplier is to declare that all substances used in the material/s and for the manufacture of material/s are compliant according to N2580.1 and N2580.2

19. Surface Treatment Evaluation:

Physical test results and method for evaluation of surface treatment(s).

20. RBAU Written Authorisation for Non-conforming characteristics Prior to PPAP Submission:

If acceptance of supplier non-conformance to submission requirements has been agreed by RBAU, include written RBAU authorisation with PPAP.

21. Packaging Details:

Details on dimensions, weight, and type of packaging for specified pack quantity of production stock. Refer Packaging Section of the RBAU Supplier Requirements Manual.

22. PLP:

Completed and Approved Purchasing Launch Plan Checklist. Refer PLP Supplier Instruction under useful downloads.

3.4. PGQP:

The PGQP is used to identify to the supplier the important characteristics required for monitoring of a new part. The draft form of this document is supplied at the quote or start of supplier preparation phase. It then forms the basis of a quality agreement between RBAU and the supplier. This agreement includes ongoing production monitoring as well as PPAP capability requirements.


The Supplier's Quality Manager is to sign the form and required to keep a copy of this PGQP in their part files. They are then obliged to fulfil the tasks stipulated in this PGQP during serial production. It is the responsibility of the supplier to implement PGQP requirements and tasks. The PGQP is the minimum agreement for monitoring and it is still the supplier's obligation to meet the drawing specifications on all other dimensions.

Refer to sample PGQP for more information.

A signed copy of the PGQP from the supplier is to be included in the PPAP Submission if this is specified on the PLP Checklist. Evidence must also be attached that the PGQP tasks are being completed.

The PUR-Q is to crosscheck and verify that the supplier has fulfilled PGQP requirements.

All documents and results must be retained for a minimum of 10 years after production finish. Note that Safety critical items require a retention period of 15 years after production finish.

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3.4.1. Alteration of PGQP:

If the PGQP is revised it shall be signed by PUR-Q and the Buyer, and dispatched to the supplier with the PPAP order and PLP Checklist (if required). A copy of this signed PGQP should be retained by PUR-Q until PPAP re-submission is processed. The supplier shall sign off the new PGQP and submit at PPAP (or before if requested), retaining a copy and destroying the old level PGQP upon PPAP approval of the latest level.

3.5. Disposition of PPAP

The following table shows the options for the disposition of the PPAP. The scores allocated to each PPAP are also shown. These scores are used for evaluation the suppliers PPAP performance (EMKZ).

Approved (Y)	Fully Approved (Part Fully Conforms to RBAU Requirements).	0
Approved (Y2)	Fully Approved (Drawing to be updated with OOPT waivers).	0
Approved (V)	Fully Approved but Submission Delivered Late	1
Approved (U)	Fully Approved but Submission Documents Incomplete	2
Approved (TV)	Fully Approved but Submission Delivered Late and Production Affected	5
Provisional (S)	PPAP Parts used on Concession	1
Rejected (A)	Parts are non conforming	3
Rejected (TA)	Parts are non conforming and Production Affected	5
Rejected (R)	Parts are non conforming and rejected on Re-Submission	6
Rejected (R1)	Parts are non-conforming and Rejected on Re-Submission and Production Affected	8
Rejected (R2)	Parts conforming to specification, functionally non conforming	0

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3.6. Delivery Types Summary:

This Matrix clarifies the different types of part deliveries to RBAU:

	Engineering Samples	PPAP Submission	Production Deliveries	
			PPAP Approved	Concession
Order Type:	Engineering Samples Order	PPAP Order	Production Order	Approved Concession + Production Order
Parts Ordered for:	<ul style="list-style-type: none"> Engineering Prototype Samples RBAU process evaluation RBAU Part Evaluation 	PPAP Approval Submission Only	RBAU Production	RBAU Production
Delivery Instructions:	<ul style="list-style-type: none"> Pack Separately from other parts. Separate Delivery Documents. Identify delivery as "Engineering Samples". Name & department of RBAU recipient 	<ul style="list-style-type: none"> PPAP Order exclusively used for PPAP submissions including all documents. Pack samples and all documents together but separate from other deliveries. Package labelled as "PPAP Submission" PPAP delivery documents to quote PPAP Order Number. Name & department of RBAU recipient 	<ul style="list-style-type: none"> Part must be PPAP Approved by RBAU. Ship stock to Production schedule. 	<ul style="list-style-type: none"> If part is not PPAP approved by RBAU, stock must not be shipped unless a concession has been authorised. Quote Concession Number on delivery documents for all shipments. Supply to production schedule but concession quantity/date limits must not be exceeded.
Supplier Instruction:	Engineering Samples	PPAP, PLP, (PGQP)	PPAP, Delivery	PPAP, Delivery