



SUPPLIER QUALITY MANUAL

Exhibit 1

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Global Quality Supplier Quality Manual Policies and Standards

Revision/Review Updates

Change #	Revision Description	Approved by & Title	Date
0005	Updated to Carrier specific as an independent company	Gary Christman	3/23/2020

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1. QUALITY POLICY

Carrier is a world class provider of quality HVAC, refrigeration, building controls, fire prevention, detection & suppression, and security solutions.

We are committed to providing our customers an exceptional life cycle experience with our products and services. We accomplish this through innovative quality designs, lean manufacturing processes, a strong supply base and responsive post-sales support. We are dedicated to provide our customers safe and compliant products, delivered on time, that meet or exceed their expectations. We develop our employees to embrace the Quality Policy by utilizing our continuous improvement tools and ethics-based culture.

Suppliers play an integral role in ensuring the quality and cost effectiveness of Carrier products and shall comply with all requirements defined in this manual or communicated otherwise.

2. PURPOSE

This manual defines the initial and on-going requirements for supplier quality systems and performance.

3. APPLICABILITY

This Supplier Quality Manual applies to all suppliers that provide production material, deliverable software, supplier designed products which are incorporated into a Carrier assembly/product, finished goods branded by Carrier and product related services to Carrier facilities. Further the SQM applies to internal suppliers within Carrier (i.e. Carrier owned suppliers and Joint Ventures (JV's). Individual Carrier plants may have additional plant-specific requirements and will establish specific processes for carrying out these requirements. If a conflict exists between the requirements presented in this manual and individual plant requirements, the more stringent requirements will apply.

4. OWNERSHIP AND APPROVAL

The Vice President of Quality, Carrier Corporation, is the owner of this standard work instruction. All interpretations and changes require prior approval of the owner. Contact the owner for all questions regarding this standard work instruction.

5. EXPECTATIONS

5.1 Communications

In general, the following contact points should be used:

Primary Contact – For all issue regarding supply chain and procurement activity contact your buyer

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Product/Part Quality – For all issues regarding product quality, contact Supplier Quality Assurance (SQA) personnel at the using Carrier site.

Ethics concerns – Carrier maintains a contact site for suppliers who have questions or issues related to the Code of Ethics. Suppliers can make direct contact with an independent ombudsman to assist in resolution of concerns. Site can be accessed through the Supplier link on the Carrier.com homepage.

5.2 Purchased Products and Product Related Services

Purchased Products and Product Related Services Shall Comply with Established Specifications and Requirements, including:

- Drawings that apply to the specific product or service.
- Engineering specifications and/ or reliability requirements that apply to the commodity or specific part.
- Material specifications that apply to the product or service
- Applicable Regulatory / Industry standards.
- Carrier approved changes or deviations.
- Established Commercial Agreements

5.3 Suppliers are required to:

- 5.3.1** Demonstrate and maintain compliance to, all documented requirements, including design performance, reliability, process control, and capability.
- 5.3.2** Provide resources to participate in product quality planning
- 5.3.3** Have a change control system that reacts to changes in a timely and accurate fashion. In all cases, acquire written approval *prior* to implementing any change that may impact form, fit, function, interchangeability or reliability. This shall include manufacturing processes, quality standards for product acceptance, and testing requirements.
- 5.3.4** Have a documented quality system in place which addresses all stages of product / process development, manufacturing and delivery. Suppliers must agree to on-site quality system assessments and validation as requested.
- 5.3.5** Maintain process, product and service documentation.
- 5.3.6** Deploy expectations and controls equivalent to those presented in this document to sub-tier supply chain.

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- 5.3.7** Be accountable for quality of all sub-tier suppliers including “directed-buy” sources.
- 5.3.8** Maintain the expertise and resources to perform effective root cause analysis and implement timely corrective and preventive action.
- 5.3.9** Provide notification of any and all situations that may negatively impact the supplied product’s quality, reliability, and safety; design and/ or production; or any other matter described in this manual.
- 5.3.10** Be accountable for the impact of poor quality on Carrier and its customers.
- 5.3.11** Notify Carrier of any condition or change that has impact on Carrier’s environmental/ sustainability commitments or regulatory requirements.
- 5.3.12** Fully comply with the Carrier Code of Ethics and Supplier Code of Conduct.
- 5.3.13** Maintain a self-audit system which ensures compliance of all the above.

5.4 New Supplier Information

New suppliers to Carrier must provide general information including:

- DUNS number by factory qualifying for production
- A list of key supplier contacts by qualifying factory location
- A copy of their 3rd. party Quality System certificate

6. SUPPLIER QUALIFICATION REQUIREMENTS

Suppliers shall establish and maintain a Quality Management System that ensures production meets all customer requirements and expectations.

6.1 Quality System

- 6.1.1** All suppliers shall maintain an effective documented quality system that communicates, identifies, coordinates and controls all key activities necessary to design, develop, produce, deliver and support quality product or service.
- 6.1.2** All suppliers must be certified/ registered to the latest version of one of the following international quality management standards by a recognized independent certified 3rd party registrar:
- 6.1.3** ISO 9001: Quality Management Systems Requirements
- 6.1.4** ISO/ TS16949: Quality Management Systems (Automotive Requirements)

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- 6.1.5** SAE AS9100: Quality Management Systems (Aerospace requirements)
- 6.1.6** Exceptions to maintaining 3rd. party registration will be managed on a case by case basis. A Carrier Quality Director, with concurrence from all other Carrier sites using this same supplier location, may waive 3rd. party registration. In such cases an onsite Q+ audit must be completed. Suppliers may be required to reimburse Carrier for the cost of conducting these audits.
- 6.1.7** Note: Suppliers must notify Carrier immediately if their third party registration expires or is revoked.
- 6.1.8** Carrier reserves the right to:
 - Verify Supplier quality systems with an on-site audit
 - Verify a supplier's compliance to an applicable quality standard
 - Conduct a Q+ audit in lieu of, and/ or in addition to, third party certification
 - Disqualify suppliers based on substandard performance. In such cases, full requalification will be required prior to resuming business.

6.2 Carrier Quality System Assessment

Q+ is the quality systems assessment/ survey used by Carrier. It consists of a self-assessment and an on-site audit conducted by Carrier. Both the Q+ Self-Assessment and Survey criteria are intended to assess a supplier's quality system, process control capability, as well as assist the supplier to identify strengths, weaknesses, and/ or areas requiring improvement.

6.2.1 Q+ Self-Assessment

When required, the self-assessment shall be completed by suppliers independently and evaluated by Carrier. The criteria generally follows ISO 9001 adding specific requirements to ensure effective process control and quality results. Suppliers completing self-assessments shall submit action plans to improve any section not meeting minimum requirements. Carrier reserves the right to perform an on-site Q+ audit based on the results of self-assessments.

6.2.2 Q+ Survey

This on-site survey consists of various quality system and process control categories and is intended to provide a fair appraisal of the supplier's quality system, process controls, and commitment to quality at the time of the survey. From time to time Carrier will revise this survey to incorporate new quality system requirements.

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6.3 Process Audits

Carrier may conduct a process qualification audit at the supplier's manufacturing facility. This audit focuses on the specific process quality controls that the supplier has in place for the products being manufactured for Carrier, as well as part/ commodity specific process requirements. Additionally, Carrier reserves the right to conduct such an audit at sub-tier suppliers. Such audits shall not relieve the supplier's responsibility to produce and deliver defect-free parts.

7. PRODUCTION PART & PROCESS QUALIFICATION REQUIREMENTS

Part Qualification ensures that the part is capable of meeting technical/ performance requirements. Process Qualification ensures that the specific manufacturing processes in place will produce a part of consistent and acceptable quality.

7.1 PPAP Submission Requirements

All production part sample submissions shall be in accordance with Production Part Approval Process (PPAP) general requirements for each PPAP level (refer to Appendix 1). The Carrier using site will define a PPAP level 1-5 to be submitted. PPAP requests will be made using the PPAP Request Sheet (QLY-02-FM4) or by similar means. PPAP submission should be made as far in advance of production start-up as possible, working to a date agreed to with the Carrier using site.

NOTE:

- Commercial Off-The-Shelf items (COTS), when meeting the definition provided in section 13, will require at least a Level 1 PPAP.
- Check with your using Carrier Business Unit for any specific timing guideline for PPAP submission

7.2 Shipment Approval

Suppliers shall not ship production parts until a full or interim approval is received from Carrier via a signed Parts Warrant (PSW) (Attachment 1). In the case where Full approval is not granted, Carrier will advise the supplier of the areas of concern and determine necessary corrective actions. At Carrier's discretion, any or all of the PPAP items may be reviewed on-site at the supplier's facility as part of a process qualification audit.

7.3 PPAP Warrant Validity

Unless otherwise specified on the PSW, approval is valid until there is a revision to the part or process or until revoked by Carrier. Additionally, should one of the following conditions occur, the supplier must notify Carrier *prior* to first production shipment:

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- Correction of a discrepancy on a previously shipped part.
- Product modified by an engineering change to design records, specifications, or material on an approved Product Change Authorization (PCA).
- Use of an optional process or material than was used in a previously approved part.
- Production from new or modified tools (except perishable tools), dies, molds, patterns, including additional or replacement tooling.
- Production following refurbishment or rearrangement of existing tooling or equipment
- Production following any change in process or method of manufacture to include changes in lubricants, mold release agents, or other process solutions
- Production from tooling and equipment transferred to a different plant location or from an additional plant location
- Change of source for subcontracted parts, materials or services (for example, heat treating, plating)
- Product re-released after the tooling has been inactive for volume production for twelve (12) months or more.
- Following a Carrier request to suspend shipment due to a supplier quality concern
- Any other activity that will result in a change to the supplier's Control Plan (CP)
- Loss or revocation of 3rd. party quality system registration.

The supplier will utilize a Supplier Deviation Request (SDR), Attachment 9, to notify Carrier should any of the above events occur. The SDR will be reviewed by Carrier; a full or partial PPAP resubmission may be required. Should resubmission be required, the using site will communicate the level to be submitted. Full or interim approval, in writing, must be granted prior to first production shipment.

7.4 PPAP Level

Carrier requires part approval to different levels (1-5) depending on the purpose for the PPAP submission.

PPAP level definitions

Level 1	Part Submission Warrant (PSW) only submitted to the customer.
Level 2	PSW with product samples and limited supporting data.
Level 3	PSW with product samples and complete supporting data.
Level 4	PSW and other requirements as defined by the customer.

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Level 5	PSW with product samples and complete supporting data available for review at the supplier's manufacturing location
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- Level 3 is the default level unless otherwise specified.
- Required PPAP documentation by level is outlined in the submission table (appendix 1) and section 10 "Records".
- Dependent upon program requirements, the using business unit may require a Run-at-Rate capacity study to be completed. The program Supplier Quality Engineer will provide the specifics should a Run-at-Rate study be required.

7.5 Annual Product Revalidation

- 7.5.1** All suppliers on a yearly basis must complete a full dimensional verification to specification, ProCert summary for all identified Key Characteristics and obtain current material certification(s). Suppliers shall retain these records for release to the Carrier using site if requested. Refer to section 8 regarding ProCert data submissions as requested by Carrier Quality representatives.
- 7.5.2** When specified by a Carrier Business Unit, a complete annual layout inspection and PPAP data package submission is required. Suppliers shall revalidate parts/ components/ materials and be able to provide results to the requesting Carrier site within one (1) work week of the request. [Should tests be required taking longer than one (1) work week, arrangements must be made with the site requesting the revalidation] Those characteristics, notes and tests that will be part of the revalidation must be designated at the time of PPAP approval.

8. PROCESS CERTIFICATION (PROCERT)

Process Certification is Carrier's methodology to achieve and sustain statistically controlled and capable processes for manufacturing, business, support, maintenance, assembly, and test. ProCert follows a prescribed methodology, employing a set of standard quality tools to stabilize process output, reduce its variation and drive continuous improvement.

8.1 ProCert Requirements

- 8.1.1** Suppliers are required to implement ProCert in their manufacturing processes to address all key characteristics defined by Carrier. Other methodologies, similar to ProCert may be used when approved by Carrier, providing they meet the requirements outlined in Appendix 2.

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NOTE: Suppliers will be requested to submit ProCert data to Carrier, specific requirements will be communicated through the assigned Carrier Quality representative.

- 8.1.2** Suppliers are encouraged to identify additional key characteristics beyond those defined by Carrier. This should take into consideration, finished part characteristics, upstream product characteristics and process parameter controls.
- 8.1.3** Suppliers with design responsibility **MUST** identify key characteristics in addition to any identified by Carrier.
- 8.1.4** All identified key characteristics must meet the process certification requirements, or other similar approved methodologies, as defined in Appendix 2 – Process Certification.
- 8.1.5** All KC's must achieve Milestone 4 (Certified KC's / KPC's) at time of PPAP submission. At a minimum Milestone 3 (Process Control) may be accepted at PPAP providing there is a Carrier approved containment plan in place.
- 8.1.6** On-going control for all KC's must use Statistical Process Control (SPC) or approved mistake proofs. The type and frequency of SPC or mistake proof shall be documented on the Control Plan and agreed to with the using Carrier site.
- 8.1.7** All gages used to evaluate and control Key Characteristics must demonstrate a minimum of 20 % repeatability and reproducibility. Gage R&R must be performed at a minimum every 24 months.

8.2 Key Characteristic (KC) (see section 13 for all definitions)

A key characteristic is any feature of a material, process, part, assembly, or test, whose variation within or outside the specified requirement has a significant influence on product fit, performance, service life, manufacturability, information, service or other expected deliverable.

Carrier will define the key characteristics which the supplier needs to certify. Key Product Characteristics (KPC's) will be communicated through various methods, including:

- Notations and/ or symbols documented on Carrier engineering drawings and specifications
- Written communication based on known process issues, production problems or field problems.

The various symbols used on Carrier documents to signify Key Product Characteristics are shown below:

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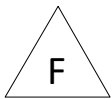


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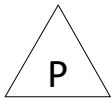
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- **SAFETY-** A feature is classified as Critical to Safety if it creates a substantial risk of injury, property damage, illness, product damage, environmental damage, and or contamination, if not produced within its prescribed acceptance limits. If a supplier does not maintain milestone 4 for any safety KPC, they must be certified 100% for that characteristic.



- **FUNCTION-** A feature will be classified as Critical to Function if it can lead to significant reliability problems, performance issues or probable cause for rendering unit inoperable or not meeting customer requirements, and expectations if not produced within its prescribed acceptance limits.



- **PROCESS-** A product feature identified by manufacturing and determined to be of high risk due to number of producers or it's variation within prescribed limits has a significant impact on the ability of the part, component, unit, or options to meet fit, assembly, installation or test requirements.

Additionally, some older drawings may contain other symbols to denote key characteristics. Refer to Appendix 2.

NOTE: KCs identified on the drawing / design documents using symbols X, F and P are called KPCs (Key Product Characteristics). All ProCert requirements for KCs equally apply to KPCs

8.3 Alternate Means of Control (AMC)

AMC (Alternate Means of Control) are types of quality controls that might be required when noted on Carrier drawings or Carrier specifications. When drawings/ specifications identify features and/ or conditions that require specific AMC controls, the producer will be provided with detailed instructions from the Carrier ordering entity as to what is the required AMC method as well as how records and objective evidence of compliance is maintained.

Examples of AMC controls may include, but are not limited to:

- Traceability- Products, Components, Material
- Over-inspection (over-inspect)
- 100% Inspection by a Certified Operator or Inspector
- Certificate of Conformance or Material Certification
- In-process Mistake Proofs

The following are illustrative steps suppliers may be asked to complete as part of AMC:

- Measurement system analysis related to the item identified as requiring AMC

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- Documentation of AMC as part of the control plan as well identification of Key Inputs that impact the quality results of the AMC.
- A validation of the control method for AMC
- A verification that the control method associated with the AMC is sustainable

8.4 Layered Process Audits

Suppliers shall conduct periodic internal process audits at a stated frequency to ensure continued conformance with standard work instructions, control plans and process stability / capability. Compliance with implemented process controls and verification of mistake proofs must be included in the audit. (Reference Layered Process Audits in section 13 glossary).

9. NON-CONFORMING PRODUCT

Under no circumstances shall a supplier ship non-conforming product without first receiving written authorization from Carrier. The following sections identify and explain key quality requirements that are applicable for non -conforming product.

9.1 Warranty

Specific warranty obligations of suppliers are provided in the Commercial Contract in force between the supplier and Carrier.

9.2 Supplier Identified Non-conforming Product

The supplier may find products, through their quality control processes or from reports by other customers, which were produced outside of specifications. The supplier is expected to immediately:

- Segregate these products and determine if this error may have occurred, undetected, in earlier production that may have been shipped to a Carrier facility.
- Prior to shipping any non-conforming product, the supplier must notify Carrier utilizing the Supplier Deviation Request (SDR), product may not be shipped until the SDR has been fully approved.
- Reasons for SDR include, but are not limited to:
 - If the non-conformance affects form, fit or function of the part.
 - If the non-conforming product will affect deliveries to Carrier.

The supplier is responsible for the segregation and quarantine of nonconforming material. Non-Conforming materials shall not be shipped unless until a deviation is granted. Discrepant material received at Carrier without an approved SDR will be rejected and returned to the supplier with all extra handling and shipping costs incurred by the supplier. No discrepant material will be processed until a deviation is approved by all required Carrier personnel.

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9.3 Carrier Identified Non-conforming Product

9.3.1 Non-Conformances Found Prior to Release to Customer

In the event supplier-responsible non-conformances are discovered by Carrier prior to release to the customer, the parts/ components in question will be identified and segregated to preclude further use.

Carrier's evaluation of the non-conformance will determine whether:

- Defects are accumulated and returned to suppliers in accordance with plant procedures.
- Supplier sorts defects at Carrier or at a local off-site location.
- Supplier reworks defects at Carrier or at a local off-site location.
- Supplier contracts 3rd party to complete inspections at Carrier or at a local off-site location.
- Contingent on contract specifics, Carrier reworks defect and charges supplier for rework costs and/or 3rd party containment activities.

Suppliers are expected to reimburse Carrier for all costs associated with quality escapes including, but not limited to a minimum standard charge for processing each escape.

9.3.2 Field Failure

The warranty obligations of suppliers for non-conforming parts discovered in the field, as well as their disposition, shall be specified in the commercial contract in force between the supplier and Carrier. If a critical field failure issue has been identified, a determination of the next steps in the process will be made based on several criteria including the failure's criticality, quantity, cost, and other factors.

Based on this evaluation Carrier may require:

- Defective parts to be repaired/ replaced in the field by Carrier.
- Defective parts be repaired/ replaced in the field by supplier.
- Product be recalled, and repaired or replaced. In all cases listed above, suppliers are required to reimburse Carrier for all costs associated with correcting field failures, and for any other costs imposed on Carrier because of such failures.

9.4 Non-Conformance/Corrective Action Reports (CAR)

The need for a formal CAR will be evaluated in terms of potential impact upon production costs, quality costs, performance, reliability, safety, and customer satisfaction. Carrier requires suppliers to submit a formal written corrective action plan to address specific non-conformances identified at either a plant or in the field using the

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electronic Global 8D Corrective Action Reporting system. The supplier is responsible for keeping the appropriate contact information up to date within the Global 8D Corrective Action Reporting system. When Carrier issues a request for corrective action, the supplier will be notified via an e-mail link from our host server.

Supplier response to corrective action requests must include root cause determination, containment action (short-term corrective action), and permanent (long-term) corrective action. As part of the corrective action, a defined implementation plan with implementation dates must be included, as well as disposition of suspect material.

NOTE: it is expected suppliers consider mistake-proof solutions in all corrective actions

Containment action (steps D1-D3) shall be communicated to Carrier within 24 hours of receipt of corrective action request. Failure Analysis, leading to the root cause determination, shall be completed within a reasonable time period agreed to with the Carrier issuing site. The 8D will not be considered complete until proposed corrective and preventive action has been approved by Carrier.

10. CHANGE MANAGEMENT

After production (PPAP) approval, suppliers must not make any product or process changes without prior written notification and approval from Carrier. This requirement also applies to sub-tier suppliers. Changes are defined as alteration in the product design, production specification, purchased parts, material or services, manufacturing location, method of manufacture, testing, storage, packaging preservation or delivery.

NOTE:

- This must include any changes to software, firmware or any programming incorporated into the product sold directly to or through Carrier.
- Check with your using Carrier Business Unit for any specific advance timing guidelines for change notification

10.1 Supplier Deviation Request (SDR)

Supplier Deviation Request (SDR) forms are used to communicate all requests for deviation and process changes both temporary and permanent. For a permanent product change, Carrier reserves the right to requalify the product and/or process.

- 10.1.1** Prior to shipping any non-conforming product or product produced by a process different than what was in place at the time of the PPAP, suppliers must submit and receive full approval of a written SDR (attachment 9) to their Carrier Purchasing contact (Buyer) for approval.

SDR required information:

- The current process/ product

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- The proposed deviations/ changes
- Proposed test plan for qualification and validation
- The reason for deviations/ non-conformances with supporting data.
- Fixed quantity of parts or time duration which the SDR will be in effect for.
- Mitigation plans to address any risks due to the process change/ nonconforming product
- Detailed list of part numbers including part description by using Carrier site(s)

10.1.2 Discrepant material received at Carrier without an approved SDR will be rejected and returned to the supplier at the supplier's expense. All additional incurred costs, including but not limited to; handling, shipping and any impact to Carrier Operations and/or customers will be the responsibility of the supplier.

10.1.3 Once approved, all material shipped to Carrier must be accompanied by a copy of the approved SDR. Carrier reserves the right to request a written corrective action plan via a Corrective Action Report (CAR). If approval is not granted, the reason for disapproval will be summarized on the request form and returned to the supplier.

10.1.4 SDRs shall not be used to cover up or replace the lack of proper quality systems or controls at the supplier location. Carrier views excessive use of SDRs for non-conforming material as an abuse and an indicator that a supplier may have a serious breakdown in their quality system.

10.2 Product Deviation/Change

In certain instances, it may be necessary for the supplier to deviate from Carrier requirements and specifications. When changes do not affect fit, form or function, an SDR may be submitted for the following:

- Non-conforming material found at the supplier's facility.
- To request substitution of material.

10.3 Process Deviation/Change

Process deviations are required for any changes to process different than what was in place at the time of the PPAP approval. Carrier expects suppliers to constantly strive to improve quality and reduce process variation through system improvements. To achieve these goals, suppliers may require temporary process deviations, due to design changes or other unforeseen circumstances (such as changes in equipment/ tooling, changes in critical sub-suppliers, etc.).

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Carrier may require the supplier to maintain a safety stock of product produced under the original processes for a period while deliberate changes are proven out. After approval, the disposition of safety stock should be jointly managed by the supplier and Carrier.

Work transitions from one manufacturing plant to another require early notification to Carrier purchasing through the submission of an SDR. Suppliers making such transitions shall manage these moves in compliance with Carrier expectations as described in this document.

10.4 Process Deviation/Change

10.4.1 Traceability

Items requiring traceability will be identified during the development phase of a project. Where traceability is required, Carrier will work with suppliers to develop an acceptable system. The requirement for traceability will be communicated to suppliers through specifications and drawings.

10.4.2 Records:

Supplier's certification, process, test and/ or inspection data shall be provided to Carrier upon request. Records shall be retained by the supplier for a ten (10) year period after delivery of the relevant products. This requirement does not supersede any governmental or regulatory requirements for records retention. Any exceptions should be brought to the attention of Carrier by submitting an SDR. Certain data may be required to be included with product shipment. This will be agreed to with the using Carrier site quality department.

11. SUPPLIER EXCELLENCE PROGRAM

Carrier's Supplier Excellence Program is a method to differentiate suppliers currently operating with high delivery and quality performance levels. It is a means of recognition for significant continuous improvement efforts and achievements of our suppliers who have achieved world-class levels of performance.

The program tracks four levels of performance. All suppliers in the program are expected to be at the "Approved" or "Preferred" levels. Suppliers who are not operating at least to the "Approved" level shall prepare an improvement plan for review with Carrier. Additional information may be obtained on the "Suppliers" page at Carrier.com.

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		Preferred	Approved	Probation	No New Business
PPM (as received in the factory)	Category A Suppliers	1000	2000	3000	6000
	Category B Suppliers	500	1000	2000	4000
	Category C Suppliers	250	500	1000	2000
	Category D Suppliers	20	100	250	1000
Escape Count	Category A, B, C Suppliers	2	5	10	20
	Category D Suppliers	0	1	2	5
	Escape Count (field)	0	≤ 1	No more than 2	> 2
	On-Time-Delivery (% + Impact to Operation)	≥ 98% Category based Impact	98% > OTD ≥ 95% Category based Impact	95% > OTD ≥ 80% Category based Impact	OTD < 80% Category based Impact
	8D Aging – Containment	Within 24 hours (Average)	Within 48 hours (Average)	Within 72 hours (Average)	> 72 hours (Average)
	8D Aging – Validated CA	Within 30 days (Average)	Within 45 days (Average)	Within 60 days (Average)	> 60 days (Average)

12. SUSTAINABILITY

Carrier has established 2020 Sustainability goals for Preferred Level suppliers. These goals are a continuation and expansion of a formal environment, health and safety (EH&S) improvement goals program. These sustainability requirements will be phased in over the coming years as noted below.

Carrier has established eleven sustainability program requirements for preferred level suppliers:

- Supplier has code of conduct for ethics and sustainability appropriate for its business (2017)
- Supplier has formal CEO or Board level commitment to continuous EH&S improvement (2017)
- Supplier uses an appropriate, written workplace EH&S management system (2017)
- Supplier has a current injury incident rate < 3.0 (2017)
- Supplier uses root cause analysis following all serious or fatal injuries (2017)
- Supplier has demonstrated annual improvements in its use of energy (2017)
- Supplier has formal EH&S goals (2018)
- Supplier has demonstrated annual improvements in workplace safety (2018)
- Supplier has demonstrated annual improvements in its use of water (2018)
- Supplier includes attainment of formal EH&S goals in executive compensation (2019)
- Supplier has demonstrated annual improvements in its waste recycling rate (2019)

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13. DEFINITIONS

8D - A problem solving process developed by Ford Motor Company. The name “8D” originates from the fact there are eight disciplines associated with this problem solving format. Carrier has adopted the 8D format to be used for both internal and external problem solving activities.

Capability - The ability of a process to produce output within specified limits. “Improving process capability” involves taking steps to limit the amount of variation to defined acceptable limits.

Capability Index - The comparison of available tolerance to the portion of the tolerance consumed by a process in a state of statistical control.

Carrier Excellence - Carrier Excellence is the operating system for Carrier. Carrier Excellence is a customer-focused, process-based methodology for achieving higher levels of customer satisfaction and business performance.

Cpk - The capability index, which accounts for process centering and is defined as the minimum of CP Upper (C_{pu}) or CP Lower (C_{pl}). It relates the scaled distance between the process mean and the closest specification limit to half the process spread.

C_{pl} - Measures how close the process mean is running to the lower specification limit.

C_{pu} - Measures how close the process mean is running to the upper specification limit.

Commercial off-the-shelf items (COTS) - Standard commercial off the shelf or catalog items selected from a supplier’s standard line of parts. Where Carrier does not have design control. Carrier does not have a dedicated drawing or purchased part specification. Parts not tooled specifically for Carrier. Parts are used by multiple industries/ customers. Examples include: electronics (capacitors, diodes, and resistors), common fasteners (nuts, screws, washers, etc.).

Corrective Action Report (CAR) - A formal request by Carrier to take action to eliminate the cause(s) of an existing nonconformity or other undesirable situation in order to prevent recurrence.

Control Plan (CP) - Methodology for controlling parts and processes to ensure all process outputs remain in a state of control. The plan is used and maintained throughout the product life cycle and is responsive to changing process conditions via written descriptions of the actions that are required at each phase of the process from receiving through shipping.

Critical Item - Any component, material, assembly or complete system which is selected for production and field traceability in order to satisfy safety reporting requirements or to support reliability analysis of high cost / high interest items. For example, a compressor model or certain electronic control modules might be designated as “traceable” items due to their high replacement costs. A furnace gas valve might be designated due to product safety reporting needs.

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Deliverable Software - All software intended to be used in Carrier saleable product, including but not limited to software embedded in deliverable hardware and deliverable firmware. Refer to section 9 Change Management.

Directed-buy source - Any sub-tier supplier providing material, components, software or services which has been designated to be used by Carrier.

Failure Mode and Effects Analysis (FMEA) - A preventive analytical technique to methodically study the cause and effects of potential failures in a product or a process. The product or process is examined for all the ways in which a failure can occur. For each potential failure, an assessment is made of its effect on the system and its seriousness, and a review is made of the action being taken (or planned) to minimize the probability of failure or to minimize the effects of the failure.

Gage Repeatability and Reproducibility (Gage R&R) - The evaluation of a gauging instrument's accuracy by determining whether the measurements taken with it are repeatable and reproducible.

Key Characteristic (KC) - Any feature of a material, process, part, assembly, or test, whose variation within or outside the specified requirement has a significant influence on product fit, form, function or other expected deliverable, and thus must be controlled within prescribed acceptance limits via Process Certification practices.

Key Process Inputs (KPI) - A subset of the process inputs or their characteristics that are key to running the process and producing the right product/ output.

Key Product Characteristic (KPC) - KPCs are product features that are indicated on the drawing and or related documentation by engineering as described in 5.1.3. These are typically critical to safety, critical to function, and by exception critical to process features of the product that must be controlled within prescribed acceptance limits via Process Certification.

Layered Process Audits (LPA) - A system of manufacturing process audits performed by multiple levels of management. Key process characteristics are audited frequently to verify conformance to processing standards and assure performance output is to expected levels.

Non-conforming product / service - Non-fulfillment of an intended requirement for reasonable expectation for use, including safety considerations.

On Time Delivery - The number of Purchase Order line items delivered on time to the required date and quantity divided by the number of total Purchase Order line items required.

Part Family - Group of related products that pass through similar processing steps and over common equipment in a value stream.

Parts Per Million (PPM) - A measurement of the defect rate in a product, calculated as:
 $PPM = (\text{Total number of defective parts}) \times 1,000,000 / (\text{Total number of parts received})$.

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Part Submission Warrant (PSW) - The warrant contains supplier, part information, required documentation, the supplier application warrant and Carrier disposition. The submission approval by Carrier authorizes the supplier to start production.

Process Capability - The range over which the natural variation of a process occurs as determined by the system of common causes. Process capability has three important components:

- Design specification.
- Centering of the natural variation
- Range or spread of the variation.

The importance of process capability is in assessing the relationship between the natural variation of a process and the design specifications. This relationship is often quantified by measures known as process capability indices. The most common is Cpk.

Process Certification (ProCert) - is Carrier's methodology to achieve and sustain statistically controlled and capable processes for manufacturing, business, support, maintenance, assembly, and test.

Production Material and Services - Includes parts, components or raw material that are directly used in the manufacture of Carrier products; supplier designed products that are incorporated into a Carrier assembly/product; and finished goods branded by Carrier.

Production Part Approval Process (PPAP) - A process which defines the generic requirements for production part approval. The purpose of PPAP is to determine if all customer engineering design record and specification requirements are properly understood by the supplier and that the process has the potential to produce product consistently meeting these requirements during an actual production run at the quoted production rate.

Q-Plus (Q+) - A quality management standard whereby suppliers are rated at one of four levels of compliance.

Repeatability - Assesses the variation in a measurement system caused by the combined sources of measurement variation of a gage or test equipment when used by one operator or under one set of environmental conditions.

Reproducibility - Variation in measurement averages when more than one operator or set of environmental conditions are imposed on the gage or piece of test equipment.

Run at Rate study - A formalized production capacity study that verifies proper cycle times, quality expectations and yields have been achieved in accordance with plan.

Supplier Deviation Request (SDR) - A form submitted by the supplier that is used to document and request approval for any product or process deviation.

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Work Transitions - Work Transitions are any movement of production from one manufacturing plant to another.

14. REFERENCE MATERIALS

It is the responsibility of the supplier to ensure that they are working to the latest version of specifications referenced within this document as well as Purchase Order requirements. The following publications are available from the Automotive Industry Action Group (AIAG). These may be ordered on-line at: <http://www.aiag.org>.

- Advanced Product Quality Planning (APQP) and Control Plan (CP).
- Measurement System Analysis (MSA).
- Potential Failure Mode and Effects Analysis (FMEA).
- Production Part Approval Process (PPAP).
- Statistical Process Control (SPC).

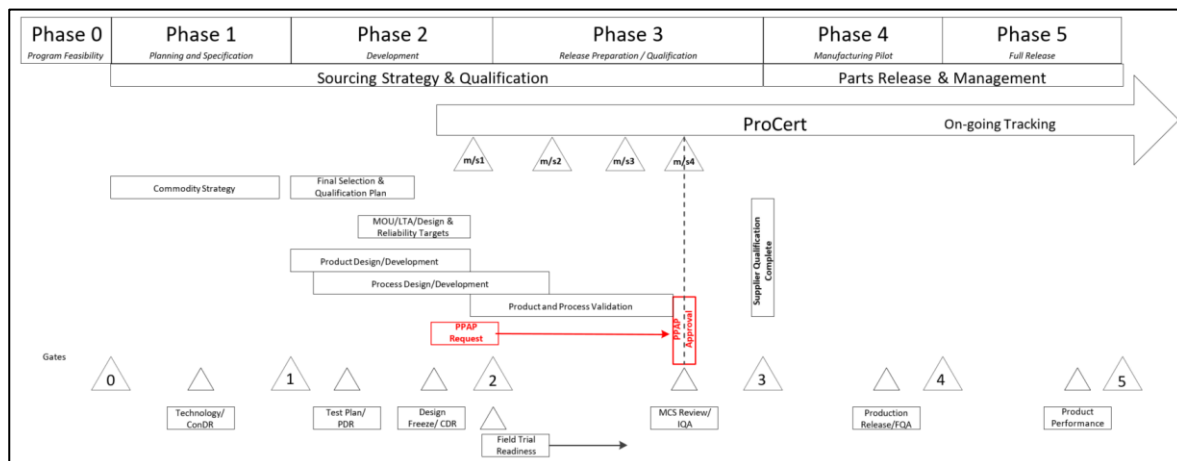
The publications listed below provide additional information concerning quality assurance processes and techniques discussed in this manual and are available to suppliers through their Carrier contacts.

- Business Gifts from Supplier
- The Giving and Receiving of Business Gifts

15. APPENDICIES

15.1 Appendix 1 – PPAP Requirements

Below timeline reflects where PPAPs should be requested and approved in the New Product Development cycle.



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Below Requirements table defines the documentation / data to be submitted to Carrier or retained by supplier.

PPAP Requirements / Submission Table

	Level 1	Level 2	Level 3	Level 4	Level 5
1 Design Record	R	S	S	*	R
for proprietary components	R	R	R	*	R
for all other components/ details	R	S	S	*	R
2 Engineering Change Documents, if any	R	S	S	*	R
3 Customer Engineering approval, if required	R	R	S	*	R
4 Design FMEA	R	R	S	*	R
5 Process Flow Diagrams	R	R	S	*	R
6 Process FMEA	R	R	S	*	R
7 Control Plan	R	R	S	*	R
8 Measurement System Analysis Studies	R	R	S	*	R
9 Dimensional Results	R	S	S	*	R
10 Material, Performance Test Results	R	S	S	*	R
11 Initial Process Studies	R	R	S	*	R
12 Qualified Laboratory Documentation	R	S	S	*	R
13 Appearance Approval Report (AAR), If applicable	S	S	S	*	R
14 Sample Product	R	S	S	*	R
15 Master Sample	R	R	R	*	R
16 Checking Aids	R	S	S	*	R
17 Records of Compliance	R	R	S	*	R
18 Part Submission Warrant (PSW)	S	S	S	S	R

S = shall be submitted to Carrier. A copy shall be retained at the supplier location.
R = shall be retained by the supplier location and made available to Carrier upon request
***** = shall be retained by the supplier location and submitted to Carrier upon request

15.2 Elements of PPAP Defined

1. Design Records

A printed copy of the drawing needs to be provided. If Carrier is design responsible, this is a copy of the specification or drawing that is sent together with the Purchase Order (PO). If supplier is design responsible this is a released drawing in supplier's release system. Ballooned drawing/ specification: Supplier must number each and every feature and requirement on the design record. Numbering must correspond with the documented inspection results (including notes, standard tolerance notes and specifications, and anything else relevant to the design of the part).

2. Authorized Engineering Change (note) Documents

If submission is required while a formal change is in process, an approved Supplier Deviation Request (SDR) must be included.

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3. Engineering Approval

If submission is required before Carrier engineering has approved all Engineering qualification tests, an approved Supplier Deviation Request (SDR) must be included.

4. DFMEA

If the supplier is design responsible, a copy of the Design FMEA (DFMEA), reviewed and signed -off by Carrier

Engineering must be included. If it is agreed the DFMEA contains supplier control Intellectual Property (IP), the DFMEA may be reviewed with Carrier Engineering and Quality for approval. Where Carrier is design responsible the list of all Key Characteristics should be shared with the supplier, so they can be addressed on the PFMEA and Control Plan. This would typically take place during a design feasibility review meeting.

5. Process Flow Diagram

A copy of the Process Flow, indicating all steps and sequence in the fabrication process, including incoming components.

6. PFMEA

A copy of the Process Failure Mode and Effect Analysis (PFMEA), reviewed and signed -off by supplier and customer. The PFMEA should address potential failure modes in each step as outlined in the process flow document. [Including packaging and labeling]. All KC and KPC's must be included on the PFMEA.

7. Control Plan

A copy of the Control Plan, reviewed and signed-off by supplier and customer. The Control Plan follows the PFMEA steps. All KC and KPC's must be identified and included on the Control Plan.

8. Measurement System Analysis Studies (MSA)

MSA usually contains the Gage R&R for the Key Characteristics (KCs) and Key Product Characteristics. MSA is required for both variable and attribute features.

9. Dimensional Results

A list of every dimension noted on the ballooned drawing/ specification. This list shows the product characteristic, specification, the measurement results and the assessment showing if this dimension is "ok" or "not ok". Carrier will define the quality required for a dimensional layout, typically 3-5 pieces, however this may be adjusted in special circumstances such as multi-cavity tooling.

10. Records of Material / Performance Tests

A summary of every required test performed on the part. Requirements are usually agreed to by Supplier & Carrier during the design feasibility meetings. This summary lists each individual test, when it was performed, the specification, results and the

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assessment pass/ fail. Supporting data to be included as requested, but may be submitted as tests are completed. In addition, this section lists all material certifications (steel, plastics, plating, etc.), as specified on the print/ specification. Actual materials certifications are to be included with the submission.

11. Initial Process Studies

Usually this section shows all Statistical Process Control charts affecting the most critical characteristics. The intent is to demonstrate that critical processes have stable variability and that is running near the intended nominal value. All Carrier defined KCs and Supplier defined KPC's must have studies included.

12. Qualified Laboratory Documentation

Copy of all laboratory certifications (e.g. ISO 17025, TS) of the laboratories that performed the tests reported on section 10.

13. Appearance Approval Report

A copy of the AAI (Appearance Approval Inspection) form signed by the customer. Applicable for components affecting appearance only. Requirements for any Appearance Approval Reports should be defined during the Design Review.

14. Sample Production Parts

Carrier will define the number of samples to be submitted with the PPAP. Such samples must be produced as part of the PPAP production run. These samples are to be numbered to correspond to the measurement data submitted with the Dimensional Report (Item 9 above)

15. Master Sample

A sample [typically] signed off by customer and supplier, which usually is used to train operators on subjective inspections such as visual or for noise.

16. Checking Aids

When there are special tools for checking parts, this section shows a drawing of the template or tool and calibration records, including dimensional report of the tool. (CMM programing information may be requested)

17. Customer-Specific Requirements

Carrier customer may have specific requirements to be included on the PPAP package. It is a good practice to ask the customer for PPAP expectations before even quoting for a job.

18. Parts Warrant (PSW)

This form that summarizes the whole PPAP package. The PSW includes part information, the reason for submission and the level of documents submitted to the customer. A Declaration statement must be signed by an authorized person at the Supplier's site making the submission (typically the plant quality manager). The

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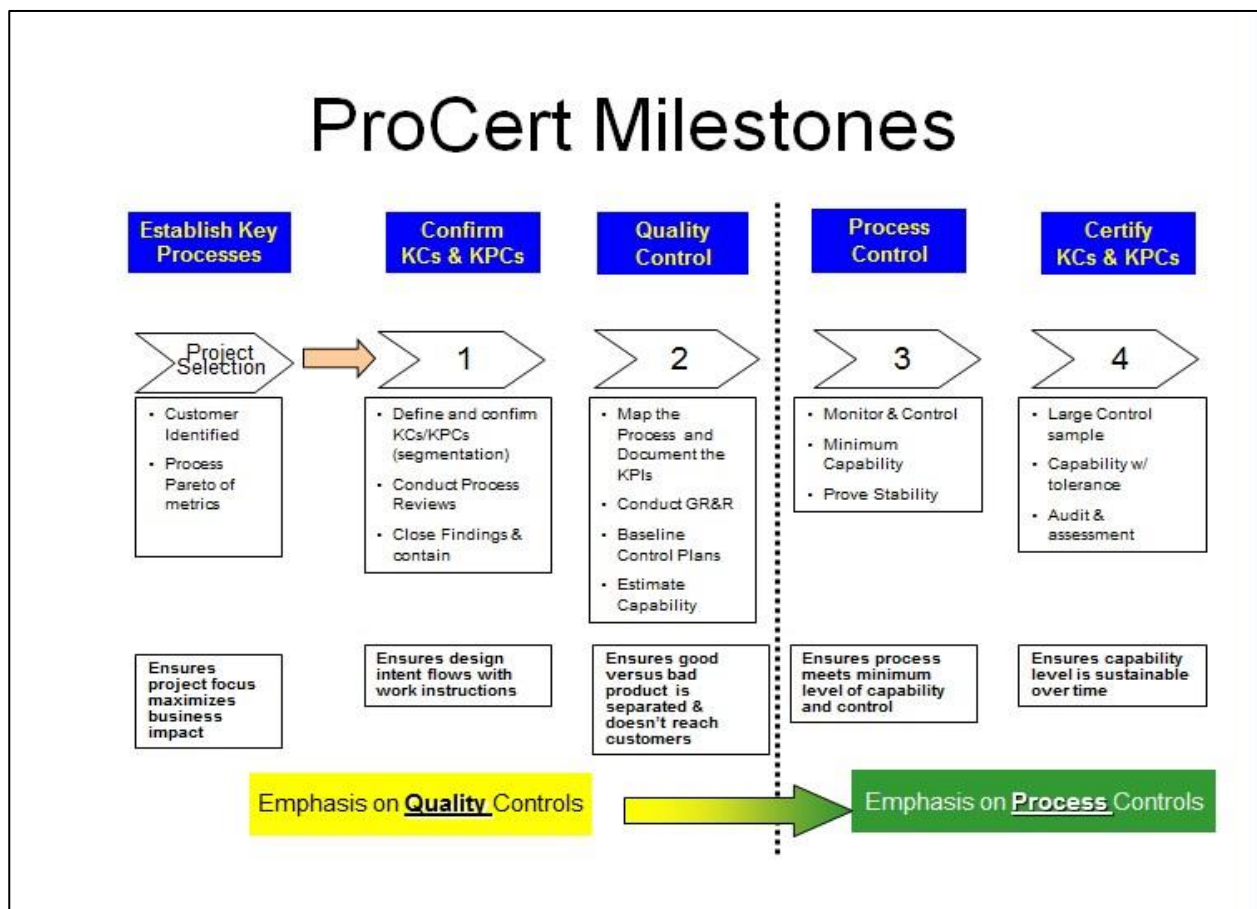
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Carrier using site must disposition the PSW, sign and return to the supplier. The supplier is not authorized until they have received a full or interim approved PSW from Carrier.

If a Level 4 PPAP is requested, the Carrier requestor must specify, in writing, what documentation / data will be required to accompany the PPAP submission (attachment 2, L-4 addendum).

15.3 Appendix 2 - ProCert



15.4 Steps to Certify a Process

The following requirements shall be achieved to consider a process / KC certified.

15.4.1 Initial steps to implement Process Certification:

- Map the current process steps to identify KPIs and the process KCs that impact the process output and/ or KCs identified by Carrier. Refer to

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Design and Process FMEA's in this step. Identify current process performance or output for each process step.

- Verify and document that the measurement processes used for all variable and attribute KCs are capable (i.e., repeatability, reproducibility, correlation studies, and total process capability).
- Identify controlling actions to maintain process capability and reaction plans for out of control conditions as they occur at the workstation. These should be documented on the control plan and/ or work instructions.
- Implement a process monitoring method.
- Implement a Preventive Maintenance Plan.
- Perform self-audits.

15.4.2 Variable Measured Characteristics: A process is considered certified when:

- Measurement equipment is qualified (e.g. R&R studies completed)
- Assignable causes for variation have been identified, documented, and removed.
- Process inputs and KCs are identified, monitored, and controlled.
- A minimum of twenty-five (25) consecutive observations or thirty (30) days of output whichever is greater, capturing variability associated with step to step, piece to piece, set up to set up, time to time, and lot to lot variation, with no nonconformance detected.
- KCs are under statistical control and Cpk of 1.33, or better is demonstrated.
- Routine self-audits being performed

15.4.3 Attribute Measured Characteristics: A process is considered certified when:

- Measurement equipment is qualified (e.g. R&R studies completed)
- Assignable causes for variation have been identified, documented and removed.
- Process inputs and KCs are identified, monitored and controlled.
- A minimum of forty-five (45) consecutive observations (90% confidence) or (30) days of output whichever is greater, capturing variability associated with step to step, piece to piece, set up to set up, time to time, and lot to lot variation, with no non-conformances detected.
- Routine self-audits being performed

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15.4.4 Key Characteristics

Business Unit	Legacy Identification Symbols
Refrigeration	(X) F P
BSS / Carlyle	#
EMEA / Montluel	! CTF
RLCS	(X)
RCS / RCD	(C)
Fire & Security	CTF

16. ATTACHMENTS

The following are samples of forms referenced in this manual. To obtain blank forms, or for assistance in completing forms, suppliers should contact their designated Carrier point-of-contact.

Attachment 1: Parts Warrant (PSW)

Attachment 2: QLY-02FM4 - PPAP Request Sheet

Attachment 3: QLY-02FM4 - Production Part Approval- Dimensional Test Results*

Attachment 4: QLY-02FM4 - Production Part Approval – Material Test Results*

Attachment 5: QLY-02FM4 - Production Part Approval – Performance Test Results*

Attachment 6: QLY-02FM1 - Appearance Approval Report (AAR)

Attachment 7: QLY-02FM2 - PFMEA*

Attachment 8: QLY-02FM3 - Control Plan*

Attachment 9: Supplier Deviation Request (SDR)

Attachment 10: 8D Corrective Action Report (CAR)

*with using plant consent, Suppliers may use their own internal documents/ forms, as long as they contain all required information.

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Parts Warrant (PSW)

		PARTS WARRANT (PSW)	
Part Name _____	CCS Part Number _____		
CCS Drawing No. _____	Supplier Part Number _____		
Engineering Change Level _____	Dated _____		
Regulations: Safety and/or Government? <input type="checkbox"/> Yes <input type="checkbox"/> No	Purchase Order No. _____	Weight (kg) _____	
SUPPLIER MANUFACTURING INFO			
Supplier Name & Supplier / Vendor Code _____			
Street Address _____			
City _____	State _____	Postal Code _____	Country _____
MATERIALS			
Product complies with Materials of Concern Requirements	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Are polymeric parts identified with proper ISO marking codes ?	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
REASON FOR SUBMITTAL		REQUESTED SUBMITTAL LEVEL (Check one)	
<input type="checkbox"/> Initial Submittal		<input type="checkbox"/> Level 1 - Warrant only submitted to customer.	
<input type="checkbox"/> Change to Raw Material		<input type="checkbox"/> Level 2 - Warrant with sample parts and supporting data submitted as defined by CCS	
<input type="checkbox"/> Supplier Change		<input type="checkbox"/> Level 3 - Warrant with sample parts and complete supporting data submitted to CCS.	
<input type="checkbox"/> To Correct Discrepancy		<input type="checkbox"/> Level 4 - Warrant and other requirements as defined by CCS.	
<input type="checkbox"/> Tooling Inactive (more than 1 year)		<input type="checkbox"/> Level 5 - Warrant with sample parts and complete supporting data review ed at supplier's manufacturing location.	
<input type="checkbox"/> Drawing Revision Change			
<input type="checkbox"/> Tooling Change: New , Transfer, Reburished			
<input type="checkbox"/> Change in Part Processing			
<input type="checkbox"/> Parts produced at New Factory Location			
<input type="checkbox"/> Other - please specify _____			
SUBMITTAL RESULTS			
The results for <input type="checkbox"/> dimensional measurements	<input type="checkbox"/> material & functional tests	<input type="checkbox"/> capability	<input type="checkbox"/> appearance
These results meet all drawing and specification requirements: <input type="checkbox"/> Yes <input type="checkbox"/> NO (If "NO" - Explain Below)			
DECLARATION			
I affirm that the samples represented by this warrant are representative of our parts, which were made by a process that meets all CCS requirements. I also certify that documented evidence of such compliance is on file and available for review. I have noted any deviations from this declaration below.			
EXPLANATION/COMMENTS: _____			

Supplier Authorized Signature _____	Date _____		
Print Name _____	Phone No. _____	Fax No _____	
Title _____	Email _____		
PPAP Warrant Disposition <input type="checkbox"/> Approved <input type="checkbox"/> Rejected <input type="checkbox"/> Interim Approval _____			
FOR CCS USE ONLY			
CCS Signature _____	Date _____		
Print Name _____	Customer Tracking Number (optional) _____		

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PPAP Request Sheet (QLY-02FM4)

	PPAP Request Sheet	Form: QLY-02FM4 Revision: 3/16/2020
Supplier Information		
Supplier Name _____	Commodity _____	
Supplier Address _____	Part Number _____	
_____	Part Name _____	
_____	Rev. Level _____	
Supplier Contact _____	ECN _____	
PPAP level requested		
REQUESTED SUBMITTAL LEVEL (Check one)		
<input type="checkbox"/>	Level 1 - Warrant only submitted to customer.	
<input type="checkbox"/>	Level 2 - Warrant with sample parts and supporting data submitted as defined by CCS.	
<input type="checkbox"/>	Level 3 - Warrant with sample parts and complete supporting data submitted to CCS.	
<input type="checkbox"/>	Level 4 - Warrant and other requirements as defined by CCS. [See Addendum for Requirements]	
<input type="checkbox"/>	Level 5 - Warrant with sample parts and complete supporting data reviewed at supplier's manufacturing location.	
Number of samples requested for:		
Dimensional layout _____		
Capability studies _____		
Additional Key Characteristics [for legacy products ONLY where not defined on engineering drawing / specification]		
_____	_____	
_____	_____	
_____	_____	
_____	_____	
CCS Authorization		
Issued By: _____	Date _____	
Supplier Sign-off		
I have reviewed and understand the above requirements _____	Date _____	
Signature of supplier authorized representative		

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Level 4 PPAP Addendum (QLY-02FM4)

	Level 4 PPAP Addendum	Form: QLY-02FM4 Revision: 3/16/2020
Note: Carrier to complete this addendum when requesting a Level 4 PPAP only		
Supplier Information		
Supplier Name _____	Commodity _____	
Supplier Address _____	Part Number _____	
_____	Part Name _____	
_____	Rev. Level _____	
Supplier Contact _____	ECN _____	
Supplier Information (If marked "Y" must be submitted)		
<input type="checkbox"/> Design Record <input type="checkbox"/> Engineering Change Documents <input type="checkbox"/> Customer Engineering Approval <input type="checkbox"/> Design FMEA <input type="checkbox"/> Process Flow Diagrams <input type="checkbox"/> Process FMEA <input type="checkbox"/> Control Plan <input type="checkbox"/> Measurement System Analysis Studies <input type="checkbox"/> Dimensional Results	<input type="checkbox"/> Material, Performance Test Results <input type="checkbox"/> Initial Process Studies <input type="checkbox"/> Qualified Laboratory Documentation <input type="checkbox"/> Appearance Approval Report (AAR) <input type="checkbox"/> Sample Product <input type="checkbox"/> Master Sample <input type="checkbox"/> Checking Aids <input type="checkbox"/> Records of Compliance <input type="checkbox"/> Part Submission Warrant (PSW)	

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PPAP – Dimensional Test Results (QLY-02FM4)

		Initial Sample Inspection Report				Form: QLY-02FM4 Revision: 3/16/2020	
PART NUMBER _____	PART NAME _____						
REVISION LEVEL _____	DATE _____						
SUPPLIER NAME _____	SUPPLIER LOCATION _____						
INSPECTION FACILITY _____	LAB REPORT ATTACHED _____						
Item	Dimension / Specification (Nominal & Tolerance) and Material Specifications	Supplier Measurement Device / Technique	Supplier Measurement Results	Carrier Measurement Device / Technique	Carrier Verification	OK	NOT OK
<div style="display: flex; justify-content: space-between; align-items: flex-start;"> <div style="text-align: center; width: 30%;"><u>Supplier Signature</u></div> <div style="text-align: center; width: 30%;"><u>Title</u></div> <div style="text-align: center; width: 30%;"><u>Date</u></div> </div> <div style="border: 1px solid black; padding: 10px; margin-top: 10px;"> <p>Disposition <input type="checkbox"/> Approve <input type="checkbox"/> Fail <input type="checkbox"/> Deviate <input type="checkbox"/> Resubmit</p> <p>Carrier Signature _____ Date _____</p> </div>							

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PPAP Material Test Results (QLY-02FM4)



Material Test Results

Form: QLY-02FM4
Revision: 3/16/2020

ORGANIZATION _____	PART NUMBER _____				
SUPPLIER/VENDOR CODE _____	PART NAME _____				
NAME of LABORATORY _____	DESIGN RECORD CHANGE LEVEL _____				
MATERIAL SUPPLIER _____	ENGINEERING CHANGE DOCUMENTS _____				
*Customer Specified Supplier / Vendor Code _____					
*If source approval is req'd, include the Supplier (Source) & Customer assigned code _____					

Material Spec. No. / Rev. / Date	Specification / Limits	Test Date	Qty. Tested	Supplier Test Results (Data)	OK	NOT OK

Blank statements of conformance are unacceptable for any test results
Signature Title Date

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Appearance Approval Report (AAR) (QLY-02FM1)

PART NUMBER	DRAWING NUMBER		APPLICATION (VEHICLES)																				
PART NAME	BUYER CODE		E/C LEVEL		DATE																		
SUPPLIER NAME		MANUFACTURING LOCATION			SUPPLIER CODE / OTHER																		
Reason for Submission	PART SUBMISSION WARRANT	SPECIAL SAMPLE		RE-SUBMISSION		OTHER																	
	PRE TEXTURE	FIRST PRODUCTION SHIPMENT		ENGINEERING CHANGE																			
APPEARANCE EVALUATION																							
SUPPLIER SOURCING AND TEXTURE INFORMATION				PRE-TEXTURE EVALUATION		AUTHORIZED CUSTOMER REPRESENTATIVE SIGNATURE AND DATE																	
				CORRECT AND PROCEED																			
				CORRECT AND RE-SUBMIT																			
				APPROVED TO TEXTURE																			
COLOR EVALUATION																							
COLOR SUFFIX	TRISTIMULUS DATA					MASTER NUMBER	MASTER DATE	MATERIAL TYPE	MATERIAL SOURCE	HUE				VALUE		CHROMA		GLOSS		METALLIC BRILLIANCE		COLOUR SHIPPING SUFFIX	PART DISPOSITION
	DL*	Da*	Db*	DE*	CMC					RED	YEL	GRN	BLU	LIGHT	DARK	GRAY	CLEAN	HIGH	LOW	HIGH	LOW		
COMMENTS																							
ORGANIZATION SIGNATURE:						PHONE NO.:			DATE:			AUTHORIZED CUSTOMER REPRESENTATIVE SIGNATURE:						DATE:					

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PFMEA (QLY-02FM2)

Work Station Process FMEA Worksheet																					
Value Stream: Work Station Task	Failures or errors that could occur for this operation (Observed or potential)	Effects of the error or failure... (Observed and potential) (Consider possible effects on: - Other assembly operations in this station - The product, ability to perform properly)	Severity Score (S)	CAUSE & OCCURRENCE of failure Possible causes of the failure (Observed and potential) (Consider potential failure modes, errors, omissions, etc. Drive to root causes)	DETECTION & PREVENTION of failure		RPN (SxOxDP)	Associated Key Characteristics	Percent status	PROCESS IMPROVEMENT											
					Score (D)	Controls for preventing the failure or defect from occurring, or detecting it when it does. <small>Prevention occurs at: Location of the process, Detection occurs at: Location of the process, etc.</small>				Planned Improvement Activities	New actions based on S O D	New RPN (SxOxDP)	Responsibility	Target completion date	Status						
Assembly Operation																					

NOTE: For all items with a Severity of 9 or 10, the Detection rating must be ≤ 4

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Supplier Deviation Request Form (SDR)

	<h2>Supplier Deviation Request Form</h2>							
A SUPPLIER AND PART INFORMATION								
Date _____	Part Number _____							
Supplier Name _____	Part Name _____							
Supplier Location _____	Revision Level _____							
Supplier Contact _____	PO Number _____							
Telephone # _____	Quantity _____							
Fax # _____	Required Date _____							
B DEVIATION INFORMATION								
Deviation Request is: <input type="checkbox"/> Process Related <input type="checkbox"/> 1st Time <input type="checkbox"/> Permanent								
<input type="checkbox"/> Product Related <input type="checkbox"/> Material Change <input type="checkbox"/> Temporary								
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 33%;">Current Specification or Process</th> <th style="width: 33%;">Proposed Deviation</th> <th style="width: 33%;">Reason for Deviation/Corrective Action</th> </tr> </thead> <tbody> <tr> <td style="height: 100px;"></td> <td></td> <td></td> </tr> </tbody> </table>			Current Specification or Process	Proposed Deviation	Reason for Deviation/Corrective Action			
Current Specification or Process	Proposed Deviation	Reason for Deviation/Corrective Action						
C CARRIER APPROVAL / DISAPPROVAL								
	Signature	Approve/ Disapprove	Date	Comments				
Purchasing								
Supplier Quality								
Engineering								
Manufacturing								
Other								
D DISPOSITION								
Document change required? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, PCA # _____								
Comments: _____								

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