



**QLY-02 KGS Supplier Quality Manual (SQM)**

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### 1. INTRODUCTION TO THE QUALITY POLICY

**Quality Policy** – Kidde Global Solutions (KGS) is a global technology leader in fire and life safety solutions.

We are committed to providing our customers an exceptional life cycle experience with our products and services by delivering safe and compliant products, on time, that meet or exceed all requirements and expectations.

Leadership ensures legal compliance, and that our quality management system is effective, sets quality objectives, continually improving, in alignment with the context and strategic direction of the company, and minimizes risks that satisfy all interested parties.

Employees are trained and developed to embrace the Quality Policy by promoting teamwork to continually improve and drive excellence in our business processes with our quality management system. This is accomplished through zero defect mindset, innovative quality designs, lean manufacturing processes, a strong supply base and responsive post-sales support.

**Supplier Quality Mission** - Achieve best in class quality for all purchased components enabling product leadership for our customers.

### 2. PURPOSE

This manual defines the requirements for supplier quality systems and performance. All products supplied to KGS will be in conformance with the product specifications, which include, but are not limited to, Supplier Quality Manual (SQM) and Production Part Approval Process (PPAP) standards. All products must satisfy KGS's test and quality standards, meet applicable industry quality and performance standards, comply with all applicable legal and regulatory requirements, and be merchantable and fit for the purpose intended by KGS. Supplier agrees to support and adhere to KGS-required quality processes on an ongoing basis, with the objective of delivering zero (0) defects for all products.

### 3. APPLICABILITY

This Supplier Quality Manual (SQM) applies to all suppliers that provide production and service material, deliverable software, supplier designed products which are incorporated into a KGS assembly/product, finished goods branded by KGS and product related services to KGS facilities. The SQM also applies to internal suppliers within KGS (i.e., KGS owned suppliers and Joint Ventures (JV's)). Individual KGS 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 requirement, the more stringent requirements will apply.

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### 4. OWNERSHIP AND APPROVAL

The head of KGS Quality is the owner of this standard work instruction. All interpretations and changes require prior approval of the owner. Contact the owner or the Director of Supplier Quality for all questions regarding this standard work instruction.

### 5. EXPECTATIONS

Key performance indicators will be tracked monthly as part of the supplier performance scorecard and be made available to suppliers to drive preventive and proactive quality improvement actions to deliver zero defects.

#### 5.1 Communications

In general, the following contact points should be used:

**Primary Contact** – For all issues regarding supply chain and procurement, contact KGS buyer.

**Product/Part Quality** – For all issues regarding product quality, product safety, deviation initiated by supplier, Engineering change (ECN) initiated by KGS Engineering and issued by KGS buyer, or regulatory, contact KGS buyer and Supplier Quality Engineer (SQE) personnel.

**Ethics concerns** – KGS maintains a contact site for suppliers who have questions or issues related to the Code of Ethics or KGS Supplier Code of Conduct.

#### 5.2 Purchased Products and Product Related Services

**Purchased** products and related services shall comply with established specifications and requirements, including:

- Drawings and BOM 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.
- KGS approved changes or deviations.
- Established commercial contracts.

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### 5.3 New Supplier Information

New suppliers to KGS shall provide the following information:

- Data Universal Numbering Systems (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.

### 5.4 Suppliers Are Required to:

- Demonstrate and maintain compliance to all documented requirements, including design performance, reliability, process control, and capability.
- Provide resources to participate in product quality planning.
- 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.
- 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.
- Maintain process, product, and service documentation.
- Suppliers must retain records for a min period of ten years.
- Deploy expectations and controls equivalent to those presented in this document to sub-tier supply chain.
- Be accountable for quality of all sub-tier suppliers including “directed-buy” sources.
- Maintain the expertise and resources to perform effective root cause analysis and implement timely corrective and preventive action.
- Provide notification of 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.
- Be accountable for the impact of poor quality on KGS and its customers.
- Notify KGS within 8 hours of any condition or change that has impact on KGS’s regulatory requirements.
- Fully comply with the KGS Code of Ethics and Supplier Code of Conduct.
- Maintain a self-audit system which ensures compliance of all the above.
- If requested, supplier shall provide additional data (i.e. Pareto Analysis, Root Cause Analysis, Corrective Action Plan, or any other applicable data).

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### 6. SUPPLIER QUALIFICATION REQUIREMENTS

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

Suppliers should be certified / registered to the international quality management standards with a recognized independent, 3rd party registrar.

As a minimum requirement, suppliers must obtain compliance to Level 2 requirements during an on-site KGS Quality System Audit by KGS resources or they will be required to create an improvement plan to reach Level 2 compliance.

#### 6.1 Quality Management System

All suppliers shall maintain an effective documented quality management system that communicates, identifies, coordinates, and controls all key activities necessary to design, develop, produce, deliver, and support the quality of products or services.

Suppliers should be certified / registered to one of the following international quality management standards with a recognized independent, 3rd party registrar.

- ISO 9001 - Quality Management Systems – General Requirements.
- IATF 16949 - Quality Management Systems – Automotive Requirements.
- AS9100 - Quality Management Systems – Aerospace Requirements.

The supplier shall provide a copy of the registration to one of the above standards.

If a supplier does not have a 3rd party QMS certification, KGS Supplier Quality Systems Audit Manual (QLY-52) will be used to assess the quality system at supplier site(s) This audit will be performed on-site by KGS resources and the supplier must achieve a Level 2 audit result. Re-audit by KGS resource at the supplier's site is required at least every 3 years when no 3rd party QMS certification exists. Suppliers may be required to reimburse KGS for the cost of conducting these audits.

Note: Suppliers must notify KGS immediately if their third-party registration expires or is revoked.

KGS 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 KGS Quality System audit in lieu of, and/ or in addition to, third party certification.

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- Disqualify, suspend and/or terminate suppliers based on substandard performance. In such cases, full requalification will be required prior to resuming business.

### 6.2 KGS Supplier Quality Systems (QS) Audit

The QS audit consists of a self-assessment and an on-site audit conducted by KGS. The KGS Supplier Quality Systems Audit Manual (QLY-52), the accompanying form, KGS Supplier Quality Systems Audit Form (QLY-52FM1) are the official documents utilized to assess and rate a supplier's QMS. The KGS Quality System Audit 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. The QS audit can be used as a self-assessment, or an on-site audit conducted by KGS.

The on-site audit 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 audit. KGS will continuously improve the audit manual to incorporate new quality system requirements to align with the latest standards.

Suppliers must obtain compliance to Level 2 requirements during an on-site KGS Quality System Audit by KGS or suppliers will be required to create an improvement plan to reach Level 2 compliance.

### 6.3 Process Audits

KGS may conduct a process qualification audit (QLY-10 FM1) at the supplier's manufacturing facility in the following scenarios.

- To ensure product quality of the first Purchase Order production (pilot run).
- To develop high-risk supplier's capability for better product quality performance.

The purpose of the process audit is to review and approve the specific supplier process for the product being manufactured for KGS. This audit focuses on specific process requirements and quality controls, including PFMEA, Control Plan, Process Quality including FAI (First Article Inspection), and Process-Specific.

Additionally, KGS 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.

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### 6.4 Contingency Planning

Supplier shall conduct a risk assessment of their operations that support KGS's production facilities, quality requirements, and delivery schedules. Each assessment should consider, at a minimum, the impact arising from:

- Natural disasters
- Geo-political hazards
- Supply chain disruptions
- Intellectual property claims
- Personal concerns
- Equipment problems
- Facility or system issues
- Pandemic

Supplier shall prepare contingency plans to ensure continuity of its operations and minimize any disruption of the supply of goods and/or services to KGS. Supplier shall communicate any critical risk scenario without a contingency plan that may result in a disruption. Supplier shall provide the contingency plans to KGS when requested.

## 7. PRODUCTION PART & PROCESS QUALIFICATION REQUIREMENTS

Part Qualification ensures the part is capable of meeting technical and performance requirements. Process Qualification ensures 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 the AIAG – PPAP manuals. The Prism Portal PPAP system is the primary method for suppliers to upload documentation and receive approvals from KGS. In addition, KGS's PPAP Package (QLY-02FM1) can be obtained by contacting your KGS site representative. PPAP submission should be made as far in advance of production start-up as possible, working to a date agreed to with the KGS plant / site.

- Check with your using KGS Business Unit for any specific timing guideline for PPAP submission.
- Commercial off-the-shelf items (COTS), when meeting the definition provided in section13, will require at least a Level 1 PPAP.

Link: [Prism Portal PPAP](#)

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### 7.2 Shipment Approval

Suppliers shall not ship production parts until a full or interim approval is received from KGS via a signed Parts Submission Warrant (PSW) (PPAP Package QLY-02FM1) or digitally in Prism Portal. In the case where full approval is not granted, KGS will advise the supplier of the areas of concern and determine necessary corrective actions. At KGS's discretion, any or all 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 KGS. Additionally, should one of the following conditions occur, the supplier must notify KGS prior to the first production shipment:

- Correction of a discrepancy on a previously shipped part.
- Product modified by an engineering change to design records, specifications, or material on an approved PPAP.
- Use of an optional process or material other 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 and equipment have been inactive for volume production for twelve (12) months or more.
- Any changes to software, firmware or any programming incorporated into the product sold directly to or through KGS.
- Following a KGS 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).

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- Loss or revocation of 3<sup>rd</sup>. party quality system registration.

The supplier will utilize Prism Portal DM website to notify KGS should any of the above events occur. The Supplier Deviation Request (SDR) will be reviewed by KGS and a full or partial PPAP resubmission may be required. The using KGS site will communicate the level to be submitted, if required. Full or interim approval, in writing or digitally in Prism Portal, must be granted prior to the first production shipment.

**7.4 Production Part Approval Process (PPAP) Level**

KGS requires part approval to different levels (1-5) depending on the purpose for the PPAP submission. Level 3 is the default level unless otherwise specified. The supplier is required to perform all PPAP steps regardless of the required submission level.

PPAP level definitions:

<b>Level 1</b>	Part Submission Warrant (PSW) only submitted to the customer
<b>Level 2</b>	PSW with product samples and limited supporting data
<b>Level 3</b>	PSW with product samples and complete supporting data
<b>Level 4</b>	PSW and other requirements as defined by the customer
<b>Level 5</b>	PSW with product samples and complete supporting data available for review at the supplier's manufacturing location

Dependent on 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**

All suppliers on a yearly basis must complete a full dimensional verification to specification, Process certification (refer to section9: ProCert) summary for all identified key characteristics and obtain current material certification(s). Suppliers shall retain these records for release to the KGS using site if requested. Refer to section15.3 regarding process certification data submissions as requested by KGS Quality representatives.

When specified by KGS, 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 KGS site within one (1)

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work week of the request. If some tests take longer than one 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. CHANGE MANAGEMENT

Supplier will not make any change during the term of the order and shall not deviate from the PPAP approved product/process without prior written notification and approval from KGS. This requirement also applies to sub-tier suppliers. Refer to conditions stated in Section 7.3. Supplier will provide KGS a minimum of six (6) months prior written notice of any intent to change or, check with your using KGS Business Unit for any specific advance timing guidelines for change notification.

KGS may request additional time to complete qualification of a proposed change, and supplier must allow for this contingency in its deviation implementation timing. Should supplier fail to conform to this process, supplier shall reimburse KGS for all direct and indirect costs associated in re-qualifying the unauthorized changes made, not limited to engaging KGS's designees for onsite activities.

Sub-tier supplier qualification and quality performance monitoring shall be the responsibility of the primary supplier to ensure high-quality standards are practiced. KGS retains the authority to monitor, review, and/or approve sub-tier supplier processes quality data, engineering/process changes and facilities when deemed necessary.

KGS primary suppliers shall be responsible for evaluating and selecting suppliers and subcontractors based on their ability to consistently deliver products to their specification and services that meet KGS Quality standards. The manufacturer shall select suppliers and subcontractors in accordance with its established supplier / subcontractor management program.

#### 8.1 Supplier Deviation Request (SDR) for Changes

Deviation request has two types, temporary and permanent.

A deviation request is a temporary or short-term request to use product that departs from the design or process defined from the latest approved PPAP submission until permanent improvements, corrective actions, or a return to the approved PPAP condition takes place. Deviation requests must be recognized as an unfortunate necessity in situations that do not offer other alternatives. This type of change will have the affected quantity of parts, batch number, or serial number range declared on the SDR form and will expire after such quantity, batch, or serial number is reached.

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A permanent deviation is a result of systemic improvement made to the original approved PPAP condition to improve performance, quality, and/or reduce process variation. Example: changes in production equipment/tooling, critical sub-tier suppliers, etc. Supplier shall submit SDR package in advance to the KGS Supply Management contact according to the following:

- If a single KGS using site is affected, the SDR will be submitted to the local purchasing contact.
- If more than one KGS using site is affected, the SDR will be submitted to the responsible Category Manager (regional, BU or WHQ).

**Note:** For all supplier production location moves, this event will require minimum 6 months advance notification or per contract agreement.

### 8.2 SDR Package

#### 8.2.1 SDR Package Shall Consist of The Following Minimum Requirements:

When a supplier identifies the need for a change or deviation, they shall complete a Supplier Deviation Request (SDR) in the KGS Deviation Management (DM) application in Prism Portal. The Prism Portal DM application is a web-based application to manage deviation request at KGS.

Link: [Prism Portal DM](#)

The Prism Portal DM tool facilitates the workflow with the supplier(s) and KGS quality teams during the deviation process. It is a platform for KGS to include all stakeholders in the approval process so that everyone can be informed of any deviation as a method to prevent escapes.

#### 8.2.2 Deviation Request Highlight

When a supplier identifies the need for a deviation, they shall complete a Supplier Deviation Request (SDR) in the KGS Deviation Management application in Prism Portal. Once the SDR is submitted, SDR is routed to the KGS contact, according to the following:

- If a single KGS using site is affected, the SDR will be routed to the Quality Manager, who is assigned as an approver in the Prism Portal. Plant quality will be the owner and has the authority to reject the deviation request. Note: If more than one KGS site is affected, then an SDR will need to be submitted for each of those sites.

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- If a supplier is unable to use the Prism Portal DM tool due to restrictions, KGS plant supplier quality is responsible for submitting the deviation in Prism Portal on behalf of the supplier. Once the disposition is complete, plant supplier quality is to send the supplier a notification of the disposition.

### 8.3 Unauthorized Deviation to Product

Shipment of any deviation request parts without approval from KGS shall be rejected and returned to the supplier at the supplier's expense. All additional costs incurred including, but not limited to, handling, shipping, and any impact to KGS Operations and/or customers will be the responsibility of the supplier.

In the event of any unauthorized changes to product without prior consent from KGS, KGS reserves the right to:

- Report the issue to the supplier's designated management representative and/or ISO/IATF registrar.
- Place the supplier under controlled shipping at supplier's cost (refer to [section10](#)).
- Require a new PPAP of other currently supplied components; or
- Reduce supplier's KGS Supplier Rating status to Bronze or Red (see [section11](#)).

### 8.4 Deviation Management Record

A deviation management record not limited to the SDR request package and PSW shall be retained by the supplier throughout the supply life of the affected part(s).

### 8.5 Deviation Request Highlight

Deviation requests shall not be used on safety-related noncompliance, nor shall it be used to cover up or replace the lack of proper quality systems or controls at the supplier location. KGS 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.

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### 9. PROCESS CERTIFICATION (PROCERT)

Process Certification is KGS'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.

#### 9.1 ProCert Requirements

Suppliers are required to implement ProCert in their manufacturing processes to address all key characteristics defined by KGS. Other methodologies like ProCert may be used when approved by KGS, providing they meet the requirements outlined in Appendix 2. Suppliers will be requested to submit ProCert data to KGS. Specific requirements will be communicated through the assigned KGS Quality representative.

- Suppliers are encouraged to identify additional key characteristics beyond those defined by KGS. This should take into consideration, finished part characteristics, upstream product characteristics and process parameter controls.
- Suppliers with design responsibility MUST identify key characteristics in addition to any identified by KGS.
- All identified key characteristics (KC) must meet the ProCert requirements, or other similar approved methodologies, as defined in Appendix 2 – Process Certification.
- All KCs shall 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 submission there is a KGS approved containment plan in place.
- On-going control for all KC's shall 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 KGS site.
- All measurement tools used to evaluate, and control KCs shall demonstrate a maximum of 20% repeatability and reproducibility. MSA, such as Gage R&R, shall be performed at a minimum every 24 months or if the gage is upgraded, repaired, or replaced.

#### 9.2 Key Characteristic (KC) (see section13 for all definitions)

A key characteristic (KC) is any feature of a material, process, part, assembly, or test, whose variation within or outside the specified requirement has a significant

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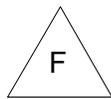
influence on product fit, performance, service life, manufacturability, information, service, or other expected deliverable. KGS shall define the key characteristics which the supplier needs to be identified in the PFMEA and then certified. Key Product Characteristics (KPC's) will be communicated through various methods, including:

- Notations or symbols documented on KGS engineering drawings and specifications.
- Written communication based on known process issues, production problems or field problems. It is an alternative method because drawings and specifications change need time.

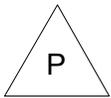
The various symbols used on KGS documents to signify KPC are shown below:



**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 ProCert 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. 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.

### 9.3 Alternate Means of Control (AMC)

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

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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:

- AMC-1: Traceability - Products, Components, Material or Processes
- AMC-2: Independent Oversight Inspection
- AMC-3: Certified At-Station Operator/Technical Inspector
- AMC-4: Certificate of Conformance or Analysis
- AMC-5: Material Certification
- AMC-6: Mistake-Proofing of Fixtures, Tools, Machines, Processes
- AMC-7: Frozen Process Control
- AMC-8: Burn-In
- AMC-9: Fully Automated Testing
- AMC-10: Engineering Source Approval

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

- Measurement system analysis related to the feature requiring control.
- Documentation of AMC as part of the PFMEA and control plan and identification of Key Inputs that impact the quality results of the AMC.
- Validation of the control method.
- Verification that the control method is sustainable.

### 9.4 Layered Process Audits (LPA)

LPA is a system of manufacturing process audits performed by multiple levels of management.

It is recommended that suppliers conduct periodic internal process audits with a stated frequency, audit checklist, and each level's leader to ensure continued conformance with standard work instructions, control plans and process stability / capability. (Ref AIAG CQI-8 Process Layered Audit) Compliance with implemented process controls and verification of mistake/error proofing must be included in the audit. (Reference Layered Process Audits in section 13 definition).

## 10. NON-CONFORMING PRODUCT

Non-conforming product is product that doesn't meet or fulfill its specified or defined requirements. A non-conformance can occur in both product and process. Under no circumstances shall a supplier ship non-conforming product without first receiving written authorization from KGS.

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At KGS, **Quality Events (QE)** are a significant supplier quality related issue(s) that cause downtime or rework of finished goods. **Supplier Responsible Escapes (SRE)** are a significant supplier quality related issue(s) that causes significant field issues, such as recalls, regulatory non-compliance, or epidemic issues. The site Quality Manager and Supply Chain Management must be aware of all QEs and SREs and a full 8D must be initiated for each of them.

Suppliers must complete the corrective action issued by KGS to identify root cause and prevent future defects. Additionally, KGS may impose Controlled Shipping Levels 1 and 2 for repeat / significant defects. Suppliers should reach out to their respective contacts at KGS to learn more about escapes and how to report any discrepancies. The following sections identify and explain key quality requirements applicable to non-conforming product.

### 10.1 Supplier Identified Non-Conforming Product

KGS uses the Prism Portal to process all Supplier Deviation Requests (SDR) and the Global 8D System to process relentless root cause analysis including any joint root cause assessment required by an applicable commercial contract.

Link: [Prism Portal DM](#)

The supplier may find products, through their quality control processes or from reports by other customers, 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 KGS facility.
- Prior to shipping any non-conforming product, the supplier must notify KGS utilizing the Supplier Deviation Request (SDR) in the Deviation Management system. Product may not be shipped until the SDR has been fully approved in the Deviation Management system.
- Reasons for SDR include, but are not limited to:
  - The non-conformance affects form, fit, or function of the part or system.
  - The non-conforming product will affect deliveries to KGS.

The supplier is responsible for the segregation and quarantine of non-conforming material. Non-conforming materials shall not be shipped unless an SDR is approved by KGS in the Prism Portal. Non-conforming product or materials received at KGS without an approved SDR will be rejected and returned to the supplier at supplier's sole cost and expense including any extra handling and shipping costs which will be charged back to supplier. Non-conforming material shall not be processed until a deviation is approved by all required KGS personnel in the Prism Portal.

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Product voluntarily segregated or recalled from a KGS plant without plant inspection and supplier owned product at a 3PL or in-transit will not be counted against the supplier, provided the KGS plant's production is not impacted.

### 10.2 KGS Identified Non-Conforming Product

#### 10.2.1 Non-conformances Found Prior to Release to Customer

In the event non-conforming products or materials are discovered by KGS prior to release to KGS's customer(s), the parts/ components in question will be identified and segregated to prevent further use. KGS's evaluation of the non-conforming products or materials will determine whether:

- Defects are accumulated and returned to suppliers in accordance with plant RMA procedures.
- Supplier sorts the defects at KGS or at a local off-site location.
- Supplier reworks defects at KGS or at a local off-site location.
- Supplier contracts 3rd party to complete inspections at KGS or at a local off-site location.
- Contingent on any applicable commercial contract specifics, KGS will rework defects and charge the supplier for rework costs and/or 3rd party containment activities; or
- Contingent on any applicable commercial contract specifics, KGS will scrap or dispose of the non-conforming product or material and receive full credit, refund, or no-cost replacements from the supplier.

Suppliers are expected to reimburse KGS for all costs associated with quality defects, Quality Events (QEs) or Supplier Responsible Escapes (SREs) including, but not limited to a minimum standard charge for processing each defect, Quality Events (QEs), Supplier Responsible Escapes (SREs), or per the commercial contract.

#### 10.2.2 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 applicable commercial contract in force between the supplier and KGS. 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 KGS may require:

- Defective parts to be repaired/ replaced in the field by KGS.

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- Defective parts be repaired/ replaced in the field by supplier, or
- Product be recalled and repaired or replaced.

In all cases listed above, suppliers are required to reimburse KGS for all costs associated with correcting field failures, recalling products, and for any other costs imposed on KGS because of such failures.

### 10.3 Non-conformance/Corrective Action Reports (CAR)

KGS 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 electronic Prism Portal 8D system. The supplier is responsible for keeping the appropriate contact information up to date within the Prism Portal 8D system. When KGS issues a request for corrective action, the supplier will be notified via an e-mail link. The need for a formal CAR shall be evaluated in terms of potential impact upon production costs, quality costs, performance, reliability, safety, and customer satisfaction.

Supplier's 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 that suppliers shall consider implementing mistake-proof and preventive solutions in all corrective actions

Containment actions (steps D1-D3) shall be communicated to KGS within 24 hours of receipt of corrective action request. Failure analysis, leading to the root cause determination, shall be completed through 8D within a reasonable time agreed to with the KGS issuing site.

The 8D shall not be considered complete until the proposed permanent (long-term) corrective action and updated PFMEA and Control plan have been approved by KGS.

### 10.4 Problem Resolution

If a supplier's PPM or defect rate increases to levels set forth in section 11 is higher than the maximum rate acceptable as a "Gold" or "Silver" supplier in the KGS Supplier Rating Program for the category, the supplier will have a period of twenty four (24) hours from the date of notice by KGS to take containment action and a period of fifteen (15) days from the date of notice by KGS to take permanent corrective action. If the quality reports during the corrective fifteen (15) day period indicate the defect rates have not been reduced to an acceptable level, then, in

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addition to the other remedies provided in the commercial contract, KGS may, at its option, reject shipments of the affected product and reschedule or cancel all open orders for the affected product without further liability.

If containment action is triggered, KGS shall have the right at supplier's expense to secure replacements of the affected product (including any engineering expense to identify and obtain PPAP approval of a suitable replacement) and/or have a third party inspect the supplier's products for non-conformance and/or defects. Supplier shall engage in continuous improvement quality performance including but not limited to, adherence to the following items:

- Delivery of zero (0) product defects improvement plan.
- Document and improve 8D corrective action response and closure time, current target is 45 days for closure.
- Implement process or product capabilities with Statistical Process Control (SPC).
- New Product Introduction - 100% PPAP on time (at or prior to pilot).
- Timely closure of any open actions resulting from a supplier quality audit.
- Process certification requirements, not limited to Pro-Cert.
- Risk identification & mitigate potential issues using proactive quality tools & initiatives.

### 10.5 Controlled Shipment (CS)

Controlled Shipment (CS) is put in place to protect KGS manufacturing facilities and its customers from receiving non-conforming parts or products that do not meet specifications. The data obtained from this process is critical as a measure of the effectiveness of containment and corrective actions taken to eliminate the root cause of non-conformities.

Supplier is fully responsible and liable for all costs associated to reduce or mitigate the impacts of non-conforming product or parts passed on to KGS end customers. This process does not change any terms of KGS's purchase orders or the applicable commercial contract, nor modifies or limits in any way KGS's remedies or rights of recovery from the supplier.

#### 10.5.1 Controlled Shipment Levels

KGS will determine when a supplier shall be placed into Controlled Shipping Level 1 (CS1) and/or Controlled Shipping Level 2 (CS2). KGS may place a supplier immediately into CS2, bypassing CS1, if needed.

**Level 1 Controlled Shipment (CS1):** The supplier must provide certified conforming product to KGS. The supplier shall provide CS1 inspection results at the specified

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frequency determined by KGS. The supplier shall continue its problem-solving activities and corrective action implementation.

**Level 2 Controlled Shipment (CS2):** There is evidence the supplier is not able to effectively contain and isolate the issue within supplier’s facility when in CS1. If CS2 is required, a meeting will be scheduled between key stakeholders within KGS and the supplier. An approved third-party provider will be used to certify the shipments prior to use. The results from CS2 third-party certification shall be provided directly to KGS at the specified frequency.

All payments to the third-party provider for provision of CS2 is the financial responsibility of the supplier. Any supplier that is placed on CS2 will also be considered at the “Red” level and will be subject to new business hold until the supplier has successfully completed the CS2 process. The supplier shall continue its problem-solving activities and corrective action implementation as specified in section 10.4.

**10.6 Warranty**

Specific warranty obligations of suppliers are provided in the applicable commercial contract in force between the supplier and KGS.

**11. SUPPLIER CONTINUOUS IMPROVEMENT (CI)**

Supplier continuous improvement includes the following three indicators. These indicators shall be tracked monthly and be made available to suppliers to drive preventive and proactive quality improvement actions to deliver zero defects.

- Quality system audit: Level 1~4, Refer to section 6
- Supplier performance rating: Red, Bronze, Silver, Gold
- Supplier risk rating: High, Medium, Low

**11.1 Supplier Performance Rating**

KGS’s supplier performance rating is a method to distinguish suppliers’ operating with high on-time delivery (OTD), quality, and sustainability performance levels and maintaining cost. It is a means of recognition for significant continuous improvement efforts and achievements of our suppliers who have achieved levels of performance.

The supplier performance rating tracks four levels. All suppliers are expected to be at the “Gold” or “Silver” levels. Suppliers who are not operating at least to the “Silver” level shall be asked to prepare an improvement plan for review with KGS.

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**Supplier Performance Rating Matrix**

<b>Level</b>	<b>SOTD</b> (Rolling 12 months)	<b>SPPM</b> (Rolling 12 months)	<b>QEs</b> in Factory (Rolling 12 months)	<b>SREs</b> in Field (Rolling 12 months)
<b>Gold</b>	≥98%	≤100	1	0
<b>Silver</b>	≥95%	≤500	2	0
<b>Bronze</b>	≥80%	≤1000	4	1
<b>Red</b>	< 80%	> 1000	> 4	> 1

**Note:**

- **SPPM targets** are based on a 12-month rolling average using actual volumes.
- **QEs** and **SREs** are based on 12-month rolling sum.
- **QE** (Quality Event in factory): A significant supplier quality related issue that causes production stop or rework of finished goods and finally result in production OTD failed.
- **SRE** (Supplier Responsible Escape in field): A significant supplier quality related issue that causes about PASS (Products and Services Safety) recall or epidemic return.

**11.2 Supplier Risk Rating**

Supplier risk rating is a method to assess supplier’s risk level and identify high risk suppliers for monitoring and improvement.

The supplier risk rating has three levels. All suppliers are expected to be at the “Low” or “Medium” levels. The high-risk suppliers shall be asked to prepare an improvement plan for review with KGS.

KGS supplier annual audit plan shall focus on the high-risk suppliers’ improvements. Suppliers who have been high-risk for two consecutive years shall be phased out.

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**Supplier Risk Rating Matrix**

Criteria 1: Quality System Audit <i>(Refer to: QLY-10 section 6.2.1, 6.2.2, Table-1, Table-2, and QLY-52)</i>	Criteria 2: Supplier Performance Rating <i>(Refer to QLY-02 section 11)</i>	Supplier Risk Rating
Level 2 or 3 or 4	Gold or Silver	<b>A - Low</b>
	Bronze	<b>B - Medium</b>
	Red	<b>C - High</b>
Level 1	Gold or Silver or Bronze or Red	<b>C - High</b>

**12. SUSTAINABILITY**

The supplier recognizes the value in supporting initiatives which strive to achieve excellence in environmental and social performance. Supplier agrees to take reasonable and timely action to support KGS’s achievement of the Sustainability Goals including, without limitation, collecting information throughout supplier’s own supply chain on the origin and use of specific materials in the goods sold to KGS, participating in assessments, and responding to KGS’s requests for information. Supplier further agrees to comply with all KGS’s published policies on sustainability as they exist from time to time and all current and subsequently enacted laws and regulations regarding sustainability applicable to KGS, KGS’s customers or the goods or services.

**13. DEFINITIONS**

**8D** - The name “8D” originates from the fact there are eight disciplines associated with this problem-solving format. KGS has adopted the 8D format to be used for both internal and external problem-solving activities including root cause assessments.

Link: [Prism Portal 8D](#)

**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.

**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.

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

**Commercial Contract** – The supply agreement in force between KGS and the supplier governing the purchase and sale of Products subject to such agreement. Unless there is a commercial contract in place that expressly excludes their application, KGS's Standard Term & Conditions of Purchase shall apply to all suppliers. If no commercial contract exists KGS's Standard Terms & Conditions of Purchase in effect on the date of the applicable purchase order or release shall be considered the "Commercial Contract" for purposes of the SQM.

**Corrective Action Report (CAR)** - A formal request by KGS to take action to eliminate the cause(s) of an existing nonconformity or other undesirable situation 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.

**Deliverable Software** - All software intended to be used in KGS 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 KGS.

**SRE (Supplier Responsible Escape)** - A significant supplier quality related issue that causes about PASS recall or epidemic return. Each escape MUST have a full 8D initiated.

**Epidemic Failure** - any product or service that is delivered to a customer or end user which exhibits a failure rate or nonconformance more than the threshold rates in the applicable commercial contract.

**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, a risk 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.

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**First Article Inspection (FAI)** - A production validation method for verifying that a new or modified production process produces conforming parts that meet design specifications before mass production. Typically, a supplier performs the FAI, and the purchaser reviews the report. The FAI usually consists of fully testing and inspecting either the first part produced by the new process or a sample from the first batch of parts. If supplier doesn't have the in-house capability or if the purchaser requests, the first article inspection may be conducted by an approved subcontract supplier such as a dimensional inspection/metrology laboratory.

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

**Supplier On Time Delivery (SOTD)** - The number of purchase order items delivered on time to the required date and quantity. For further information, please reach out to your respective KGS sites.

**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 KGS disposition. KGS's approval of the PSW 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)** - KGS'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 KGS products; supplier designed products that are incorporated into a KGS assembly/product; and finished goods branded by KGS.

**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.

Link: [Prism Portal PPAP](#)

**QE** (Quality Event in factory): A significant supplier quality related issue that causes production stop or rework of finished goods and finally result in production OTD failed. Each escape must have a full 8D initiated.

**Supplier Quality Systems (QS) Audit** - A quality management standard whereby suppliers are rated different 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)** – Prism Portal DM website tool facilitates the workflow with suppliers during deviation process.

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Link: [Prism Portal DM](#)

**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 as well as critical compliance expectations and are available to suppliers through their KGS contacts.

- Business Gifts from Suppliers
- Supplier Code of Conduct
- Human Trafficking Policy
- Conflict Minerals Policy
- California Transparency in Supply Chains
- Materials of Concern
- Standard Terms & Conditions of Purchase

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

- QLY-02FM1 – PPAP Package
- QLY-10FM1 Process Qualification Audit
- QLY- SW – 15T2 (Supplier Deviation Prism Portal Training)
- QLY-52 KGS Supplier Quality Systems (QS) Audit Manual
- QLY-52FM1 KGS Supplier Quality Systems (QS) Audit Form
- 8D Corrective Action Report (CAR)

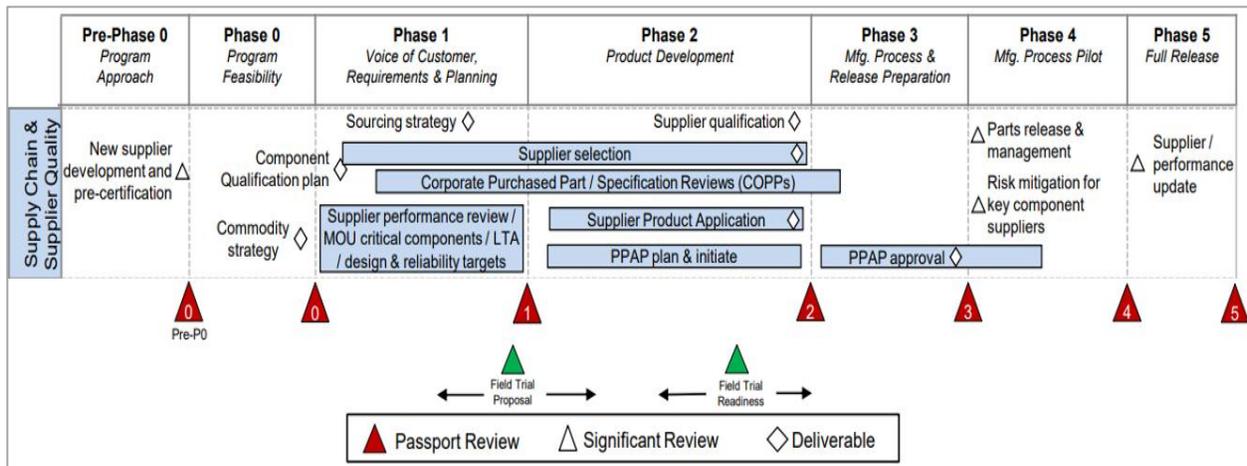
\*With using plant consent, Suppliers may use their own internal documents/ forms if they contain all required information.

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### 15. APPENDICES

#### 15.1 Appendix 1 - PPAP Requirements

PPAPs should be requested at design freeze (prior to P2) and approved at MCS review (prior to P3), refer to the latest PDP overview chart. Below timeline reflects where PPAPs should be requested and approved in the New Product Development cycle.



Below requirements table defines the documentation / data to be submitted to KGS or retained by supplier.

**PPAP Requirements / Submission Table**

		Level 1	Level 2	Level 3	Level 4	Level 5
<b>1</b>	<b>Design Record</b>	R	S	S	*	R
	<b>for proprietary components</b>	R	R	R	*	R
	<b>for all other components/ details</b>	R	S	S	*	R
<b>2</b>	<b>Engineering Change Documents, if applicable</b>	R	S	S	*	R
<b>3</b>	<b>Customer Engineering approval, if required</b>	R	R	S	*	R

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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 KGS. A copy shall be retained at the supplier location.

**R** = shall be retained by the supplier location and made available to KGS upon request

**\*** = shall be retained by the supplier location and submitted to KGS upon request

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### 15.2 Elements of PPAP Defined

#### I. Design Records

A printed copy of the drawing needs to be provided. If KGS 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 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).

#### II. 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.

##### a) Engineering Approval

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

##### b) DFMEA

If the supplier is design responsible, a copy of the Design FMEA (DFMEA), reviewed and signed -off by KGS Engineering must be included. If it is agreed the DFMEA contains supplier control Intellectual Property (IP), the DFMEA may be reviewed with KGS Engineering and Quality for approval. Where KGS 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.

##### c) Process Flow Diagram

A copy of the end-to-end Process Flow, indicating all steps and sequence in the fabrication process, including incoming components, rework & repair, labeling and so on.

##### d) 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 KCs, KPCs and AMCs must be included on the PFMEA.

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### e) Control Plan

A copy of the control plan reviewed and signed-off by supplier and customer. The control plan follows the PFMEA steps. All KCs and KPC's must be identified and included on the control plan.

### f) Measurement System Analysis Studies (MSA)

MSA contains the Gage R&R or Attribute Agreement for KCs and KPCs. MSA is required for both variable and attribute features.

### g) 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". KGS 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.

### h) Records of Material / Performance Tests

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

### i) 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 KGS defined KCs and Supplier defined KPC's must have studies included.

### j) Qualified Laboratory Documentation

Copy of all laboratory certifications (e.g., ISO 17025, TS) of the laboratories that performed the tests reported on section10.

### k) Appearance Approval Report

A copy of the Appearance Approval Inspection (AAI) form signed by the customer. Applicable for components affecting appearance only. Requirements

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for any Appearance Approval Reports should be defined during the Design Review.

### **l) Sample Production Parts**

KGS 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)

### **m) 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.

### **n) 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 programming information may be requested)

### **o) Customer-Specific Requirements**

KGS 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.

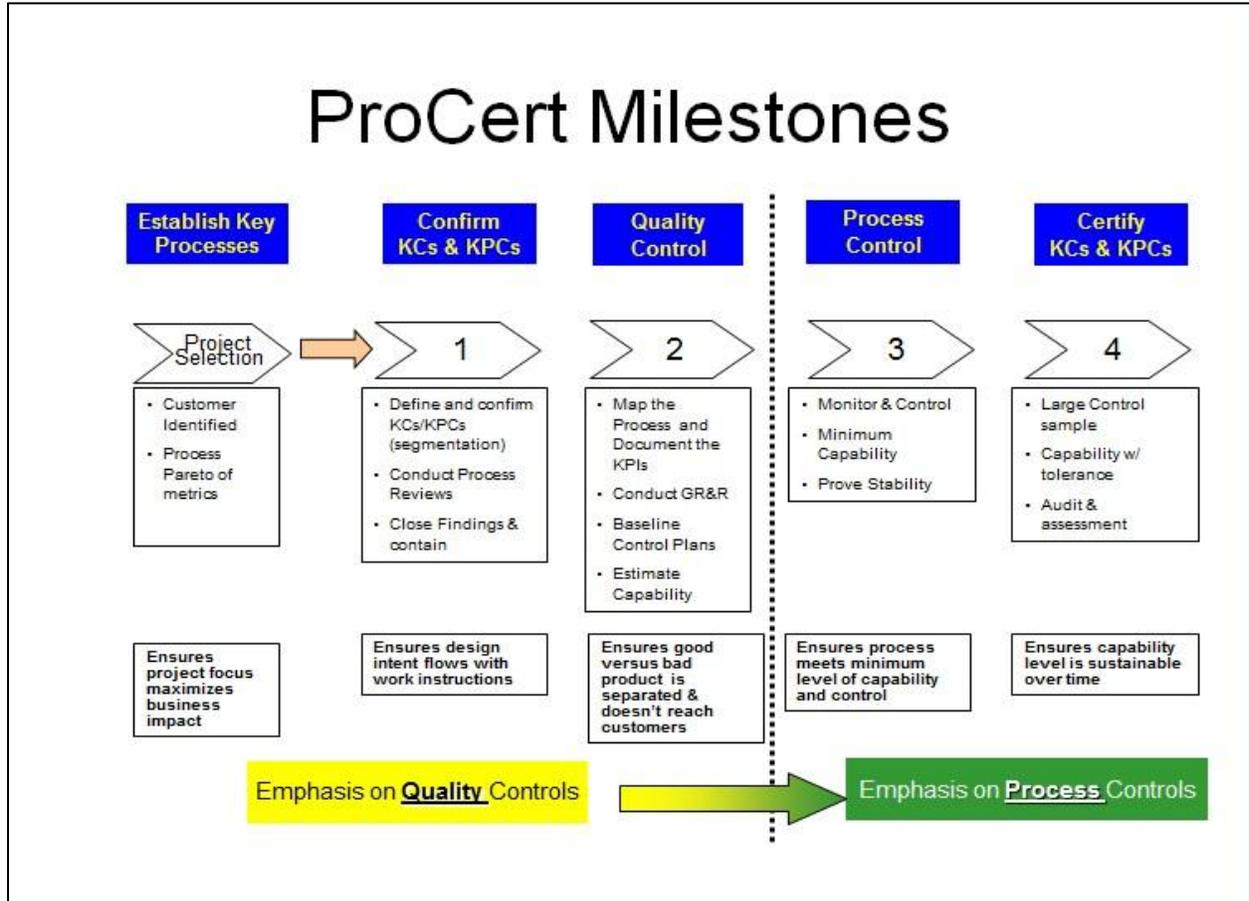
### **p) Part Submission Warrant (PSW)**

This form 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 supplier is not authorized to ship until a full or interim approved PSW has been provided by KGS.

If a Level 4 PPAP is requested, the KGS requestor must specify, in writing, what documentation / data will be required to accompany the PPAP submission.

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**15.3 Appendix 2 - ProCert**



**15.4 Steps to Certify a Process**

The following requirements shall be achieved to consider a process / KC certified. Initial steps to implement Process Certification:

- a) Map the current process steps to identify KPIs and the process KCs that impact the process output and/ or KCs identified by KGS. Refer to Design and Process FMEA's in this step. Identify current process performance or output for each process step.
- b) 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).

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- c) 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.
- d) Implement a process monitoring method.
- e) Implement a Preventive Maintenance Plan.
- f) Perform self-audits.

### 15.5 Variable Measured Characteristics: A process is considered certified when:

- a) Measurement equipment is qualified (e.g., GR&R studies completed).
- b) Assignable causes for variation have been identified, documented, and removed.
- c) Process inputs and KCs are identified, monitored, and controlled.
- d) 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.
- e) KCs are under statistical control and Cpk of 1.33, or better is demonstrated.
- f) Routine self-audits being performed.

### 15.6 Attribute Measured Characteristics: A process is considered certified when:

- a) Measurement equipment is qualified (e.g., GR&R studies completed).
- b) Assignable causes for variation have been identified, documented, and removed.
- c) Process inputs and KCs are identified, monitored, and controlled.
- d) 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.
- e) Routine self-audits being performed

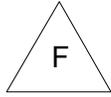
### 15.7 Key Characteristics



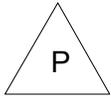
**SAFETY-** A feature is classified as Critical to Safety if it creates a substantial risk of injury, property damage, illness, product damage, environmental damage, and or contamination, if not produced within its prescribed acceptance limits. If a supplier does not maintain milestone 4 for any safety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

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**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.

**16. REVISION / REVIEW UPDATES**

Change #	Revision Description	Approved by	Date
1	Create for KGS specific as an independent company	Tom Ciampa	15/11/2024