CARLING TECHNOLOGIES

Supplier Quality Manual

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3rd Edition

Table of Contents

INTRODUCTION

Carling Technologies is committed to working with suppliers to ensure customer satisfaction through total conformance to customer requirements.

This manual is designed with the intent to assist our suppliers in understanding the standards, requirements, procedures and systems that should be in place to assure the shipment of defect free, on time parts to Carling Technologies. Carling Technologies subscribes to the eight quality management principles, one of which is "Mutually Beneficial Supplier Relationships". As a supplier to Carling Technologies you play an important role in our success and the success of our customers. This manual is one of several methods we use to cascade our customer's requirements throughout our supply chain.

Carling Technologies continually strives to improve the quality of products we supply to our customers. To do this, our suppliers must also strive for continuous improvement.

Carling Technologies will assist our suppliers whenever possible to meet our requirements. The responsibility for quality and on-time delivery, however, remain with the supplier.

Sincerely,

Harold A. Wiegard
Vice President Global Quality
Carling Technologies

David Pippa
Vice President Global Supply Chain
Carling Technologies

Carling Technologies Mission Statement

With our long history of providing our customers with the best in switching and circuit protection products since 1920, Carling Technologies pledges to continue to lead the industry with total commitment to quality. Quality is to be the controlling factor in the design of our corporate structure, our corporate systems, our products, our tooling, our manufacturing processes, and our customer relations. Our mission is Quality By Design! **Our goal is to provide our customers with products of the best possible quality, consistently meeting all specified design parameters.**

Environmental, Health and Safety

Protecting the environment and the health and well being of our employees, neighbors and business partners is a key principle of Carling Technologies. As such, we expect our suppliers to also adopt the same principals and we further expect them to work with their suppliers to the same end. We expect our suppliers to, at a minimum, comply with the EICC Code of Conduct and the current ISO14001 international standard.

Corporate Social Responsibility and Ethics

We require Suppliers to, at a minimum, comply with the EICC Code of Conduct (http://www.eiccoalition.org/standards/code-of-conduct/ . We require our business partners to have an active Code of Conduct or Ethics Policy that addresses all sections outlined in the EICC Code of Conduct.

Purpose

The purpose of this Supplier Quality Manual (SQM) is to specify Carling Technologies management system requirements for our suppliers. These requirements extend from supplier qualification, to new product development, to serial production, and to service. It should be understood that the requirements noted within this SQM reflect Carling Technologies requirements that shall be considered to be "Customer Specific Requirements" for the purposes of Quality / Management System conformance and audit purposes.

The SQM has been developed and provided to assist suppliers to understand the requirements of Carling Technologies regarding quality and management systems and in meeting the terms of Carling Technologies' purchasing agreement, engineering drawings, and specifications.

Scope

This manual applies to all direct material/service external suppliers, providing Carling Technologies with materials, components, products, processing, and related services including sub-tier sources. This manual applies to indirect material/service suppliers only when a Carling Technologies Purchase Order requires it. The requirements outlined herein are an integral part of Carling Technologies' total requirements. The VP of Global Quality or their designee must approve any deviation to these requirements.

Supplier Requirements

Suppliers are responsible for meeting the requirements of this manual. Failure to meet these requirements may result in the loss of existing and/or future Carling Technologies orders, in addition to reimbursement of the cost to Carling Technologies resulting from those failures. Suppliers shall ensure that their direct material/service suppliers comply with the requirements of the current ISO/TS 16949 standard. Suppliers shall adopt the standards of Zero Defects and 100% On Time Delivery to Carling Technologies. Suppliers shall understand that any established PPM target is not an Accepted Quality

Level, but represents an intermediate continuous improvement step toward shipment of components/materials meeting the Zero Defects requirement.

Quality & Environmental, Safety and Health Policies

Carling's Quality Policy

Our entire team is committed to customer satisfaction and quality. Industry leadership in quality is a key element to our continuing success.

- We constantly strive to continue to lead the industry in product innovation combined with the best customer service and quality. Quality dominates our entire corporate discipline.
- Our Quality commitment requires us to provide products to our customers with consistent and total conformance to specifications.
- Defect prevention is paramount to our Quality By Design program.
- Our suppliers are a key part of our business. They are involved closely with us to provide materials and components consistently meeting our specifications.
- We maintain close relationships with our customers to enable us to clearly define the product and service parameters we are to consistently provide.
- We work to continuously improve our quality and customer satisfaction.

Carling's Environmental Policy

It is the policy of Carling Technologies to design, manufacture and distribute products and to manage, recycle and dispose of materials in a safe and environmentally responsible manner.

Our Principles

- Meet laws and regulations concerning environmental, health and safety issues; according to the nature, scale and environmental impacts of Carling Technologies activities, products and/or services;
- Meet customer requirements concerning banned/restricted substances;
- Verify our performance through internal audits and management reviews;
- Where laws and regulations do not reflect environmental, health and safety management practices, we shall establish and implement goals and objectives by creating our own environmental, health and safety standards to protect human health and the environment;
- Support and promote sound scientific principles and fiscally responsible public policies that enhance environmental quality, health and safety;
- Advocate for the adoption of environmental, health and safety principles and practices by our contractors, vendors, and suppliers, making them available to the public;
- Communicate environmental, health and safety requirements to Carling Technologies employees;
- Design, manage and operate our facilities to maximize safety, promote energy efficiency, and protect the environment;

- Create products that are safe in their intended use, conserve energy and materials, promote safety, and prevent pollution throughout the product life-cycle including design, manufacture, use, and end–of–life management;

- Strive to continually improve upon our environmental, health and safety performance by reducing consumption, along with more efficient use of materials and resources;

- Ensure that Carling Technologies employees are aware of their roles and responsibilities to fulfill and sustain the environmental, health and safety requirements.

Quality System

Carling Technologies maintains certification to the following standards (current revision): ISO/TS 16949, ISO 9001 and ISO 14000. Suppliers to Carling Technologies will be, at a minimum, registered by an ANAB, IATF or IAF recognized registrar, to the current ISO 9001 standard or have a plan to achieve certification within 24 months and must have a plan to be compliant, if not already registered, to the current ISO/TS16949 standard. Certification must be maintained, including yearly surveillance audits, and any loss of certification for whatever reason must be reported within 30 calendar days to Carling Technologies. Carling Technologies reserves the right to perform Quality System Assessments at any time, with proper notice given to the supplier. Poor Supplier performance as indicated on Carling Technologies' Supplier Score Card could trigger a Quality System Process audit. This type of assessment is tailored after the standard that the supplier is certified to and Carling Technologies' specific requirements.

The core tools reference manuals required to support efforts toward compliance to the current ISO9001 or TS16949 standards can be obtained through the Automotive Industry Action Group. Carling Technologies requires the methods and requirements in these manuals unless specifically expressed otherwise. The manuals include the current versions of:

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

If you have any issues concerning the use of these core-tools manuals, contact your Carling Technologies Quality representative.

Quality Manual

Upon request, the Supplier shall furnish Carling Technologies with a copy of the Supplier's Quality Management System Manual, which is to be current and approved by the Supplier's management, including or making reference to related documents. The quality management system documentation shall include Supplier's statements of a Quality Policy and Quality Objectives. Top management shall define quality objectives and measurements, which should address customer expectations and be achievable within a defined period of time. The supplier shall promptly notify Carling Technologies of any substantive changes to the Supplier's quality management system or personnel.

Supplier Approval Process

Carling Technologies requires all Suppliers to be approved prior to the issuance of contracts. Carling Technologies must approve all Suppliers, regardless of approvals by customer or other entities. The Supplier selection process begins when the Carling Technologies has a requirement for a new material, or Carling Technologies is looking at alternate sources of supply for existing materials, services or

products.

The Carling Technologies Supply Chain Group has the ultimate responsibility to identify suitable Suppliers.

There are several factors that are evaluated in the selection process. Examples of these factors are listed below:

- Supplier's Technology alignment with Carling Technologies needs
- Supplier's Cost Competiveness
- Supplier's ability to meet Delivery/Capacity requirements
- Supplier's support of Value Added Service Programs and Initiatives
- Supplier's Technical, Physical and Financial resources to support Carling Technologies future demand
- Supplier's security procedures that meet the minimum-security criteria for C-TPAT membership

Suppliers are also evaluated based on the status of their Quality System. The procurement group provides a Supplier Quality Survey (QAF-160) to the Supplier. Should there be any deficiencies noted by the Carling Technologies Quality organization, the Quality Manager will communicate these issues to Carling's Supply Chain team and the supplier for resolution. The Global Quality Manager or designee will identify the audit results as follows: "Approved", "Conditionally Approved", or "Disapproved". Any results other than "Approved" requires a corrective action plan. The Quality Manager or designee will determine whether we can proceed with the Supplier.

Special Processes

This document establishes Carling Technologies' quality requirements for suppliers who design, manufacture or control such special processes. Carling Technologies has identified the following as ***special processes*** – heat treating, plating, coating/painting, welding, soldering and molding. Each supplier of these special processes is required to complete the following CQI assessments as part of the PPAP or initial validation process and then once every three years:

- CQI-9 Special Process: Heat Treating System Assessment
- CQI-11 Special Process: Plating System Assessment
- CQI-12 Special Process: Coating System Assessment
- CQI-15 Special Process: Welding System Assessment
- CQI-17 Special Process: Soldering System Assessment
- CQI-23 Special Process: Molding System Assessment

Substance Reporting and Management

RoHS / REACH – The end users of our products require compliance to the latest and ever changing RoHS and REACH standards. The products and materials we purchase must be compliant to the current requirements. Suppliers must certify that the products/materials shipped to Carling are in compliance. We will periodically audit the materials shipped and we request that the supplier also audit their sub-tiers suppliers for conformance. The introduction of new/additional restricted and banned substances are ever changing and we expect our suppliers to remain current to the latest RoHS and REACH requirements. We require compliance to the current standards on the date of receipt to Carling Technologies.

Other Substance Reporting – We may also require compliance to the following banned substances requirements; California Prop 65, Canadian Environmental Protection Act, Low Halogen or Halogen Free, Ozone Depleting substances, radioactive substances or asbestos. Suppliers must certify that the products/materials shipped to Carling are in compliance.

At times, our customers have their own restricted/banned substance lists. Any customer specific

requirements will be communicated via the QAF-800 process and flowed down through this agreement and purchase order requirements.

Conflict Minerals – Carling expects its suppliers to have a policy to reasonably assure that the Tantalum, Tin, Tungsten and Gold in the products they manufacture and supply Carling are "conflict free". "Conflict free" means that any "conflict minerals" (gold, columbite-tantalite, also known as coltan, cassiterite, wolframite or their derivatives) tin, tantalum, tungsten) necessary to the functionality or production of the supplied product, either do not originate from the "Conflict Region" situated in the eastern portion of the Democratic Republic of the Congo (DRC) and surrounding countries (Angola, Burundi, Central African Republic, Congo Republic, Rwanda, Sudan, Tanzania, Uganda and Zambia) or are from recycled or scrap sources.

Suppliers must adopt a policy regarding conflict minerals consistent with Carling's policy, implement management systems to support compliance with their policy and require their suppliers to take the same actions.

Carling expects suppliers to establish their own program to ensure that the specified minerals / metals are being sourced only from smelters outside the "Conflict Region" or from smelters which have been certified by an independent third party as "conflict free" if sourced within the "Conflict Region". Smelters are qualified as "conflict free" if they are compliant to the EICC Conflict Free Smelter (CFS) protocol, using the CFS Compliant Smelter List.

Carling requires all suppliers on a yearly basis to submit the latest version of the EICC template to maintain compliance to the "conflict free" requests. Carling may ask for records of compliance and written evidence to support the suppliers due diligence program and compliance with its Conflict minerals policy, including but not limited to a review of appropriate supplier documents and review of records.

IMDS (International Material Data System) – Our commercial vehicle customers require Carling Technologies to submit material declarations through the IMDS (http://www.mdsystem.com/imdsnt/startpage/index.jsp). If a supplier needs to submit a material declaration through this system, they will be notified by the buyer or quality representative to sign-up for a free account and what part numbers shall be submitted via the QAF-800 process. The supplier is to submit the information through the IMDS website to Carling's account number, 31900. When submitting a part, please have the Carling part number in the "Internal Part No." field and "drawing change level" field should have a revision and "drawing dated" field needs to be filled out.

Quality Planning

Sufficient quality planning must be done before mass production to minimize problems after industrialization. This planning involves the use and/or creation of:

- Design documents
- DFMEA (if supplier is design responsible)
- Equipment, tooling and facility requirements
- Material sourcing and testing
- Process Flow Charts
- PFMEA
- Control Plans
- Initial Process Studies using quality indices such as Ppk or Cpk for important variable characteristics.
- MSA Gauge Studies
- PPAP Submission
- Process Work Instructions
- Process Control condition or set-up sheets
- Training and Qualification of Team Members
- Pilot production runs and analysis
- Others

A Project Management approach to planning and implementation is recommended utilizing a multifunctional team in which Quality, Production, Engineering and Carling Technologies are team members. Task timing with assigned responsibility shall be utilized in project planning. All Safety or special characteristics identified by Carling Technologies shall be maintained in statistical control and monitored via SPC. Special characteristics are defined as those having a significant affect on fit, function or performance. Priority for continuous improvement shall apply to the reduction in variation around a target value for special characteristics.

Safety characteristics shall be controlled with SPC control charts and made available to Carling Technologies upon request. Special product and process characteristics will be identified by Carling Technologies in addition to those selected by the Supplier through knowledge of the product and process.

All special characteristics shall be identified in the Control Plan, PFMEA and operator instructions with the Carling Technologies special Symbol or the organization equivalent symbol. Guidelines for quality planning activities should follow the AIAG Advanced Product Quality Planning reference manual.

Documentation and Record Retention

Sufficient documentation must be developed and kept by the supplier to verify performance of all quality inspections, test, studies, plans and procedures. The data and related documentation should be distributed and used by the people responsible for or who may have input to the process.

The following quality related data, records and procedures must be retained and kept for the life of the program (including service) plus 1 year:

- Statistical Quality Data
- Inspection and Test Results Data
- All Initial sample data
- Corrective action reports
- Receiving inspection information
- Control Plans / PFMEA / DFMEA / Flowcharts
- Quality procedures and system descriptions
- Written instructions, Test and Lab Instructions
- Test Procedures

These documents must be retained in such a manner that they can be made available to Carling Technologies within 48 hours of request.

Lot Control and Traceability

Suppliers must have an effective system of traceability that ensures all delivered product can be traced from a finished product in the customer application back to specific lots, sub-components, parts, blanks and raw materials. Controls must be in place to provide product traceability, including all components and raw materials, through their entire process. Lot traceability records must be kept on-hand and be available to Carling Technologies upon request for a period equal to 15 years from the end of production.

Material Performance Test Data

The supplier is responsible for conducting and submitting all material and performance testing as specified on the print with the PPAP package. If the supplier is not capable of performing all tests, they can contract the service with a qualified source such as the sub-supplier or a third-party laboratory or test facility. The contracted source must be an accredited facility (A2LA, ISO 17025).

The supplier is responsible for maintaining and submitting certificates of compliance and updated test results electronically via E-Mail to the designated Carling Technologies Quality individual, when requested, prior to each shipment.

Statistical Methods

Suppliers are expected to utilize appropriate statistical methods for process control, process improvement, evaluation of process capability and other applications. Such statistical methods should include:

- Process Capability studies *(CP, CPK, PPK)*
- Trend Charts
- Pareto Analysis
- SPC charts

The supplier may be asked to provide statistical data to verify process control and capability. This request will come from a Carling Technologies Quality representative. All Safety characteristics must be controlled by SPC data and submitted to a Carling Technologies Quality representative on request. A minimum CPK value of 1.33 must be achieved as well as a Ppk value of 1.67 must be maintained unless otherwise stated in the Standard Specification. All statistical data is subject to be requested at any time (i.e. *Per shipment, Monthly, or Quarterly).*

Use of statistical methods mentioned above is fully explained in the AIAG Statistical Process Control (SPC) manual.

Process Controls

The supplier is expected to establish, control and document production methods that will result in products that meet all Carling Technologies requirements. Controls should include documented procedures for inspection and testing activities to verify product conformance to specified requirements. These should be detailed in a quality plan or procedures and should include controls at receiving, in process and final inspection.

At receiving, controls should be in place to ensure that incoming product is not used or processed until it has been verified as conforming to specified requirements. In-process controls should be directed toward defect prevention methods such as Poka Yoke, Statistical Process Control, limit samples and Process/set up verification.

Related quality records should clearly show whether the product has passed or failed the required inspections and/or tests and should identify the inspection authority responsible for release of the product.

Production methods should be documented using process flow charts and operator instructions. Carling Technologies reserves the right to request this documentation at any time.

Software Quality Approval Process

When product developed includes custom created software, the activities for engineering consist of software development via the APQP process. The supplier's software process definition is expected to adhere to a widely accepted software process framework. The software shall be developed according to organization-wide processes tailored to the product being developed via the APQP process. The maturity of the software development process is expected to demonstrate the characteristics for repeatable, managed and defined processes. At times, Carling technologies will request evidence of consistently achieving software process maturity. Carling Technologies recommends suppliers become ASPICE certified.

Production Part Approval Process

Suppliers to Carling Technologies may be required to comply with the PPAP submittal procedure and Carling Technologies PPAP approval documented on a PSW prior to shipping production parts. Carling Technologies will provide assistance, if needed. Contact your Carling Technologies Quality representative for the PPAP procedure and guidance or follow guidelines of the AIAG Production Part Approval Process reference manual. The conditions requiring a PPAP submission are listed below along with a brief description of the process and documentation involved.

When any of the following conditions occur, contact your Carling Technologies Quality for guidance as to what Carling Technologies expects in a PPAP package. Once an understanding has been reached on what is required for the PPAP submittal, it must be submitted in a timely manner and approved prior to shipment of parts produced for mass production.

- New part
- New supplier for new or existing parts
- Change to optional construction or material
- Engineering change
- Correction of discrepancy
- Changes to inspection or testing processes and equipment or techniques
- Change in material or source of material
- Parts produced at different locations
- Product produced after part has been inactive for at least 12 months
- Change in manufacturing location including major layout changes
- Change in manufacturing process including:
    - Addition of new tools, equipment, dies, molds or cavities
    - Major repair of equipment or tooling, replacement or refurbishment
    - Other circumstances as dictated by Carling Technologies

If the change is initiated within your organization, you must notify your Carling Technologies Quality representative so that necessary approval can be received prior to implementing the change in production. Parts evaluated for PPAP must be produced on production ready tooling and equipment. Carling Technologies requires at least 12 weeks notification for any proposed change.

Carling Technologies requires a Level III PPAP unless otherwise requested by the Carling Technologies Quality representative. The PPAP package usually consists of the following documents. However, depending on the reason for submission and/or customer requirements, some documents may or may not be required.

- Part Submission Warrant
- Appearance Approval Report
- Dimensional Results / Inspection Results
- Measurement System Analysis - *Gauge R & R*
- Process Capability Studies
- Qualified Laboratory Documentation
- Process Flow Diagram
- Process Control Plan, *Production control plan and prototype control plan (if required).*
- Process Failure Mode & Effects Analysis
- Key Features Diagram
- Sample parts (see specific Carling Technologies PPAP submittal procedure).
- Carling Technologies specific requirements
- IMDS

When authorized to submit a level 1, 2 or 4 PPAP, it is expected that all required Level 3 documents be retained at the supplier's location and be made available upon request.

Process Flow Charts – PFMEA

Suppliers are to begin the advanced quality planning process by establishing process flowcharts listing all process steps beginning with receipt of raw material to packaging and shipment to the customer. The process flowchart can be used to analyze sources of variation of machines, material, methods and manpower used in the manufacturing process. To provide strong linkage between the process flowchart, FMEA and Control Plan, each process step called out on the flowchart is given an operation number. This number should be carried over to the PFMEA and Control Plan to identify the process steps.

Once the flow chart is established, a PFMEA must be developed following the method and format as defined in the AIAG FMEA manual. Each process step that is numbered and defined in the process flowchart should be addressed in the PFMEA. Defect modes and the resulting potential effects on the manufacturing or application of the finished product are established for each process step. For every defect mode, an RPN number is established that is the multiple of the ranking numbers for the *severity* of the defect, the likelihood of *occurrence* of the defect and the potential for defect *detection*. The highest RPN's must be addressed via a corrective action plan.

Control Plans

An essential element of the advanced quality planning process is the development of a part and process control plan.

The control plan is the key document for defining the type of controls, gauges, sample sizes, frequencies, documentation and reaction plans to be used for controlling each step of the process, from receiving to finished goods storage and shipping.

Suppliers are expected to develop control plans for each product (or product family-consult your Quality representative) shipped to Carling Technologies. The control plans are to be submitted with the PPAP package to the Carling Technologies Quality representative for review and approval. Control plans are to be maintained and updated to reflect any changes made and must be available to Carling Technologies upon request.

Control Plans are developed for the prototype, pre-launch and production phases of the process. The development, use and application of the control plan are explained in the AIAG Advanced Product Quality Planning manual.

The control plan focuses on the identification of process and product characteristics as they appear throughout the manufacturing process and defines the degree of control established for them. All critical and safety related characteristics must be addressed on the control plan. Because the control plan is dependent on the process flow chart and the PFMEA, these two documents must be developed prior to establishing the control plan.

Measurement Systems

Suppliers are expected to establish and maintain a measurement system that will provide adequate, accurate data to demonstrate the conformance of the product to the specified requirements. The system should provide inspection, measuring and test equipment necessary throughout the process. The measuring equipment must be controlled, calibrated at scheduled intervals, properly used and maintained.

Gage capability analysis must be performed on gauges identified in the Control Plan. Analysis methods are explained in the AIAG Measurement System Analysis reference manual. Attribute gauging should

be included in the calibration and analysis system.

When gage repeatability and reproducibility studies are used, the acceptance criteria are as follows:

- Under 10% - Considered acceptable
- 10% to 20% - An Improvement Plan must be established to bring it to 10% or less
- Over 20% - Unacceptable (Remove from service until an acceptable GR&R is achieved).

Continuous Improvement

Continuous improvement is a process for continuously finding improvements in our current standards through systematic analysis and development of creative solutions to implement and strengthen the production system.

Continuous improvement offers a fundamental approach to staying competitive and fostering a learning organization flexible enough to adapt to changing customer demands.

Every individual at every level of the organization has a role in continuous improvement. C.I. must be integrated and systematic in order to be sustained. This means that everyone has ownership and responsibility for continuous improvement.

Carling Technologies strongly encourages its business partners to adopt a continuous improvement strategy. Please remember, any changes to design/product/process/materials that have been previously approved must be approved by the Carling Technologies Quality function.

Product and Process Change Approval

When engineering changes or deviations are needed during production to meet Carling requirements, improve quality or reduce cost, Carling Technologies' suppliers must be prepared to secure necessary approvals prior to implementing the change in production. These approvals include PPAP and Engineering approvals.

The supplier will not make product or process changes or deviations, without prior written authorization from the Carling Technologies Engineering Department. The supplier will be held liable for all direct or indirect problems from any unauthorized change. This applies to distributors who may be purchasing from multiple sources. Only the source, from which the original PPAP, sample or production order was made, is approved for use. For raw material suppliers and distributors this applies to the source of materials. Carling Technologies must approve each and every source from which distributors and raw material suppliers will secure their input. It is preferable for our suppliers who are distributors or raw material suppliers to communicate with us upfront, so that if multiple sources will be used, that we qualify each of these sources early in the qualification process.

Any request for drawing changes, process changes or part deviation must be communicated in writing to the appropriate Carling Technologies buyer via Carling's QAF-670 form. The request should explain in detail; the requested change, the reason for the request, the cost/savings and benefits. This request may include, but is not limited to changes in:

- Manufacturing Location
- Material Processing
- Sequence of Processing, Manufacturing / Process methods
- Bill of Materials (BOM's) and their sources
- Design

- Quality Control Techniques
- Sub-Suppliers (including Tier 2 and Tier 3)
- Fixtures
- Gages
- Dies
- Tooling
- Packaging Changes
- Rework or any activity not included in the initial PPAP/validation
- RoHS, REACH, SVHCs or other environmental requirements
- Software changes

The request should include a qualification plan. The plan should include the reasons for the change so that Carling Technologies can understand the motivation for the change, benefits (Quality, Cost, Delivery, etc.) and implications of the change. This must include the additional special activities required to maintain quality and capacity / supply during and after the change period. The change documents shall also be used to confirm that the supplier has successfully implemented the change. We require 12 weeks minimum notification for any planned change so that we can fully validate the change. When unplanned events require immediate attention, please contact your buyer as soon as possible.

Delivery

Suppliers are required to achieve 100% on-time delivery (defined as the agreed to delivery date to the specified Carling Technologies facility), in the correct quantity, according to the Purchase Order requirements. Suppliers delivering less than 100% on time may be required to submit a corrective action plan to improve and meet the requirement. Suppliers may be responsible for all costs incurred by Carling Technologies as a result of late shipments. If the supplier is unable to ship product as scheduled, a late shipment notification via E-mail and/or telephone communication must be sent to the suppliers' designated Carling buyer, indicating the reason for the delay and the target date for supplying the product and a corrective action plan. For expedited shipments due to supplier issues, the supplier will assume responsibilities for the expedited portion of the shipping costs.

Material Rejection and Corrective Actions

If the supplier ships nonconforming products to Carling Technologies, the quality department will place the material on hold and notify the supplier immediately. The initial contact will be by phone and e-mail containing a Supplier Corrective Action Request (SCAR) to the designated supplier contact person.

Carling Technologies has simplified the Supplier Cost of Quality (S-COQ) system for defective supplier materials and products. It is Carling Technologies goal to present a consistent approach across the Supplier base and our various facilities. This consistent approach to S-COQ will include the following elements contained in the Supplier Corrective Action Request. Charge-back fees may be imposed on suppliers who are unable to replace, sort or inspect materials that have been agreed to be out of specification should the component/material in question be needed and the supplier can not replace or sort or inspect the materials.

Supplier Support Requirements will be addressed in 24 hrs. or less to address the following items:

- On-Site Sort and/or Rework with supervision
- Formal Corrective Action Response
- Return Goods Authorization
- Certified Replacement Stock

The primary intent of the SCAR is to heighten the awareness of repeatable quality issues and to help drive the implementation of permanent corrective actions. As always, Carling Technologies will support

the efforts your company is making towards these corrective actions.

Suppliers are required to use disciplined problem-solving methods to investigate and eliminate the root causes of defective product and implement effective preventive/corrective action. Carling Technologies requires the use of the Carling Technologies Supplier Corrective Action Report (SCAR) or other similar 8D format. The supplier response must include the following:

- Implementation of Containment Actions
- Implementation of Temporary Corrective Actions
- Determination of Root Cause (five whys for occurrence and five whys for detection)
- Implementation of Permanent Corrective Actions
- Verification of the effectiveness of actions taken

For all Carling Technologies facilities, Suppliers are required to initiate containment activities within 2 business days and final corrective action response within 10 business days after SCAR notification. Validation/Verification of the effectiveness of the correction action is required within 30 business days.

Counterfeit and Fraudulent Parts Control

Carling Technologies has modeled its Counterfeit and Fraudulent Parts Control process to comply with the SAE Standard AS5553 (Counterfeit Electronic Parts: Avoidance, Detection, Mitigation and Disposition). Carling requires all electronic parts will only be procured directly from the original manufacturer or through a franchised distributor. If a broker is needed, this will require Carling Technologies approval, the supplier is to notify the buyer and quality representative immediately so risk can be assessed and if necessary, an action plan can be implemented.

Carling requires all electronic suppliers and distributors that sell electronic parts to be compliant to the SAE standard AS5553.

Counterfeit and fraudulent parts do not only apply to electronic components, but to any product. The supplier has responsibility to ensure Carling receives known authentic parts / services without being used, refurbished or pulled parts. If they are used or refurbished, they shall be marked accordingly.

Supplier C-TPAT Program Participation

The Customs-Trade Partnership Against Terrorism ("C-TPAT") is a joint United States Customs-business initiative to build cooperative relationships that strengthen overall supply chain and border security to protect against the introduction of terrorists and weapons of mass destruction into the United States. Through this initiative, US Customs asks importers into the United States, such as Carling Technologies, to ensure the integrity of their security practices and communicate security guidelines to their business partners within the supply chain.

As part of the C-TPAT program, Carling Technologies is obligated to develop and implement a program to enhance security throughout our supply chain in accordance with C-TPAT guidelines. Carling Technologies must communicate C-TPAT guidelines to our suppliers, transportation providers, and other participants in the Carling Technologies supply chain and work toward building the guidelines into relationships with these companies. These guidelines, which are available for review, encompass the following areas: Procedural Security, Physical Security, Personnel Security, Education and Training, Access Controls, Manifest Procedures, and Conveyance Security.

In order to meet our responsibility, Carling Technologies may ask you to review the C-TPAT security recommendations appropriate for your business, to respond to a questionnaire designed to assess your conformance to those recommendations, and to agree to address those areas where your company's security program should be improved in order to conform to the recommendations. We appreciate your

cooperation in this important program.

Business Continuity Planning / Disaster Recovery

Suppliers are expected to develop a documented Business Continuity Plan, which would allow for the uninterrupted flow of parts/services to Carling.

Supplier Report Card

Carling Technologies will utilize a supplier Report Card to rate its suppliers. The Supplier Report Card is a comprehensive, cross-functional, evaluation of a supplier's quality performance. This rating is used to develop the supply base and improve the quality of the product supplied. It is also used to determine future business opportunities with a supplier.

The supplier quality performance rating will be generated monthly by Carling Technologies and forwarded to the supplier. Any supplier that has a conditional performance for three consecutive months or is unacceptable is required to submit corrective action. Failure to receive acceptable performance may result in removal of supplier from the approved supplier list. Unacceptable performance in any two consecutive periods could result in an on-site audit or the supplier may be requested for a face-to-face meeting to explain their plans for improvement.

Suppliers are measured using the following criteria:

- Quality (PPM, Reject Occurrences, Line Disruptions)
- Delivery
- Support (SCAR Response, Quality system)
- Commercial (Cost Saving)

Confidentiality

All information shared with suppliers is considered confidential. Disclosure of any Carling Technologies confidential material, outside Carling Technologies, will be considered grounds for immediate supplier dismissal and or legal action. Suppliers are expected to sign a binding confidentiality agreement.

Supplier Acknowledgement

We, the undersigned, acknowledge the receipt of this Supplier Quality Manual. We agree to submit our acknowledgement within 3 weeks of receipt.

By acknowledging receipt of this manual, we agree to all of its contents without exceptions or deviations. We also acknowledge acceptance of the contents contained in this Supplier Quality Manual (SQM) when accepting Carling Technologies' purchase orders.

We also agree that any exception or deviations shall be submitted and approved by Carling Technologies either in the section noted below or on an official company letterhead document.

Supplier Name/Address

Submitted by Name Title

Signature Date

Receipt date

Carling Signature

Exceptions / Deviations Noted below (please reference section where noted exceptions or deviations and why). Add additional sheets as necessary.