



SUMCO Phoenix Corporation

Supplier Quality Manual - SQM

For IATF 16949:2016

Effective April 1, 2018

World Class Performance Begins With You

As a supplier to SUMCO Phoenix Corporation, you play a pivotal role in positioning SUMCO for a strong future. We depend on you as well as your products and services every day to make SUMCO successful. We look forward to a close working relationship that is mutually advantageous. We have integrated our global Supply Chain – and you, our strategic partners – into our Quality Management Systems (QMS) in order to establish a shared mindset that will enable SUMCO to achieve our vision of exceptional quality and performance.

The result: our shared attainment of a high level of consistency and efficiency in managing our business and manufacturing products, has set new standards in our industry. Today, SUMCO plants consistently achieve world-class levels of operating performance, from quality and on-time delivery, to scrap control, inventory and customer complaint resolution. Confirming our commitment to world-class Quality Management Systems, all of SUMCO's Global plants and processes have achieved certification to the IATF 16949:2016 automotive standard. More about this standard can be found at IATF web site: <http://www.iatfglobaloversight.org/>.

As our valued supplier partner, you have been instrumental in helping SUMCO achieve world-class standards of operating performance for customers. Yet, therein is the challenge. It is up to all of us – as one SUMCO team – to maintain and improve upon the level of excellence already achieved. Part of SUMCO's compliance with IATF 16949:2016 is to work with our suppliers on their QMS development, with ultimate objective of becoming certified to IATF 16949:2016 Automotive QMS standard.

To a Higher Standard

We publish this SUMCO Supplier Quality and Customer Specific Requirements Manual as your roadmap in that effort. It provides SUMCO's documented performance guidelines for our current and future strategic partners. We expect that you will work in a spirit of collaboration with our plants to meet SUMCO's quality and delivery performance objectives. Moreover, we expect that your performance will demonstrate your commitment to achieving for SUMCO the same standards of excellence that our customers demand of us. Meeting these stringent customer requirements of world class quality begins with our strategic partners and the achievement of flawless results across the global supply chain.

Ethical Behavior

SUMCO's commitment to conducting ourselves ethically and with integrity in all business dealings has been embedded in our company's values. As well, SUMCO holds Supply Chain to the highest ethical standards, as we create a dynamic line of visibility from order entry to the on-time distribution of our products to the customer. We require our strategic partners to adhere to these same ethical standards. In your work with SUMCO, our expectation is that you will, without exception, adopt and apply our values and expectations as your own. To further demonstrate our commitment to ethics, environmental, and social responsibility, SUMCO has aligned our business practices with the Responsible Business Alliance (RBA) Code of Conduct (www.responsiblebusiness.org) to ensure that working conditions in the electronics industry are safe, that workers are treated with respect and dignity, that manufacturing practices are environmentally responsible, and that business is conducted with the highest of ethical standards.

Partnership

We look forward to your commitment and support in achieving our quality and management systems vision. For our part, we commit to providing you with clear expectations, mentoring, development and leadership that will enable you to deliver world-class performance. This document is intended to provide SUPPLIERS with SUMCO's expectations for excellence in quality and service. The ultimate goal is total customer satisfaction beginning with conformance to this document.



Gheorghe Lese
Quality Management Systems Lead Auditor

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1. Quality Policy

It is the quality policy of the SUMCO Group to deliver world class quality and reliability through anticipation of future needs; continuously improving products, processes, technology and service for total customer satisfaction.

2. Scope

This document applies to the direct suppliers of SUMCO Phoenix Corporation (SUMCO or SPX) who receive this document directly from SPX and are requested to acknowledge its receipt. These are the suppliers to SUMCO US based operations in Arizona and New Mexico.

3. Reference Documents

The latest edition of the following AIAG (<http://www.aiag.org/>) / IATF (<http://www.iatfglobaloversight.org/>) manuals as well as the current ratified revision of the Automotive Standards (ISO / IATF) are used to develop this Supplier Quality Manual. In addition see SUMCO's supplier quality documents on the SUMCO web site.

- 3.1. SUMCO Supplier Management Documents: http://www.sumcousa.com/about_suppliers.htm
- 3.2. Advanced Product Quality Planning and Control Plan (APQP)
- 3.3. Measurement Systems Analysis (MSA)
- 3.4. Potential Failure Mode and Effects Analysis (FMEA)
- 3.5. Production Part Approval Process (PPAP)
- 3.6. Statistical Process Control (SPC)
- 3.7. ISO 9001:2015 and IATF 16949:2016

4. Responsibility

- 4.1. Suppliers are responsible for meeting the Supplier Quality Management requirements. Failure to meet these requirements may result in the loss of existing and/or future SUMCO business, in addition to reimbursement of the cost to SUMCO resulting from those failures.
- 4.2. Suppliers shall ensure that their critical material/service suppliers comply with the requirements of ISO 9001 and / or IATF 16949. **Minimum Automotive Quality Management System Requirements** for Sub-Tier Suppliers as defined by the IAQB can be found here (make sure you refer to the latest revision of the document!): <http://www.iatfglobaloversight.org/wp/wp-content/uploads/2016/12/Minimum-Automotive-Quality-Management-System-Requirements-for-Sub-tier-suppliers-2ndEd-rev2.pdf>
- 4.3. Suppliers shall adopt the goals of Zero Defects and 100% On-Time Delivery to SUMCO. Suppliers shall understand that any established quality target represents an opportunity for further improvement towards a supply of components / materials meeting the Zero Defects requirement.

5. Training and Competency

5.1. Competence

As a supplier to SUMCO you shall:

- a) define the competency requirements of person(s) that affect the performance and effectiveness of your quality management system (for example, job descriptions);
- b) ensure that these persons are competent on the basis of appropriate education, training, or experience;
- c) where applicable, take actions to achieve competence, and evaluate the effectiveness of the actions taken;
- d) provide evidence of competency.

NOTE: Applicable actions can include, for example, the provision of training of, the mentoring of, or the re-assignment of currently employed persons; or the hiring or contracting of competent persons.

5.2. Training

5.2.1. The Supplier shall document the training process(es) to achieve and maintain competency of all personnel performing activities affecting conformity to product and process requirements. Personnel performing specific assigned tasks shall be qualified on those tasks with particular attention to satisfying customer requirements.

5.2.2. The Supplier shall provide on-the-job training (which shall include customer requirements training) for personnel in any new or modified task affecting conformity to quality requirements, internal requirements, regulatory or legislative requirements; this shall include contract or agency personnel. The level of detail required for on-the-job training shall be commensurate with the level of education the personnel possess and the complexity of the task(s) they are required to perform. Persons whose work can affect quality shall be informed about the consequences of nonconformity to customer requirements.

5.2.3. Records of training and certifications shall be retained and available for inspection.

6. Quality Systems Requirements

6.1. ISO/IATF Quality Standards

All suppliers of critical products / services provided to SUMCO that affect customer requirements (Class A and B materials) must achieve certification to ISO 9001 by a third-party certification body bearing the accreditation mark of a recognized IAF MLA (International Accreditation Forum Multilateral Recognition Arrangement) member and implement automotive core tools for your manufacturing process that will demonstrate: Failure Mode and Effects Analysis (FMEA), Measurement System Analysis (MSA), and Statistical Process Control (SPC), Control Plans (CP).

Part of SUMCO's compliance with IATF 16949 is to work with our suppliers on their QMS development, to become certified to IATF 16949 Automotive QMS standard.

SUMCO may exempt certain organizations from ISO 9001:2015 and/or IATF 16949:2016. This exemption applies to those organizations whose automotive business is of such low significance that they will not register to ISO 9001/IATF16949 but are still needed as a supplier. Periodic audits will be conducted of exempted suppliers to assess overall capability to provide consistent quality products for the volume required.

7. Government Regulatory Compliance

7.1. Hazardous Materials

The supplier will annually provide a current SDS to the SUMCO facility receiving any Hazardous Material or parts/components containing Hazardous Materials. All material classified as hazardous by local, state or federal government regulations will be identified, documented, handled, packaged, and shipped as required by applicable laws, rules and regulations.

7.2. Restricted Substance Management Standard (RSMS)

SUMCO is committed to product compliance, quality assurance, health and safety, and environmental management as required by local, state, federal and customer pertaining to chemical substances. Product data submissions and certifications should be made in accordance with the International Material Data System (IMDS). This policy supplements but does not supersede the responsibility of the supplier to comply with laws and regulations for the receiving SUMCO location(s). It is the duty of all suppliers of product to SUMCO to also comply with the Global Automotive Declarable Substances List (GADSL).

7.3. Business Practice – RBA / Ethics – C-TPAT

Suppliers shall comply with all applicable governmental regulations. These regulations relate to the health and safety of the workers, environment protection, toxic and hazardous materials, and free trade. Suppliers should recognize that the applicable government regulations might include those in the country of manufacture, as well the country of sale. For products brought into the United States, all federal standards must be met. International suppliers should be Customs Trade – Partnership Against Terrorism (C-TPAT) or country equivalent certified.

TSCA (Toxic Substance Control Act) certification and any other applicable laws or regulations shall be completed as required.

In addition suppliers should understand and ensure compliance with the business practices outlined by Responsible Business Alliance (RBA) - www.responsiblebusiness.org.

The United States government requires that SUMCO and our suppliers importing parts and/or materials into the United States utilize pallets that have been certified as having been constructed from wood that has been treated / fumigated. The pallets need to bear a seal, showing certification. The US requirement affects all inbound shipments into the United States.

7.4. Conflict Minerals

SUMCO is committed to sourcing responsibly and considers mining activities that fuel conflict as unacceptable. SUMCO's efforts related to conflict minerals are aligned to the work of the Responsible Business Alliance (RBA). The RBA's work includes the Conflict-Free Smelter Program and the Conflict Minerals Reporting Template. Suppliers are required to meet this requirement per end customer requests. Traceability data must be maintained and accurate records must be kept for 5 years per the Organization for Economic Cooperation and Development (OECD) due diligence guidance for responsible supply chains of minerals from conflict-affected and high-risk areas and as required by Section 1502 of the Dodd-Frank Act.

8. Environmental Protection - Guidelines

SUMCO is convinced that the future and permanent protection of our environment, land, water, and air can only be achieved through the joint efforts of Industry, Government and Society. SUMCO will strive for continual improvement in our environmental performance through the development of new products, processes and working methods. In doing this, we strive for economical use of raw materials, energy, water, and other goods; and will fully consider the life cycle of our products through production, use and disposal. The environmental impact of our products during manufacturing covers both the manufacturing at SUMCO and those of our suppliers. This means that both we and our suppliers have to perform our activities such that the

impact of those activities on the environment is reduced to a minimum. We therefore expect from our suppliers an active engagement in environmental concerns and the establishment, and adherence to, an environmental management system such as ISO 14001:2015. This does not release the supplier from complying with all relevant national and international regulations. Registration to ISO 14001:2015 is strongly recommended.

The techniques and methods below are those that we believe to constitute the prerequisite to reach the above-mentioned environmental targets:

- Written guidelines regarding the environmental performance,
- Regular review of production, maintenance, supply, and disposal processes and products to determine their environmental impact,
- An emergency plan,
- Definition of targets to improve environmental protection and documentation of their fulfillment, which includes:
 - Safeguarding of resources (raw materials, energy, water),
 - Prevention and reduction of environmental pollution,
 - Minimization of waste and rejects,
 - Reduction of expendable packaging,
- Compliance with all government regulations regarding materials and substances,
- A recycling concept/program.

9. Supplier Capacity Analysis

- 9.1. Capacity verification is an integral and mandatory part of IATF 16949 and our Automotive Customers. The objective of the SUMCO Supplier Capacity Analysis is to verify the supplier's production system can support the on-going quality and quantity demands requested by SUMCO. SUMCO may request supplier capacity analysis upon new part introduction, increased demand or as an annual review.

10. Material Identification and Traceability

- 10.1. You must be able to identify a specific lot, batch or volume, traceable through all stages of production of the final product, packaging and delivery. This must include any out-sourced operation. Injection molded product must have cavity identification.
- 10.2. You must also record the raw material/component lot/batch number assigned by the sub-supplier that is used to produce each specific lot/batch/volume of final product.
- 10.3. The specific lot/batch/volume number shall be recorded on all documentation pertaining to the delivered product. This documentation may include, but are not limited to:
- Material lot number
 - Job set-up sheet
 - Production log
 - Inspection/testing methods
 - Control charts
 - Traveler tags
 - Expiration date of delivered products

11. Statistical Process Control

If requested, the supplier should provide evidence of control and on-going capability as required. SPC monitoring is required where applicable for prototype, preproduction trial runs, production and continuous improvement monitoring. Minimum capability values are Ppk of 1.67 for the pre-production trial runs and Cpk 1.33 for production per AIAG Guidelines.

Evidence of control and on-going capability may be required for submittal on a regular basis.

Summaries of SPC data are acceptable, when requested.

12. Monitoring and Measurement Systems

- 12.1. The organization shall determine and provide the resources needed to ensure valid and reliable results when monitoring or measuring is used to verify the conformity of products and services to requirements.
- 12.2. The organization shall ensure that the resources provided:
 - a) are suitable for the specific type of monitoring and measurement activities being undertaken;
 - b) are maintained to ensure their continuing fitness for their purpose.
- 12.3. The organization shall retain appropriate documented information as evidence of fitness for purpose of the monitoring and measurement resources
- 12.4. Statistical studies shall be conducted to analyze the variation present in the results of each type of inspection, measurement, and test equipment system identified in the control plan. The analytical methods and acceptance criteria used shall conform to those in reference manuals on measurement systems analysis. Other analytical methods and acceptance criteria may be used if approved by the customer.

13. Risk Assessment

SUMCO requires its suppliers to have a risk assessment process in place to identify risks that can affect the ability to meet supply demands and commitments to SUMCO. The risk assessment process is expected to measure, monitor, analyze and respond to identified risks to improve performance and reliability.

At a minimum suppliers shall have in place a business continuity assessment and plan as well as FMEA for the product realization process (receiving to shipment of finished goods – inclusive).

14. Non-Conforming Products, (SUMCO or our Customer) Complaints and Corrective Actions

14.1. **Complaint Management**

- 14.1.1. For any case of non-conforming products and/or (SUMCO or SUMCO's Customer) Complaints the Supplier shall have a complaint handling flow process in place that allows the Supplier to respond within the time frame defined in the table below.
- 14.1.2. The Supplier shall have a procedure and appropriate process in place to take all necessary corrective and preventive actions for all rejects or non-conforming products received by SUMCO. The defined containment action shall stay in place until the effectiveness of the implemented corrective action has been verified successfully.
- 14.1.3. The Supplier shall use a systematic analysis method with risk assessment such as 8D analysis. For each Supplier incident, reports shall be submitted to SUMCO. The Quality and timing of the submitted reports shall meet 8D Quality requirements per Table 1 below to ensure containment and to minimize cost / interruption to SUMCO and SUMCO's customer. A 5-Why analysis is a mandatory SUMCO requirement for incidents that result in product recall, customer complaint, production interruption or scrapped product in SUMCO or

SUMCO's customer production lines.

Table 1

Time Table:

8D Disciplines	Required response time in calendar days
D2: Problem description	Released within 24 hrs.
D3: Implement containment actions	
D4: Define root cause(s)	Released within 48 hrs.
D5: Choose permanent corrective action	Released within 5 days
D6: Implementation of permanent corrective action	
D7: Action(s) to prevent recurrence	Per agreed plan. When > 5 days: weekly updates
D8: Prevention of repetition	

14.1.4. Irrespective of the instance level, the Supplier shall take all necessary short-term actions (e.g. screening) at its plants, at the sub-supplier's plants, – upon request by SUMCO - also at SUMCO plants, and if required at the SUMCO's Customer's plants. These actions shall guarantee continuous delivery of defect free products.

14.2. Problem Solving Methods

14.2.1. Supplier shall have trained (preferably certified) personnel with the ability to quickly and permanently resolve product and process issues using data driven problem resolution tools and techniques. Problem resolution must be conducted using a defined, structured process like the 8D.

14.2.2. Discipline process, 3x5xWhy, Six Sigma DMAIC (Define, Measure, Analyze, Improve, and Control) or any other process that includes verification of the root cause and validation of corrective action effectiveness shall be implemented by the supplier.

14.2.3. Data driven techniques in accordance with APQP should also be used during the product / process design, verification and validation phases in order to prevent problems with new or changing products and processes. Such data driven tools and techniques include but are not limited to: Failure Mode and Effects Analysis (FMEA), Measurement System Analysis (MSA), Statistical Process Control (SPC), Design of Experiments (DOE) and Taguchi Methods.

14.3. Deviations for Non-Conforming Material

It is the policy of SUMCO not to accept product that does not meet the requirements of applicable drawings and specifications. Requests for concessions on non-conforming product must be submitted to SUMCO for approval prior to shipment.

Any such requests shall be accompanied by a thorough explanation of the root cause(s) for the non-conformance, the actions taken to eliminate the root cause(s) and to prevent reoccurrence.

SUMCO will review the request for concession via our change management process and respond to the supplier with written (email) approval / denial of the request from SUMCO procurement / supplier management.

15. Changes to Approved Products and Processes (PCN)

- 15.1. Supplier and sub-supplier(s) are not to make any unauthorized changes to a product (e.g. the product specification, material type or quality used to make the product, sub-product specifications or assemblies, location of manufacture,) or the process method used to produce a product that has been previously qualified.
- 15.2. When considering a change, the Supplier shall make a risk assessment of the effects of an intended change on the supply and product requirements of Customer by means of an FMEA or similar techniques
- 15.3. If the results of the risk assessment indicate an impact to the product or process used to make the product, the Supplier shall send a Process Change Notification (PCN) with request for approval in a written form at least 12 months before the intended change is implemented, or at an earlier instance in case qualifying the change can be reasonably expected to take more time.
- 15.4. Table 2 identifies change types / categories that require SUMCO notification and approval at least 12 months before the intended change. Suppliers must also notify SUMCO in advance of other changes not listed per Table 2, that can impact form, fit, function, impact SUMCO's products or impact on SUMCO's customer, to agree on the time required before the change is implemented. When in doubt, ask. Suppliers considering a change must understand:
- 15.5. SUMCO must approve the change in writing prior to change implementation. Supplier must provide SUMCO with data and details justifying the change.
- 15.6. SUMCO may audit the supplier manufacturing to assess the change management and other elements as identified in the SUMCO Supplier Material Consistency Assessment Tool (SMCAT) audit program.
- 15.7. Suppliers shall not deliver any product with a change applied without prior acceptance by SUMCO in accordance with this section 15.
- 15.8. The change classification level is defined as follows:
 - Class B: Change that causes significant impact on product
 - Class C: Change that causes minor influence on product
 - Class D: There is no influence on the product

15.9. Types of changes to consider notifying SUMCO:

Table 2

Change Item	Change Request
Raw Material Changes (Sub-Supplier change)	<ol style="list-style-type: none"> 1) Material source supplier change 2) Systematic Production change 3) Change in specification 4) Subcontractor change
Spec/Type/Design change	<ol style="list-style-type: none"> 1) Parts/Materials properties change 2) Parts size/structure change 3) Spec/Function/Properties change 4) Part / product termination (end of life)
Process flow change	<ol style="list-style-type: none"> 1) Process system change (Flow/Machine type/Equipment type/Prolong process characteristic or parameter change/Mold change, change from manual to automatic, etc.) 2) Process control methods change 3) Plant/Working site environment change (Plant/Process line expansion or change, Process transfer, Layout change, Extensive planned shutdown and restart, etc.)
Test/ Inspection change	<ol style="list-style-type: none"> 1) Test/Inspection methods change 2) Test/Inspection tool, machine or instrument change 3) Change of the Testing Specification 4) Limits or parameters in the product inspection records
Transport/ Packaging change	<ol style="list-style-type: none"> 1) Transport or Packaging methods change, transport company change, etc. 2) Packaging materials design/ change (grade, type, color) 3) Labeling changes

15.10. [If you're unsure as to the impact of a given change please consult with SUMCO's](#) procurement / supplier management team who will get you in touch with the experts to assist in understanding the impact and level of testing / data / qualification that will be required to move forward. Even if the proposed change is within specification or normal design parameters but is outside of historical settings the change severity may not be clear. SUMCO may be able to test the impact on the product. This will not be understood until discussed with SUMCO. SUMCO will assist you in characterizing the change criticality. SUMCO does not want to discourage a Suppliers effort to improve it manufacturing process, procedures,

testing methods, safety, environmental impact or costs, so let us help ensure a win-win symbiotic relationship.

- 15.11. Lack of written response from SUMCO does not constitute acceptance of the change/termination of products.
- 15.12. Supplier has to receive PCN acceptance / release notification from SUMCO Phoenix (SPX). Deliveries of changed products and / or termination of delivery must not start prior to a written approval of SPX.
- 15.13. The Supplier is obligated to identify the first shipment including the change with proper identification, mutually agreed upon between the Supplier and the receiving SPX location.

16. Identification and traceability

- 16.1. The aim of traceability shall be to minimize the impact and consequences of quality concerns. The Supplier shall maintain an appropriate traceability system. All product realization records and results of the manufacturing process shall be linked to a unique identification number. These records and results (data) shall be available and accessible, and upon request, delivered to SUMCO within one working day.
- 16.2. Supplier is required to utilize and ship material in order of manufacturing sequence:
 - FIFO: 'First In - First Out' basis
- 16.3. Forward Trace (Containment) - Forward Trace is the collection of information needed to identify suspect products already delivered (for containment) in order to minimize the quantity of non-conforming products - as early as possible – in SUMCO's possession or shipped to SUMCO's customers.
- 16.4. Backward Trace (Containment) - Backward Trace shall be the collection of information required to identify suspect material at the source and in the Supplier possession.
- 16.5. The traceability system shall ensure that all finished goods and sub-products utilized in the product realization process can be traced back to the manufacturing date, shift, equipment, tool number, personnel and the respective inspection/conformity results. Supplier shall perform a risk assessment of the best lot size that minimizes internal as well as the external risks; minimizes containment in the event of a deviation and seek agreement with SUMCO to determine shipment lot size

17. Records

- 17.1. Suppliers shall retain product realization records, documents and product samples (as required) for the time the part is active (a part is active as long as it is being supplied to the customer for original or service applications) in production plus a minimum period of five years. At a minimum, but not limited to, the following documents, data, samples shall be retained:
 - a) Raw Materials
 - b) Production
 - c) Shipment
 - d) Data – SPC, lot data, inspection reports, test results, etc.
 - e) Sub-Supplier selection and data related to supplied products / services
 - f) Training / Certification
 - g) Calibration / Metrology / MSA

18. Incoming Material Validation

The overall SUMCO requirement is 'Zero Defect' deliveries.

Supplier is responsible for all aspects of product quality assurance; therefore SUMCO intends to not perform incoming inspection. Inspection of delivered products is only done on:

- Logistics: order handling, receiving activities
 - Visually: assessment of packaging and labelling defects as well as contamination to outer packing
 - Maverick products / products with deviation identified as agreed to by SUMCO
 - When there is a suspected quality issue with incoming products
 - Random incoming inspection as required
- 18.1. Supplier shall load all material CoC / CoA data to SUMCO SQM (SPC) system unless a written deviation has been provided to supplier. Data shall be loaded prior to delivery of material to SUMCO. Preferably data will be loaded prior to shipment to prevent discrepant material shipments.
 - 18.2. Discrepant materials (damaged goods, upon use identified issues, product quality, etc.) – handle as identified in the complaint management section of this document. Supplier is expected to respond in accordance with Table 1.
 - 18.3. Shelf-life, stability of product parameters: Products as delivered to SUMCO are required to meet the purchase specification throughout the Shelf-life.
 - 18.4. SPX shall not be obliged to carry out a more detailed incoming inspection. Furthermore, SPX can decide on additional incoming inspection which will be defined in a dedicated material specification and as agreed upon with the supplier. Supplier shall supply any information on request to make this possible. Information shall not be withheld unreasonably. Whenever SPX notices a defect, the Supplier shall be informed accordingly in writing.

19. Supplier Audits

- 19.1. SUMCO employs several audit tools in its Supplier Development Process such as assessment of a potential new supplier that desires to enter a business relationship with SUMCO, New Supplier Self Evaluation Questionnaire, New Product Readiness audits, New Supplier Operations audit, final production validation audits, and Supplier Material Consistency Assessment Tool (SMCAT).
- 19.2. Any supplier of production material to SUMCO may be requested to participate in one or more of the audit types. Audit frequency will be determined by SUMCO's internal supplier performance metrics. When notified of a planned audit, it is recommended the supplier conduct an internal audit before the SUMCO audit team arrives.
- 19.3. Issues identified during supplier assessment, audits, performance or product quality may result in SUMCO working with the supplier to resolve identified issues. Suppliers are expected to actively engage and resolve any issues / gaps identified.
- 19.4. SUMCO may, at its discretion, utilize independent auditors. These individuals represent SUMCO and will audit the supplier's processes to establish conformance to validated quality systems.

20. Sub-Supplier Management

- 20.1. Suppliers of SUMCO shall have capabilities to manage their respective suppliers, including suppliers' Quality Management Systems disciplines and periodic auditing. SUMCO, when it deems necessary, will audit the critical processes of the sub-tier suppliers to ensure that proper controls are in place throughout the entire supply stream. Suppliers of SUMCO shall ensure they audit and manage critical processes at their suppliers.
- 20.2. Sub-tier suppliers have a tremendous impact on the quality of the final component. Whether they provide raw materials, services or sub-components, their influence is so profound that it is critical for each of SUMCO's suppliers to have a supplier management system in place. This system shall include a function that tracks and reports on their supply base quality and delivery performance. Suppliers shall be able to demonstrate that they manage their suppliers' issues through documented corrective actions and verification activities.
- 20.3. Supplier Facility Access:
By prior notice, suppliers shall allow SUMCO and SUMCO's customer's access to both their facilities and those of their suppliers, for the purpose of evaluating parts, processes, documents (i.e., FMEA, Control Plan, Instructions, records, etc.), methodologies, and systems used in manufacturing of SUMCO's products.

21. Contingency Plans

Supplier is required to pro-actively prepare, test and execute contingency plans (e.g. IT outages, utility interruptions, labor shortages, transportation disruptions, sub-supplier quality or delivery issues, key equipment failure, unexpected shutdowns and field returns) to reasonably protect SUMCO's supply of product in the event of an emergency, excluding Force Majeure.

Supplier shall notify SUMCO immediately in the event of an actual event, the expected impact and duration of the event.

Supplier shall have a contingency plan in place that would be implemented in the event of a deviation from normal business processes. Contingency plans shall be documented and shall include, at a minimum, key internal/external contacts, containment actions and recovery steps to return to normal operations and / or providing SUMCO with Quality Product from a supplier certified alternate location upon approval by SUMCO.

22. Continual Improvement

SUMCO defines supplier continual improvement as a comprehensive approach to overall quality and business management system improvement. Suppliers should, at a minimum, develop and present plans (upon request) that improve internal systems that support flawless launching of new products / components / sub-systems, value enhancements and cost competitiveness, and achievement of agreed upon quality targets, with a plan to achieve zero defects in support of on-going operational excellence.

This plan should include lessons learned from previous new product launch, cost and quality issues, and how these lessons have been incorporated into respective continuous improvement activities.

SUMCO recommends suppliers use the fundamentals outlined in IATF 16949 as a platform for organizing continuous improvement plans.

23. Business Reviews - Supplier Scorecards - Quality Performance

- 23.1. The expectation is that you provide parts and services that have zero defects and result in zero customer claims. SUMCO will rate its suppliers based on the SUMCO scorecard. This scorecard will include, at a minimum: PPM, on-time delivery, any expedited shipping required, corrective actions required and response time, and existing quality certifications.
- 23.2. Your quality performance will be taken into consideration when we make sourcing decisions.
- 23.3. On an annual basis or as otherwise determined as appropriate, SPX Commodity Team Managers will schedule business reviews of key suppliers. The purpose of these meetings will be to review items such as:
 - Supplier performance
 - Progress toward established goals
 - Review of open/unresolved issues
 - Goal setting
 - Technical issues
 - Cost-reduction opportunities
 - Market conditions
 - Future requirements

These reviews will be critical to forming and maintaining strong relationships with our key suppliers. We want to encourage suppliers to communicate openly with us at these periodic reviews so that we jointly understand each other's overall goals and barriers.

Additional details related to these requirements can be found here:

http://www.sumcousa.com/about_suppliers.htm

REVISION HISTORY:		
Date	Revision #	Description
April 1, 2018	0	Origination of document in alignment with automotive / IATF supplier management protocol
February 26, 2020	1	Replaced ISO14001 with ISO14001:2015 and replaced Michael West signature