DARAMIC

Daramic
Supplier Quality Manual

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1.0 Introduction

The purpose of this manual is to define the requirements for doing business with DARAMIC LLC (DARAMIC LLC and its affiliates shall be referred to herein as "DARAMIC"), and to outline processes used to ensure that our supply base is continually improving to prevent quality and delivery disruptions, provide the lowest optimized cost, and required level of service.

Implementation of the processes outlined in this manual will not only reduce risk of supply chain disruptions, but will also help DARAMIC and its suppliers to increase their competitive industry position and ensure our continued success.

Scope

The requirements of this manual apply to all suppliers of finished goods, production materials (raw or components), as well as outside processes, where applicable. Products not incorporated into finished goods sold by DARAMIC are typically not covered by this manual. Please direct any questions regarding the applicability of the requirements contained in this manual to your DARAMIC contact(s) for resolution. This document defines the general quality and environmental requirements for all Suppliers who design or manufacture products for DARAMIC or provide a service to DARAMIC. A Supplier's acceptance of a purchase order from DARAMIC for products or services indicates acceptance of the requirements in this document.

Responsibility

It is the responsibility of the supplier to review, understand, and satisfy the requirements of this manual and any other applicable requirements as part of the acceptance of purchase orders from DARAMIC. The supplier should obtain any referenced documents to ensure full compliance with all applicable requirements.

DARAMIC will maintain and document changes in the general quality requirements included in this manual. Revisions to the DARAMIC Supplier Quality Manual will be available through DARAMIC's Quality and Purchasing Departments.

1.1 DARAMIC Company Overview

Established in 1930 as the Dewey & Almy Corporation, USA with the development of the rubber separator, DARAMIC went on to invent the Polyethylene (PE) separator in Owensboro, KY plant in 1969 and this plant became the first DARAMIC location to manufacture PE separators in 1972. DARAMIC began to expand its global manufacturing footprint to service customers in all areas of the globe and to continue to lead the way in developing new and innovative technology for the lead acid battery market.

DARAMIC is committed to delivering unsurpassed expertise in advanced separator technology. Our Center of Innovation in Owensboro, Kentucky, is the central hub for our scientists, industry experts and service technicians – all of whom have valuable industry-specific experience DARAMIC's future depends on continued innovation, maintaining advanced business practices and satisfying our customers in an ethical and uncompromising manner. Working with suppliers that support these objectives is a critical element of our future success.

With headquarters in Charlotte, NC, USA, DARAMIC operates nine manufacturing facilities. Each facility is strategically located, ensuring continuity of supply, short lead times and fast service. These plants include Owensboro, Kentucky – USA, Selestat – France, Norderstedt – Germany, Baddi & Gujarat – India, Tianjin & Xiangyang – China, and Prachinburi – Thailand.

DARAMIC battery separator solutions are included in the following applications:

- Original Equipment
- Aftermarket Automotive
- Heavy-Duty Truck
- Agricultural
- Marine
- New Hybrid Vehicle Technologies
- Telecommunication Systems
- Electric Utilities
- Railroads
- Photovoltaic for Solar Power Applications
- Uninterruptible Power Supply (UPS)
- Lift Trucks
- Mining
- Other Commercial Vehicles

1.2 DARAMIC's Values

DARAMIC works with suppliers who deliver the best quality, value and service while exhibiting a high commitment to ethical conduct and social accountability. DARAMIC selects business partners who follow workplace standards and business practices that are consistent with our company's key values as provided below.

Suppliers should demonstrate compliance with corporate ethics. To the extent possible, we endeavor to ensure or suppliers' commitment to the highest quality of product and service and their compliance with relevant laws and regulations, particularly those that prohibit bribery and the use of conflict minerals and that prevent human rights violations such as compulsory labor, child labor, human trafficking and slavery. We will share the Asahi Kasei Group's policy on such matters with suppliers and request their complete compliance.

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VALUES

SAFETY
- We take ownership in creating a safe and healthy working environment for our employees and our community.

EXCELLENCE
- We exceed expectations.
- We are creative and innovative by adding value through unity and synergy.

PARTNERSHIP
- We actively create an environment that is transparent and sincere.
- We work collaboratively to build consensus and resolve conflicts in the achievement of common goals.
- We truly appreciate the uniqueness of each and every individual.

1.3 Strategic Sourcing Mission & Vision

DARAMIC follows a Strategic Sourcing process to optimize supply chain activities by coordinating and leveraging the procurement of raw materials, indirect purchases, and services from a select group of preferred suppliers. DARAMIC Strategic Sourcing provides a cohesive inbound supply chain that maximizes the value of all products and services procured by our worldwide locations, providing exceptional global operating efficiencies and innovation.

1.4 Quality Policy

DARAMIC Technologies is committed to continuously improving our management systems, business processes, products, and services by prioritizing, focusing, and executing our business targets and objectives.

DARAMIC'S vision focuses on "Battery Separators re-invented" and includes the mission of serving the world as an innovation leader while fulfilling our customer's needs for green energy storage. This commitment includes support of start/stop technology (automobiles & trucks), support of industrial energy storage for infrastructure applications, commitment on all levels to improve the quality management system, and commitment of DARAMIC employees to evaluate and reduce the risk that may impact the quality of our processes, products, and services.

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2.0 Quality System Requirements

2.1 Quality Systems:

DARAMIC recommends supplier accreditation to an industry recognized quality standard minimum such as the ISO 9001 current version. Accredited third party registration is highly recommended and will be a factor considered in the award or continuation of business with DARAMIC. DARAMIC encourages compliance to ISO 14001 (Environmental) standard as well.

For strategic raw materials, either an on-site or self-audit will be required for potential new suppliers. Audit may be required for other raw materials as decided by the local DARAMIC site.

DARAMIC will work with each supplier to develop Purchase Specifications for all critical materials. These specifications will designate requirements for physical & dimensional properties, chemical properties, packaging & labeling, traceability & record keeping, environmental, safety, and health, and certification of products. Fulfillment of a purchase order that references a specific Purchase Specification connotes that a supplier acknowledges compliance to the given Purchase Specification. The Purchase Order will reference the Specification as well as the revision level. It is the supplier's responsibility to verify that they have the latest revision level.

2.2 Supplier Quality Targets

The DARAMIC target for suppliers is Zero Defects/0 PPM. For Process performance (PpK), a minimum of 1.33 or higher is acceptable with efforts made toward continuous improvement. These improvements attained by rigorous quality planning and monitoring of key attributes with an emphasis on defect prevention.

2.3 Control Plans & Sampling

Control Plans are a written description of the dimensional measurements, material & functional tests and other product/process controls implemented to control the production process. The Control Plan is a living document and should be updated regularly as lessons are learned during the production cycle. Control Plans should include inspection defining the measurement systems to be used, and the sampling frequencies and number of samples to be inspected or tested. Inspection shall also include the test data, product certifications, and frequencies of submission to DARAMIC. Control Plans can be utilized as work instructions on the production floor, and as training aides for production members.

2.4 Quality Planning:

Suppliers must follow a New Product Development process. Typical models are Stage Gate or APQP. Recommended phases include:

- Plan and define the program specific to the product and Daramic 's needs and requirements
- Product Design and Development Verification, where applicable.
- Process Design and Development Verification
- Product and Process Verification
- Product Launch, Feedback, Assessment and Corrective Action.

2.5 Quality Records:

Suppliers must retain all quality system records for a minimum of 5 years, unless otherwise specified to be longer. This includes records of process control and traceability, which are vital to any required failure analysis.

2.6 Material Traceability:

As applicable/specified in the contract, the supplier is required to establish a lot traceability system that tracks raw material lot / batch numbers to the finished product lot / batch numbers including traceability to inspection records.

Process performance documentation shall be made available for products sold to Daramic upon request for problem solving and continuous improvement activities. Daramic will treat this information as proprietary, and not share with any third parties.

3.0 Supplier Selection & Approval

3.1 Supplier Selection & Approval

DARAMIC uses a cross functional process to select and approve suppliers. During the process, DARAMIC looks for suppliers that show strong quality processes, are financially viable, provide exceptional customer service, and are cost competitive.

During the selection process, DARAMIC may require the following:

- Supplier Profile completed (Self Survey form to be provided by DARAMIC)
- Signed Non-Disclosure Agreement (when applicable)
- Request for Quote (Quote based on DARAMIC's requirements)
- Supplier Self/On-Site Quality Assessment – Based on the critical nature of the business

DARAMIC may elect to have the supplier complete a Self-Quality Assessment and/or complete an on-site assessment. (Assessment form to be provided by DARAMIC)

Financial Analysis – DARAMIC will determine financial viability based on the information provided in the Supplier Profile. Further analysis, including the use of Dunn & Bradstreet, may be used in the financial viability decision.

The decision to select a supplier can include many cross-functional team members. Some suppliers will be accepted with conditions that must be addressed before award

of business. Upon approval, suppliers will be added to the approved supplier matrix. Suppliers may also be removed from the approved supplier if the supplier fails to meeting rating requirements as defined in the supplier rating process.

3.2 Sub-contractor Management:

Supplier may not engage any subcontractor without the prior written authorization of DARAMIC. It is the responsibility of the supplier to manage the quality of all sub-contractor operations. All requirements described in this manual are also to be applied for sub-contractors. All documents, registers and audit reports must be kept available by the supplier and/or submitted for DARAMIC evaluation when required. The use of DARAMIC or DARAMIC Customer designated sources, including tool/gauge suppliers, does not relieve the organization of the responsibility for ensuring the quality of purchased products.

4.0 Requirements Communication

4.1 Requests for Quote (RFQ)

All RFQ will typically contain all necessary documents for full quotation, including:

- Engineering drawings
- Technical specifications
- PPAP submission requirements
- Physical samples when available

The supplier must contact DARAMIC in the event the RFQ materials are illegible, unclear, or missing key information that is necessary for quotation. Later amendments or changes to supplier's commercial proposals, due to any reason, will not be accepted.

4.2 Supplier Quality Manual

General supplier requirements are contained within this DARAMIC Supplier Quality Manual. Supplier compliance with this manual is a requirement of doing business with DARAMIC. Performance of suppliers in meeting these requirements will be assessed on an ongoing basis, and will be a factor in future supplies strategy. Additionally PO's from DARAMIC may contain additional requirements.

4.3 Purchase Orders (POs)

Product specific requirements may also be communicated on POs. Product drawings stated on PO's may specify characteristics that affect the fit, form, and function of the product. Each PO should be followed by an acknowledgement from the supplier confirming for each part number, the price agreed, quantity and delivery date. Product configuration will be specified by the prints, in addition to the configuration

specified by the part number. Acceptance of the PO is an acceptance of the standard Terms and Conditions of the PO.

4.4 Packaging & Logistics Requirements

Packaging and Logistics requirements will be stated on DARAMIC specific requirement as referenced in product specifications, drawings, PO's and/or supply chain agreements. Supplier must comply with such requirements, according to the production needs of each DARAMIC site (e.g. MOQ, batch sizes, etc…).

The supplier is expected to meet the shipping, packaging, and label requirements as specified by the applicable DARAMIC location, as a minimum the Part number and Batch traceability should be on each pallet. Country of origin needs to be labeled on the product in accordance with DARAMIC procedures and the laws of the shipping, in-transit, and receiving countries. Unless otherwise agreed upon with DARAMIC, suppliers should ensure that the product packaging and pallet unit are capable of passing International Safe Transit Association (ISTA) requirements. Specifically, shipping packages should be tested to the specific ISTA requirement, depending on package type and weight.

DARAMIC Purchase Orders define required routing information. Non-compliance will result in refusal of transportation charges back to the shipper and may include a chargeback penalty fee as well.

4.5 Revisions

Any revisions to the product requirements will be communicated through the DARAMIC purchasing organization, or through revision levels stated on Purchase Orders. It is the supplier's responsibility to review Purchase Orders to ensure that up-to-date revisions of product requirements are utilized by their manufacturing. In case of non-compatibility, it is the supplier's responsibility to request from DARAMIC an updated specification. The supplier is not allowed to deliver previous revision level parts, except by written agreement with the pertinent DARAMIC plant quality team.

5.0 Part Qualification

5.1 Part Approval

DARAMIC utilizes an approval process to qualify both new and changes to raw materials. Daramic conducts an assessment according to ISO 14001 to identify risks to our operation. The supplier, as required, will provide specific raw material items (samples, specifications, SDS) during qualification. The supplier is responsible for ensuring that the sourced product meets all requirements identified by the referenced documentation, e.g. Product Part Approval Process (PPAP).

Pilot trials provide internal validation. DARAMIC creates temporary raw material specifications followed by extended plant trials (as required) leading to final approval. A signed order specification document by Daramic and the supplier outlines agreement with final specification limits (DOS – Daramic Order Specification).

Inspection & Testing for raw material qualification shall be conducted by a qualified laboratory. The qualified laboratory (internal or external), shall have a lab scope and documentation showing that the laboratory is qualified for the types of tests and measurements conducted. Accreditation to ISO/IEC 17025 may be used to demonstrate the organization's laboratory conformity to this requirement. When an external/commercial laboratory is used, the supplier shall submit the test results on the laboratory letterhead or the normal laboratory report format. The name of the laboratory, the date of the tests, and the standards used to run the tests shall be identified.

DARAMIC will not pay for material or shipping related costs associated with product not approved in cases where approval documentation is required. All product is considered unapproved until the PPAP package is formally approved by DARAMIC.

The PPAP defines the requirements for initial production part approval, corrections of nonconformance, and potential other changes. The purpose of PPAP is to demonstrate that all of the Purchase Specification requirements are understood by the supplier, and that the manufacturing process has the potential to meet these requirements consistently during an actual production run at production rates. For initial production parts, the products for the PPAP lot shall be taken from a significant production run, similar in size to the quoted quantity to fulfill DARAMIC requirements. The production run shall be conducted at the production site, using production tooling, production gauges, production process, production materials, and production operators. Any deviations must be approved by DARAMIC Purchasing and Quality.

Reasons for Submission

DARAMIC Quality will work with Purchasing and suppliers to determine when PPAP's are required. If in doubt, supplier should contact DARAMIC Quality to review supplier's conditions and determine PPAP requirements. The general reasons for submission are as follows:

- Qualification of a new supplier, part, product, or process.
- Correction of a discrepancy on a previously submitted part

5.1.1 Customer notification

Customer notification is required as outlined section 7.0 below.

5.1.2 Submission level

Unless otherwise notified, standard PPAP submission will be level 2 as identified below.

	Requirement	Level 1	Level 2	Level 3

1.	Design Records of Saleable Product (Specifications / Drawings / Technical Approvals)	R	S	S
	– for proprietary components/details (Formula/Raw Material Spec. / Process parameters)	R	R	R
2.	Engineering Change Documents, if any	R	S	S
3.	Customer Engineering Approval, if required	R	R	S
4.	Design FMEA	R	R	R
5.	Process Flow Diagrams	R	R	S
6.	Process FMEA	R	R	R
7.	Dimensional Results	R	S	S
8.	Material, Performance Test Results	R	S	S
9.	Initial Process Study	R	R	S
10.	Measurements System Analysis Studies	R	R	S
11.	Qualified Laboratory Documentation (Laboratory Scope)	R	S	S
12.	Control Plan	R	R	S
13.	Part Submission Warrant	S	S	S
14.	Sample Product	R	R	R
15.	Master Sample (Retain)	R	R	R
16.	Records of Compliance with Customer Specific Requirements, if any	R	R	R

S	Submit to designated customer part approval activity. Retain copy at manufacturing location.
R	Retain at manufacturing location. Readily available to customer representative upon request.

Once DARAMIC approves the material, controls must exist to ensure product supplied does not change in any way from the product approved. This also includes non-specified properties that impacting product performance. Likewise, we do not expect any variation of product batch to batch that could affect the quality of our products without prior request that a change has occurred (see Section 7.0 below).

5.2 Material Compliance

Daramic requires suppliers to understand and verify the composition of their raw materials. At any time, DARAMIC reserves the right to request raw material confirmation on any supplier purchased product. The supplier should be able to provide a Certificate of Acceptance (COA) report when required. Any changes to the raw material require written notification and ultimate approval by Daramic before making the change (see Section 8.0 below). If your company does not have in-house, capability to test your materials you must secure an accredited external third party source that has the capability of material compliance analysis for your specific raw materials. All suppliers must have the ability to provide evidence of both material compliance and, when external testing performance, third party accreditation if requested by any of Daramic manufacturing facilities, engineering or quality representatives.

In addition, DARAMIC can require ongoing material certification be provided on a routine basis for any purchased product at the supplier's expense during the life of the product.

DARAMIC Quality will work with suppliers to develop similar inspection tools & methods and develop acceptable correlations between Daramic's and each supplier's techniques. If possible, identical methods and gauges are preferred.

For some critical characteristics, DARAMIC Quality may require a Measurement Systems Analysis or gauge study be completed to understand the variances included in a particular measurement system. These studies may include Bias, Stability, Repeatability & Reproducibility (R&R), and Linearity. If required, methods shall conform to those specified in the AIAG's Measurement Systems Analysis reference manual. Daramic Quality can assist suppliers in conducting these studies if needed.

5.3 Environmental, Safety, & Health Requirements

Certain Daramic products must meet pertinent regulatory directives; such as, but not limited to:

Description	Regulatory Reference
Toxic Substance Control Act (TSCA)	40 CFR 700 https://www.epa.gov/tsca-inventory/how-access-tsca-inventory#download
China Restriction of Hazardous Substances (RoHS 2)	GB/T 26572-2011
Restriction of Hazardous Substances 3 (RoHS)	EU/2015/863
Global Automotive Declarable Substance List (GADSL)	Global Automotive Stakeholder Group (GASG) http://www.gadsl.org
Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)	EC/1907/2006 https://echa.europa.eu/substances-restricted-under-reach
Conflict Minerals	Section 1502 of the Dodd Frank Act
Halogens	
Ozone Depleting substances	40 CFR 82

The requirements will be negotiated with suppliers based on their input on the Supplier Qualification Form, then defined within the Purchase Specification for each commodity to be supplied. Suppliers must meet these requirements, and assure that they are also being met by secondary suppliers and sub-contractors.

6.0 Management of Change

6.1 Management of Change

DARAMIC requires suppliers to inform us of all supplier related changes and in many cases get prior approval to proceed with a change. The effect of many different types of changes that occur without prior approval can adversely affect our business. As a supplier to DARAMIC, you are required to notify us in writing via a Supplier Change Request prior to any anticipated change (to adequately evaluate, some changes may require 1-2 years of approval from DARAMIC customers). The request made to your purchasing contact at DARAMIC. Unapproved changes made by the supplier may warrant chargeback on costs incurred related to the change. Managing any change/event correctly is critical to minimize any potential adverse effect. There are a number of different "types of change" that require approval from DARAMIC. Below is the table of that require approval before any significant planning or expense pursued. You are required to submit and provide evidence that the product impacted by the change is meeting requirements as directed by Daramic.

4M Change Item	4M Change Detail	4M Change Contract Requirement
Man	Change in primary contact	X
Material	Product Raw Materials	
	chemical structure	X
	supplier change	X
	product change from current supplier	X
	change in current supplier manufacturing location	X
Method	Process change - change in sequence of product/process flow from documented process flow diagram	X
	Sub-process supplier change	X
	Additional process	X
	Formula Change	X
	EDI change	X
	Change in material type for packaging	X
	Modification of Label contents	X
	Transportation mode change	X
	Traceability (Batch code) marking change	X
	Inspection method	X
	Inspection equipment	X
Machine	New production line	X
	Move production item to another Plant location	X

Depending on the change, DARAMIC may require submission of a PPAP package. This should be verified with DARAMIC Purchasing and Quality.

6.2 Supplier Change Request

DARAMIC provides a 4M Change Notice form, requiring completion for submission to your purchasing representative. The Supplier shall employ the 4M Change Notice for approval prior to proceeding with any significant planning for your company's change. The form is available from Daramic Purchasing or Quality departments.

7.0 Non-Conformity - Corrective and Preventive Action (CAPA)

7.1 Non-Conformity Report & 8D Reporting Methodology

DARAMIC Purchasing or Quality will notify suppliers of suspect or nonconforming materials along with the reasons and details for rejection. Upon agreement on the nonconformance, Purchasing will negotiate the return of the material to the supplier. All rejected material shall be removed from DARAMIC within a reasonable period after

the supplier is notified. The supplier is responsible for arranging the return of rejected material, and accepting all transportation costs associated. Replacement material must be received within a reasonable period, and the supplier shall issue credit for the returned material and re-invoice for the replacement material.

Serious nonconformances that result in large monetary losses, loss of significant production time, missed customer shipments, or extensive rework may be considered for a chargeback to the supplier (see Section 9.2 below). Purchasing will notify suppliers and negotiate any chargebacks due to quality issues.

DARAMIC suppliers must maintain and apply an effective closed loop corrective and preventative action system, associated with actual or potential process or product non-conformances. Supplier non-conformances identified within a DARAMIC site may warrant initiation of a Supplier Non-Conformity Report. Requested receipt of a corrective action is the responsibility of Daramic. Feedback from the supplier shall employ 8D/Why-Why or other accepted methodologies.

The response shall include:

a. Nonconformance identified by DARAMIC.
b. Supplier will provide a containment response to DARAMIC within 24 hours/1 business day.
d. Supplier will provide a root cause analysis, corrective action plan and effectiveness of corrective actions response within 14 calendar days, unless otherwise specified by the location issuing the request for corrective action.

Corrective Action responses shall include:

Define the Problem: DARAMIC will provide an initial problem statement with other related information including test data, photos, and samples when available. The supplier should be pro-active in obtaining further detail from the DARAMIC receiving location, when necessary. Additional information may include the status of samples, a further understanding of the product application, or further information including lot codes and defect rates.

Identify Team: Expectation is corrective action investigation and resolution by cross-functional teams. The leader of the 8D is typically the process owner. Communicate the customer contact to the DARAMIC receiving location.

Containment and Impact of Similar Products/Processes: Supplier shall communicate Containment Actions aimed at protecting Daramic and our customers from repeat issues within 24 hours of issue notification.

Actions should identify a responsible person and due date: Identify, label, and segregate suspect material internally. Quarantine and containment actions must consider product in on-site inventory, distribution centers, in-transit, or at customer

locations. Addition of tightened process controls shall be added to ensure on-going manufacturing can proceed without passing along further defects to DARAMIC, and kept in place until permanent corrective actions are in place and determined by DARAMIC to be effective. Product supplied to DARAMIC prior to corrective action implementation shall be identified to show that the product was subject to containment actions.

Root Cause: Expectation is supplier communication of details of the evaluation, root causes, and contributing factors within 14 calendar days of being notified of the issue. Investigation can begin before samples by reviewing defects found in containment, evaluating process paperwork, and inspecting on-going production. Identification of root causes should include reviewing nonconformance, detection failure, and system failure. Root Causes should be numbered and align with corrective actions listed later. The root cause should be validated through experimentation (turn the issue on/off), and should include the root cause of the occurrence and the root cause of the non-detection of the problem.

Choose and Verify Permanent Corrective Action: It is expected that the supplier report short and long term corrective action plans within 14 calendar days of being notified of the issue. Actions should identify the responsible person and due date, and should directly relate to previously identified nonconformance, detection, and system root causes. Work instructions, Control Plans, FMEA's, process inspection checklists, visual work standards, and other quality documentation should be considered for updating. Training of affected team members should be completed.

Implement Permanent Corrective Action: It is expected that the supplier will report a plan to validate short and long-term corrective action plans within 14 calendar days of being notified of the issue. Actions should identify the responsible person and due date, and should be quantitative in nature. Implementation dates and lot codes should be identified. A follow-up date should be identified. Plans should verify that the root cause and defect have been eliminated, not only that the correction action was implemented.

Preventive Actions / Mistake Proofing: It is expected that the supplier will report preventative actions or mistake proofing methods identified within 14 calendar days of being notified of the issue. Action should identify the responsible person and due date. Any process changes that will prevent mistakes from occurring must be documented. If no reasonable mistake proofing / poke yoke method can be identified, it must be noted that the evaluation was completed with no additional control identified.

Verification of Implementation and Effectiveness of Corrective Actions: Results should be quantifiable results of verification activity). Defects found in the verification activity require a restart of the 8D process from the beginning. Closure of an 8D Report is at the discretion of DARAMIC upon review of verification results.

7.2 Chargeback/Cost Recovery

Non-conformances on product supplied to DARAMIC can have a large effect on deliveries and product performance. In the case of a nonconformance, it is the responsibility of the Supplier to ensure adequate conforming parts or material are delivered in time to prevent any line stoppage situations. This can be accomplished in the following ways:

1. Expedite shipping of conforming and certified parts so they arrive before line stoppages occur; or

2. Provide sorting, repair or rework resources to the appropriate DARAMIC facility in a timely fashion to prevent any line shortages.

3. If 1 and/or 2 cannot be accomplished within a timely fashion to prevent line stoppage, DARAMIC reserves the right to sort, repair or rework the non-conforming material at Supplier's expense in order to ensure acceptable parts or material are utilized and production requirements are met. All sorting will be coordinated with the DARAMIC production facilities by the appropriate plant personnel.

7.3 Supplier Quality Management Review (SQMR)

In the event of a dispute with a supplier, the plant concerned will initiate an SQMR with the supplier; this process has three levels as prescribed:

(Level 1) A Plant Quality Department Representative working with a Purchasing Department Representative is responsible for initiating, notifying the supplier, and conducting the SQMR level 1 through to closure or escalation to SQMR level 2. Typical criteria to call an SQMR 1 are as follows:

- Product attributes do not meet specifications and are causing manufacturing issues or specified Significant Characteristics do not meet Ppk requirements.
- Production interrupted or suspended at a DARAMIC plant due to intermittent supply, supplier product quality, shortages, or logistical issues.
- Chronic documented problems (documented with non-conformance reports) in the area of Quality, delivery or logistics, indicating that the Supplier is not performing as required at that point in time.
- Suppliers consistently not replying or not replying on time to Non-conformance reports from a Daramic plant.

(Level 2) The Plant Quality/Purchasing Managers are responsible for initiating a level 2 SQMR, escalating the concern to the corporate Procurement Director, but supporting the escalation process with their input. Local Procurement team/Quality team will conduct the SQMR 2 meetings.

Typical criteria to call an SQMR 2 are as follows:

- Product Safety issue.

- Supplier has not resolved SQMR level 1 issues in the defined period or to a satisfactory conclusion or has given an unreasonable response.
- Supply severely interrupted at a DARAMIC Plant due to poor quality, delivery, or logistical issues that has affected delivery dates to customers.
- Any SQMR level 1 where the final customer remains dissatisfied with interim actions and plans.
- Chronic documented SQMR 1 problems, which indicates that the supplier does not meet the required performance level.

(Level 3) The SQMR level 3 is the responsibility of the corporate Procurement/Quality Functions -- Procurement Director and Quality Director, supported as required by Plant Quality and Purchasing Manager. Typical criteria to call a SQMR 3 are as follows:

- Unresolved Product Safety issues
- Supplier has not resolved chronic documented SQMR level 2 issues in the defined period or to a satisfactory conclusion or has given an unreasonable response.
- Supply severely & repeatedly interrupted at DARAMIC plant due to poor quality, delivery or logistical issues that has affected delivery dates to customers.
- Any SQMR level 2 where the final customer remains dissatisfied with interim actions and plans and continued unresolved problems exist.
- Supplier's inability to work with DARAMIC to improve their performance to make fundamental Quality or Logistical improvements.

7.4 Warranty Claims

If DARAMIC's end customers are affected by a Supplier quality issue, the Supplier shall assist DARAMIC with resolving customer issues, which may include but is not limited to providing replacement material on an expedited basis; developing field rework procedures; sending Supplier personnel to customer locations, etc. The Supplier shall provide a formal plan to resolve warranty claims within 48 hours and DARAMIC may recover any associated costs or resolution as outlined in a Supply Agreement.

8.0 Monitoring and Improvement

8.1 Supplier Scorecard / Performance Evaluation

DARAMIC continually monitors and ranks its key suppliers using a supplier scorecard. The output of the supplier scorecard is used by the DARAMIC Sourcing and Quality teams to determine opportunities to grow business and to determine opportunities for supplier improvement. Supplier scorecard results can be obtained from the local Purchasing Manager.

The DARAMIC supplier scorecard is comprised of three major elements: Quality (Performance and Systems), Delivery and Cost.

8.2 Continuous Improvement

DARAMIC expects suppliers to create and maintain continuous improvement plans focused on improving Quality, Delivery, Cost, and Service performance. Daramic may schedule reviews to evaluate progress and results of improvement plans. The supplier's management should take a lead role in continuous improvement by embracing the concept and by adopting continuous improvement as a key element of their business plan and by ensuring the training of key personnel with application of the following techniques to include PFMEA, 8D and New Product Development.

Example of continuous improvements techniques:

Lean manufacturing	Six Sigma
Mistake Proofing / Poka Yoke	Benchmarking
Statistical Process Control (SPC) (Control Charts)	PFMEA, DFMEA
(Variable and Attribute), Capability index (Cp, Cpk, Pp, Ppk)	Parts per million analyses
Design of Experiments (DOE)	Cost of poor quality (COPQ)
Pareto Analysis	-

8.3 Ongoing Part/Product/Process Monitoring

DARAMIC evaluates incoming product conformity to requirements utilizing one or more of the following methods:

- Receipt of, and evaluation of, statistical data from the supplier.
- Receiving inspection and/or testing, such as sample based on performance.
- Second or Third party assessments or audits of supplier sites, when coupled with records of acceptable delivered product conformity to requirements.
- Evaluation by a designated laboratory.
- Another method agreed with the customer.

At minimum once a year, the supplier should provide Ppk values as proof of their ongoing product/process capabilities.

8.4 Data Management

The handling of data, documents and records including material specifications and designs as well as any content of communication between DARAMIC and our Suppliers considered proprietary shall follow the principles of information security: confidentiality, integrity and availability.

8.5 Supply Interruptions

DARAMIC Purchasing shall be notified immediately of any planned or unexpected disruptions to the supply chain including line or plant stoppages, sub-supplier issues, labor issues, or natural disasters. DARAMIC Purchasing & Quality will review each incident and determine if re-qualification is required to resume supply of critical materials to DARAMIC.

8.6 Risk Management

The supplier shall conduct a risk assessment that includes, at a minimum, lessons learned from product recalls, product audits, field returns and repairs, complaints, scrap, and rework. Preventive actions shall be appropriate to the severity of the potential issues.

DARAMIC Purchasing and Quality will conduct Supplier Risk Assessments of Critical Suppliers. Based upon risk, suppliers may be subject to periodic surveys.

David Gunter
Director of Quality
Daramic, LLC

Monica Tourville
Director of Procurement
Daramic, LLC

As an authorized representative for Daramic's supplier, I acknowledge that I have reviewed the Daramic Supplier Quality Manual, reviewed with the appropriate members of my company, and agree to the provisions as outlined in the Supplier Quality Manual.

Name Mr.Atthakorn Kraisri
Signature A.Atthakorn
Title Integrated Management Representative
Supplier Company Salee Colour Public Company Limited
Date 25 March 2022

Manual Revisions

Issue No.	Date	Reason for Issue
1	2021-NOV-02	New manual