SUPPLIER QUALITY MANUAL

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Revision: 3

Owner: VP of Supply chain

CRENLO CONFIDENTIAL PROPRIETARY INFORMATION

Basic Supplier Requirements

- All suppliers are compliant to a third party Quality Management System (formal certification not required).
- Suppliers must notify Crenlo of any changes to the product, process, or sub-supplier changes.
- All suppliers are expected to ship products with zero defects.
- Supplier delivery performance shall be 100% on time.
- Culture of continuous improvement and Lean Manufacturing.
- Use of error-proofing in design and mistake-proofing in manufacturing processes.
- Develop and maintain an aggressive warranty reduction program.
- Requests for Corrective Action require an initial response within 24 hours and a final response (including root cause analysis and irreversible corrective action) within 30 days or sooner.

1. Introduction

This manual has been developed to assist all current and potential Crenlo suppliers in developing, maintaining, and continually improving a quality system that meets Crenlo requirements. Suppliers are not required to have third party QMS certification but should be compliant to the ISO 9001:2015 standard at a minimum.

Crenlo's continued success is built upon providing products and services that meet customer requirements and improve our competitiveness. Crenlo will communicate and collaborate with suppliers to provide unparalleled levels of quality and service to customers.

Crenlo designs and fabricates metal products for the electronic, telecommunication, computer, electrical and agriculture/construction equipment industries. This manual specifically informs suppliers of how they support the Crenlo Quality Policy:

> *Crenlo Quality Policy: "We are committed to meeting customer requirements and increasing customer satisfaction through standardizing processes, sharing best practices, and driving continuous improvement to the Quality Management System through education, process advancements and problem prevention."*

It is expected that our suppliers work toward exceeding the expectations and procedures of Crenlo's Supplier Quality Manual and individual contracts to achieve a strong partnership and a continuous growth environment.

1.1 Scope

The intent of this manual is to broaden the scope of recognized industry quality system standards to include additional requirements of Crenlo. It is imperative that every internal and external supplier location that manufactures and/or ships production or service parts and materials to Crenlo plants, or to our customer's plants, embrace the standards and business practices outlined in this manual.

1.2 Supplier Quality Manual — Relation to Purchase Agreements

Supplier acknowledges and agrees that the requirements of this Supplier Quality Manual shall augment any supplier contract, Terms and Conditions, and subsequent Purchase Agreements issued by Crenlo. Supplier shall confirm agreement with this Manual by signing and returning Attachment A form to the Crenlo Supplier Quality team prior to accepting any purchase commitment.

1.3 Acronyms/Abbreviations

AIAG	Automotive Industry Action Group
ANOVA	Analysis of Variance
ANSI	American National Standards Institute
ASQ	American Society for Quality
ASTM	American Society for Testing and Materials
CAPA	Corrective and Preventive Action
COPQ	Cost of Poor Quality
COTS	Commercially Available Off-the-Shelf
DFARS	Department of Defense FAR Supplement

DMR	Defective Material Report
DOE	Design of Experiments
DRC	Democratic Republic of the Congo
DUNS	Data Universal Numbering System
EAR	Export Administration Regulations
ECO	Engineering Change Order
ECR	Engineering Change Request
EHS	Environmental Health and Safety
FA	First Article Inspection
FAR	Federal Acquisition Regulation
FIFO	First-In-First-Out
FMEA	Failure Mode and Effects Analysis
FOB	Free On Board
IEC	International Electrotechnical Commission
ISIR	Initial Sample Inspection Report
ISO	International Organization for Standardization
ITAR	International Traffic in Arms Regulations
LLC	Limited Liability Company
MSDS	Material Safety Data Sheet
NCMR	Nonconforming Material Report
NDA	Non-Disclosure Agreement
NIST	National Institute of Standards and Technology
NSA	National Standard Authority of Ireland
OECD	Organization for Economic Co-operation and Development
OFAC	Office of Foreign Assets Control
OMB	Office of Management and Budget
OSHA	Occupational Safety and Health Administration
PBB	Polybrominated Biphenyls
PBDE	Polybrominated Diphenyl Ethers
PO	Purchase Order
PPAP	Production Part Approval Process
PPM	Parts Per Million Defects
PPV	Purchase Price Variance
PSW	Part Submission Warrant
QS	Quality System
RFQ	Request for Quote

RMA	Return Material Authorization
ROPS	Roll-over Protection Structures
SCAR	Supplier Corrective Action Request
SLA	Service Level Agreement
SQA	Supplier Quality Assurance
TD	Temporary Deviation
TS	Technical Specification
UK	United Kingdom
UL	Underwriters Laboratories
VA/VE	Value Analysis/Value Engineering

1.4 Applicable Documents/Associations

ANSI	American National Standards Institute
ASTM	American Society for Testing and Materials
ASQ	American Society for Quality
ES-229	ROPS Mill Test Report Requirements
Form 12140	Terms and Conditions of Purchase
Form 12141	Strategic Supply Agreement
Form 12148	Supplier Evaluation Survey
Form 12206	Business Classification
Form 12207	Terms and Conditions of Purchase
Form 12208	Supplier Code of Conduct
Form 12987	Calibration Supplier Evaluation
NIST	National Institute of Standards and Technology
ISO 9001	Quality Management Standard
ISO-10012	Quality Assurance Requirements for Measuring Equipment
ISO/IEC 17025	Standard for Testing and Calibration of Laboratories
QA-159	PPAP Part Submission Warrant
TS-16949	International Technical Standard
QC-080000 (NSAI)	National Standard Authority of Ireland
W9	Federal W9 Tax Form

Suppliers are expected to understand and adhere to all standards applicable to the supplied product. All documents/forms are accessible on Crenlo's Supplier Portal website and/or through the Crenlo Procurement Team.

2. General Supplier Expectations and Requirements

Compliance with this manual is imperative to ensure suppliers have the systems, processes, and procedures in place to meet compulsory requirements of our customers.

2.1 Supplier Integrity

All confidential and/or proprietary information provided by Crenlo to a supplier in connection with or to further a purpose, can be visual, written, or orally communicated and is deemed "Confidential Information". Suppliers will be required to sign one or more of Crenlo's Non-Disclosure Agreements (NDAs). These agreements will also bind the Sub-tier supplier to non-disclosure activities.

Except as required by law and regulations, suppliers will not issue a press release or grant an interview regarding any subject matter that involves a Crenlo product without the explicit written approval of Crenlo Management.

All Crenlo-owned documents, processes, and systems are "proprietary" and shall not be shared with any other supplier or customer without prior Crenlo approval.

2.2 Conflict Minerals

As a company, Crenlo supports ending the violence and human rights violations in the mining of certain minerals from a location described as the "Conflict Region", which is situated in the eastern portion of the Democratic Republic of the Congo (DRC) and surrounding countries.

Crenlo Commitment:

- Support the aims and objectives of the U.S. legislation on the supply of "conflict minerals".
- Do not knowingly procure specified metals that originate from the "Conflict Region" that are not certified as "conflict free".
- Request that our suppliers perform reasonable due diligence with their supply chains to assure that specified metals are being sourced only from mines and smelters outside of the "Conflict Region" or mines and smelters which have been certified by an independent third party as "conflict free".

Crenlo holds our suppliers responsible for providing written evidence documenting they are adhering to our commitment.

3. General Business Requirements

3.1 Management

Supplier Top Management is expected to be fully committed in all aspects of the material supply chain process to Crenlo; insuring delivery of quality products per all provided requirements. This obligation shall address all the managerial processes of product realization, logistics, quality, services, and continuous improvement.

3.2 Risk Management

Suppliers must have a business continuity plan to protect Crenlo's supply of product in the event of an emergency (e.g., utility interruptions, labor shortages, logistic disruptions, key equipment failure, pandemics, and natural disasters). In addition, suppliers must inform the Crenlo Procurement Team of plant shutdowns, Holidays, etc.

3.3 Communication

Suppliers are expected to have a business email address for all Crenlo communication. All written communications are to be in English. All electronic communication shall constitute as an electronic signature for validating the document or record.

Acceptance of a Crenlo Purchase Agreement constitutes acceptance of the requirements of this manual. In addition, suppliers are expected to review this Quality Manual annually, sign the form in Attachment A, and make appropriate internal revisions if necessary.

3.3.1 Responsiveness

Crenlo suppliers are expected to respond expeditiously and efficiently to all inquiries, quote requests, quality non-conformances, return material authorization requests, late delivery notification, shipping documentation, etc. Supplier responses/communications should be within one (1) business day of receipt unless otherwise noted.

3.3.2 Status Changes

It is the supplier's responsibility to inform Crenlo of any change in status to facilitate database accuracy and reassess performance activities/customer impact. These status changes could encompass ownership/management, name, address, quality system, or achieving ISO certification.

3.4 Documentation Compliance

Products purchased by Crenlo must comply with all blueprints, specifications, and Demand Communication requirements. Suppliers are responsible for obtaining the latest blueprint or specification. Crenlo uses Imperial (US) and Metric measurement standards. Obsolete documents shall be properly destroyed to ensure no accidental manufacturing use.

3.5 Continuous Improvement (Quality, Defect Prevention, Commercialization, and Cost Improvement)

Error-Proofing

Suppliers are expected to demonstrate the use of error-proofing methods and actions for making improvements to minimize the total cost of producing the product. The focus of continuous improvement initiatives shall be on 'prevention' not 'detection'. Examples of recommended techniques:

- Toyota Production Systems Methods (e.g., 5S, Kaizen)
- Process/machine capability studies (Cp, CpK)
- Lean manufacturing principles
- Design of Experiments (DOE)
- Problem-solving techniques (e.g., FMEA, Pareto Analysis, 8D, Fishbone, 5-Why, VA/VE)
- Mistake proofing (Poke Yoke)
- Reliability and Repeatability Equipment Validation (Gauge R&R)

3.6 Regulatory/Safety Requirements

It is the supplier's responsibility to ensure that their product is compliant with all applicable regulatory agency and product safety requirements.

4. Quality Requirements for New Parts/Suppliers or Changed Parts

4.1 New Part or New Supplier for an Existing Part

Whenever a new part or material is being procured or a new supplier is being used for an existing part or material, Crenlo will generally require one of the following submissions:

- Production Part Approval Process (PPAP) documentation and samples
- Certificate of Conformance and associated reference documents (for COTS parts)

4.2 Changes for Existing Parts and Suppliers

Suppliers shall notify Crenlo Purchasing and Supplier Quality of any of the following planned events:

- Subcontractor or source change (even within a company)
- Change of location of subcontractor or source
- Design, process, or material change (including production methods)
- Tooling/fixture change
- New part or product
- Correction of a discrepancy on a previously submitted part
- Tooling has been added, repaired, or replaced
- Known quality problems including situations where a problem found at one Crenlo plant will affect parts sent to other Crenlo plants

4.3 Description of Submission Types

4.3.1 Certificate of Compliance

A Certificate of Compliance is required for proof of compliance for product characteristics required in Crenlo documents. A qualified supplier designee must approve the Certificate of Compliance prior to Crenlo submission. Documents must be sent to the appropriate email address for the given Crenlo location:

- Greeneville: lcash@crenlo.com
- Rochester: jmanyam@crenlo.com
- Watertown: dhoppe@crenlo.com

4.3.2 Production Part Approval Process (PPAP)

All suppliers of raw materials and components used in the manufacture of Crenlo products are required to submit PPAP packages and receive PPAP approval prior to shipments. Unless otherwise agreed, PPAP packages will consist of:

- Part Submission Warrant (Appendix A)
- Design Record
- Dimensional report with ballooned print
- Material Certification(s)
- Process Flow Diagram
- Control Plan
- Performance/cycle testing documentation, if required
- Weld Study, if required

- Master Sample (signed off by Crenlo SQE, tagged as "PPAP Sample", returned to supplier)
- If PPAP submission is incomplete, a Crenlo Interim PPAP Worksheet must be included (Appendix B)

The default submission level is Level 2. Crenlo must approve any change to this level prior to shipment.

Crenlo Supplier Quality shall notify the supplier of approval status:

- "Approved" — Parts are acceptable and PPAP elements are acceptable.
- "Rejected" — Parts fail to meet requirements; corrected samples/updated submissions required prior to shipment.
- "Other" — Interim PPAP approval; PPAP package not fully accepted but supplier may begin shipments with an action item list to resolve outstanding items.

Note: Products received without required approvals will be considered non-conforming and placed on hold.

5. Delivery, Packaging, Shipping, Receiving

5.1 Delivery

"On-Time" delivery is defined as a product delivery received on the contracted delivery date provided by the Crenlo purchase order. The delivery date listed on the purchase order is the date the material needs to be on dock at the respective Crenlo facility, not the supplier ship date.

5.2 Packaging

All suppliers are expected to package product in accordance with best commercial practices to avoid shipping or storage damage. Maximum weight for skids/pallets is 1,500 pounds. Standard skid footprints by location:

- Greeneville, TN: 48" x 42"
- Rochester, MN: 48" x 32"
- Watertown, SD: 48" x 42"

Carton/box/container labels should be bar code standard compliant, in English, and contain: Crenlo PO Number, Crenlo Part Number and revision level, Quantity, Approved Heat Number (when applicable), Country of Origin, Box/roll number, and Bar Code.

All product delivered to Crenlo docks must be in a van or curtain style trailer.

5.2.1 Steel-Specific Packaging Requirements

The following requirements apply to all Crenlo locations:

- Heats should not be mixed within each bundle.
- Steel must be protected during shipping with either the use of tarping or by using a Conestoga trailer.

5.2.2 Crenlo Plant-Specific Packaging Requirements

Greeneville, TN:

- Forklift, side unload
- Require pallets for anything thinner than 14GA & Stainless Steel
- 4x4 wooden cross blocks, minimum of 3 used
- 2 bands toward edges in both directions (4 total) — plastic
- Edge protectors should be used under banding; banding around sheet bundles only (not over blocks)
- Tags identifying every bundle: Part Number, Description, Heat Number, Quantity, PO Number, Supplier Name
- Height of bundles not to exceed 90mm/3.5"
- Max bundle weight = 3,500 lbs.

Rochester, MN:

- Sheet lifter with max of 3,000 lbs.
- 2x4s as runners with 3 runners for 60" wide material, 2 runners for 48" material
- 2 bands toward edges in both directions (4 total) — plastic preferable

- Tags identifying every bundle: Part Number, Description, Heat Number, Quantity, PO#, Supplier Name
- Max bundle weight = 3,000 lbs.

Watertown, SD:

- Forklift, side unload
- Require pallets for anything thinner than 14GA & Stainless Steel
- 4x4 wooden cross blocks, min of 3
- 2 bands toward edges in both directions (4 total) — plastic
- Banding around sheet bundles only (not over blocks)
- Tags identifying every bundle: Part Number, Description, Heat Number, Quantity, PO#, Supplier Name
- Height of bundles not to exceed 90mm/3.5"
- Max bundle weight = 5,000 lbs.

5.3 Shipping

Domestic Shipments:

- Shipments less than 150 lbs.: ship according to the site routing guide (contact your Crenlo Buyer).
- Shipments greater than 150 lbs.: set up using Crenlo's 3rd Party Logistics Provider. NOVAPATH Crenlo@novapath.com

International Shipments:

- Ocean shipments: contact: your buyer or khurram.mohammad@expeditors.com
- All Air Shipments need Crenlo approval prior to shipping.

Freight terms shall be FOB Supplier to the correct Crenlo receiving point. Pallet stacks must not exceed 6' in height. Packing slips must accompany each shipment and contain: Crenlo PO Number, Crenlo Part Number and Revision Level, Supplier Number, Quantity Shipped, and Approved Heat Number (when applicable).

5.4 Receiving

Transportation vehicles used for the delivery of product shall be accountable for damage to Crenlo property. Pallet stacks must not exceed 6' in height due to Crenlo safety requirements. Any pallets that exceed the 6' limit will not be received.

6. Quality

6.1 Nonconformances

A Nonconformance is issued to document nonconforming quality incidences at any stage in Crenlo's supply chain process. A nonconformance is generally defined as a deficiency in characteristic, documentation, or procedure, which renders the quality of a product or service unacceptable.

6.1.1 Sorting/Rework

Crenlo reserves the right to initiate sort, scrap, rework, or repair activities with or without prior authorization from the supplier to protect customer builds.

Supplier Deployed:

If sorting or rework is required at Crenlo or customer facilities, the supplier must provide trained personnel and contact Crenlo Supply Chain Management, the SQE, or designee prior to entering Crenlo manufacturing facilities. Safety equipment must always be worn.

Crenlo Deployed:

Any rework/sorting, materials, and/or administrative time performed in-house by Crenlo personnel shall be charged back to the supplier unless previously negotiated in the contract.

6.2 Material Returns (Return Material Authorization — RMA)

When nonconformances are found, Crenlo will contact the supplier electronically requesting an approved RMA form. Suppliers must acknowledge the RMA request within one (1) business day and forward the approved RMA within three (3) business days.

Any material left on Crenlo premises over five (5) business days will prompt Crenlo to either scrap or return the material at the supplier's expense.

Fees that may be charged include:

- SCAR Processing fees
- Crenlo sort charge
- Crenlo rework/repair fees
- Support staff labor
- Material handling fees
- Overtime expenses to prevent production disruption
- Lost line time
- Assembly scrap fees
- Containment and tear down of built product fees
- Scrap Disposal fees
- Late shipment fees / Stock-out fees
- Mis shipment fees (wrong address)
- Expedited freight costs / Shipping charges for original shipment

6.3 Supplier Corrective Action Request (SCAR)

SCARs may be issued for the following issues:

1. Any repeat nonconformance for a given part.

2. Issues that show signs of a quality system failure or supplier not following their process.

3. Mislabeled containers or packing slips being missing or containing the wrong information, shipped to wrong location etc.

4. Any issue at a Crenlo Customer that is due to a supplier nonconformance.

5. Any time rework or containment must be done due to supplier not being able to address themselves.

6. Any time a supplier issue causes safety concerns at Crenlo or a Crenlo customer.

7. Any time the wrong parts are shipped, resulting in missed shipments or a line shutdown at Crenlo.

8. Any time there are missing parts in a shipment, resulting in missed shipments or a line shutdown at Crenlo.

9. Any time there is an over-shipment of parts.

10. For issues deemed by the plant Supplier Quality Engineer (SQE) to warrant a formal corrective action.

The supplier shall initially comply with the following actions within 24 hours of SCAR notification:

- Initiate containment and inspection of all suspect material.
- Post evidence of customer concerns at appropriate locations.
- Identify certified product containers with green dots.
- Implement immediate corrective action to eliminate the discrepancy.

Once root cause is determined, a long-term corrective action response is due 30 days from SCAR notification. The supplier is also required to review corrective action effectiveness sixty days after the SCAR is initiated.

6.4 Non-Conformances/Late Product Identified at Customer — External Costs

Non-conforming products identified by Crenlo's customer and attributed to purchased components will have a negative impact on supplier performance and will be subjected to charge backs. Any charges/costs incurred by Crenlo due to supplier issues at our customer will be passed directly to that supplier.

6.5 Supplier Quality System

All suppliers are expected to establish goals toward overall improvement in quality, cost, commercialization, and service. While not required to be certified to ISO:9001 (or greater), at minimum, suppliers must have a Quality Management System that is compliant to an international standard.

The supplier is responsible for the quality of materials and components provided by their sub-tier suppliers and subcontractors. All suppliers and their sub-tier suppliers shall provide full access to Crenlo Quality Assurance and the Procurement Team for quality audits as deemed necessary.

6.6 Manufacturing

The supplier is responsible for ensuring all materials meet all technical requirements for form, fit, function, and methods specified by Crenlo documents. The supplier shall ensure the product meets all specified requirements prior to shipment to Crenlo.

For ROPS controlled product with new heat numbers not previously approved, the supplier must submit the mill test information for that new heat prior to shipment. ROPS materials with different heats must not be mixed in manufacturing or shipping.

All nonconforming products must be conspicuously identified and contained within the supplier facility to prevent inclusion with conforming product.

6.7 Calibration/Verification

All supplier measuring and test equipment, including tooling and fixtures used to determine product conformance, must be maintained and calibrated at established intervals. All gages must be calibrated to be traceable to NIST (or similar authority when outside the U.S.). Outside calibration services must be certified to ISO/IEC 17025.

Gage variability must be less than 20% of the product tolerance whenever possible.

6.8 Tooling

Any Crenlo or Crenlo customer-owned tooling on loan to suppliers is "Proprietary," cannot be shared with any Crenlo competitor and cannot be used to produce parts for non-Crenlo companies without written authorization. Tooling shall not be destroyed without written permission from the Crenlo VP of Supply Chain.

6.8.1 Tool Invoices

The supplier shall include a photograph of the respective tool when submitting an invoice to Crenlo.

Large tool invoices >= $15,000 will typically be paid incrementally:

- 33 1/3% paid upon purchase order initiation
- 33 1/3% paid upon PPAP acceptance and receiving tooling cards and pictures
- 33 1/3% paid net 60

All other tool invoices will be paid in full upon invoice acceptance.

6.9 Roll-over Protection Structures (ROPS) Compliance

All ROPS submissions must comply with Crenlo ES-229. Mill/Certified test reports must be sent prior to the receipt of shipment at Crenlo to:

- Greeneville: Steelcerts.Greeneville@crenlo.com
- Rochester: Steelcerts.Rochester@crenlo.com
- Watertown: Steelcerts.Watertown@crenlo.com

Heat information must be clearly identified for each part. Do not mix ROPS heat numbers within a part container or shipment.

6.10 Engineering Change

An engineering change is a Crenlo initiated design or process alteration indicated through revision control on respective documents. Suppliers are required to submit a Certificate of Conformance or PPAP documentation with the respective subsequent shipment. Supplier proposed engineering changes will be guided through Crenlo procedures by the Procurement Team or Design Engineering.

6.11 Temporary Deviation (TD)

Temporary Deviations are required for any product that does not conform 100% to Crenlo specifications, purchase orders, or prints. The TD request shall include:

- Affected supplier facility name/location

- Crenlo part number(s) affected
- Part description
- Proposed deviation effective date (From: dd/mm/yyyy to dd/mm/yyyy)
- Proposed affected part quantity
- Description of deviation with supporting data related to fit, form and function
- Reason of deviation
- Corrective action plan to resolve the deviation

Temporary Deviations must be approved prior to supplier shipment. All shipping containers of nonconforming product shall be identified as "Deviated Product".

6.12 Preventative Maintenance

All suppliers shall have an implemented Preventative Maintenance Program. This program should contain at a minimum:

- Procedure to describe maintenance activities
- Schedule depicting maintenance activities
- Predictive maintenance methods
- Availability of replacement parts for key manufacturing equipment

6.13 Records

Supplier must maintain appropriate records on file according to the requirements of Crenlo, suppliers or regulatory agencies and traceable to Crenlo Purchase Orders. Table 1 shows Crenlo's minimum record retention requirements:

Table 1: Record Retention Requirements

Record	Retention Period
Certificates of Compliance	Indefinitely
Engineering Change Order (ECO) approved	2 years
Performance Testing	Permanent
Training Records	Duration of Employment
Steel Certifications	1 year
Mill Reports	Indefinitely
Crenlo Nonconformances	Life of part
Supplier Corrective Action Report (SCAR)	Life of part
Calibration Records	5 years
Crenlo Authorization to Destroy Tooling	Permanent

6.14 Obsolescence

Manufacturing is a dynamic environment, and changes are to be expected. Claims will be reviewed and analyzed for appropriate disposition within thirty (30) days.

6.15 Storage and Inventory

Crenlo expects suppliers to have an internal process to assess the condition of product in stock at appropriate planned intervals to detect deterioration and shelf-life integrity. Suppliers should utilize an inventory management system to optimize inventory turns, such as First-In-First-Out (FIFO).

7. Safety Considerations

Suppliers are required to maintain a clean and safe work environment to produce Crenlo supplied materials. All products must be packaged in a manner to be handled safely. The risk of unforeseen disruption of production due to safety considerations must be planned for and the associated risk mitigated.

8. Supplier Performance Management

8.1 Supplier Scorecards

Supplier scorecards will be sent to direct suppliers every quarter. Scorecards will be based on data from a six-month period ending on the last day of the quarter scored, with the following weightings:

- Delivery — 45%
- Quality — 55%

The Quality element will be determined from:

- PPM — 75%
- Number of SCARs Issued — 15%
- SCAR Responsiveness — 10%

8.2 Scorecard Elements and Scoring

8.2.1 Delivery Score

On-Time Delivery (OTD) percentage will be measured using the Original Promise date compared to the Receipt date.

Table 2: Delivery Performance

OTD Percentage	Delivery Performance Description
97-100%	Excellent
90.00% – 96.9%	Very Good
80% – 89.9%	Satisfactory
70% – 70.9%	Marginal
< 70%	Unsatisfactory

8.2.2 Quality Score

PPM

PPM = 1,000,000 x (# of Defective parts / # of parts received)

Table 3: PPM Scoring

Criteria	PPM Score
PPM ≤ 100	100%
100 < PPM ≤ 500	99%

Criteria	PPM Score
500 < PPM ≤ 1000	97%
1000 < PPM ≤ 2000	94%
2000 < PPM ≤ 20000	90%
> 20000	80%

Number of SCARs Issued

SCAR Score = 100 – 1.25 x (# of SCARs issued). Minimum score = 90.

SCAR Response Time

SCAR Responsiveness Score = 100 – 1.25 x (# of SCARs not responded to within 15 business days). Minimum score = 90.

8.3 Quality Scoring

Table 4: Quality Performance

Quality Score	Quality Performance Description
97-100%	Excellent
90.00% – 96.9%	Very Good
80% – 89.9%	Satisfactory
70% – 70.9%	Marginal
< 70%	Unsatisfactory

8.4 Overall Scores and Ratings

Based on the elements and weightings described above, an overall score will be computed. Suppliers that receive an "Unsatisfactory" rating will be required to fill out a supplier improvement corrective action plan.

Table 5: Overall Rating

Overall Weighted Score Table		Status
Excellent	97% - 100%	Platinum Status Supplier
Very Good	90% - 96.9%	Preferred Supplier
Satisfactory	80% - 89.9%	Satisfactory Supplier
Marginal	70% - 79.9%	No Future Sourcing Until Corrected
Unsatisfactory	< 70%	Possible Resource Of Current Workload

8.5 Supplier Certification

To measure qualitative criteria and assess suppliers that add extra value beyond the basic expectations, Crenlo will rate some suppliers once a year to determine which suppliers performed well beyond the basic scorecard performance.

Two groups of suppliers will be evaluated annually:

1. Strategic suppliers chosen by the Procurement Team.

2. Any supplier that achieves a minimum of two "Excellent" and two "Very Good" scorecard ratings within the year may submit a project or accomplishment for Certification evaluation.

Note: Suppliers that do not offer Net 60 Credit Terms will be ineligible for Certification unless approved by the Crenlo Vice President of Supply Chain.

Certification factors include:

- Acceptable scorecard results
- Cost Improvement Initiatives
- Responsiveness to Crenlo communication and documentation requests
- Invoice Accuracy during the year
- Delivery performance including flexibility
- Providing value that enhances the product being received by Crenlo
- Demonstration of continual improvement of quality and service

Suppliers that achieve scoring of 42 out of 50 points will receive Certification status for the year. Certification can be removed at any time if a supplier scores below "Very Good" level for any given quarter.

8.6 Supplier of the Year

One "Supplier of the Year" award will be given annually. All certified Suppliers will be considered for this award. The award will be based on input from all key stakeholders within Crenlo.

8.7 Sourcing Priority for Supplier of the Year and Certified Suppliers

The Supplier of the Year and Certified Suppliers will be given priority for sourcing of new and existing parts and services.

9. Special Considerations for Service Suppliers

Service suppliers will initially be evaluated and selected using the supplier selection criteria outlined above. Service suppliers will be re-evaluated after initial selection during the bid process for new work. Typically, purchasing will receive bids from at least three suppliers during this process.

Although freight vendors will not be measured with quarterly scorecards, claims may be filed against freight vendors for quality issues that are caused by them. Freight vendors could receive SCAR requests for significant or ongoing issues.

Critical service suppliers such as calibration and freight vendors may be eligible for Supplier Certification.

Calibration vendors are required to have a current accreditation to perform calibrations for Crenlo and must provide proof of accreditation each year.

Appendix A: Part Submission Warrant (PSW) (Form QA-159)

The Part Submission Warrant (PSW) is Form QA-159, available on Crenlo's Supplier Portal. The signed PSW and supporting PPAP documentation should be sent to the appropriate Crenlo Supplier Quality email address prior to initial shipment.

Key fields include: Part Name, Customer Part Number, Tool/PO Level, Supplier Name and Code, Submission Information (Dimensional, Material/Functional, Appearance), Reason for Submission, Required Elements checklist, and the Declaration/Signature block.

Appendix B: Interim PPAP Worksheet

The Interim PPAP Worksheet (PPAP Recovery Worksheet) is used when a PPAP submission is incomplete and must be included with any incomplete PPAP submission.

The worksheet includes:

- Customer Name, Supplier Vendor Code, Part Name, Part Number
- Interim Approval Expiration Date, Resubmission Date, Engineering Change Level
- Section 1 — Master Status (AP = Approved, IA = Interim Approved, RJ = Rejected, N/A = Not Applicable)
- Section 2 — Action Plans: lists all reasons why full PPAP status has not been achieved, action plans, owner, and completion date
- Customer Approvals signature block (Supplier Quality Engineer, Project Engineer, Validation Engineer, Program Buyer)

Document Approvals

Name	Title	Signature
Edward Jackson	VP — Purchasing & Supply Chain	
Michael Burgess	VP — Operations	

Document Revision History

Rev	Description of Change	Effective Date
	Initial release	10/02/2012
1	Combination of Supplier Quality Manuals from merged companies to form Crenlo	9/1/2020
2	Major revisions — added/deleted sections	2/1/2023
3	Small revisions, Corporate logo, contact emails & owner updates	8/1/2026

Attachment A — Acknowledgment Receipt of the Crenlo Supplier Quality Manual

This is to verify that you have received your new release of the Crenlo Supplier Quality Manual. Your signature and return of this acknowledgment signify your understanding and acceptance of Crenlo Supplier Quality requirements.

Field	Information
Company Name	
Corporate DUNS	
Name	
Position	
E-mail Address	
Phone	
Signature	
Date	
Location	

- Please scan and submit this verification via e-mail to:
    - Greeneville: lcash@crenlo.com
    - Rochester: jmanyam@crenlo.com
    - Watertown: dhoppe@crenlo.com