



SUPPLIER QUALITY DEVELOPMENT MANUAL

Quality Manager

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1.0 Purpose

This Supplier Quality Assurance Manual is to define Metelix Product Inc.'s current and potential new suppliers Metelix expectations and requirements.

All expectations and requirements are intended to assure safe, reliable products from suppliers which meet Metelix Product Inc. and its customer's expectation for quality, delivery and cost.

Metelix will assess each supplier's ability to comply with the requirements contained in this Manual and based on the perceived assessment may include an on-site audit of the supplier facility by Metelix Product Inc. assigned personnel.

Metelix Products Inc. expects all suppliers to acknowledge and comply with the requirements contained in this Manual.

2.0 Quality Management System

2.1 General Requirements

A robust Quality Management System is a base to become a Metelix Products Inc. supplier. Metelix Products Inc. prefers suppliers certified to current editions of ISO 9001 and/or IATF 16949. Suppliers are expected to implement, maintain, and improve their certifications to this technical specification to achieve zero defects and continually strive to improve product quality and delivery.

Metelix Products Inc. will accept suppliers registered to current edition ISO 9001 with the ability to meet AIAG (Automotive Action Group) latest edition manuals of Core Tools (APQP, PPAP, FMEA, MSA and SPC) Metelix Products Inc. specific requirements and Metelix Products Inc. end customers "Customer Specific Requirements".

Suppliers are also encouraged to comply with the current edition ISO 14001 Environmental Management Systems.

Certificates are to be provided to the Metelix Products Inc. Purchasing department and updated as required.

Calibration and Testing Service suppliers must be certified to ISI/IEC 17025 by an accredited third-party certification body or approved in writing by OEM.

Mould and tooling suppliers must be ISO 9001 registered.

In the event of changes to the supplier quality management system certification status, Metelix Products Inc.'s purchasing department is to be notified within five business days.

2.2 End Customer Expectations

Suppliers must comply with the latest automotive OEM Specific Requirements.

Metelix Products Inc. requires the suppliers to be familiar with the end customer quality requirements as it is a requirement of Metelix Products Inc. to cascade these requirements to the supply base. The examples of such requirements are the current edition GM BIQS audit and the current edition of VW VDA self-audit where sub-suppliers of product to GM and/or VW are expected to conduct this self-audit.

Metelix Products Inc. expects its suppliers to be familiar with and implement Metelix Products Inc. end customers' requirements defined in their published current edition "Customer Specific Requirements". This includes but is not limited to annual layout and/or functional testing and adherence to CQI - Special Processes Requirements.

3.0 Supply Chain Management

3.1 Supplier's Selection

Potential suppliers go through the selection process and upon approval are listed in Metelix Products Inc. Approved Supplier List. An evaluation process is conducted by Metelix Products Inc. to ensure all suppliers meet Metelix Products Inc.'s expectations for quality, delivery, responsiveness and cost.

A potential supplier will be required to provide Metelix Products Inc. with a self-assessment (POT) for review. The POT Self-assessment is structured to evaluate the supplier Quality Management System to the current editions of ISO 9001, IATF 16949, AIAG Core Tools, VDA and any additional Customer Specific Requirements. Based on the result of the Self-assessment a follow-up audit at the supplier site may be conducted by Metelix assigned personnel or Metelix representative.

Metelix Products Inc. will generate a Request for Quote (RFQ) when a new product or product/program change is required. Suppliers are expected to respond to Metelix Products Inc. by dates identified on the RFQ, with the appropriate documentation that is specified by the Metelix Products Inc. RFQ originator.

Metelix will issue Purchase Orders to Suppliers for awarded products or programs. Metelix's General Terms & Conditions are the ONLY terms and conditions that will govern the purchase of goods or services by Metelix.

Acceptance of Metelix's Purchase Order means acceptance of the requirements of this Manual. Any deviation from the requirements of this Manual or PO requires written agreement from Metelix Products Inc. Purchasing or an approved deviation sign-off.

3.2 Supplier Development Program

This Supplier Quality Assurance Manual is designed to improve the Supplier's operations in all aspects of their business, which includes new product development, engineering, quality communication, performance, delivery and cost, all through the implementation of a certified quality system in conjunction with appropriate quality tools. If the Supplier requires any assistance in these areas please contact the Metelix quality function to arrange for help, guidance or workshops.

3.3 Supplier Performance Evaluation

The quality and delivery standard for suppliers is Delivered product conformity to requirements and 100% on-time delivery. Any non-conformance found will result in a partial or total lot rejection and may be returned/sorted to/by the supplier at their expense. All products and material received by Metelix may undergo an inspection for any or all requirements as received or may be released for verification by the production process. Rejections will be documented on an ICAR with corresponding charges included.

3.4 Supplier Scorecard

The Supplier Scorecard summarizes an evaluation of the performance of the supplier's in each of the following areas: Quality Issues, Disruptions at Metelix, Premium Freight Occurrences, and Late Deliveries.

When there are concerns in the above categories, penalty points are applied in the number of occurrences giving demerit points the total of which is used to calculate the performance score in a percentage form.

Performance is tracked and evaluated by Metelix every quarter. The report is issued in the month following the last quarter and communicated to the suppliers. This provides suppliers with measurement and feedback on current performance and highlights opportunities for improvement.

Metelix Product Inc. Supplier ratings are as follows: 90+ - GREEN, 80 to 89 – Yellow, less than 80 – RED.

Suppliers with a red score (less than 80) will be re-audited by Metelix assigned personnel.

Suppliers with a yellow score (80 to 89) will be required to provide a Self-assessment with an improvement plan and maybe re-audited by Metelix assigned personnel or Metelix representative at our discretion.

Suppliers with a green score (90+) will be asked to provide a Self-assessment as required.

4.0 Delivery Expectations

The Suppliers are expected to use appropriate lead times to ensure the product arrives at the schedule. On-time delivery is a key to meeting our customer's expectations. Supplier's delivery performance is calculated through tracking non-compliance to delivery dates and quantity requirements.

5.0 Customer Specific Requirements

OEM's Customer Specific Requirements are part of the business in the automotive industry and are part of the contracts with Metelix Products Inc. It is expected that all suppliers become knowledgeable in all applicable OEM's customer-specific requirements.

6.0 Supplied Product and Process Requirements

6.1 Special Characteristics

Product or process are designated with special characteristics which are defined as attributes of a component, material, manufacturing and/or assembly operation which have been designated by Metelix Engineering or their customer as being significant to part function relative to quality, reliability and durability performance.

These designations are defined by (SC) symbols which are used by the end customers on their design record to indicate key product or process characteristics.

Items identified or called out by special characteristics must be proven stable, capable and with a short-term process capability index (Ppk) of 2.00 or better. Proven process capability requires statistical evidence of a long-term process capability index (Cpk) of 1.67 unless otherwise specified. See drawing notes for additional gaging and control methods.

Short-term process capability studies must be conducted before the start of production. These characteristics will be measured for Production Part Approval (PPAP) per AIAG guidelines. Special attention must be placed on these items in the PFMEA, Control Plans and process instructions to ensure compliance with specifications and controls. Quality records relating to these items with and SC symbols must be retained per OEM requirements (GM: for a period of life of the program and service requirements, plus one (1) year, VW: for 15 years).

Special product & process characteristics are to be monitored. The monitoring method must be described and specified in the supplier's control plan. Variable data will be measured by the supplier with both Cpk and attribute data being tracked on an ongoing basis. This data is to be available for review by Metelix upon request.

6.2 Production Part Approval Process (PPAP)

Metelix fully supports the AIAG Production Part Approval Process procedure and will adopt any AIAG manuals, standards, procedures and references as they supplement this procedure. Metelix will communicate any additional customer-specific requirements in writing. It is a requirement that all suppliers have a copy of this standard and be familiar with it. All PPAP submissions will be following this manual.

Supplier shall submit Level 3 PPAP documentation at a minimum unless otherwise stated on Metelix's purchase order. Suppliers are expected to maintain a record of all PPAP documentation and approved PPAP samples.

PPAP documentation will be reviewed by the Metelix quality and engineering functions for compliance.

Metelix's Quality function will notify the Supplier's in writing of either PPAP approval or any discrepancies that require the Supplier's reaction.

No Supplier's product or material will be released for production by Metelix purchasing until formal approval has been received from the Metelix function.

Any changes to the current PPAP approved parts, process, material or equipment will require a new PPAP submission. The Metelix quality function must be notified before any changes.

6.3 Containment Requirement (GP12 / Safe Launch)

All Suppliers of production parts are required to utilize a containment program for all pre-production and production ramp-up until Metelix or the customer's exit criteria is met. Data collected from the containment process must be made available to Metelix personnel as required.

6.4 Run at Rate

Upon PPAP approval, Suppliers must conduct a run at a rate to identify that their process meets all quoted cycle times and part specifications. Suppliers must use all production tooling and run at full production speeds, using regular direct and indirect personnel and support systems. The capability of the process is to be verified using data from the run. Run at Rate is required to protect the cost and quality of the part/product and the customer. Metelix and our customer may request documentation and/or elect to participate in Run at Rates before the program launch.

6.5 Ongoing Quality requirements

6.5.1 Control of Subcontracted Products

The Suppliers are responsible for ensuring products and services purchased from subcontractors for use in Metelix Products Inc. products conform to their and their end customers' requirements. The Suppliers are responsible for establishing procedures to meet this requirement by implementing the following:

- Ensuring there is documented evidence of conformance to all applicable requirements.
- Performing the required inspection & testing at adequate frequencies to ensure conformance to specifications and performing appropriate statistical analysis.
- Ensuring that materials that have been approved are identifiable & traceable. Non-conforming materials must be identified as such and must be segregated in a defined HOLD area.
- The Supplier must verify their subcontractor's certification at least once yearly.

6.5.2 Verification & Testing

Suppliers must prepare written laboratory test & inspection instructions to enhance applicable engineering standards. These instructions could include inspection instruction sheets, test procedures or other documents normally used.

When Supplier's product or material has regulatory requirements within a product or material specification, the Supplier must maintain accredited test results for 15 years. These test results must be made available to Metelix or its' Customers upon request.

6.5.3 Inspection Gages and Test Equipment

Suppliers are required to have gauges and test equipment to adequately control product quality and support analytical problem-solving.

Supplier gages & measuring equipment (including fixtures) must be inspected periodically and calibrated at established intervals. Each gage must be identified and gage control records are to be maintained.

Calibration must be following recognized standards traceable to the National Institute of Standards and Technology (NIST).

Gage and equipment calibration instructions must be available and current. Any calibration performed by an outside source must have proper certification.

Gage repeatability and reproducibility (Gage R & R) studies should be conducted on all measuring equipment in the inspection of control characteristics.

6.5.4 Process Control

Suppliers must identify and plan the moulding, forming, stamping, plating, painting, casting and assembly processes that directly affect the quality of the product and must ensure that these processes are carried out under controlled conditions

6.5.5 Management of Statutory and Regulatory Safety Related Products and Manufacturing Processes

Suppliers must provide for the management of product safety-related products and manufacturing processes, which includes but is not limited to the following where applicable:

- a) Identification by the supplier of statutory and regulatory product safety requirements (example: FMVSS, CMVSS, OHSA (ON), and WMHIS (CA) at the country of origin, country and point of manufacture and the country of final destination
- b) Metelix Products Inc. notification of requirements in item a)
- c) Special approvals for Design FMEA (Metelix Products Inc. and /or the Automotive OEM Customer).
- d) Identification of product-safety related characteristics
- e) Identification and control of safety-related characteristics of the product and at the point of manufacture
- g) Special approval of Control Plans and process FMEA's (Metelix Products Inc. and /or the Automotive OEM Customer).
- h) Reaction plans
- i) Defined responsibilities, the definition of the escalation process and flow information, including top management, and customer notifications
- j) Training identified by the supplier or customer for personnel involved in product safety-related products and associated manufacturing processes
- k) Changes of product or process must be approved before implementation, including evaluation of potential effects on product safety from the process and product changes (also refer to current edition ISO 9001:2015 Section 8.3.6).
- l) Transfer of requirements concerning product safety throughout the supply chain, including customer designated sources (refer to current edition ISO 9001:2015, clause 8.4.3.1)
- m) Product traceability by manufactured lot (at a minimum) throughout the supply chain (refer to ISO 9001:2015 clause 8.5.2.1)

6.5.6 Audits

Metelix requires suppliers to audit each manufacturing process annually to determine its effectiveness. It is expected that supplies are knowledgeable and apply all OEM's specific audit requirements.

Examples are:

GM: Current Edition: BIQS Audit and AIAG Sub-tier Supplier Management process-Supplier Assessment.

CQI: Current Editions:

CQI-9 Special Process - Heat Treat System Asses
CQI-11 Special Process - Plating System Assessment,
CQI -12 Special Process– Coating System Assessment,
CQI - 23 Plastic Molding Assessment.

VW: Current Editions

Self Audit – according to VDA 6.3

Product Audit – according to VDA 6.5

D/TLD Audit - according to Formel Q Capability

6.5.7 Process Capability Study

Process capability data must be taken from a significant production run of a minimum 300 consecutive piece run or as indicated by Metelix Products Inc.

Acceptance criteria are Cpk greater than 1.67. Refer to the AIAG SPC manual for more information on evaluating stability.

6.6 Product Status

Suppliers are responsible for identifying the inspection & test status (OK, Reject, Sort, Hold, Rework, etc.,) of the product through all stages of the process utilizing stamps, tags or other effective control measures.

All containers, racks, box or pallets of material must be fully identified, including Metelix and supplier part numbers, quantity, shipment or manufacturing date and deviation numbers, if applicable.

Identifications must permit traceability back to Supplier manufacturing and inspection records that must be retained 15 years past the date of the original creation. Products must be shipped on a lot and First in, First out (FIFO) basis. A lot can be identified as a homogenous quantity of parts produced during a specified period that are traceable to a production date, raw material or another applicable grouping.

Suppliers must ensure that products are properly handled through every phase of the manufacturing and shipping process to prevent damage, deterioration, loss of identification and mixed parts.

Shelf life control: Every delivery of product or material that has a limited or specified shelf-life, the Supplier shall furnish data of the certification and the product or container label that shows

- a) the manufacturing date,
- b) expiration date Shelf-life,
- c) lot or batch number, and when applicable, any special handling or storage requirements.

Unless specified by contract, all Shelf-life limited products or material delivered to Metelix must have a remaining Shelf-life of at least 80% of the total Shelf-life. Failure to comply with this requirement will result in a rejection or a return to the Supplier for full credit upon the Shelf-life expiry.

6.7 Periodic Layout Inspection

Upon receiving Production Part Approval (PPAP) and unless specified by Metelix Products Inc., layout inspection shall be performed according to OEM requirements.

7.0 Non-Conforming Products

When a nonconforming product is found at Metelix Products Inc. an ICAR (Incoming Corrective Action Request) will be issued to the supplier.

Non-conforming products will be tagged immediately, segregated and sorted for either rework or scrap. Material awaiting disposition and/or rework / scrap must be identified and secured in a marked HOLD area. Suppliers are required to notify Metelix of any suspect product shipped to Metelix and of the corrective action taken by the Suppliers to ensure the non-conforming condition does not occur in future shipments.

If a non-conforming product is shipped from the Supplier to Metelix, the Supplier may be held accountable for all costs incurred as a result of the added inspection, downtime, resulting scrap, administration and product recall costs. The Supplier is responsible for taking immediate corrective measures to ensure Metelix production requirements are met with conforming product.

7.1 Customer Directed Pass-Through-Product Non-Conformance:

If a non-conforming product is shipped from the Supplier and enters Metelix's customer production system, that Supplier will be responsible for all associated costs until full recovery is achieved. The Supplier shall follow the customer's prescribed format for documentation and resolution. Customer rejections, such as GM's PR&R, VW's KPM, Navistar's-NYX's-JAC's 8Ds or any other Customers (Auto or not Auto products) will be assigned to the Supplier's location.

7.2 Issuance of an ICAR

A debit may be applied with the issuance of an ICAR. Any debit will be automatically deducted from the applicable invoice for each ICAR issued to cover costs incurred. Also, any customer penalties, downtime or expediting costs which may be incurred, may be applied.

The issuance of an ICAR will result in an adjustment to the Supplier rating.

7.3 Corrective Action

When corrective action is required, it will be addressed as follows:

- The first response is required within 24 hours of receiving ICAR using the supplier's 8D format addressing containment action
- Full root cause analysis and corrective actions are to be submitted within 15 days.
- All Quality documents (CP, PFMEA, PFD, Work instructions) must be updated to reflect the corrective actions taken.

Metelix Products Inc. may follow up with a visit to verify corrective action implementation

7.4 Reworked and/or Repaired Products

Suppliers must establish rework and/or repair procedures to correct non-conforming product that occurs during production. Suppliers must perform an inspection of the product following rework and/or repair to ensure conformance to specification before shipment to Metelix. Containers are to be labelled with a green tag that reads "Rework and/or Repair Process Complete". Rework and/or Repair that deviates from Metelix Products Inc. specifications requires an approved deviation.

7.5 Controlled Shipping

In the event of continued unacceptable quality or delivery performance, the supplier will be notified of the need to initiate controlled shipping of the product.

Level 1 (CS1) – The supplier is expected to:

- Assign a person responsible for the inspection activity
- Have an area separate from manufacturing operations and perform an additional inspection and certification of all identified suspect products
- Specify identification of certification to be used on the product and containers
- Report the type and the quantity found in the CS1 activity

Level 2 (CS2) – When the supplier quality issue continues and the CS1 action taken by the supplier is insufficient to stop the supply of the non-conforming product, the supplier will receive a written notification requesting containment (CS2). Supplier is expected to

- Assign a person responsible for the inspection activity
- Retain an independent party to monitor, measure, inspect and identify all identified

suspect product

- Have an area separate from manufacturing operations and perform an additional inspection and certification of all identified suspect products.
- Specify identification of certification to be used on the product. Containers are to be labelled with a green tag that reads "Containment process complete". Each tag must be initialled and dated by the person responsible for the inspection activity
- Report the type and the quantity found in the CS2 activity
- Exit criteria will be specified in the written notification.

The supplier will be removed from controlled shipping when inspection data shows no defect found for a minimum of 15 days for the specified quality concern. Metelix assigned personnel will review the data, verify corrective action and decide if a supplier audit needs to be conducted.

8.0 Packaging Requirements

Packaging will be designed to maintain the integrity of the product throughout the entire supply chain.

9.0 Labelling Requirements

Suppliers are required to identify products with AIAG standard barcode labels which include supplier, part number, lot number, manufacturing date and bar code serial number as identified by Metelix or their customer.

10.0 Internal Audits

Suppliers must carry out internal quality audits to verify the effectiveness of the quality system. Audits must be scheduled based on the status and importance of that activity. The audits and follow-up actions must be carried out following documented procedures.

11.0 Training of Personnel

Suppliers must establish and maintain documented procedures for identifying training needs and provide for the training of all personnel performing activities affecting quality or service. Personnel performing specific tasks shall be qualified based on appropriate education, training and/or experience as required. Appropriate records of training shall be maintained. Training effectiveness shall be periodically reviewed.

12.0 Continual improvement

Suppliers shall develop standard costs, track actual costs and regularly compare the two and analyze the variances. Through comparison and scientific measurement of these costs, Suppliers shall focus on continuous improvement of its cost structure, while reducing cost. Suppliers are required to cooperate with Metelix to reduce costs both before and during production. Suppliers shall be willing to share suggestions and cost reduction benefits with Metelix. Metelix expects its Suppliers to participate in our on-going effort to continuously improve supplied product quality, service and technology while decreasing costs to our customers.

13.0 Supplier Sustainability Responsibility

Suppliers are responsible for purchasing and supplying materials from sustainable and ethical sources. They shall develop various policies and procedures regarding sustainable energy and responsibility.

Supplier shall implement policy regarding below requirements.

- Child labor and young workers
- Wages and benefits
- Working hours
- Modern slavery (i.e. slavery, servitude and forced or compulsory labor and human trafficking)
- Ethical recruiting
- Freedom of association and collective bargaining

Metelix Products Inc.
Supplier Quality Development Manual

Preparer: Param Patel
Approver: I.Godwin

MPI SQDM

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- Non-discrimination and harassment
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- Data protection and data security
- Financial responsibility (Accurate Records)
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- Decarbonization
- Water quality, consumption & management
- Air quality
- Responsible chemical management
- Sustainable resources management
- Waste reduction
- Reuse and recycling
- Animal welfare
- Biodiversity, land use and deforestation
- Soil quality
- Noise emissions

REVISION LOG			
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001 / 1 Feb.2014	Original release	Cross-Functional Team and Greg Post	T. Chapman
002 / 1 June 2017	3.1 Added VW requirements 3.4 Added Supplier ratings	Cross-Functional Team	T. Chapman
003 / 20 June 2018	3.1 changed to current editions of ISO 9001, IATF 16949, AIAG Core Tools, VDA and any additional Customer Specific Requirements. 6.5.5 added paragraph Management of Statutory and Regulatory Safety Related Products and Manufacturing Processes (a) to (m). 6.5.6 Issued paragraph number to Audits. Added current edition to text 6.5.7 Renumbered and added: as: indicated by Metelix Products Inc. 7.4 Changed Reworked to Reworked and/or Repaired. Added Rework and/or Repair to text	E. Escobedo and R. Webster	T. Chapman
004 / 19 June 2019	Supplier performance areas were updated.	E. Escobedo	J. Burns
005 / 22 March 2021	6.5.6 Supplied Product and Process Requirements- Audits- GM- AIAG Sub-tier Supplier Management process-Supplier Assessment was added. 7.1 Customer Directed Pass-Through-Product Non-Conformance was updated.	E. Escobedo	J. Burns
005-2/29 Nov 2021	6.6 and 6.7 adjusted according to index	P.Dave	I. Godwin
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