DEMATIC

SUPPLIER QUALITY ASSURANCE MANUAL

FIRST EDITION I 2022

INTRODUCTION

Every day in Dematic, we are relentlessly working to improve our processes, products and competences to be best in class in our industry. Equally important is the spirit of true commitment to quality excellence, having a customer-focused approach at heart and a continuous improvement mindset. This is where you as our supplier and business partner come into the picture. We expect and encourage you to adopt the same principles, practices and mindset. Both today, with your unbeatable knowledge of well-known technologies, and your competitive curiosity for tomorrow's innovations.

Quality Policy

Quality is the foundation of the long-term business success in terms of customer expectations in the field of material handling solutions and maintaining competitiveness.

The objectives are increasing customer satisfaction in terms of quality and reducing internal quality efforts.

SHERIF LABIB

SR. DIRECTOR, Global Quality

OBJECTIVE & SCOPE

Objective

Our challenge to exceed customer expectations and improve products and services is a goal which must be aimed at and executed alongside each and every part of our Supply Chain, this including our suppliers, who are an integral part of our process. The relationship with our suppliers must be built on total quality principles and practices to achieve efficiency, delivery reliability, consistent advanced quality planning and production monitoring, all while optimizing quality and generating a continuous improvement culture.

WANDA JACKSON-DAVIS

SVP, Procurement

Scope

The expectations set forth in this manual are applicable to existing and new suppliers who supply parts or services for the production process and / or spare parts supply to all Dematic manufacturing and installation sites worldwide.

Contents

Using this document

Organization

This document defines the expectations and working procedures intended to assist suppliers in achieving and maintaining a successful working business relationship with Dematic Organization.
This document is organized in eight chapters explaining our main Supplier Quality processes.

Text in frame boxes like this provide an overview of the information in the section and may be used as a quick reference.

Key Element Procedures

In addition to this Supplier Quality Assurance Manual, Dematic maintains a set of procedures, templates and training packages that define specific requirements and expectations in key areas. These Key Element Procedures cover Dematic requirements related to all the Supplier Quality processes. The Key Element Procedures are available on the Dematic Supplier Portal. This document contains links to these procedures. Always contact the Dematic Category Lead, Buyer or Supplier Quality Engineer if you have questions related to our procedures and requirements. At Dematic, Supplier Development Engineers (SDE) are also available for any question related with our expectations.

CRITICAL MANDATORY REQUIREMENTS ARE HIGHLIGHTED IN THIS FORMAT

Dematic Supplier Portal

Dematic Supplier Portal is the web entry point on https://supplierportal.dematic.com/Login.aspx, which enables collaboration between Dematic and its suppliers. The portal allows suppliers to access all relevant documents needed to collaborate efficiently. Suppliers are responsible for applying for access to Dematic Supplier Portal by contacting the Buyer or supplierportal.azure@dematic0.onmicrosoft.com.

Suppliers are required to maintain the contact details for key individuals and business information for their organization. To ensure timely and accurate information, authorized suppliers are responsible for maintaining the supplier's information on Dematic Supplier Portal and have the ability to grant access. An authorized supplier contact can manage their own employee's access rights to our system and applications when organizational changes occur. It is recommended to review the contact information at least every six months. This will help to ensure the effective exchange of important information the latest version of this Supplier Quality Assurance Manual is also available there.

Supplier feedback

We welcome and encourage feedback concerning this document. Any suggestions for adding additional information or improvements to this document, should be e-mailed to supplierportal.azure@dematic0.onmicrosoft.com.

1. ENVIROMENT HEALTH SAFETY & SUSTAINABILITY

PROTECTING SUPPLIERS, DEMATIC AND OUR CUSTOMERS

"At Dematic we believe that a sustainable solution is one that has been correctly applied, provides the logistics outcomes and the cost-efficiencies the costumer wants to achieve; while it minimizes impact to the environment".

According to our CEO's vision of zero injuries and illnesses, the foremost objective and duty of care is to assure that we will do business without harming people or the environment. Built on a foundation of Dematic's values and principles, the main purpose is to engage and effectively support a safe work environment and safe work methods. Our commitment is to deploy, implement and improve the robust EHSS&QA Management System.

We take the same principle for our Quality approach. Quality is what we do at Dematic, our products and solutions are recognized as reference in the industry. We strive to be the best in our industry by providing solutions that are safe to use and comply with the Product Safety requirements of the markets on which we operate.

With a holistic and collaborative effort, the EHSS&QA Team stands for continuous improvement processes, identifies, and takes the innovative challenge to achieve our goals through this management system, to compete at the Logistics Marketplace.

At Dematic we are convinced that EHS&S, Quality and Product Safety will benefit from a prompt decision making process, that will help the organization to develop, deploy and implement processes that will lead us to the World Class Performance.

The supplier's contribution to safety lies in developing innovative solutions, implementing safety features, and producing fully conforming products

The production of safe, fully conforming products to the Dematic organization is the supplier's responsibility and is part of the supplier's contractual commitment. Any assistance provided by Dematic does not in any way limit the supplier's responsibility to supply parts that conform to all technical specifications and standards, as well as regulatory, contractual, and legal demands. Suppliers are required to conduct a criticality analysis for features of the product design and production process that could result in a safety effect. For suppliers having design responsibility, special characteristics related to safety should be clearly identified within their design specifications, verification/validation plans, drawings, and technical documentation. Suppliers who are design responsible for products impacting safety should develop System, Sub-System, Design and Process Failure Modes Effects Analysis to assist in the analysis.

2. SUPPLIER SELECTION EVALUATION & APPROVAL

JOIN THE DEMATIC TEAM

2.1 Objective

The main objective of supplier selection process is to reduce purchase risks, evaluate supplier responsiveness, and capability. Effectively select business partners by developing strategic long-term relations that allow our organization to create value-added systems, to give its suppliers a competitive advantage in the market, considering suppliers as one of the best intangible assets for Dematic organization.

2.2 Scope

Supplier selection evaluation and approval process is applicable to all new suppliers who supply parts or services to Dematic manufacturing and installation sites worldwide.

2.3 Process

It's the first step in building a strong relationship between Dematic and our suppliers.

Suppliers have an important role to play in the selection process:

- Actively participating in evaluation audits performed by Dematic
- Demonstrating their capability to achieve future quality results
- Responding to action plans to reach the requested level

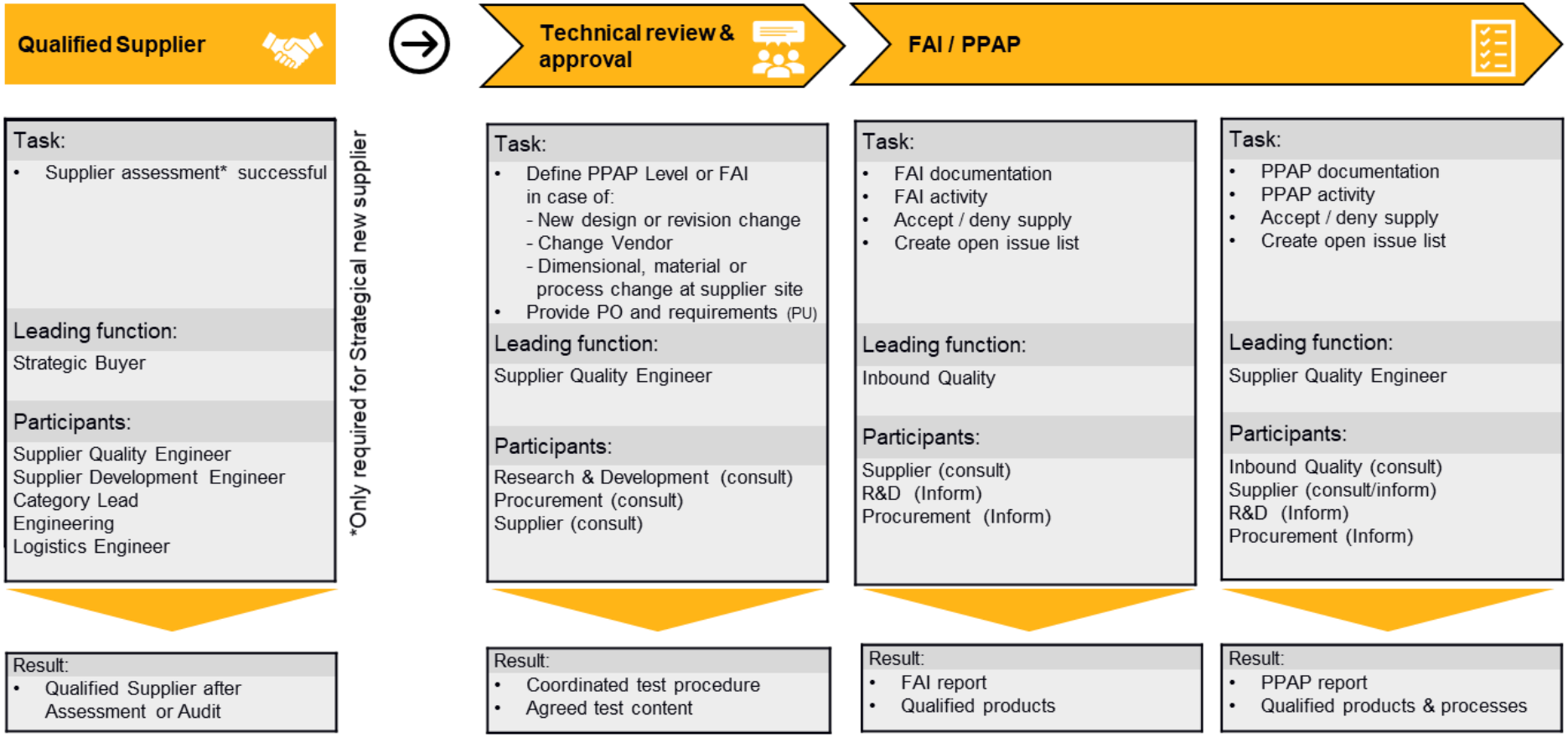
The following chapter explains the main steps in the process required to become a Dematic Supplier. In this section the information that suppliers can expect to receive and the evaluations that are required are further defined.

The Dematic Suppliers organization is divided by several groups:

1. Direct Suppliers – Suppliers supplying parts to Manufacturing Dematic sites.
2. Resale Suppliers – Suppliers supplying parts or services to Dematic Installation sites.
3. Installations Supplier – Suppliers who do mechanical and electrical installation on behalf of Dematic or Dematic sub-contractor.

Further details on the processes for both groups can be found in the next pages of this chapter.

2.3.1 Manufacturing Suppliers (Direct)



2.3.1.1 Supplier Assessment

The Dematic Supplier Assessment has been developed by KION Group based on a history of working with suppliers, lessons learned and "Best in Class" practices. This audit normally takes one to three days, depending on the size of the organization and is required for each supplier manufacturing location that will be shipping to a Dematic site.

The Dematic Supplier Assessment is the primary tool for the evaluation and selection of suppliers. The audit is designed to provide a broad, overview of the supplier's organization. The Assessment is an on-site face-to-face evaluation of a supplier's capabilities.

The structure of this questionnaire is separated into 6 chapters:

- Initial Supplier Assessment
- Audit team Observation
- Quality
- Logistic
- R & D (when required)
- Documents

Suppliers must achieve a minimum score according the following rules:

ASSESSMENT SCORE		LOGISTICS		
		<70	70≤L<85	≥85
QUALITY	<80	Rejected	Rejected	Rejected
	80≤Q<90	Rejected	Re-Audit	Re-Audit
	≥90	Rejected	Re-Audit	Approved

When R&D/Eng is required, the same approach is followed (<80=Rejected, 80≤R&D<90=Re-Audit, ≥90=Approved)

Assessment result is Approved if Supplier achieves the min score. If the Supplier does not achieve the minimum score in one area, the overall decision is Re-Audit or Rejected.

CRITICAL SUPPLIERS MUST COMPLETE THE ASSESSMENT WITH AN "APPROVED" SCORE TO BE CONSIDERED FOR THE AWARDED DEMATIC BUSINESS

Initial Supplier Assessment (ISA)

ISA is composed by 23 YES/NO questions. Supplier must fill out this form prior any consideration for Assessment. In case of any question related to this form, please contact the Dematic Buyer or Category Lead.

Supplier Self-Assessment

Prior the on-site Assessment, Vendor must do a self-assessment filling out all the points related with Quality & Logistics sheets. When R&D points are required, Buyer or Category Lead will inform the Supplier to complete it too.

Supplier On-site Assessment

Purpose of the Assessment is to verify on-site the supplier's statements made in the ISA & self-assessment and if the supplier is a good fit for Dematic going forward. Observations (also such that do not relate to a specific question) shall be noted in the audit report.

During the audit, each Dematic department is to verify if its specific minimum requirements are either A) met B) can be achieved by completion of an action plan or C) are not met. In any case, a closing meeting is to be held where the supplier is to be informed about the Audit result and the next steps.

Please access to the Supplier Portal where the detailed flow chart and Assessment Template are available for Suppliers

https://supplierportal.dematic.com/Login.aspx

2.3.1.2 Technical Review

Dematic realizes that maintaining an effective supplier/customer relationship may require sharing information, communications, data or technology that is sensitive or confidential. Before receiving a Request for Quotation (RFQ), suppliers are required to sign and return a Non-Disclosure Agreement (NDA). The supplier shall treat all information and data related to the business relationship with Dematic in strict confidence and report any intentional or nonintentional breach of confidentiality to Dematic management. The NDA template will be sent by the Buyer / Category Lead.

To be considered for business, suppliers must fully address RFQ and include all of the requested supporting documents when responding. This includes, but is not limited to:

- Product Quality Plan
- Review of Technical Specification
- Documents needed to support the information in the RFQ response

The quality requirements and targets are highlighted in the documentation package of the RFQ. Suppliers are expected to be able to fulfill all quality requirements. Dematic may audit the evidence related to the fulfillment of these quality requirements. In the event of where all requirements cannot be fulfilled, suppliers are obliged to inform Dematic Buyer and may be required to develop and submit an action plan with the returned RFQ. Suppliers are responsible for all costs associated with the fulfilment of the quality requirements.

When applicable, 3D Model of the part will be included in the package. If Supplier does not get this file or any other relevant document in the package, please contact the Buyer or Category Lead to request it.

Dematic recommends that supplier adopt Advanced Product Quality Planning (APQP) methodology for part/product development. This should involve a cross-functional approach in developing applicable requirements of the PPAP process such as Process Flow Diagram, Control Plan, FMEA"s etc. The supplier should give special emphasis in meeting the requirements on first run and in continually improving on subsequent runs.

2.3.1.3 PPAP

Purpose & Applicability

The Production Part Approval Process demonstrates that the manufacturing process used to produce parts for Dematic is fully developed, thoroughly tested, and capable of serial production of parts conforming to the technical specifications.

Sample parts and the supporting documentation are submitted to show evidence that:

- The design records and specifications have been properly understood and met
- The supplier manufacturing process has the capability to produce conforming parts in the actual production environment
- The supplier manufacturing process has the capacity to support production quantities at a consistent quality level

Suppliers shall ensure that the PPAP sample submissions are in accordance with the requirements of the Dematic PPAP Manual. Suppliers shall only submit PPAP packages for released drawings. In case that a released drawing has not been received, supplier must contact the Buyer ballooned drawing shall be included in the submission package. Each supplier is responsible for meeting all these requirements before submission to Dematic, including obtaining Dematic approvals for any change requests. Dematic has established a PPAP validation requirement that further defines submission levels, including what the supplier submits.

PPAP Notification and Submission Requirements

Suppliers are typically required to obtain 'Production Part Approval' prior to the first production shipment of product. In some cases PPAP may be required on Prototype parts. The supplier should coordinate the timing of the PPAP submittal and the first production run with the Dematic buyer.

WHEN PPAP REQUIRED, DEMATIC REQUIRES PPAP APPROVAL PRIOR TO SHIPMENT OF APPLICABLE PRODUCT FOR USE IN CUSTOMER ASSEMBLIES

The Buyer may issue a Sample Order to notify the supplier that a PPAP is required. At this point, the design is considered firm enough that suppliers are authorized to place tooling orders and start the production process design and development. The due date on the sample order is the expected date for delivery of the PPAP documents to Dematic. Check with the SQE for special situations. Suppliers are responsible to verify that all technical documentation (Part Revision, Drawing, Technical Requirements, 3D Model, etc.) has been supplied. Any questions regarding the technical document package should be directed to the Buyer.

Change Notification requirements

It is important that the supplier identify any changes that might affect the further processes at Dematic or ultimately the purchaser of the system or component. The supplier must notify the Dematic buyer regarding changes to:

- Materials
- Methods
- Sources of supply

Examples of changes requiring notification:

- A new part release;
- Engineering change to design records, drawings, specifications, or materials;
- Correction of discrepancy on previous submission;
- Change in construction or material;
- Modifications or replacement of tools, dies, or molds;

- Modification or upgrades to tools or equipment;
- Supply changes in material or services;
- Inactive production for more than 2 years;
- Product or process changes that affect part fit, form, or function;
- Test or inspection changes.

The Dematic buyer will communicate to the supplier when a submission for PPAP approval is not required.

The supplier is required to submit a Part Submission Warrant (warrant) along with samples and supportive documents to the Dematic Buyer who will then forward them to Supplier Quality Assurance for approval. Details of submission requirements are given in section 3 below. Required forms and formats are provided at the end of this guideline.

Details of PPAP Submissions

PPAP Submission Levels

Requirement	PPAP Manual Section	Level1	Level2	Level3
Warrant	3.2	X	X	X
Sample Parts	3.3		X	X
Dimensional Information - First Article	3.4		X	X
Capability Study - 30 pc	3.4.2			X
Material Certifications	3.5		X	X
Process Flow Diagram	3.6			X
Quality Control Plan	3.7			X
Gage Studies	3.8			X
PFMEA	3.9b			X

** Please access to the Supplier Portal where the detailed Manual requirements and process is available for Suppliers*

https://supplierportal.dematic.com/Contenido.aspx?seccion_id=10

Capability requirements for critical characteristics communicated by SQE to Supplier are described below:

>1.67	1.33≥Ppk≤1.67	<1.33
The process currently meets the acceptance criteria	The process may be acceptable. Review process results and action plan with Dematic SQA representative	The process does not currently meet the acceptance criteria. The supplier shall submit to the Dematic SQA representative a corrective action plan and a modified control plan normally providing for 100% inspection. Variation reduction efforts shall continue until the acceptance criteria are met, or until full PPAP approval is received.

Design Records

The supplier is responsible to retain Controlled Copies of product drawing/Engineering Standards received from Dematic. The supplier must maintain current copies of general standards such as ISO mentioned on the drawings.

The supplier must verify the revision level and date on the drawings/standard with the one on P.O. / P.O. amendment received. Any discrepancy must be promptly resolved with the Dematic buyer.

If the supplier requires changes in a Dematic drawing or specification, Dematic R&D/Engineering approval must be obtained in writing prior to the submission for part approval. The request regarding the change should be communicated through the respective Dematic buyer. If the changes are not incorporated in the drawing pertaining to the submission, the change approval document (Engineering Deviation) must be submitted along with the warrant. The appropriate box in the warrant document should be checked.

Test Results – Performance / Durability Testing

Performance testing should be performed by the supplier for all parts and product materials where performance or functional requirements are specified by the Dematic drawing or Control Plan.

The test records must document the parts tested, the revision level of the parts, the date of manufacture of those parts, the test specification, the test acceptance criteria, the name and location of the test facility, the test results, and the name of the person conducting and reporting the test.

Blanket statements of conformance are not acceptable.

PPAP Records

Suppliers are required to maintain PPAP files. PPAP files are to include:

- Signed warrant
- Drawings and supportive documents specified on the PPAP matrix (see section PPAP submission Levels)

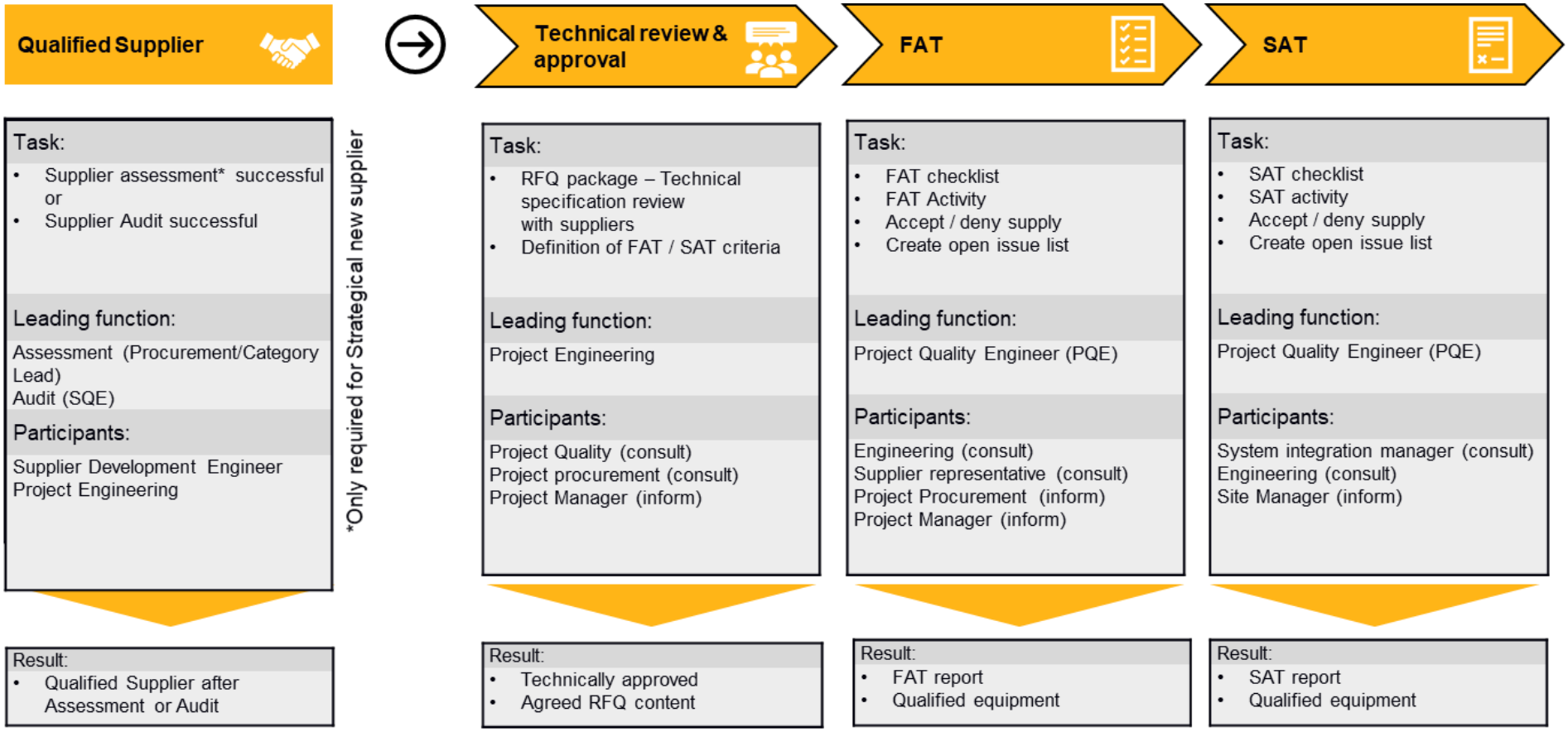
Master samples are to be clearly identified by Dematic part number, revision level, and Dematic approval date, and date of manufacture. Master samples of sizes difficult to maintain may be waived from this retention requirement by written document from the Dematic SQE.

Records of production part approval and master samples shall be retained and maintained in good order for the length of time the product is active plus one year. An active part is defined as one which has been bought in the prior two years.

Communication of approval

The Dematic buyer will inform suppliers in writing as to the disposition of part submissions. The approval will be indicated in the bottom section of the Warrant. The supplier will then be authorized to dispatch production quantities of the part on receipt of the required Purchase Orders from the Dematic buyer.

2.3.2 Resale Suppliers



2.3.2.1 Supplier Assessment

The Supplier Assessment process for resale material suppliers is the same as direct suppliers. Please refer to the point 2.3.1.1 for details of this process. For resale suppliers, Dematic Engineering Department will participate instead of R&D.

2.3.2.2 Technical Review

The Technical Review for resale material suppliers is the same as direct suppliers. Please refer to the point 2.3.1.2 for details of this process.

In case of ordering a system (not single parts), Dematic will perform a FAT and/or SAT instead of a PPAP.

2.3.2.3 FAT

Suppliers are typically required to obtain 'Production Part Approval' prior to the first production shipment of product / Systems. In some cases PPAP requirement is not possible due to low Volume Parts or high complexity Systems for our projects. In these cases we will go on supplier site for a FAT (Factory acceptance test). This procedure is used to reduce risks prior to parts/systems before delivered on site and ensures that the e.g. assembly's function properly or that the individual parts have been manufactured according to the drawing requirements.

FAT = FACTORY ACCEPTANCE TEST

The Dematic Buyer will issue with the final Order to notify the supplier that a FAT is required. At this point, the design is considered firm enough that suppliers are authorized to place tooling orders and start the production process design and development. The target date for the FAT at supplier side should be latest one week before the delivery of the parts/systems on site. Supplier shall notify Dematic of the completion of the part/system in a timely manner, that Dematic can schedule the on site FAT visit in an early stage.

Suppliers are responsible to verify that all technical documentation (Part Rev, Drawing, Technical Requirements, 3D Model, etc.) has been supplied. Any questions regarding the technical document package should be directed to the Dematic Buyer.

On the day of FAT, a Dematic Quality representative will perform an acceptance test at the supplier's site in accordance with the test criteria. The inspection criteria have been previously agreed with Engineering.
At the FAT, the supplier needs to provide internal test documentation for dimensional and/or functional test.
After the official FAT approval, the supplier is entitled to send the parts/system to the project site.

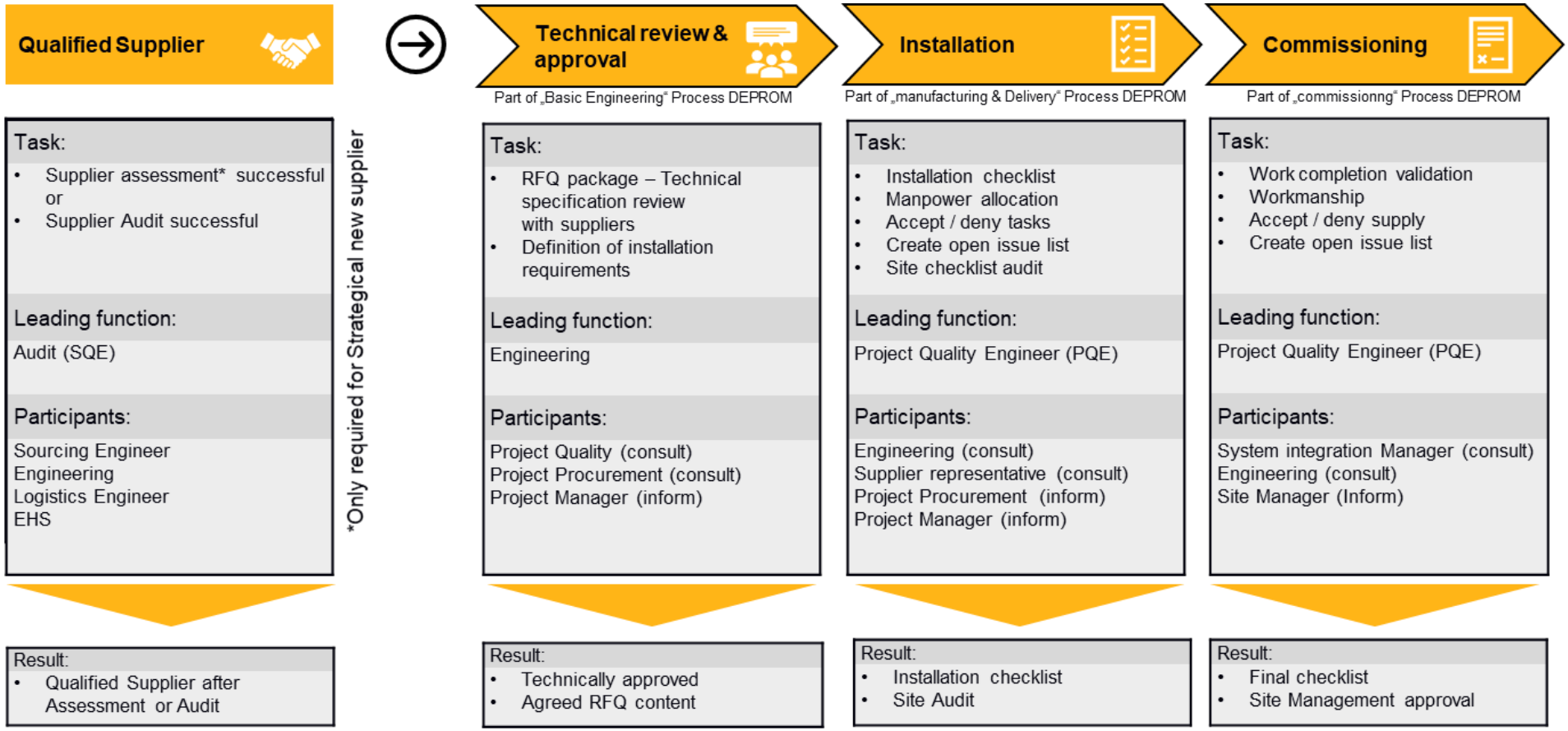
2.3.2.4 SAT

The SAT (Site acceptance test) is a test method that follows the FAT to ensure the functionality of the system immediately after installation or commissioning. SAT is used to reduce the risks before the product / system is fully commissioned. Furthermore, it ensures that the assembly's function properly after transportation and all the regulations have been complied with.

SAT = SITE ACCEPTANCE TEST

On the day of SAT, a Dematic Quality representative will perform an acceptance test at the project site in accordance with the test criteria. The inspection criteria have been previously agreed with System integration manager and/or engineering. The test includes inspections on site, approval of functionality and delivered documents.
The results are recorded against the checklist.

2.3.3 Installations Suppliers



2.3.3.1 Supplier Assessment

The supplier assessment process for installation suppliers is modified from the traditional process under 2.3.1.1, whereby suppliers are graded under Logistics, Quality, and Technical sections to achieve a final score. For service suppliers, the technical role will be represented by Project Engineering. Any score below our benchmark, an action plan will be needed.

2.3.3.2 Technical Review

The technical review for installation suppliers is the same as direct suppliers. Please refer to the point 2.3.1.2 for details of this process.

2.3.3.3 Installation

Suppliers are responsible for all technical documentation has been supplied. Any questions pertaining to the technical document package should be directed to the Dematic Buyer.

All installations to be completed per schedule mutually developed between Dematic Buyer and supplier. Supplier is responsible to verify quality workmanship and to provide only specialized skill labor (ie. welder, etc) to the installation site. Each installer must have passed the Dematic Safety requirements prior to initial work. Suppliers may be subject to a checklist audit by Dematic Quality prior to site completion. The checklist audit will provide conformance evidence to the earlier assessment.

2.3.3.4 Commissioning

After installation completion, supplier will be subject to an installation review prior to site exit. Installation work needs to conform to the technical package provided with final disposition by Dematic Project Engineering or PQE.

2.4 Quality Assurance Agreement

The Quality Assurance Agreement (QAA) is a contractual agreement between Dematic and our supplier. In the QAA, it is detailed what the supplier must provide for quality assurance and to which specifications the supplier must adhere.

With this QAA the Parties contractually define the organizational, technical and management processes to be employed by them to ensure that Dematic will receive products and services that are reliably free of defects. The Parties agree that it is in their mutual best interest to implement these processes in order to avoid defective products and services and, when avoidance is not possible, to detect defects at the earliest possible stage.

THE SUPPLIER IS OBLIGED TO ADOPT ALL MEASURES NECESSARY AND REASONABLE TO ACHIEVE THE ZERO-DEFECT TARGET AND 100% ON-TIME DELIVERY TARGET. ALL REQUIREMENTS IN THIS AGREEMENT SHALL BE UNDERSTOOD WITH THESE GOALS IN MIND.

The Quality Assurance Agreement includes quality contractual requirements:

- It consists of 15 chapters and covers several areas.
- All important quality-related topics are explained and described.
- The QAA is a living document and will be annually updated.

Complete Quality Assurance Agreement can be also found in the Supplier Portal. In case of questions about this Agreement, contact the Dematic Buyer.

https://supplierportal.dematic.com/Contenido.aspx?seccion_id=53

3. PRODUCT SPECIFICATIONS

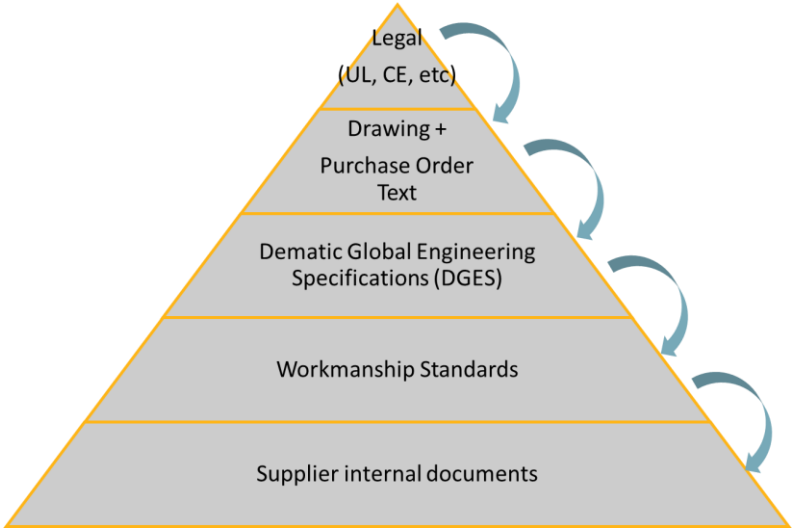
TECHNICAL REQUIREMENTS DOCUMENTATION

The goal of Dematic is to ensure suppliers have a complete understanding of the technical requirements of the product supplied and the capability to meet those requirements. The objective is to identify potential production constraints and minimize the need for late design changes or design changes after the PPAP order or Tooling Order have been placed. In addition, suppliers are encouraged to suggest improvements that would result in reduced costs or improved quality. Supplier must ensure all the technical information defining the component has been thoroughly reviewed and clearly understood. Dematic provides the opportunity to the Suppliers to collect and incorporate comments and suggestions into the drawings and technical specifications. Dematic welcomes supplier suggestions that will improve the quality of the product or reduce the costs associated with either tooling or the product.

SUPPLIERS SHOULD CAREFULLY REVIEW THE RFQ AND ALL OF THE REFERENCED DOCUMENTS TO ENSURE A THOROUGH UNDERSTANDING OF THE TECHNICAL REQUIREMENTS

3.1 Product Specification Hierarchy

It is important to note that there are standards more important that should be followed, and they must be followed in a specific order. The general idea is that when a criteria is not covered by a legal standard, one should go down this pyramid and consult the standard below it. Therefore, a criteria is followed down to the lowest level which are the Workmanship standards and then the supplier's internal documents.



3.2 Legal requirements

Supplier shall inform Buyer immediately if there is any possible risk related to reliability, function, safety, or deviation from legal compliance related to Supplier's product.

Upon request, Supplier shall obtain all required regulatory approvals, and apply approbation marks accordingly, for products and manufacturing processes. Approvals shall be obtained, and products marked, prior to first deliveries.

Upon Buyer's request Supplier shall provide Buyer with full materials content information using the designated format provided by Buyer. Supplier warrants that the information it provides Buyer based on this requirement is correct and complete and will provide a Certificate of Compliance with each full materials content response provided to Buyer. In the event that a failure to comply with this Section is detected, Supplier shall, upon Buyer written notice, immediately remedy such failure so that its conduct and Product conforms to the Rules.

Upon Buyer's request, Supplier shall certify compliance with applicable laws and regulations identified by Buyer and provide such evidence of compliance, which may include but not limited to, test results, test verification, and lab reports.

Dematic desires that material handling equipment purchased by Dematic from a supplier (Supplier) shall be provided by the Suppliers in accordance with the same standards, regulations and recommendations that Dematic complies with when manufactures, installs, and services material handling equipment, To obtain further details of the material handling safety requirements, regulations, and recommendations that Dematic compliers with, please refer to the document SAFETY REQUIREMENTS FOR PURCHASED MATERIAL HANDLING EQUIPMENT. This document can be found in the Supplier Portal.

supplierportal.azure@dematic0.onmicrosoft.com

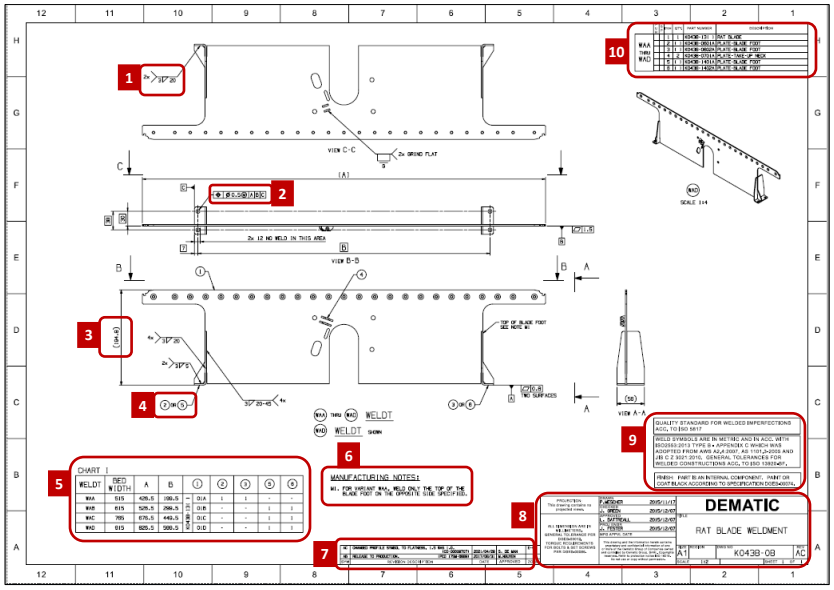
3.3 DEMATIC Drawings

Unlike a 3D model, a Dematic engineering drawing offers a lot more specific information and requirements, including: Dimensions, Geometry, Tolerances, Bill of Materials, Material type, Finish, Hardware, Revision history, manufacturing notes. 3D models are good to have and are usually (especially nowadays) used in conjunction with drawings. They are a good visual representation of the desired item, but do not contain all the information that drawings do.

Dematic Engineering drawings (also sometimes known as prints, manufacturing prints, dimensional prints, drawings, mechanical drawings) are the specific outline that shows all the information and requirements needed to manufacture an item or product.

Main sections of a drawing

Example for reference



1	Mechanical engineering drawing symbols (e.g Welding)
2	Mechanical engineering drawing symbols (e.g Geometry)
3	Dimensions and tolerances
4	Metarial balloon items, reference to the Bill of Materials
5	Chart variants
6	Manufacturing notes
7	Revision drawing history
8	General drawing data
9	Special requirements (ISO Standards)
10	Bill of Materials

Dematic suppliers can find training video and presentation in the Supplier Portal. After accessing the Portal, go to the Suppliers section, then training and download Drawing Interpretation material.

https://supplierportal.dematic.com/Contenido.aspx?seccion_id=34

3.4 Purchase Order Text

A purchase order text is a text describing the material in more detail. This text is copied to purchasing documents (such as purchase requisitions or purchase orders). It is valid for all organizational levels, not for a specific location.

Dematic uses Purchase Order Text to deliver instructions and specification to the Suppliers.

SUPPLIERS SHOULD CAREFULLY REVIEW THE PURCHASE ORDER TEXT TO ENSURE A THOROUGH UNDERSTANDING OF THE REQUIREMENTS

In case of questions or suggestions about the requirements contained in PO Text, reach the Buyer for clarification.

3.5 DGES

Dematic Global Engineering Specifications (DGES) ensure quality and consistency of Dematic entire design to production processes regardless of location, manufacturer, and/or supplier.

Global Sourcing activities must comply with these standards. Where suppliers manufacturing practices are in non-compliance, suppliers must evaluate impacts and submit implementation timelines and/or concerns to the Dematic Buyer.

Specifications are organized by category:

- General: Tolerances, Rollers, Belt Tensioning, and others
- Steel: Mechanical properties, chemical requirements, forming, coating, etc.
- Other Metals: Aluminum, iron copper, etc.
- Metal finishes: Zinc plating, black oxide, paint, etc.
- Plastics: Polypropylene, acetal, polyamide, mechanical, chemical, physical properties, etc.
- Rubber & Foam: Rubber properties.

The index of specifications can be provided by the Buyer during the RFQ process. If a DGES is specified in the drawing, it is responsibility of the Supplier to follow the requirements. Contact the Buyer to get a DGES.

3.6 Workmanship Standards

Dematic already follows certain guidelines as established by the R&D department – which are shown in the product's drawing and the DGES specifications-, by outside organizations such as ISO or CE, and even customer specific standards; but when something is not specified by any of them, there is no general criteria for the Suppliers to distinguish between good and bad quality.

For that matter, the Workmanship standards' goal is to fill the gap that is not covered either by legal (CE, UL, etc.), R&D, or customer specific standards; thus creating a criteria for good and bad quality and deploy it across all Suppliers.

It is of great importance that our suppliers work with us by following these guidelines to produce high-quality products for our customers.

Workmanship Standards are categorized by: Aesthetics Standard. Wiring Standard, Welding Standard, Fasteners Standard and Labeling Standard. These can be found in the Supplier Portal.

3.7 Product Specifications clarifications

Supplier Portal is also available to raise technical questions via tickets submission allowing Suppliers to track their own tickets and see Dematic Design Department answers. If Supplier does not have access to the Portal, Buyer and SQE are available for any question regarding product specifications. Contact directly Dematic for clarification

https://supplierportal.dematic.com/FormTicket.aspx

4. PRODUCTION SPECIFICATIONS

SUPPORTING PROCESSES

4.1 Shipping Guidelines

Depending on the Region / Country of the Dematic location, specific guidelines for shipping practices could exist. These guidelines include labeling, palletizing, identification, and other practices. Dematic Buyer will include these requirements in the RFQ. Contact your Buyer in case of any questions.

4.2 Packaging

Suppliers are expected to package components according to packaging instructions that are agreed to and approved between Dematic and the supplier before shipment to Dematic. Suppliers are required to provide appropriate storage and protection for Dematic packaging while under their control.

When Dematic does not communicate specific requirements for packaging, Supplier is responsible to design the internal packaging to guarantee that, with a proper transport handling, parts arrive to Dematic in good condition.

4.3 Traceability

Lot control and traceability should be established to limit the size and impact in the event of the need for product recalls or campaigns. The control system must be capable of linking production quantities to production processes to support root cause analysis activity. When lot control is utilized, the system must establish and maintain one-to-one relationship between a lot/batch traceability number and a certain quantity of produced parts. If a traceability number, other than the serial number, is used for identifying serialized parts, a one-to-one relationship between the traceability number and the serial number must be maintained. The extent of definition and control shall be based on risk analysis of the product and the potential impact to customers. Suppliers are responsible to ensure that the lot traceability system maintains its integrity through the entire supply chain, including raw material, purchased components/products, and sub-contracted operations.

4.4 Warranty

Responding to field warranty claims remains a top priority at Dematic. When Field Failures are determined to be the result of a supplier's product, suppliers will be notified through receipt of an official claim (refer to chapter6 Non-Conformance System). It is expected that suppliers will fully participate in the investigation, root cause analysis and corrective action when field failures are identified. Suppliers should have an established process for the handling, analysis, investigation, reporting and corrective action of customer field returns. Dematic SQE department may call the responsible supplier for immediate correction or replacement of products. The conditions defining response and responsibility are included in the Purchasing conditions, purchasing agreement and/or quality agreement. A copy of the quality agreement is included as part of the Request for Quotation.

5. CHANGE MANAGEMENT

RESPONDING TO PRODUCT CHANGES

5.1 DEMATIC Design Changes

Applies to those Dematic Suppliers or Manufacturers who… Supply Dematic with components, assemblies, processes, or services and when the drawing, print, specifications, or Purchase Order indicates specifically the part must comply to Dematic revision level requirements

There are currently TWO ways to determine if the parts you supply to Dematic *comply to these requirements:*

- *The Dematic print/drawing or Dematic Engineering Specification will include specific notation indicating control/revision level…*

And

- *The Purchase Order provided by Dematic will include specific notation indicating control/revision level.*

Suppliers of Dematic designed parts "should" have appropriate manufacturing/process control documentation in operation to ensure repeatable production of their product.

Suppliers of Dematic are required to have appropriate process control documentation, which:

- The manufacturing sequence of events, process controls, product monitoring methods, test/inspection processes used to assembly Dematic's product are defined
- Part drawings, process manufacturing plans, process control plans, work instructions, production travelers, approved PPAP documentation, etc., are used to define how the product is manufactured.
- Identifies and aligns appropriately to all defined customer requirements (prints, specs, PO notes, and Dematic's Engineering requirement).
- The supplier must control these documents to ensure current and/or approved revisions do not experience any unauthorized changes and if they must be changed, the changes are controlled and communication to and/or approval by Dematic is completed prior to the change being implemented.
- Supplier's manufacturing documentation would be subject to review/audit by Dematic.

SUPPLIERS SHOULD CAREFULLY REVIEW THE DOCUMENTATION CHANGES AND ALL OF THE REFERENCED GUIDELINES TO ENSURE A THOROUGH UNDERSTANDING OF THE TECHNICAL REQUIREMENTS

5.2 Supplier Process/Product Change Notification

ALL PROPOSED CHANGES TO THE PRODUCT, PRODUCTION PROCESS, MATERIAL OR SUPPLIERS AFTER PPAP MUST BE SUBMITTED TO DEMATIC FOR APPROVAL

The purpose of this requirement is to prevent quality and delivery issues resulting from unapproved, untested changes or modifications after PPAP approval. This applies, but is not limited to, the following cases:

- Transferring of the production line: partly or totally; to a new or existing location, plant or building
- New production layout or changes to production line
- Change of a sub-tier supplier
- Changes of a process at a contract supplier, (surface treatment, machining, etc.)
- Packaging changes or repackaging operations
- Change at sub-tier suppliers that affect fit, form or function of the product
- Renewal of non-consumable tooling
- Change to the raw material
- Outsourcing all or part of production to a sub-tier supplier
- Request for change to product design including dimensions, tolerance, function, appearance

AFTER SUCCESSFUL PPAP NO CHANGE MAY BE MADE TO THE SUPPLIER'S PRODUCT OR PROCESS WITHOUT WRITTEN APPROVAL FROM DEMATIC

Since Dematic functions as a global company with manufacturing functions on most continents, suppliers must be prepared to support the impact of a change request at all impacted Dematic facilities. Suppliers making a process or product change must be capable and willing to provide information and resources required to secure product quality and uninterrupted deliveries.

Introduction of changes without Dematic approval may result in any or all of the following actions:

- All costs related to correcting the situation created by an unauthorized change will be charged back to the supplier pursuing to the agreement with Dematic
- Supplier will be required to complete corrective action and demonstrate effective controls to prevent recurrence
- Supplier may be placed on hold for new business

After receipt by the Dematic, the request is submitted to a team for analysis. Based on the impact on Dematic and the risk associated with the change, the change notification may have one of the following decisions:

- Authorize the supplier modification
- Ask to adapt the content of the supplier modification
- Ask the supplier to delay the implementation until extra actions/ verifications are performed (actions include, but are not limited to, audits, safety stock, testing, etc.
- Ask the supplier to cancel the proposed modification

Once approved by Dematic, suppliers will be notified in writing. Upon receipt of the official approval, suppliers should implement the modification project according to the agreed implementation plan. The level of PPAP documentation required to support the introduction of the change will be determined by the SQE. Authorization to start shipping (with the changes implemented) is only granted via written approval.

5.3 Requesting deviations to specifications

In the case where the supplier wishes to request a deviation to supply parts that do not fully comply with Dematic requirements, the supplier must inform Dematic and request approval. The request must be approved prior to shipment.

To communicate deviations and seeking Dematic approval, supplier may utilize its own deviation notification form or other appropriate method of communication, considering the following when communicating to Dematic:

- ALWAYS communicate the change in writing to the Dematic Buyer, email is OK!
- Identify the Dematic and manufacture's part numbers
- Provide a detailed description of the change and reason/justification for the change
- Provide current and proposed specifications, highlighting changes
- Provide any data available supporting the verification or qualification of the change, which may include First Article data, etc
- Be prepared to provide multiple samples (typically 2) to Dematic, but samples will always be needed if any Dematic technical approvals are required
- Always provide an implementation schedule for the change, remember the notice prior delivery expectation!
- Specify if this change affects the price
- Deliver ONLY the parts after written approval from Dematic Buyer or SQE.

DEMATIC WILL NOT APPROVE DEVIATIONS TO SAFETY CRITICAL CHARACTERISITICS, REGULATORY REQUIREMENTS CHARACTERISTICS OR ELECTRONIC COMPONENTS

6. NON-CONFORMANCE SYSTEM

CLAIMING PROCESS AND FAST RESPONSE

6.1 Claiming Process

This process describes how agreements are reached for claims for damages following delivery and the obligations of the supplier in relation to this. Dematic attaches great importance to ensuring that both the entire process and all information provided for damage evaluation is transparent and clearly understandable. Dematic asks Suppliers, therefore, to read the whole process in the Supplier Portal carefully and pass it on to all employees involved in the process.

In the event non-conforming parts or material have been identified at a Dematic facility or installations site, suppliers will be notified using a Supplier Corrective Action Request. The SCAR is sent to the supplier's quality contact using a central email address.

Dematic has set up the following central e-mail address for Quality purposes:

For Direct Suppliers	
North America	
Monterrey:	sqamty@dematic.com
Salt Lake City/ Holland:	SLC-HOL-Supplier-Quality@dematic.com
Grand Rapids:	Alfredo.Valerio@dematic.com
EMEA	
Stříbro:	quality-strb@dematic.com
Zwijndrecht:	quality.zwijnrecht@dematic.com
Offenbach:	dematicqswareneingangoffenbach@dematic.com
Milano:	dematic.quality.it@dematic.com
China	
Suzhou:	quality-suz@dematic.com

For Resale Suppliers
North America
quality-na@dematic.com
EMEA
quality-emea@dematic.com
China
quality-chn@dematic.com
APAC
apac.quality@dematic.com

It is in the interest of both Dematic and the supplier, to identify and address non-conforming parts as quickly as possible. Suppliers shall take all necessary actions to respond to non-conforming product that reach a Dematic facility or installations site. Every effort is taken to investigate and document nonconformances and to notify the supplier immediately. Dematic has developed guidelines for determining the quantity of parts charged as non-conforming related to a specific SCAR. Any questions regarding the quantity rejected related to a specific SCAR and the effect on a supplier's PPM scores should be directed to the "Issuer" noted in the SCAR. The costs (sorting, handling, shipping, rework and inspection report costs) associated with addressing a non-conformance will be supplier's responsibility commensurately to their contribution to the non-conformity. These costs may include any secondary costs incurred by Dematic resulting from a non-conformance, such as the costs associated with tear down, reassembly, re-testing, and logistics support.

Suppliers can find the whole Processing Guide for Complaint Response in the Supplier Portal. SQE and Buyer are available to respond any inquiry about this process.

6.2 8D Methodology

Dematic uses the 8 Disciplines (8D) process as common problem-solving process for quality issues. Each time a nonconformance or a defect has been documented, the causes for the problem must be investigated and reported in the 8D connected to the claim report. Suppliers should submit their corrective action response to the SQE as soon as possible, and no later than the due time.

In addition to the cause and corrective action conducted during the 8D process, suppliers should conduct root cause analysis for all major issues. Root cause analysis requires evaluation of the weaknesses within the organization processes or systems that allowed the problem to occur. Root cause generally requires management action to address the underlying systems or processes.

Visit the Supplier Portal to find complete 8D training video

https://supplierportal.dematic.com/Login.aspx

AN 8D RESPONSE IS REQUIRED FOR ALL NONCONFORMANCES

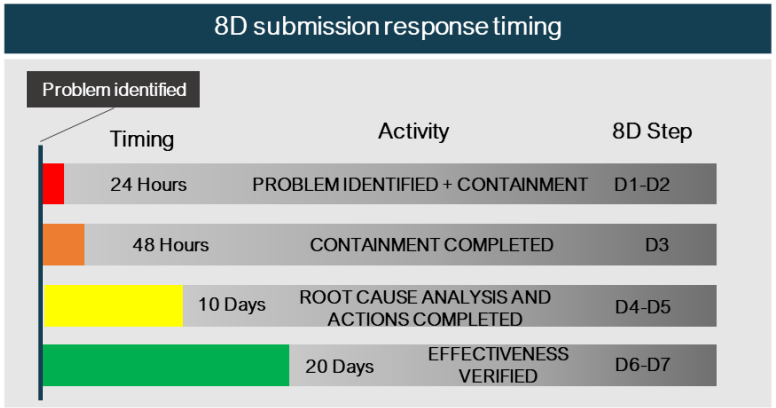
Eight disciplines problem solving(8Ds) is focused on product and process improvement, its purpose is to identify, correct, and eliminate recurring problems.[1] It establishes a permanent corrective action based on statistical analysis of the problem and on the origin of the problem by determining the root causes. Although it originally comprised eight stages, or 'disciplines', it was later augmented by an initial planning stage. 8D follows the logic of the PDCA cycle. The disciplines are:

- D0 Preparation and Emergency Response Actions: Plan for solving the problem and determine the prerequisites. Provide emergency response actions.
- D1 Use a Team: Establish a team of people with product/process knowledge. Teammates provide new perspectives and different ideas when it comes to problem solving.
- D2 Describe the Problem: Specify the problem by identifying in quantifiable terms the who, what, where, when, why, how, and how many (5W2H) for the problem.
- D3 Develop Interim Containment Plan: Define and implement containment actions to isolate the problem from any customer.
- D4 Determine and Verify Root Causes and Escape Points: Identify all applicable causes that could explain why the problem has occurred. Also identify why the problem was not noticed at the time it occurred. All causes shall be verified or proved. One can use five whys or Ishikawa diagrams to map causes against the effect or problem identified.
- D5 Verify Permanent Corrections (PCs) for Problem that will resolve the problem for the customer: Using pre-production programs, quantitatively confirm that the selected correction will resolve the problem. (Verify that the correction will actually solve the problem).
- D6 Define and Implement Corrective Actions: Define and implement the best corrective actions. Also, validate corrective actions with empirical evidence of improvement.
- D7 Prevent Recurrence / System Problems: Modify the management systems, operation systems, practices, and procedures to prevent recurrence of this and similar problems.
- D8 Congratulate the Main Contributors to your Team: Recognize the collective efforts of the team. The team needs to be formally thanked by the organization.

6.3 Fast Response

It is of vital importance that the supplier starts the problem-solving process upon notification. It is critical that appropriate actions occur immediately to contain the problem and avoid any further disturbances to production or potential quality hazard. When notified of a non-conformance suppliers are requested to react in accordance with the following timeline:

- Immediately: Acknowledge receipt of complaint and initiate containment activities.
- 24 Hours: Begin containment activities to include sorting internally, in transit and at Dematic facilities, (third party allowed). Problem analysis started. Identify other Dematic sites at risk.
- 48 Hours: Containment completed, and short-term corrective action fully implemented.
- 10 working days: Cause analysis complete for both occurrence and non-detection, permanent corrective action defined and implemented. (Timing starts after confirmation and acceptance of non-conformance.)
- 20 working days: Effectiveness of permanent corrective action checked, and recurrence prevented



7. SUPPLIER AUDITS

THE DEMATIC PROCESS AUDIT

7.1 Audits Program and audits notification

A Process Audit is a determination, by examination of objective evidence, that an organization conforms to a stated standard and to its own policies.

Dematic Process Quality Audits evaluate the quality performance of Suppliers and should result in continuous improvement.

In general, the audit objectives and responsibilities are to:

- Determine conformity to quality requirements
- Determine effectiveness of the implemented quality system
- Provide opportunity for improvement
- Meet Dematic regulatory requirements

The benefits of the Dematic quality assurance programs, including auditing, is based on prevention rather than detection of problems. Where problems do occur, emphasis is on early detection of the problem, determining the depth of the problem, and discovering the root cause of the problem.

The primary directive of an audit is to be beneficial to the function being audited. The benefits are to determine that:

- Supplier systems are effective.
- Adequate written procedures exist and are used.
- There is adherence to the legal and regulatory requirements.
- System and management deficiencies are detected.
- There is conformance to contractual specifications.
- Standardized practices exist.
- Risks to the involved organizations are minimized.

The main reasons for performing a Supplier Process Audit are:

a) Annual Audit Schedule

An annual audit schedule involving critical suppliers is created by the regional Supplier Quality Engineers in collaboration with Procurement to analyze the supplier's quality system.

The Supplier is considered a critical supplier by Dematic due to:

- Significant production rate.
- The supplier has high complexity, high impact processes such as: welding, painting, etc.
- Components are critical to the performance and safety of Dematic's final product.
- Historical supplier nonconformances.

b) Poor Supplier Performance

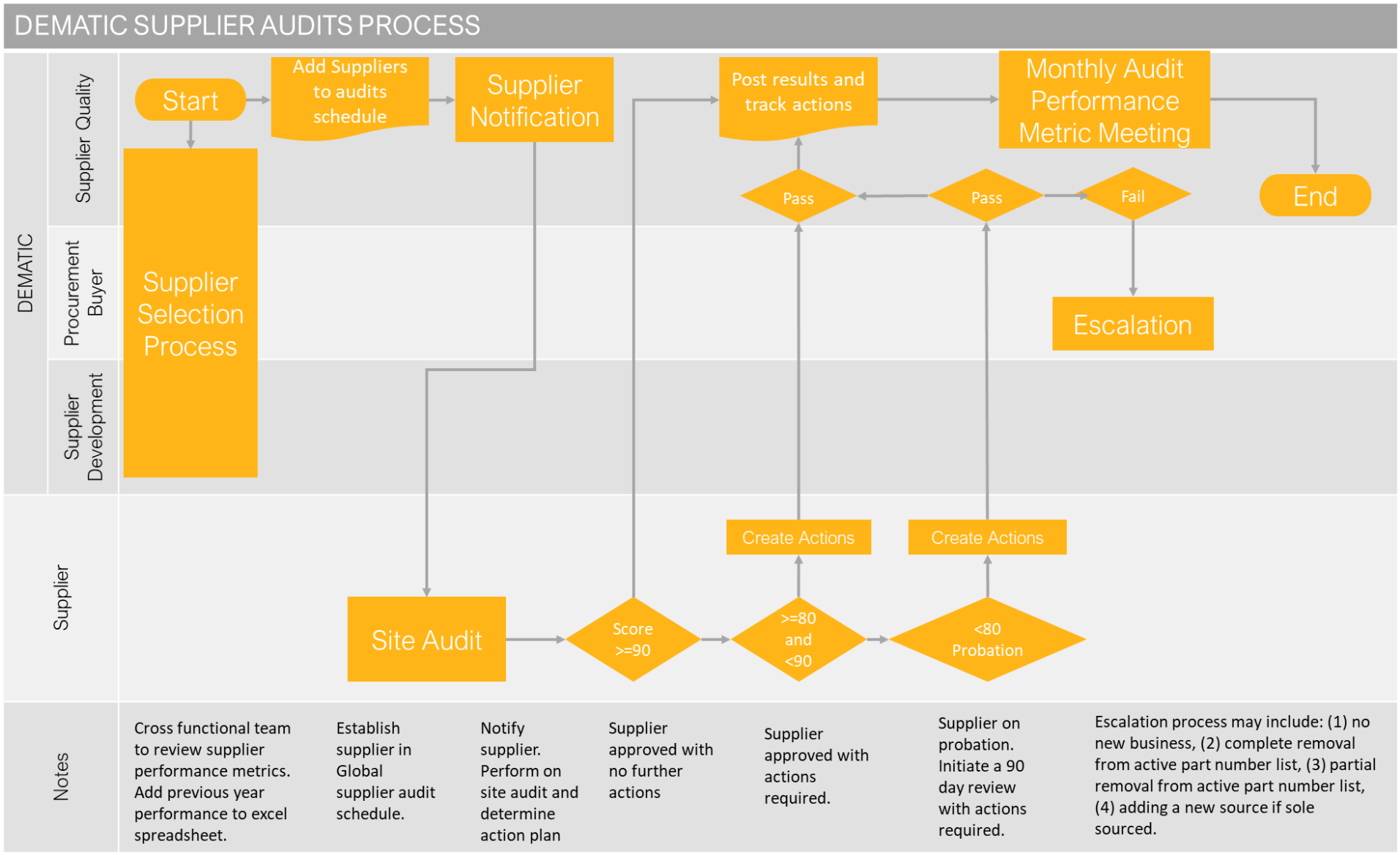
A Process Audit might be initiated due to a Supplier's high number of Supplier Corrective Action Requests (SCARs) or PPM over benchmark standard in a given period of time.

The audit's purpose will be then to assess the system and make sure actions are triggered to correct the nonconformances causing bad performance.

The Dematic Supplier Quality Department creates a yearly audit program. This program contemplates auditing critical suppliers. Suppliers with poor performance may be added to the program if required.

The SQE updates the program in the Dematic System and sends notification to the Vendor when Audit is required.

7.2 Audits Process



7.2.1 Preparation

During the planning stage, the lead auditor understands the auditee's processes, prepares the scope of the audit and notifies the Vendor of the audit. This is executed with complete transparency between the auditor and the auditee.

Inputs for the preparation:

- Collect Previous Improvement Actions
- Gather Historical nonconformances
- Investigate Product and process issues and concerns
- Review recent engineering changes impacting the auditee
- Review Product Audit Template

Preparation steps:

- Develop a semi-technical understanding of the supplier´s processes
- Define the supplier´s critical processes
- Define the critical processes and inspection points to be audited

Outputs from preparation:

- Audit notification letter
- Audit plan
- Audit agenda
- Completion of logistical arrangements
- Plan for collecting of facts
- Request quality system procedures, work instructions, quality manual and reporting forms

SUPPLIERS SHOULD CAREFULLY REVIEW THE AUDIT TEMPLATE AND ALL OF THE REFERENCED POINTS TO ENSURE A THOROUGH UNDERSTANDING OF THE AUDIT REQUIREMENTS

Audit template and documentation can be found in the Supplier Portal. Supplier can also contact the Buyer to get the relevant documentation prior the on-site Audit.

7.2.2 Execution

Initial Kick-off meeting

The lead auditor and audit team shall meet with the supplier's top management team, including:

- Plant Manager/Managing Director (if possible)
- Operations Manager
- Quality Manager
- Engineering Manager
- Others

During the meeting, the purpose, scope, and processes to audit will be explained to the supplier's team. The auditor will request additional information, permissions and plant support to perform the audit.

THE SUPPLIER'S MANAGEMENT TEAM IS EXPECTED TO PROVIDE THE NECESSARY RESOURCES TO AID AND ASSIST THE AUDITOR DURING THE AUDIT, AS THE AUDIT SHALL BE EXECUTED WITH COMPLETE TRANSPARENCY

Audit Execution

Evidence should be collected through:

- Interviews
- Examination of documents and records
- Observation of activities and conditions

Audit Observations

All observations will be:

- Documented
- Reviewed
- Reported as nonconformities, when applicable.
- Clear and concise
- Supported by evidence
- Identified in terms of the specific requirements
- Acknowledged by the auditee management.

Findings and observations will be presented in an impersonal and factual manner.

A finding is an audit conclusion that identifies a condition that goes against the audit plan or a condition that presents an adverse effect on the quality of the activity under review. Each finding must be a clear concise statement of a generic problem and must be based on objective evidence.

Closing Meeting

The meeting should last between 30 to 60 minutes. It is conducted at the end of the audit, prior to preparing the official audit report. This meeting presents audit observations to the auditee´s senior management in such a manner that they clearly understand the results of the audit. The lead auditor should present observations and the audit team´s conclusions. Records of the meeting should be kept.

7.2.3 Reporting

During this phase, the findings must be translated into the Audit format and the final report must be generated by the Dematic lead auditor. The final report should be accurate, concise, clear, and shall be sent within one business week.

The reporting phase includes:

- Reviewing the results against the audit format requirements.
- Preparing the audit final report.
- Listing the findings and observations (if possible, add drawings)
- Approving the report
- Distributing the report to the auditee, client, and other.
- Retaining records in Dematic System.

7.2.4 Follow-up

WHEN SCORE RESULT IS BELOW 90, THE SUPPLIER IS RESPONSIBLE FOR PROVIDING THE DEMATIC SQE WITH AN ACTION PLAN WITHIN (5) BUSINESS DAYS. THE PLAN WILL OUTLINE THE ACTIONS TO BE TAKEN TO RECTIFY THE NON-CONFORMANCE, THE INDIVIDUAL(S) ASSIGNED AND ESTIMATED DATE OF COMPLETION. THIS RESPONSE WILL BE ISSUED TO EACH AUDIT MEMBER, PROCUREMENT BUYER, SUPPLIER QUALITY ENGINEER, AND SDE.

The supplier audit is considered for closure once the corrective action has been implemented and verified. Cross functional action item review bi-weekly or monthly to ensure completion.

Corrective action and subsequent follow-up audits should be completed within an agreed upon time period, and should be traceable via the audit program.

The corrective action must demonstrate that it was implemented in a timely fashion, was effective and was designed to prevent further reoccurrences. The steps leading to a formal closure of the corrective action request might necessitate another site visit to verify the implementation and effectiveness of the corrective action.

8. PERFORMANCE MEASUREMENT

THE DEMATIC DIRECT SUPPLIERS SCORECARD

Dematic maintains a scorecard of the quality and delivery performance for each supplier that delivers parts to Dematic facilities or sites. The measurements on this scorecard are regularly reviewed to track supplier performance and identify negative trends. This information is available for supplier review over the Dematic Supplier Portal. It is recommended that suppliers review this information on a regular basis. Regular review of their performance data allows suppliers to take action to address problems and trends before Dematic is required to take action with the supplier.

Dematic Supplier Scorecard is a tool that enables Dematic to measure and monitor the Suppliers performance (delivery + quality) Globally and/or for specific locations.

The information in the scorecard provides a picture of how Dematic views the supplier ability and capability. The information in the scorecard is routinely used in making sourcing decisions. To access this information, suppliers should contact the Dematic Buyer.

8.1 DEMATIC Scorecard training

Training package exists in the Dematic Supplier Portal including all the details on how to interpretate score and understand the whole process for communication and escalation. In case of any question after reading the training package, contact the Dematic Buyer for clarifications.

8.2 Scorecard content

The supplier's performance is calculated for a calendar month and the scorecard is updated during the first half of the following month. Information about the latest update can be found in the Supplier Portal or contacting directly the Dematic Buyer. The scorecard shows information for the prior twelve months, with the ratings calculation based on a six-month rolling average.

8.2.1 Notification letter

When a Supplier receives the scorecard results, a *rating letter* is always attached, which communicates formally the Supplier performance result of the evaluated month, as well as the specific score obtained, and the next steps to do depending on the result.

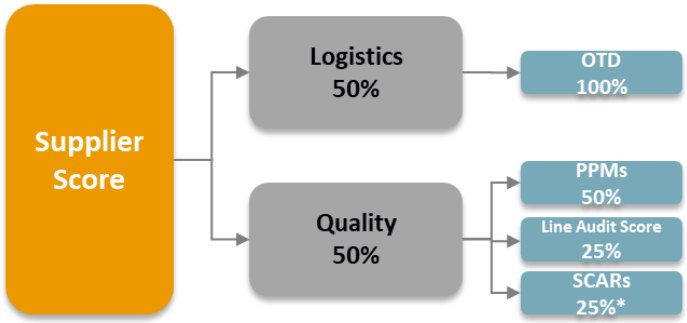
8.2.2 Performance measurement (Quality and Delivery)

Measurement criteria (Overall score):

Points	Rating	Definition
94 - 100	A	Preferred
86 - 93	B	Acceptable
70 - 85	C	Not Acceptable, Actions required
<70	D	Supplier Probation

The goal of the Dematic supplier scorecard is to initiate and drive improvement activities with suppliers who are performing below expectations.

What is considered to calculate the overall score?



$$\textbf{Logistics Points} = \text{OTD Points}$$

$$\textbf{Quality Points} = [(\text{PPM Points})(0.5) + (\text{Audit Points})(.25) + (\text{SCAR Points})(.25)]$$

$$\textbf{Overall Score} = \frac{\text{Logistics Points} + \text{Quality Points}}{2}$$

** If supplier does not have a Line Audit the SCARs % will increase to 50%*

Definition of Terms:

- On Time Delivery (OTD):
  The number of deliveries received on time, divided by the total number of deliveries multiplied by 100.
- Parts per Million (PPMs):
  The number of parts rejected, divided by the number of parts delivered multiplied by 1 million
- Line Audit Score:
  Score obtained from Dematic's Process Audit at the supplier's facility
  *For more details on this process, go to chapter 7 of this Manual
- SCARs:
  The number of complaints issued to a supplier during the time window

8.2.3 Performance per Dematic Factory

For those suppliers which supply parts or services to multiple Dematic factories or sites, the scorecard is capable to display the results and graphs by individual factory or as an overall result. It is important that the Supplier identifies and understands what location is being shown by the scorecard graphs. Supplier can manipulate dropdowns to change the visualization by factory or overall result.

8.4 Action plans follow-up

Suppliers are expected to use the lessons learned from each incident to improve production process, product design, or underlying business systems. The goal is to eliminate the possibility of similar incidents, not only by making procedural and process adjustments on the manufacturing floor, but by removing the environment that allowed the issue to surface. Lasting improvement requires correcting the systems and strategies that support the production process.

A SUPPLIER CAN BE PLACED IN A SUPPLIER IMPROVEMENT PROGRAM BASED ON PERFORMANCE FOR AN INDIVIDUAL PART NUMBER, MULTIPLE PART NUMBER BASES OR ORGANIZATIONAL PERFORMANCE.

In addition to responding to identified non-conformances, suppliers should use statistical data to continually evaluate and refine their processes. This evaluation should include analysis of quality out of control indications, high PPM, scrap, downtime, and warranty failures. The clear objective of this analysis must be reduction of variation with the finished product. The supplier shall have ongoing, active improvement projects that target two or three of the largest problem areas and be able to demonstrate a positive trend in reducing incidents and repeat occurrences.

Glossary

3D three-dimensional

8D Eight Disciplines of Problem Solving

APQP Advanced Product Quality Planning

CE European Conformity

CEO Chairman Executive Officer

DFMEA Design Failure Modes Effects Analysis

DGES Dematic Global Engineering Specifications

ENG Engineering Department (Project Engineering)

EHS Environment Health and Safety

FAI First Article Inspection

FAT Factory Acceptance Test

FIFO First In First Out, accounting method

FMEA Failure Modes Effects Analysis

ISA Initial Supplier Assessment

ISO International Organization for Standardization

NDA Non-Disclosure Agreement

OTD On Time Delivery

PFMEA Process Failure Modes Effects Analysis

PO Purchase Order

PPAP Production Part Approval Process

PPM Parts Per Million, measurement unit

PQE Project Quality Engineer

PU Procurement Department

QA Quality Assurance

QAA Quality Assurance Agreement

R&D Research & Development Department

RFQ Request For Quote

SAT Site Acceptance Test

SCAR Supplier Corrective Action Request, complaint

SDE Supplier Development Engineer

UL Underwriters Laboratories, certification company

Revision record

Edition	Revision Description
01-2022	Initial release

Concluding words

Together with our suppliers and partners, we are on an exciting journey. The supply chain solutions business is entering disruptive times. Change is coming faster with shorter development, manufacturing, installation, and commissioning cycles than ever seen before.

By being part of transforming the automated logistic solutions, strategic partnerships are of utmost importance. Collaboration and co-innovation are primordial to meet the future customer and market demands, thus, your competence and knowledge will be a key competitive advantage for DEMATIC.

With a base of thousands of suppliers around the world, we partner to leverage from each other's strengths for the benefit of everyone – including our customers and society as a whole.

DEMATIC thanks all of our suppliers and partners who are part on our journey and mission in driving prosperity through supply chain solutions.