
SUPPLIERS
MANUAL
MFS
SINTERING

INTRODUCTION

Increasing customer demands, global competition and pricing pressures require more products and robust manufacturing processes from the start of production. Thus, and taking into account the activity of **MFS Trapaga Sintering** (MFS) depends to a large extent on the quality of the supplied products, we consider it essential to face this challenge together with our suppliers if our products are to succeed in the marketplace.

A successful cooperation implies a strict compliance with the requirements for price, supply reliability, quality, and innovation at all levels of the supply chain. Therefore, and by means of this guide, we provide our customers with an updated statement of the key quality requirements that are expected to meet when working with us and which include different concepts like continuous improvement, APQP, zero defects, added value, pro-active risk management etc.

MFS suppliers are also expected to extend the requirements in this manual to their suppliers and assume responsibility to ensure that quality is consistent through their supply chain.

By submitting a tender as a potential supplier, the supplier acknowledges having read, understood and agreed to the requirements set forth in this guideline; commits to comply with these requirements without exception, and promise to ensure their implementation throughout its supply chain.

Purpose:

This manual has been created for MFS suppliers and is provided to communicate quality, delivery and purchasing requirements. This Supplier Quality Manual outlines business rules and supplier requirements necessary to standardize supplier processes, rejections and supplier performance.

The intent of this manual is to extend the scope of latest IATF 16949, ISO 14001 and ISO 9001 requirements and to include the additional requirements of MFS.

This document defines the basic quality systems and procedures required for MFS suppliers and are intended to orient suppliers to these requirements.

The supplier's quality system is subject to review and evaluation by MFS personnel and this document will serve as the basis for such a review. The MFS divisions or plants initiating the purchase orders may provide supplemental requirements.

Scope:

This manual is mandatory for all productive material suppliers (raw material, components and outsourced industrial processes) to MFS and joint ventures registered under the MFS name and for all product lines.

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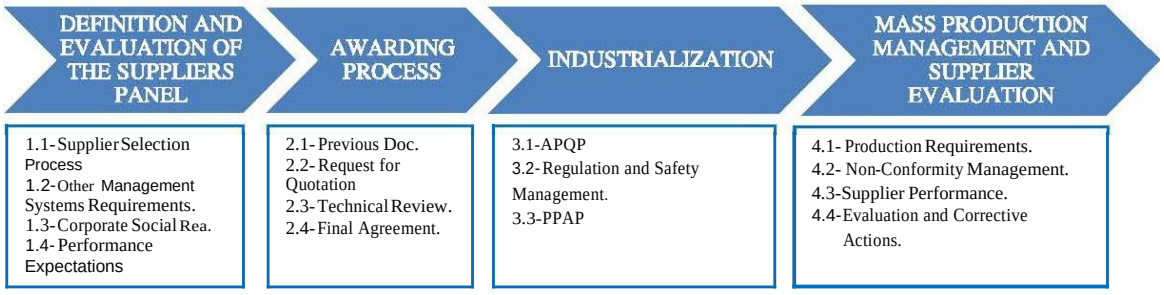
USE OF TIDS DOCUMENT

Organization

This document defines the expectations and working procedures intended to assist suppliers in achieving and maintaining a successful working business relationship with MFS Trapaga Sinterig. This document is organized in chapters, related to our main processes.



The MFS Supplier Portal

MFS maintains an internet portal that allows suppliers to access to current documents and notifications. On the supplier portal there can also be found different resources through which suppliers work hand in hand with MFS, both focused on the continuous improvement.

Suppliers are responsible to apply for access to the MFS Supplier Portal by contacting the host buyer or Supplier Quality Assurance. MFS will provide one user for the main contact, and this contact will be the responsible (administrator) for creating new users and maintaining the contact information for key individuals in their organization.

Key Documents

In addition to this Supplier Quality Manual, MFS maintains a set of documents that define specific requirements and expectations in key areas. These Key Documents cover MFS requirements related to Quality, Logistics, Cost management, Environment, Corporate Social Responsibly, etc... There are also traditional guidelines, communication kits, and templates posted on the MFS Supplier portal.

Furthermore, MFS requires its suppliers to meet the applicable Specific Customers Requirements published in the website of AIAG :(http://www.iatfglobaloversight.org/oem-reguirements/customer-specific- requirements, and other Customer Specific Requirements that may apply. All the additional requirements and information will be sent or communicated to each supplier by means of specific technical documents, drawings etc.

Supplier feedback

Feedback concerning this document or supplier portal is welcomed and encouraged. Any suggestions, including suggestions for additional information or improvements to this document, should be emailed to: andonipozuelo@mfs-sintering.com.

1 DEFINITION AND EVALUATION OF SUPPLIERS PANEL

Supplying products to the vehicle Industry is a very demanding business. It requires the ability to mass produce complex assemblies employing state of the art technologies. To support the demands of this type of production while delivering high levels of quality, there are specific processes and systems defined.

The aim of the Supplier Panel is to ensure that all suppliers of MFS Trapaga Sintering that are taken into account in the awarding process meet basic requirements and expectations. Moreover, by means of the supplier panel MFS Trapaga Sintering ensures the coordination of these decisions across all MFS locations.

In this section the basic requirements to enter in the supplier panel of MFS Trapaga Sintering are defined.

1.1 Supplier Selection Process

To enter into the MFS Automotive Systems supplier panel, suppliers must be homologated. The homologation process defined by MFS Trapaga Sintering, has 2 different phases; Company Homologation and Quality System Homologation, in which the following minimum requirements must be met:

Company Homologation:

- Suppliers must obtain a minimum value in the Company Assessment conducted by staff of purchasing department

Quality System Homologation:

- All suppliers have to possess a company registration certificate in accordance with IATF 16949 and ISO 14001 (expected) or in accordance with ISO 9001, issued by a certification body bearing the accreditation mark of a recognized IAF MILA member and where the accreditation body's main scope includes management systems certification to ISO/IEC 17021.
- Supplier must pass a Quality System Evaluation (Potential audit), conducted by staff of MFS.

The homologation process will depend on the supplier's activity or supplier type and therefore not all the suppliers must go through both phases.

Once the supplier has gone through both phases and has entered into the supplier panel, is provided with the following information:

Purchasing General Conditions

Supplier Quality Manual

Liability Insurance

Purchasing conditions and liability insurance must be fulfilled and sent back to MFS. MFS will not send any RFQ to those suppliers who has not signed the purchasing conditions or confidentiality agreement and sent together with the insurance copy to MFS. Besides, by submitting a tender as a potential supplier, the supplier acknowledges having read, understood and agreed to the requirements set forth in this guideline.

1.2 Other Management Systems

MFS encourages its suppliers to develop different systems so as to approach the key aspects of its activity. In this section there are mentioned other management systems suggested by MFS, which consolidate the relation between customer and supplier.

Environmental System: IS0-14001 with a current certificate or an environmental plan defined.
Health and safety management systems: IS0-45001
Logistics Evaluation: MMOGLE Self-assessment Level A.
EDI: 100% electronic communication.

1.3 Corporate Social Responsibility / MFS Code of conduct.

As you may know our companies are subjected to many existing and incoming laws linked to corporate social responsibility issues, and in order to manage a part of that, MFS company has defined a Code of Conduct (available at website).

This Code of Conduct is part of the Organization and Management Model (Compliance Program) of the MFS Company.
The Code of Conduct seeks to cement the business culture that already exists in the MFS Company. Compliance with this Code is based on cooperation, trust and respect, as well as on the confidential treatment of all communications between the people representing the MFS Company and their stakeholders with who it is in contact.

Compliance with the Code of Conduct is an obligation for MFS Company suppliers. The MFS Company reserves the right to terminate any contract with suppliers who do not comply with this Code of Conduct.

The supplier undertakes to make available to MFS all details and information required on the future regarding sustainability in the form stipulated (e.g, Specific self-assessment questionnaires, final customer's assessments …).

1.4 Performance Expectations

The table below defines the target performance levels for MFS suppliers. MFS desires that all suppliers strive to meet and exceed these target values. All suppliers are expected to adopt a Zero Defect mind set and continuously strive to achieve the goal of Zero Defects. By summiting a quotation the supplier accepts and acknowledges the performance expectations and assumes the responsibility for meeting them.

MEASUREMENT	TARGET
Quality Performance Measurement For scoring explanation, see the section of supplier assessment	85% as a minimum requirement 100% as a target
Delivery Precision / Service Performance For scoring explanation, see the section of supplier assessment	85% as a minimum requirement 100% as a target

The fulfillment of these targets does not relieve the supplier from his obligation to implement the appropriate corrective and preventive measures in case of non-conformities.

The agreement of the above mentioned targets and measures shall not release the supplier from his liability in respect of defect and damage claims from MFS and their customers, which arise from defects in supplies and/or services.

MFS will perform a continuous monitoring of suppliers performance that will be available at MFS Supplier Portal.

2 AWARDINGPROCESS

The awarding of business to a supplier is one of the most important decisions made by the purchasing department of MFS Trapaga Sintering. It directly impacts our ability to deliver to our customers and remain competitive.

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

- Take part actively in evaluation audits carried out by MFS.
- Demonstrate they capacity to achieve the Quality objectives defined by MFS.
- Respond the action plans to achieve the Quality level requirement.

The following chapter explains the main steps in the awarding process required to become a MFS supplier.

2.1 Request for quotation (RFQ)

For the request of quotation, pending of the supplying goods, MFS can send some information to the suppliers. This information includes:

- This Supplier Quality Manual
- Drawings, if it were necessary.
- List of special characteristics (They can be included in the drawings)
  Standards
- Technical Conditions
- Main Milestones of the project or supply.
- APQP format, if it were necessary.

Considering the cost, service and quality objectives, supplier must fully address each section of the RFQ and include all of the requested supporting documents when responding in MFS format. This can include, but is not limited to:

- Preliminary Advanced Product Quality Plan (APQP)
  Statement of Work (if requested)
- Review of Technical Specification (RTS)
  Other documents needed to support and justify the information in the RFQ Response

2.2 Technical Review

The goal of this process is assure that the potential supplier has understood all requirements (including final customer requirement), the feasibility of the product design and manufacturing process in order to minimize the need for late design/process or design/process changes after the PPAP order or Tooling Order has been placed.

The Review of Technical Specification ensures that all the technical information and special requirement defining the part or component has been thoroughly reviewed clearly understood by the supplier and is feasible. The technical review also provides the opportunity to collect and incorporate the supplier's comments and suggestions into the drawing and technical and special specification.

2.3 Final Agreement / Awarding/ Nomination Letter

Once the supplier is selected, the Nomination letter must be signed and returned to MFS.

3 INDUSTRIALIZATION

Staying competitive in the markets where MFS participates requires continuous development of new products and regular improvements to existing product This means that new products require a well-defmed and organized process for project planning and launch.

3.1 APQP (Advanced Product Quality Planning)

Suppliers are required to have an effective project planning process that can support the MFS process and timing for project management, including all requirements.

MFS has adopted the AIAG **guideline for APQP** as the standard planning method for suppliers bringing products to production.

3.1.1 **Scope**

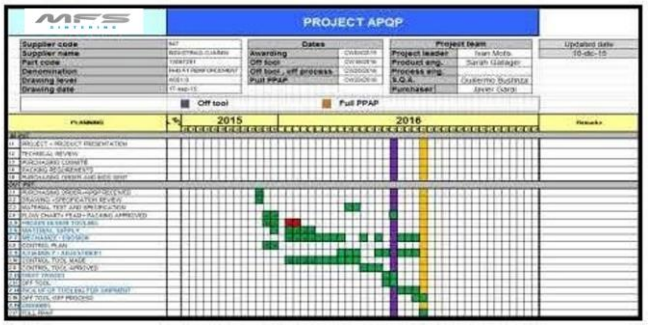
We believe that the ultimate quality of delivered parts is determined during the design and development phase of the production process.

MFS expects suppliers to create product launch plans to support:

- Launch of new components intended for serial production.
- Significant changes to existing products, or process
- Development of new manufacturing processes

3.1.2 **APQP- Planning**

The objective of the planning process is to deliver the project on time, at cost and at the highest level of quality. The initial development of the APQP should begin upon receipt of the RFQ. This initial plan should be included as part of the RFQ response package.



This timing chart gives an overview of the activities typical of a standard launch. This is provided as a reference only. Suppliers are encouraged to develop a plan suited to their specific business.

3.1.3 **Responsibilities in APQP**

MFS has learned that successful projects require a level of cooperation and teamwork between customer and supplier. Here is a short list of the key areas of responsibility.

The SUPPLIER is responsible for:

Assign a dedicated project manager or APQP leader
Organize across-functional APQP project team
Develop and execute an APQP Plan to support asuccessful product launch

MFS is responsible for:

Identify the MFS project team members
Assignan SQA to support the completion of APQP activities with the project team
Identify key milestones and project parameters

3.1.4 **Part/Component Category**

All parts used in the vehicle are important to customer satisfaction and the safe, reliable operation of the final product. However, there are some parts that require more attention than others. At the start of a project, a cross-functional project team classifies the parts in three different categories: Quality Part A, B and C.

- **Quality Part A**: A parts are those with any safety characteristic, regulatory or legal requirements, high difficulty of manufacturing, appearance requirement or high impact in a safety product/feature. They also can be included in this category the parts that although they do not meet the conditions described, are similar to another parts that have been critic in another projects. For A parts it is required the APQP with a continuous monitoring, including audits in suppliers location.
- **Quality Part B:** B parts are parts with functional/significant characteristics and structural parts. The APQP is also required for B parts, but in this case the monitoring demands are less stringent.

- **Quality Part C**: C parts are raw materials and parts with very little or no impact on the general quality of the end product. They can be standards screws, labels, rivets... The APQP is not necessary for C parts.

The MFS buyer or Supplier Quality Engineer will notify suppliers about the category of the parts during RFQ process.

3.1.5 **APQP Reviews**

Suppliers of A and B parts/components are required to report the project status at regular, established intervals during the project development.

Suppliers should be prepared for these project review meetings by completing or updating the APQP Review Template, their project plan and the project milestone dates. The initial APQP Review meeting (Kick-Off Meeting) should occur within two to four weeks after the award of business.

Suppliers are responsible to complete and maintain the information for each review meeting.

3.1.6 **APQP Soecific Requirements**

In addition to the general activities required by Advanced Product Quality Planning, MFS has developed a select Company of activities that support the process of new part introduction.

Frequently these tasks require close cooperation between the members of the MFS and supplier's project team. Suppliers are encouraged to be full participants in these activities. All of the tasks required to support these activities should be included in the supplier's project plan.

3.1.6.1 *Special Characteristics*

Among all characteristics of a part, there are some characteristics selected as special characteristics. The identification, selection criteria, requirements and guidelines related to special characteristics are available in **SupplierDocs.** (See **BSIIT-4A.1.201-***01_Special Characteristics)*

In case of any OEM Customer Specific Requirements, MFS will inform and provide each supplier with the necessary information.

This standard describes the system used by MFS to highlight and grade critical characteristics appearing in drawings and technical specifications.

For all features identified as a special characteristic, supplier the following requirement applies:

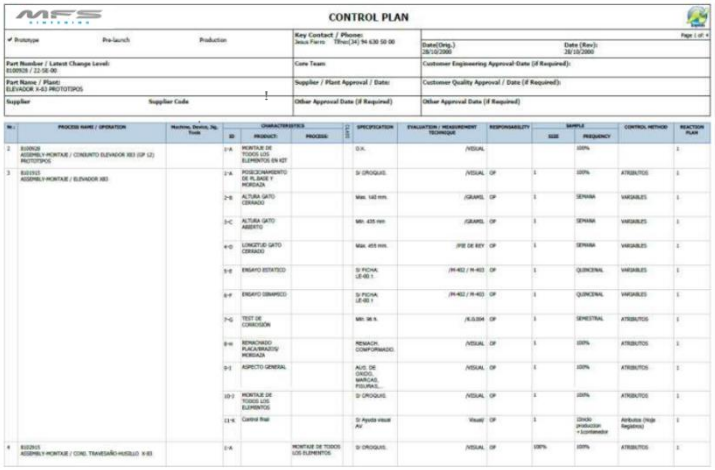
In addition to the special characteristics identified in MFS drawings or technical documents, suppliers must identify any special characteristics related to their product. Suppliers should communicate their standards for selecting and ranking critical or key characteristics and the methods used for designation on drawings. Suppliers shall also define any special considerations for handling, assembly, application, capability or use required to ensure safe, reliable performance of the product.

Remark: For safety and Regulatory characterists, please see charter 3.2

3.1.6.2 *Prototypes*

To support design verification testing, or early build trials, suppliers may be required to deliver prototype parts. There are regarded as prototype parts all the parts built on a production process other than the final PPAP approved process.

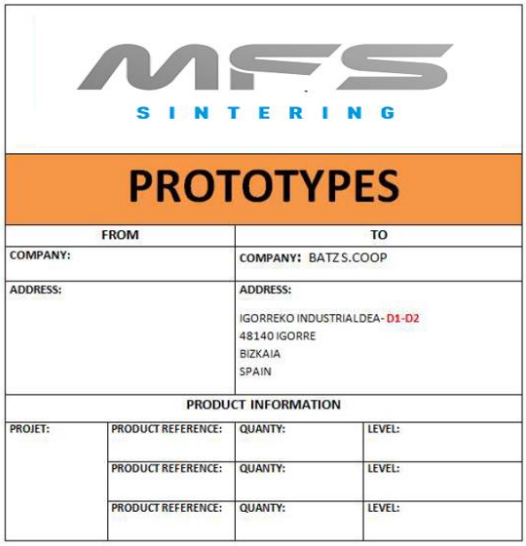
Suppliers are required to develop a Prototype Control Plan to support the production, inspection and testing activity.


CONTROL PLAN

Unless otherwise agreed between the supplier and MFS, suppliers of prototype parts are required to perform 100% measurement evaluation prior to shipment to MFS. The documentation demonstrating the inspection and the actual measurement values must be recorded and copies of the records forwarded to MFS at the time of shipment.

Shipment of prototypes

All shipments of prototype parts must be clearly identified using the label sent in the nomination, prominently displayed on the exterior of the shipping skid or container. On the label it must be detailed who is sending the prototype parts, to which project they belong to and the part number and quantity of the references in the container.



Identification of prototypes

Prototype parts must be clearly identified with the part number, the part version and the quantity of each reference. In case any additional requirement or specification is needed, MFS will contact and agree directly with the supplier.

3.1.6.3 *Prelaunch Control Plans*

Suppliers are expected to use pre-launch control plans to increase the level of quality controls applied during ramp up and early production stages of new part launch. A prelaunch control plan is defined by increased frequency, levels of inspection and increased controls during the early stages of production. The purpose is to protect the customer from problems until process controls can be refined and start-up problems can be identified and resolved. The control plan should be adjusted once the production process has been stabilized and process control can be assured.

3.2 Regulation and Safety Parts Management

In MFS quality and safety have been core values of the corporation. Since that time, the continued commitment to the research and development of new and often unique safety solutions has made the MFS name synonymous with safety around the world.

Today, Quality, Safety and Care for the Environment continue to be the core values of the organization and form a foundation for all business practices including the cooperation between MFS and our suppliers.

The primary objective is to develop products that assist in preventing accidents from occurring or, in the event an accident does occur, to minimize the consequences for the drivers and others on the road.

The supplier's contribution to safety lies in developing innovative solutions, implementing safety features and producing fully conforming products. The MFS safety management program focuses on both the suppliers' management systems, and product quality related to safety.

3.2.1 **Dermition**

Safety requirements are determined based on the potential of a feature, product or system to create a personal hazard to any person in contact with the products or effects caused by the product. A Safety Customer Effect is considered when a danger can lead to injuries to vehicle operator, passengers, other travelers, passers-by or maintenance personnel.

3.2.2 **Responsibility**

The production of safe, fully conforming products to the MFS Company companies is the supplier's responsibility and is part of the supplier's contractual commitment. Any assistance provided by MFS does not in any way limit the supplier's responsibility to supply parts that conform to all technical specifications (including OEM Customer Specific Requirements), standards, 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. The characteristics identified by the supplier must be added to the list sent previous to the RFQ.

Suppliers must clearly identify special characteristics related to safety (according to requirements defined by MFS and OEM Customers); within their design specifications, verification/validation plans, drawings and all the technical documentation, including the FMEA.

Suppliers are also responsible for ensuring that all sub-suppliers and contractors are aware of and comply with the requirements related to safety requirements. Tier n suppliers must have procedures and practices to ensure that an adequate level of control and requirements are deployed at all suppliers or sub-suppliers, whose product or processes could have an effect on safety related features.

3.2.2.1 ***Product Safety Representative (PSB) at Suppliers.***

Each supplier has to assign a person as a "Product Safety Representative (PSB)" in order to assure the compliance with the regulation and safety parts management. The name of the PSB must be included in MFS Supplier Portal data base.

Note: Please, check the PSB requirements in **SupplierDocs.**

3.2.3 **Identification**

3.2.3.1 ***Identification of the characteristics***

Safety characteristics are defined when their non-compliance with the specification could affect the final customer. MFS will provide supplier with a list of special characteristics or will identify them on the drawings. All the special characteristics will be reviewed in the technical reviews.

3.2.3.2 ***Identification of the product***

The method used for the lot/series marking, in terms of safety, must include the traceability. The series or lot number should appear on the part and preferably it must be visible once it is assembled.

3.2.4 **Production Requirements**

Special characteristics must be clearly identified throughout the manufacturing process and in all associated documentation such as process FMEA, control plans and work instructions.

Capability requirements for parts identified with special characteristics are described below. Unless any additional requirement is determined the special characteristic must meet the following:

	Minimum requirements	No. of minimum samples.
 Safety Characteristics	PPAP Presentation: Ppk 1,67: Process performance approved. On-Going production: Cpk 1,33: Process performance approved.	Minimum of 50 consecutive pieces of the same batch. Minimum 100 pieces (random samples with a size of 5 pieces) taken in different batches that cover the whole process over time. (Different batches of materials, different machine settings, different operators, different shifts, ...)
 Regulation Characteristics	PPAP Presentation: Certificate of compliance with the legal or regulatory requirement. In case of dimensional characteristics, same as the point above.	S **/** Test requirements. In case of dimensional characteristics, same as the point above.
 Significant **/** Functional Characteristics	PPAP Presentation: Ppk 1,33: Process performance approved. On-Going production: In specification. (Control by attribute is acceptable)	Minimum of 50 consecutive pieces of the same batch.

Remark: In the event of non-compliance with the capability minimum values, the supplier is required to perform 100% inspection or implement an "Error-proofing System" or "Poka-Yoke" in order to ensure the conformity of the supplied parts.

Data records resulting from SPC, automated checking, and inspection results must be available for download upon request by the MFS SQA. The data must include identification of the production lot or serial number information.

In addition to the demands detailed in the table above, the supplier must apply the following requirements;

Identification of the operations which have a direct or indirect influence on safety feature
Clear signs or placards defining the characteristic and potential effects of non-compliance
Training status and authorization for all operators working on safety feature related workstation
Other OEM Customer Specific Requirements applicable.

Thorough documentation is necessary in order to:

Demonstrate that critical components do not have any safety related defects, either from MFS or supplier.
Demonstrate that both MFS and legal requirements are met.
Limit the number of products subjected to field actions, if any.

3.2.5 **Safety Management.**

Suppliers must be able to demonstrate they have the organization, systems, processes, and competences to manage the MFS requirements related to safety characteristics.

When there is some specific customer's (OEM) requirements for safety management, MFS will inform and request to the supplier in order to assure the compliance in the complete supply chain. (For example: TLD requirement for VW Company)

3.2.6 **Lot Traceability**

In addition to component/materials traceability, the system must be capable of providing the production history of a lot or serial number. This history must include:

Rework operations or activity
Product and process special characteristics
Test records
Process parameters influencing conformance
Machine settings influencing conformance
Maintenance activity of machines, equipment, jigs, gages and test equipment
Operators and personnel qualification records for operators performing the work

The minimum requirement for storage of information related to safety critical parts is 15 years from date of manufacturing. Any additional requirements related to storage related to applicable legal requirements must be maintained.

3.3 PPAP (Production Part Approval Process)

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

For the PPAP (as for the APQP) MFS follows the AIAG requirements, with the exceptions for trucks and heavy equipment.

Note: When there are some specific or additional requirement (Specific format according final customer (OEM's format), for example VW, VDA 2 format, ...), MFS will inform and request to the supplier in order to assure the compliance in the complete documentation.

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

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

3.3.1 Scope

MFS requires its suppliers to follow the Customer Notification and Submission requirements as specified in the AIAG PPAP Manual. This includes but is not limited to:

- Supplier process change
- Material changes or substitutions
- Changes of sub-tier suppliers
- Introduction of new components
- Changes to an existing part
- Drawing or specification changes
- Corrections to a prior discrepancy

All PPAP requirements will be communicated via the PPAP Request which is together with the PPAP format (including PSW) available in MFS.

Note: In case of you need specific format according final customer (OEM's format), for example VW, VDA 2 format, ...),which are not available, please ask MFS buyer and SQA.

3.3.2 **PPAP Basic Requirements**

The preliminary target date for PPAP submission may be included as part of the RFQ information. PPAP submission dates must be planned as a milestone in the supplier's APQP plan. Any issues, delays or changes to the PPAP target date should be communicated to the MFS buyer and SQA.

The supplier is responsible for the PPAP preparation:

- Suppliers must notify the MFS Buyer and SQA of the proposed shipment date; failure to acknowledge the PPAP order is considered agreement to the due date
- Suppliers (Tier n) are responsible for the planning, approval, corrective action, follow-up and retention of PPAP submitted sub-suppliers (Tier n-1) and sub-contractors (Tier n-1)
- Supplier must indicate to the SQE if this PPAP part has been produced from new, revised or refurbished MFS Company owned tooling, including our T- Purchase Order Number as reference.
- Full documentation is required on five parts selected from the Significant Production Run
- For special characteristic, Ppk studies for PPAP approval must be completed on a minimum of 50 pieces.

The SQE may ask for the submission of additional information. Agreement to provide additional data must be documented prior to submission of the PPAP. Prior to submission, suppliers should contact the responsible SQA to determine if additional documentation is required. Proprietary documents that cannot be submitted must be available for review. Suppliers may be required to travel to MFS sites for review of proprietary documents.

3.3.2.1 ***International Material Data Standard (IMDS) and Registration, Evaluation,Authorization and Restriction of Chemical (REACH).***

All suppliers are required to submit within the IMDS on-line system all information required to comply with ELY (End of Life Vehicle) requirements. The data must be entered into the IMDS system at the time of PPAP submission, or earlier if requested by MFS. An IMDS screen print showing approval shall be supplied with the PPAP package.

For regions utilizing Registration, Evaluation, Authorization and Restriction of Chemical REACH, the supplier is responsible to fulfill all REACH requirements.

3.3.3 PPAP Submission Levels (Ace. with AIAG PPAP Manual)

There are 5 different levels of documentation (1 to 5) to be presented in the PPAP for each product/supplier, which depend on the following factors: category of the part (A, B or C), MFS experience with previous parts presentations, experience of the supplier with the article in question, new processes or suppliers…

The Level of PPAP submission to MFS always defaults to a Level 3 submission, unless otherwise specified. The language is English (parallel translation or other language with a previous agreement could be acceptable). The PPAP is at no cost to MFS.

The levels of PPAP presentation are:

- Level 1: Warrant, Appearance Approval Report (for designated appearance items only)
- Level 2: Warrant, Parts, Drawings, Inspection Results, Laboratory and Functional Results, Appearance Approval Report.
- Level 3: At Customer Location -Warrants, Parts, Drawings, Inspection Results, Laboratory and Functional Results, Appearance Approval Report, Process Capability Results, Capability Study, Process Control Plan and other possible data specified in the order (Gage Study, FMEA, etc.)
- Level4: Warrant and others requirements as defined by customer
- Level 5: At Supplier Location- Warrants, Parts, Drawings, Inspection Results, Laboratory and Functional Results, Appearance Approval Report, Process Capability Results, Capability Study, Process Control Plan and other possible data specified in the order (Gage Study, FMEA, etc.)

3.3.4 PPAP Approval / Rejection

The following dispositions will be used for each step of the PPAP approval process:

- **Accepted / Approval**
- **Refused:** The supplier must correct and resubmit the PPAP package. Only the characteristics affected by the changes on the tooling and/or process need to be addressed in the resubmission. If the PPAP has been rejected because of missing documentation, the documentation must be included with the resubmission. The supplier must not ship production quantities while the status of the PPAP is "Refused" unless a deviation is granted for all characteristics contributing to the rejection. If the supplier's PPAP is rejected, the product shall be corrected and the PPAP resubmitted for approval.
- **Interim (until date):** This status may be applied after analysis by MFS Trapaga Sintering about the respective discrepancies. A deadline will be given for the correction and presentation of new PPAP. Reference PPAP approval document.

Full Approval or deviated PPAP approval must be established prior to shipping parts/components to any MFS Trapaga Sintering facility for production. Any production shipments received by a MFS Trapaga Sintering facility prior to obtaining such approval will result in rejection and subsequent NC and PPMs.

After PPAP approval has been granted, suppliers are responsible for making sure that future production continues to meet all customer requirements.

3.3.5 **Significant Production Run**

A Significant Production Run is required for all new part introductions and is the basis for the Production Part Approval Process. This sample run is to be conducted using production tooling/equipment, environment (including production operators), facility, and cycle time.

The "Significant Production Run" requires that an adequate quantity of parts be produced to allow:

- Overall process stabilization time
- Accurate calculation of manufacturing cycle time
- Determine production through put time
- Sufficient volume for completion of capabilities studies

The parts for PPAP must be taken from a significant series of the production. This series may correspond to the production of one hour of a manufacturing shift with a minimum quantity produced of 300 parts, unless another quantity has been agreed in writing with MFS Trapaga Sintering.

For measurements and tests, representative samples shall be taken of each position of the mnltiple cavity moulds, dies, tools or standards. The full-dimensional layout using the MFS Trapaga Sintering dimensional form shall be completed on a minimum of five parts per tool or monld/die cavity.

3.3.6 **Product-Process Change Notification**

In accordance with the IATF 16949 standard, the PPAP guidelines, and MFS Purchasing conditions, a supplier cannot implement a change to a product or production process after PPAP approval, without prior approval from MFS.

The purpose of this requirement is to prevent quality & 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.....)
- Packaging changes or repackaging operations
- Change at sub-tier suppliers that affect fit, form or function of the product
- Renewal of current 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

The supplier desiring or requiring a change, shall submit a completed Product and Process Change Notification form to the MFS buyer with a copy sent to the Supplier Quality Engineer as soon as the modification project is known, and at least 6 weeks prior to the intended Start of Production. Suppliers may be required to submit additional information to support evaluation of the proposed change.

Suppliers must be prepared to support the impact of a change request at all MFS using 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 MFS 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.
The supplier's 3rd party Certification Body will be formally notified that the supplier is not following quality system or customer requirements.
Supplier will be required to complete corrective action and demonstrate effective controls to prevent recurrence.
Supplier will be put on hold for new business until effective corrective action is taken.

After receipt by MFS, the request is submitted to a team for analysis. Based on the impact to MFS and the risk associated with the change, the proposal 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,**…)**
- Ask the supplier to cancel the proposed modification.

Once approved by MFS suppliers will be notified by an official document. Upon receipt of the approval letter, 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 SQA.

3.3.7 **Product Audit and Requalification.**

The supplier must carry out "Product Audit" and "Requalification Audit" in order to confrrm that the products in series meet the requirements arising from drawings and specifications.

Both "Product Audit" and "Requalification Audit" shall be performed by the supplier for all products supplied to MFS. The frequency will be defined for every project according to the final customer requirement. In case these frequencies are not specified, the "Product Audit" will be performed every year and the "Requalification" every 3 years.

The scope of that "Product Audit" shall be agreed with the SQA Responsible of the supplied plant. If there is no such agreement, the scope must include all dimensions, functional tests and characteristics of drawings, similar to the submission of initial samples.

Such "Product Audit" tests, as well as its frequency and number of samples to be tested must be reflected in the Control Plan.

In the event that during period "Product Audit" it is detected some deviations regarding drawings requirements and/or specifications, that situation must be notified immediately and in writing to the Quality Department of MFS plants supplied.

The "Requalification Audit" must include all PPAP documentation.

The supplier shall perform such "Product Audit" and "Requalification Audit" without being required by MFS. If requested by MFS, further documents shall be also submitted. MFS is not required to answer to the report.

4 MASS PRODUCTION MANAGEMENT AND SUPPLIER EVALUATION

While the production process ultimately determines the quality of product, ensuring consistent quality also depends on the capability of supporting processes. To success in such a complex and demanding process, MFS acquires a proactive character with the suppliers working hand by hand with them in continuous improvement.

For it, MFS has defined some production requirements to be met by the suppliers and evaluates supplier's performance based on their accomplishment. The indicators resulting from this process are compiled every month and are reviewed and evaluated at all levels of the MFS organization. These measurements will be available for review on the Supplier Scorecard on the supplier portal.

4.1 Production Requirements

The processes described in this section do not directly determine or improve product quality, but failure of these processes has the potential to adversely affect product quality.

4.1.1 Requesting Deviations to Specifications

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

To request a deviation, suppliers must complete and submit a Request for Derogation. This form is available on the MFS Supplier Portal.

All shipments made under a deviation should be identified on the exterior of the shipping container. Specific labeling type should be agreed between the supplier and the SQA. Any label should include the deviation approval number.

4.1.2 **Lot Traceability**

Lot control and traceability should be established to limit the size and impact in the event of the need for product recalls. The control system must be capable of linking production quantities to production processes to support root cause analysis activity.

When batch 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.

H 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-out the entire supply chain, including raw material, purchased components/products...

4.1.3 **First In First Out - FIFO**

Suppliers are responsible to have inventory control systems that positively identify and control obsolete material to prevent inadvertent shipment to MFS. Suppliers shall maintain First In/First Out (FIFO) inventory management practice. The system for FIFO control must ensure controls extend to rework/repair, test activity and off-site (sub-contract) processes.

4.1.4 **Sub-Tier Supplier Reouirements**

MFS Purchasing requires that all sub-tier suppliers are 3rd party registered to ISO 9001 with a plan for achieving IATF 16949. MFS strongly encourages our suppliers to support IATF 16949 certification of their suppliers. Suppliers have full responsibility for the quality assurance and corrective action of products delivered from sub-tier suppliers for use in MFS products.

Suppliers from MFS are responsible to transfer to his sub-supplier all requirements that have been requested from MFS in this quality manual and customer specific requirement if applicable.

MFS Purchasing reserves the right to have direct access to sub-tier suppliers and processes that could have significant impact on final product quality. This will generally concern technical processes like surface treatment, heat treating, forging, casting etc.

If one of the sub-suppliers falls into one or more of these categories, it must be communicated and checked with the SQA. Access to sub-tier suppliers or approval of sub-tier suppliers by MFS Technical Specialist, does not change or reduce the supplier's responsibility for quality of products supplied by those sub-suppliers.

MFS Purchasing requires suppliers to use the AIAG Production Part Approval Process (PPAP) and that this requirement is applied to sub-tier suppliers of products to be used in MFS products. Suppliers have the responsibility for managing the PPAP at their suppliers and maintain evidence of compliance.

Once a part is approved, changes at sub-tier suppliers that affect its form or function must be documented and approved by MFS using the Product Process Change Notification process.

4.1.5 **Packaging**

MFS approves the packaging for each project during the APQP. Once the packaging is homologated (PPAP) no changes are permitted without a previous authorization of MFS. Not fulfilling the packaging conditions will effect on the suppliers evaluation.

4.1.6 **Warranty**

Responding to field warranty claims remains a top priority at MFS. When Field failures are determined to be the result of a supplier's product, suppliers will be notified through receipt of Non-Conformity. 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.

If the non-conformity is generated by a supplier, a MFS (SQA) may call the responsible supplier for immediate correction or replacement of products.

4.1.7 **Spare Parts Requirements**

MFS has the same level of quality requirements and expectations for parts produced for service and aftermarket as required for production parts when service parts are identical to the serial production parts.

With the aim of satisfying the buyer's spare parts requirements, the supplier should maintain any molds, tools and other elements in a perfect state of use and operation for an initial period of 15 years.

4.1.8 **Laboratory Requirements (Service Suppliers)**

All suppliers' laboratories or contract laboratories used to evaluate MFS products must comply with the requirement of Chapter 7.6 "Control of monitoring and measuring devices" of the IATF 16949. Laboratory and measurements reports must comply with the requirement of Section 4.2.4 "Control of Records".

In particular, laboratory and measurement reports shall include:

The identity and location of the laboratory used
References to the test methods used
Any deviation to the test method
Measurement results
All necessary materials and process traceability information on the tested components or samples

4.1.9 **Record Retention**

DOCUMENTATION	DOCUMENTS	RETENTION PERIOD
PPAP Documentation	Drawings, Process flow charts, Control plans, FMEAs, PSWs, instructions…	Duration of the production and service activity Plus 5 year
Quality Records	Inspection records, functional test results, material certification, torque records, Other test results (cleanliness)…	5 years from date of production
Quality System Documents	Internal quality system audits, product audits, management reviews…	5 years from date of creation
Product Safety and Regulatory related records	Inspection records, functional test results, material certification, torque records, traceability records…	15 years from date of product manufacture

4.2 Non-Conformity Management

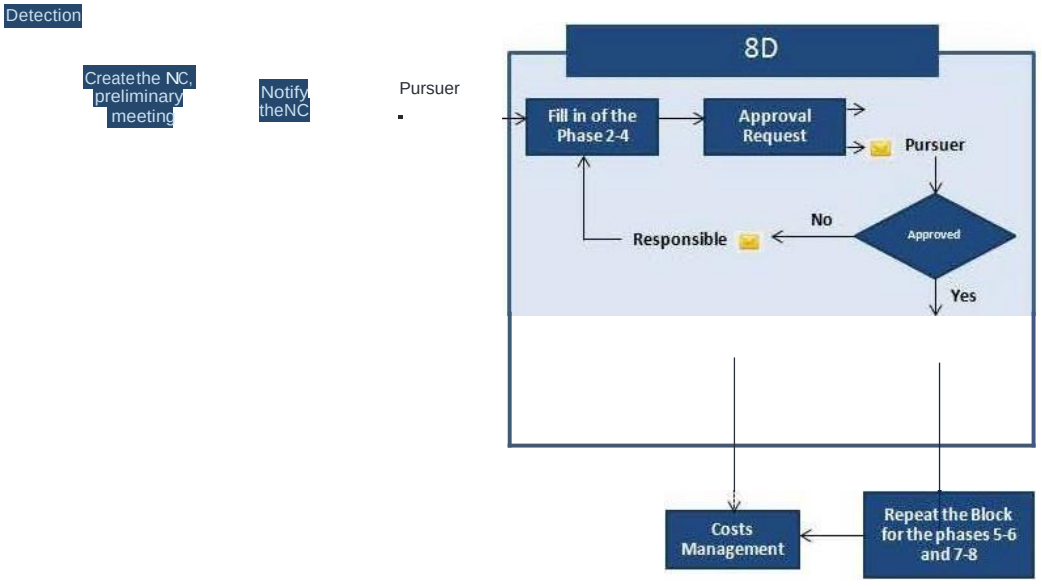
Suppliers shall take all necessary actions to respond to nonconforming product that reach a MFS facility (production site, warehouse, etc) in required format. When possible, suppliers will be given early notification of a problem prior to the issuing of a formal complaint. In the same way, suppliers are required to notify MFS immediately if it is suspected that non-conforming material has been shipped to a MFS facility.

All costs (administrative, sorting, handling, shipping, rework, ...) associated with addressing a non-conformance will be the supplier's responsibility, including the costs related with work and materials of the activity of this third party, as well as any other secondary costs incurred by MFS.

4.2.1 Non-Conformity Management procedure

Suppliers are required to respond using the 8D methodology by means of the GTK resource, available in supplier portal. The 8 Disciplines (80) process is a common problem solving process used in responding non-conformities.It defines the key steps involved in problem resolution including containment of the problem, root cause analysis, problem correction, and problem prevention.

The procedure for the non-conformity management is represented in the following diagram.



Suppliers are the responsible of the non-conformity and the answers provided by them are going to be analyzed by the pursuer/supervisor (SQA). The responsible requests the approval of each phase once he has filled in. The pursuer then approves or disapproves the phases of the 8D and communicates the approval or disapproval to the responsible. The non-conformity will be closed with the approval of the last phase.

4.2.2 **Timing**

The timing starts with the notification of the Non-Conformity.

> Immediately: Acknowledge receipt of Non-Conformity.
> Phases 2-4 answered within the first 24h: Begin containment activity to include sorting internally, in-transit, at MFS and in final Customer. Problem analysis started.
> Phases 5-6 answered within the first 10 days: Root cause analysis completion, corrective action defined.
> Phases 7-8 answered within the first 30 days: Effectiveness of permanent corrective action checked and documentation updated.

If the resolving time lasts longer than 30 days, the supplier must reach an agreement with SQA. In addition to correction of the documented problem, suppliers shall apply the lessons learned to all similar products or processes.

It is essential that the suppliers start as soon as possible with the response. It is also critical to take the proper actions to contain the problem and this way, avoid bigger problems or potential risks regarding to the quality of the parts. MFS reserves the right to start an escalation process, in case the supplier doesn'"t proceed according to the defined timing or procedure.

4.2.3 **Continuous Improvement**

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 processes 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.

In addition to isolated events, suppliers shall use statistical data to continually evaluate and refine their processes. This evaluation should include analysis of quality incidents, 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 on-going, 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.

4.3 Supplier Evaluation and Corrective Actions

MFS maintains a scorecard of the quality, delivery and cost performance for each supplier that delivers parts to a MFS facility. The measurements on this scorecard are regularly reviewed to track supplier performance and identify negative trends.

For Service Suppliers, MFS carries out a specific assessment with specific aspects of the service performance (shown below).

This information is available for supplier review over the 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 MFS is required to take action with the supplier.

The perfomance of supplier that deliver parts to MFS, is calculated for a calendar month and the ratings of a supplier's performance are based on a 6 month rolling average. For the service suppliers however, is calculated once a year.

Supplier's different location are evaluated independently. There isn't any overall evaluation for different location of a supplier.

4.3.1 Suppliers that deliver Parts and Material to MFS

4.3.1.1 *Quality Score*

According to the quality score three main areas are evaluated:

Quality Performance
Quality Management System
MFS Process Audit

Quality Performance

The quality performance includes the PPM's (number of parts rejected, divided by the number of parts delivered multiplied by 1 million) and the number of complaints opened, taking into account their severity and repetitiveness. The PPM's are evaluated based on the objective defined to each supplier by the SQA.

[Quality Performance] = [100 Points+ (PPM Demerit Points)+ (NC Demerit Points)]

Remark: For more information regarding the calculating formula, please check at MFS Supplier Portal (HorEba APP)

Quality Management System

A part of the quality management system evaluation is done based in the certification that supplier has:

Quality System Evaluation (According to Certification)		
IATF-16949	**ISO-9001**	**Demerit Points**
☑		See HorEba APP
☒	☑	See HorEba APP
☒	☒	See HorEba APP

Remark: Issued by a certification body bearing the accreditation mark of a recognized IAF Mll..A member and where the accreditation body's main scope includes management systems certification to ISOIIEC 17021.

MFS Process Audit

MFS carries out Process audits according to VDA 6.3 (unless other is required) as a prevention activity or corrective actions. These audits are carried out under the following circumstances:

- During production ramp up
- Introduction of a new process
- Move production to a new location
- Poor quality performance.
- After a major incident
- Supplier Quality System Development

Suppliers are expected to fulfill the action plans derived from the audits (including work with certified third party), with the aim of achieving the level A (green).

In addition to the situations listed, the production processes of components that have been identified as special are subjected to a higher frequency audits. These audits are to ensure that the production processes used during the "Significant Production Run" remain unchanged and capable of delivering consistent quality products. Besides, MFS reserves the right to perform process audits whenever it is deemed necessary. Suppliers will be given reasonable advance notice of a pending audit.

One or more process audits may be required during the development and launch phases of the introduction of a new product or process. The respective MFS SQA will communicate this requirement to the supplier during the development of the APQP activities.

	Quality System Evaluation (According to BATZ Process Audit)	
Process Audit		**Demerit Points**
Status of Process Audit. (VDA6.3 format)		See HorEba APP
		See HorEba APP
		See HorEba APP

QUALITY FINAL SCORE = [(Quality Performance)] - [(Certificate Demerit Points)-(Process Audit Demerit Points)]

4.3.1.2 *ServiceScore*

According to the service score three different concepts are taken into account:

Incidences: Mislabeling, Packaging and Attached Documentation
Quantity
Deadlines
Urgent transports
Line Stop

Incidences

MFS has defined some different incidents regarding to the service performance of the supplier, which are: mislabeling, packaging and attached documentation. Each logistics incidence will penalize the overall service score.

Mislabeling

MFS requires to its suppliers to identify all the packages and packs of each delivery with a label containing at least the following information:

MFS Reference
Number of items (Quantity)
Order Number
Delivery Note
Supplier batch number

Packaging

Packaging shall be according to defined with each supplier (correct number of packs, and number of parts/pack). Moreover the appearance (without damaging) must be correct, as well as the number of packages of each delivery.

Attached Documentation

All the merchandise must be delivered with a delivery note, where the following information must appear:

MFS Reference
Number of items (Quantity)
Order Number
Delivery Note
Supplier batch number
N" of packages of each reference if possible

LOGISTICS INCIDENCES

Logistics Incidences	Demerit Points.
Mislabeling	See HorEba APP
Packaging	See HorEba APP
Attached Documentation	See HorEba APP
…..	See HorEba APP

Quantity and Deadlines

MFS consults the pending material on daily bases. Pending material refers to both, the incoming material not received when requested or received on time but with pending material. For the evaluation, the sum of all the days in which an order line was pending is considered.

Depending on the supplier"s delivery frequency, the evaluation contemplates different margins. This way, the penalties can be adapted to the activity of each

supplier. The margins and penalties defined are determined in HorEba APP based

Deliveries	Criteria	Penalties
Deadlines (according to delivery frequency)	Days of delay < Margin	See HorEba APP
	Margin < Days of Delay < Limit	See HorEba APP
	Days of delay > Limit	See HorEba APP

Urgent Transports & Line Stops

Urgent transports and line stops are additional incidences that due to their relevance, imply some demerit points:

Incidence	Demerit Point
Urgent Transport	See HorEba APP
Plant Disruption	See HorEba APP
…..	See HorEba APP

SERVICE FINAL SCORE= 100 - [(Incidence Demerit Points) - (Quantity & Deadlines Demerit Points) - (Urgent 'ftansports & Line Stops Demerit Points)]

4.3.1.3 ***Cost Score***

Cost Score to be done according to MFS criteria.

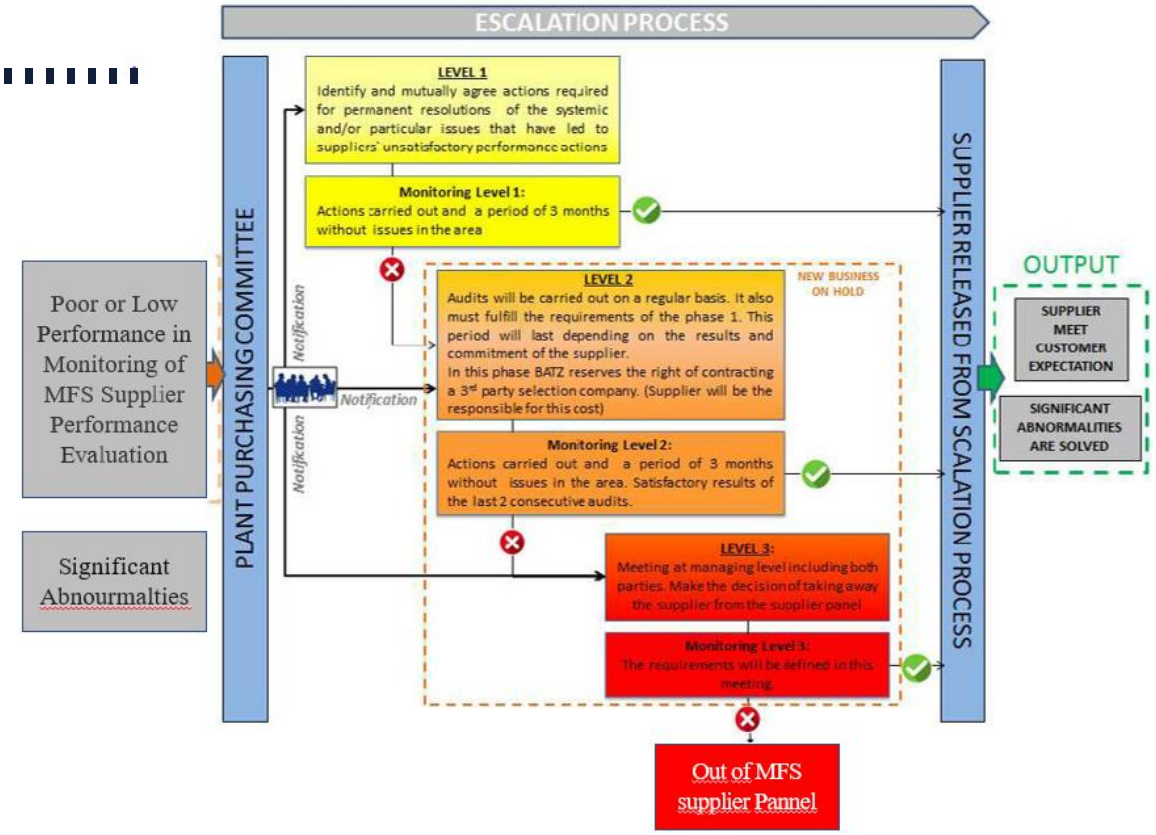
4.3.2 **Escalation Process**

The escalation determines the way in which MFS proceeds when a supplier doesn't meet the requirements or has a poor performance results. There are different reasons why a supplier could be engaged in an escalation process:

Red Status due to an accumulation of non-conformities or incidences (Quality, Service).
3 or more NCs opened and out of time
Any significant change in supplier total score (From A to B and from B to C)
Any critical NC (Safety concern. significant impact. …)
Repetitive NC's
Expired Quality Certification
Other: MFS reserves the right to considerate any issue a reason why supplier could be engaged in this process.

When any of these situations occur, MFS can decide whether to start the escalation process or not according to the chart below:

n the



New Business on Hold: New Business on Hold is a process to escalate unresolved quality issues or poor performance within the supplierls organization in order to get them successfully resolved. While on New Business Hold, that supplier will no longer be permitted to quote on new business.

5 REVISIONS

Date	Edition	Description & Reason for Modification
03-06-2021	A	Creation of the document. This document have been agreed and validated in the purchasing committee.