PIERBURG

SUPPLIER GUIDE

Division Mechatronics

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QUALITY ASSURES OUR FUTURE

Pierburg develops and manufactures in close partnership with the automotive manufacturers (termed in the following as customers) components and modules for combustion engines. As a system partner of the customers in their core technology area of engine engineering, Pierburg fulfils through its products the highest requirements through the utilisation of its know-how, specifically suited materials and innovative manufacturing processes.

The success of Pierburg is directly dependent on the satisfaction of the customers which can exclusively be attained through the complete fulfilment of customer requirements and expectations. This customer satisfaction is not only based on quality aspects but equally on keeping of deadlines and price-wise competitiveness.

Through the utilisation of modern quality assurance tools, Pierburg is relying on the avoidance of errors instead of their correction in order to attain the “zero error” quality target. All processes are arranged for the purpose of attaining a specific target and result, and are continually improved or renewed.

Regarding the quality of its products, Pierburg is highly demanding in order to bear comparison with the competitors. The quality of all supplied parts must also meet these requirements. Pierburg can attain this only in close cooperation with the suppliers.

Beyond these activities in consideration of environmental aspects is an important component in the company policy of Pierburg. Already during the development phase, attention is paid to the aspect that the manufacture of the product will have an impact on the environment which is as small as possible and that the manufacturing process will conserve energy and natural resources.

This guide describes the Pierburg minimum requirements regarding the quality management aspect of the supplier and defines the specific requirements so as to efficiently design the cooperation with the supplier during the product creation process and during series production.

For this reason the Pierburg suppliers should be included in the quality planning aspect of a project at the earliest possible stage. Pierburg expects from its suppliers to actively contribute experience and potentials for improvement within the respective process steps.

I. General

1. Purpose and Scope

This Supplier Guide represents the foundations regarding the cooperation for production related parts / components and applies to all suppliers of components as well as aids/ operating agents and services. It indicates processes and defines at the supplier and at Pierburg processes which are indispensable for the purpose of assuring the product quality.

The entire contents are based on DIN EN ISO 9001, ISO/TS 16949, all valid documents listed in Chapter VIII as well as DIN EN ISO 14001 from the current valid version.

2. Responsibility Scope

Suppliers are responsible for meeting the Supplier Guide requirements.
Failure to meet these requirements may result in the loss of existing and / or future Pierburg business, in addition reimbursement of the cost to Pierburg resulting from those failures.

Supplier shall adopt the standards of Zero (0) Defects and 100% On Time Delivery to Pierburg. Suppliers shall understand that established PPM targets do not necessarily represent an Accepted Quality Level, but maybe an intermediate continuous improvement step towards shipment of components/materials meeting the Zero Defects requirement.

3. Requirements Regarding the Supplier's Quality/Environment Management System

Pierburg expects from its suppliers an orientation in line with the quality management system in accordance with ISO TS 16949 in the in each case currently valid version and the implementation of an environment management system in accordance with DIN EN ISO 14001.

The minimum requirement for the cooperation is proof of a current certification in accordance with DIN EN ISO 9001 in its current valid version.

4. Language

Pierburg official language is English. All official communication with Pierburg will be done in English. Documents may display the native language when integrated in parallel translation. In this instance, the English is the valid version (if not stated differently).

II. Supplier Decision

1. New Suppliers

Before issuing an order to a new supplier, a supplier assessment is performed at the production location by Pierburg staff from the responsible Quality representative and Purchasing department.

Assessment shall be according to a questionnaire on aspects of logistics, production, quality, purchasing, risks and, if applicable, development and production of electronics components.

In the case of a positive assessment, a “released supplier” rating is assigned.

► Cover page *Supplier Assessment* *see Annex 1a* ◄

2. Released Suppliers

Released suppliers had fulfilled the Pierburg expectations and requirements therefore they are considered to be a production source and will receive orders.

Issuing of specific orders is agreed to in consideration of commercial and engineering criteria by the Pierburg Purchasing Committee.

3. Directed Buy Suppliers

The selection and approval of Directed Buy suppliers will be taken by the Pierburg customer.

Within the Production Part Approval Procedure the supplier provides the evidence of the customer approval (Pierburg customer to supplier) on the base of adequate documents.

III. Orders Issuing Process

1. Enquiry and Submission of an Offer

The enquiry regarding the scope of Pierburg purchased parts is effected by the purchasing department of Pierburg. As a basic package the supplier receives for this the necessary information relevant to the project as well as all documents and contractual and ordering documents. Included within the enquiry, are the following form:

- Feasibility Evaluation.

The answers to the questions posed in this form represent for Pierburg the foundations for the continuation of the order issuing process; for this reason all questions must be answered in full. A guide in completing this form is included on this Supplier Guide.

The supplier is, in his own interest, committed to check the completeness and comprehensibility of the engineering documents. In the case of possible check backs the Pierburg staff of Purchasing will get in touch with the corresponding expert department of Pierburg.

► Form 3: *Feasibility Evaluation* *see Annex 3a* ◄
► Explanations for Form 3 *see Annex 3b* ◄

2. Assuring Supplier Quality

For the purpose of ensuring the respective product and process status the supplier must fill in and/or confirm the following Pierburg forms → Feasibility Evaluation, → List of requirements for sampling of purchased parts, → Process Steering, → PPM Agreement.

Through this, Pierburg intends to standardize the processes and the necessary documentation:

-A- Feasibility Evaluation

- confirmation by the supplier as to receiving the entire product information,
- early indication of insufficient information
- timely identification of improvement potential of the supplier for the avoidance of problems during the product and production planning phase
- documentation of the engineering information status between supplier and Pierburg at the point of submitting the offer
- controlling the cooperation of the supplier with the responsible Pierburg Quality representative
- Agree on yearly re-qualification of the complete drawing requirements

-B- List of requirements for sampling of purchased parts

- reviewing/checking the production process and the product
- issuing of a production process and product release

-C- Process Steering

- laying down in writing of all special characteristics and their checking procedure
- list of all machines, processes and measuring equipment capabilities.

-D- PPM Agreement

- documentation of the ppm target specifications
- kick-off of measures for the purpose of continually improving the supplied quality
- definition of immediate ppm targets for the purpose of attaining the zero error target

IV. Sampling of Purchased Parts

1. Production Part Approval Process

The Production Part Approval Process, herein after referred to as **PPAP**, provides a final assurance and check on the production planning process and the product. A positive result of verification leads to PPAP approval.

Remark: Deliveries can take place after PPAP approval in accordance with the Pierburg Logistic delivery schedule only.

2 Possible Initiators of the PPAP

Pierburg considers the presence of the following cases triggers for PPAP:

- manufacture of new parts
- correction of a discrepancy on a previous submission
- design, specification and/or material changes
- use of alternative materials
- use of new or modified tools as well as tool inserts
- changes to production processes and production methods
- moving production to other locations
- use of new or modified production facilities
- changed subcontractors for products or contracted out work
- after a delivery ban due to massive quality related problems
- suspending series production for more than 12 months

Notes on process and/or product changes:

Before a release in writing by the responsible Pierburg Quality representative no changes must be introduced.

After approval of the change request, the changes need to be planned, performed and qualified by the supplier. The result shall be proven with a PPAP submission.

The supply of the Pierburg production parts in the current approved status must be ensured until the PPAP approval of the change is released.

Before the first delivery of changed products/processes, their packaging must be marked unambiguously.

3. Supplier Readiness (SuRe) and Overall Project Timing Plan

Upon receiving the order of the PPAP the SuRe document has to be submitted to the Pierburg Purchasing Department.
The updated SuRe Status Report shall be submitted to Pierburg without request at least every two weeks.

The supplier must indicate within the SuRe document the milestones with the order confirmation received to enable capacity verification by Pierburg Purchasing.

The supplier must inform Pierburg directly of any possible risks arising with an effect on product safety or the product schedule.

In case of deviations, the respective corrective measures must be initiated.

► Form 7: *SuRe- Supplier Readiness* *see Annex 7a* ◄

4. PPAP- Requirements

The requirements for the PPAP documentations are described in the Pierburg "List of requirements for sampling of purchased parts" as well as in the explanations to Form 2.

Explanations on this and the individual types of documentations required are included within the listing of valid documents in the appendix as well as on the form sheet named below.

If there are any further questions then contact the respective assigned responsible Pierburg Quality representative.

► Form 2: *List of requirements for sampling of purchased parts* *see Annex 2a* ◄

► Explanations to Form 2 *see Annex 2b* ◄

► Form 3: *Feasibility Evaluation* *see Annex 3a* ◄

► Explanations to Form 3 *see Annex 3b* ◄

► Form 4: *Process Steering* *see Annex 4a* ◄

► Form 5: *PPM - Agreement* *see Annex 5a)* ◄

► AIAG CQI-xx Assessment (if applicable) *current valid documents* ◄

5. Initial Samples Creation/Marking/Delivery

Initial samples serve the purpose of documenting the engineering status and the series production process.

Handling of the initial samples is effected in line with the requirements described in the following:

- The 5x initial samples per cavity / production stream must be taken from a production batch which is run at the serial production tooling at the right production rate.

  A lower number of components for the initial samples per cavity / production stream are permissible only in agreement with responsible Pierburg Quality representative.
- The minimum scope of the production batch is 300 components. For determination of process capability analysis 125 pieces (25 x 5 pieces) per cavity / production stream are required.
  A lower number of components for this batch are permissible only in agreement with responsible Pierburg Quality representative.
- The assignment and marking of the initial samples to the measurement results must be unambiguous. The minimum number of the initial samples to be measured is 5 pieces per cavity / production stream.
  A lower number of components for this batch is permissible only in agreement with responsible Pierburg Quality representative.
- The initial samples and their packaging must be marked unambiguously and durably.
- The initial samples must be supplied to the appropriate Pierburg address given within the order together with the completely filled in and signed documentations.

► PSW Cover Sheet (AIAG Form) *see Annex 2c* ◄

► Test results (AIAG Form) *see Annex 2d* ◄

6. Verification of Purchased Parts

The supplier shall permit Pierburg to grant an accordingly approved representative of a third party or customer of Pierburg the right to verify in the supplier's facilities that the product and the sub-contracted products comply with the determined requirements.

Before this verification, the relevant contact with Pierburg shall explain the agreements and the intended procedure for verification.

V. Series Production Delivery

All series production parts must correspond to the released samples.

1. Requirements for Series Production Delivery

Before delivering series production parts the supplier must have available an approved PPAP (Production Part Approval Process) issued in writing.

The first series production delivery and its packaging must be marked unambiguously.

2. Quality of the Series Production Products

The supplier is responsible for the quality of his products as well as the products obtained from his sub-contractors.

Quality assurance must be effected through own, suitable series production accompanying measures like for example,

- process capability reviews
- process control measures,
- staff training,
- internal audits.

3. Quality Target [ppm Agreement]

For the purpose of attaining the zero error quality target, a component related ppm agreement is concluded with the supplier at the beginning of series production.

In this agreement Pierburg coordinates within the scope of a continual quality improvement scheme an adequate reduction of the ppm values with the supplier.

The supplier is committed to inform Pierburg immediately in writing as soon as disadvantageous deviations from the agreed quality target are foreseeable. Here the corrective actions and the deadlines for attaining the target must be identified.

The agreement of a quality target is not indicative of an acceptance of the quality level respectively defective components by Pierburg and does not affect the liability of the supplier regarding warranty and damages claims.

Definition of the ppm value for the respective period considered, per component:

$$\text{ppm value} = \frac{\text{Deviating unit}}{\text{Delivered, respectively built-in unit}} \times 1\,000\,000$$

► Form 5: *PPM Agreement* *see Annex 5a* ◄

4. Capacity Verification

Pierburg may request/require capacity studies to be performed at any time during the program life for many possible reasons, not limited to the following;

- Capacity verification for new or current programs
- Capacity verification related to potential program volume increase and delivery concerns
- Evaluation of new equipment
- Verification following equipment moves or manufacture line rearrangements

When requested, the supplier shall perform a capacity study following the guidelines below;

- Study performed during significant production run at the actual manufacturing site
- Study conducted using the tooling, process, materials and operators that will be utilized during normal production run
- Study using production run quantities as directed by Pierburg (at a minimum will consist of one hour and/or 300 consecutive parts)

The supplier is expected to address any limiting factors, or processing constraints, identified during the review and to take appropriate actions to address productivity and efficiency.

► Form 6: Capacity Verification Sheet *see Annex 6a* ◄

5. Documentation of Series Production Tests

The tests performed during series production must be documented by the supplier as follows:

- scope of the tests,
- test results,
- test decision,
- in case of reworking: Results of the repeated tests and assessment by QA (Quality Assurance),
- in the case of deviations from nominal process figures: Remedial activities
- Within serial production for all specific characteristics a control chart with defined limits shall be maintained. In case capability indices are not achieved a 100% control must be implemented (in accordance with Pierburg Form 3).
- In case of 100% control implemented a failure summary chart shall be maintained.

6. Requalification Test

All products must be subjected to a complete dimensional, material and functional test, using latest released Pierburg drawing and specification.

All results must be available for a customer assessment (see ISO TS 16949, 8.2.4.1 Requalification).

If not agreed separately with Pierburg, a requalification of the products must be performed once a year.
The formation of parts families shall be permissible.

The procedure of requalification serves the purpose of ensuring the agreement of the product characteristics with the valid specifications and shall be included in the process control plan.

If the product requalification indicates a deviation with respect to the release status of Pierburg, then the results including the current process capabilities need to be passed on to the appropriate responsible quality representative at the Pierburg factory without further request.

Documentation of the requalification results is effected based on the valid sampling documents.

If Pierburg is asked by a customer to submit PPAP documents, new PPAP qualification according to the prerequisites of the quality department of the site to be supplied may be requested from suppliers with PPAP documentation that is older than one year.

The inspection costs arising in the scope of annual requalification shall not be assumed by Pierburg.

7. Measuring Equipment for Series Production

In line with the specifications (nominal values + tolerances) suitable measurement and test equipment must be used and documented throughout the control plan and as well as other test documents used.

The measurement equipment capabilities of all measuring equipment used as well as the release status must be determined and documented.

For monitoring the measuring equipment, a periodically repeated test must be performed.

8. Traceability of the Products

The supplier must have and ensure full traceability of various stages of his products (e.g. primary material, semi- finished products) related to the particular production batch or delivery lot (e.g. FIFO logistic; allocation to production -line, -stream, -shift;
production date; inspection documents).
It is mandatory to prevent any potential risk of mixture or mistake on material or products.
In case of a claim and the restriction of potential damages (spoilages) a small traceability unit is required in consideration of production numbers.

9. Marking, Handling and Warehousing of the Products

Marking must be clear and precise.

– Product marking according to, e.g., date code, batch number, cavity number,

When handling, warehousing and transport additional special measures (ESD protection, for example) can become necessary in order to maintain the important characteristics (material properties, dimensions, functions).

It belongs to the commitments of the supplier to inform Pierburg in writing as to special characteristics related to handling and warehousing of the products within the scope of the Production Part Approval Process (see Form 1, Section 17.4).

10. Packaging

For the delivery of serial products, only the packaging approved between the supplier and the Pierburg plant must be used and has been documented (e.g. with attached packaging data sheet / pictures)

► Form 8: *Packaging Data Sheet* *see Annex 8a* ◄

11. Archiving / Retention

– Documents as proof for the effective QM system and quality records ……3 Years,
– Documents as proof of critical features (e.g. DmbA) ……...15 Years.

The above periods shall be minimum periods and the statutory retention shall be complied with or exceeded.

For reasons of rationalisation and for the purpose of avoiding the problem of marking, Pierburg recommends a unification of the archiving duration to 15 years.

VI. Faulty Products

Should the supplier determine during the production process any deviations with respect to the product specifications, a delivery to Pierburg must be excluded.

If a delivery is affected with products which exhibit concealed or suspected deficiencies, then the supplier must inform the relevant Pierburg Plant Quality Assurance Department immediately in writing.

The analysis of the fault cause including a risk assessment and the introduction of suitable remedial activities/process improvements need to be performed immediately.

Within 24 hours, the supplier shall submit initial written feedback with a preliminary 8D report to the relevant Pierburg Plant.

If not separately agreed with the Pierburg plant quality, 8D reports shall be completely processed (including appropriate quality tools used [e.g. Ishikawa diagram, 5-Why, FMEA- Review) and completed by the supplier within 14 days. The supplier shall be responsible for reporting the error ratio of returns with complaints in the scope of the 8-D report.

To verify the effectiveness of the corrective action/ or process improvements implemented, Pierburg may perform an audit at the supplier location/s.

In the case of continued quality problems, a **C**ontrolled **S**hipping **L**evel (CSL) or a **N**EW **B**USINESS **H**OLD (NBH) can be ordered.

- CSL I = 100% delivered goods inspection by the supplier,
- CSL II = 100% delivered goods inspection by the supplier **and** 100% received goods inspection by an external service provider at the expense of the supplier,
- NBH = For the period of the New Business Hold there will be no consideration in the case of new orders, respectively new developments.

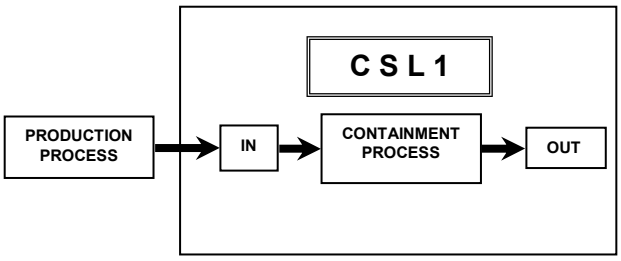
The Controlled Shipping Level shall remain applicable for the supplier until permanent corrective measures are implemented and their effectiveness is proven, and Pierburg revokes the Controlled Shipping Level by written notification.

The supplier bears the costs in the case of the delivery of faulty products and the there from resulting costs.

A. Course of CSL-1 action

Supplier Responsibilities during *Controlled Shipping Level 1*:

- **Provide a list of similar part numbers affected by the Controlled Shipping action to the PIERBURG Plant Supplier Quality Representative**
- Contain all non-conforming parts at the supplier, warehouses, in transit and at any Pierburg locations immediately upon notification of Controlled Shipping status.
- Provide an additional inspection for the defect(s) noted in an inspection area which is separated from the normal production area.
- Provide inspection by using the attached chart Containment workplace layout and the PARTS SORTING RESULT SHEET at a frequency of twice a month which should be sent to Pierburg Plant Quality Department (Quality Manager)



- Implement irreversible, permanent corrective action in a timely manner, i.e. implement error proofing.
- Revise all PPAP paperwork as required.
- Pay for all additional costs due to Controlled Shipping.
- Establish and communicate the status of improvement plans with PIERBURG Plant Supplier Quality Representative.

The procedures you have enacted to date have been insufficient in stopping the flow of non-conforming material to our plants.

Therefore, you must immediately:

1. **Develop, define, and implement an agreed-upon containment activity over and above your current process controls and containment activity.**
2. **Clearly identify the qualified shipments.**
3. **Meet the defined exit criteria.**

Note: Failure to comply with this process, or the inability to implement a successful action plan or containment activity, will result in the implementation of Control Shipping Level 2 or New Business Hold.

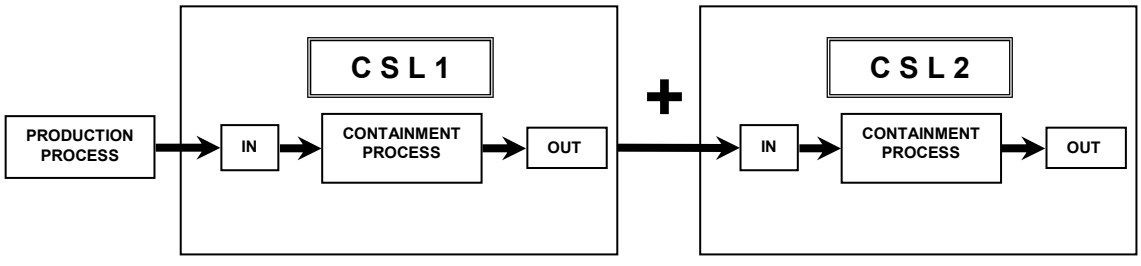
Exit Criteria CSL 1:

- Inspection data shows no rejects into the inspection area for a minimum of 100 working days after implementation of irreversible corrective action. If deemed appropriate by Pierburg Plant Supplier Quality Representative, the duration of the controlled shipping activity may be adjusted.
- Implement error proofing as appropriate within your process for the defect(s) noted above.
- Evidence that a thorough problem-solving process was used, the true root cause of the problem was discovered and those irreversible corrective actions were implemented and validated.
- Statistical process control used when appropriate to confirm a stable and capable process during the 100 working days after implementation of irreversible corrective action.
- All paperwork (Potential Failure Mode and Effects Analysis [PFMEA], Process Control Plan, Process Flow Diagram, Operator Work Instructions, etc.) modified and PPAP submission and approval as required.
- The supplier will remain in Controlled Shipping-Level 1 status until written authorization to exit Controlled Shipping-Level 1 is received from the PIERBURG Supplier Quality Manager or from the corresponding purchaser.

B. Course of CSL-2 action

Supplier Responsibilities during Controlled Shipping Level 2:

- Follow all supplier responsibilities outlined in the Controlled Shipping Level 1 above.
- Maintain Controlled Shipping Level 1 inspections and communications.
- Contain all non-conforming parts at the supplier, warehouses, in transit and at any Pierburg locations immediately upon notification Controlled Shipping status.
- Participate in the Controlled Shipping Level 2 implementation meeting.
- Establish an inspection area that is separated from the normal production or Controlled Shipping Level 1 areas. (The inspection area may be located within the normal production area if the Pierburg representatives approve the location based on material flow, possible damage due to excessive handling or product design considerations).
- Provide inspection by using the attached chart Containment workplace layout and the PARTS SORTING RESULT SHEET at a weekly frequency which should be sent to Pierburg Plant Supplier Quality Representative.



- Provide tooling, if required, for product inspection.
- Pay for all additional costs due to Controlled Shipping Level 2 and issue a purchase order to the Controlled Shipping Level 2 inspection source. The inspection source must have current ISO 9000 certification.
- Establish and communicate the status of improvement plans with Pierburg Plant Supplier Quality Representative and QS 9000 / ISO TS 16949 registrar (if applicable).

The procedures you have enacted to date have been insufficient in stopping the flow of non-conforming material to our plants.

Therefore, you must immediately:

1. Implement and pay the costs for the Pierburg defined containment activity over and above your current process controls and containment activity. By Pierburg defined containment activity is in addition to the current controls and containment activity.
2. Develop, define, and implement the agreed-upon containment activity over and above your current process controls and containment activity. This requires that the Controlled Shipping Level 1 containment remain in place.
3. Clearly identify the qualified shipments, with a green tag that reads “Containment Process Complete”. Each tag must be initiated and dated by the appropriate person whose name appears on the confirmation reply.
4. Pierburg requires (if applicable) that irreversible corrective action plans for CSL 2 also be submitted to your QS 9000 / ISO TS 16949 registrar for review and assessment. Please authorize your registrar to submit the assessment to Pierburg.
5. Meet the defined exit criteria.

Note: Failure to comply with this process or the inability to implement a successful Level 2 action plan or containment activity will result in the implementation of New Business Hold.

Exit Criteria CSL 2:

- Inspection data shows no rejects into the inspection area for a minimum of 100 working days after implementation of irreversible corrective action. If deemed appropriate by Supplier Quality, the duration of the controlled shipping activity Level 2 may be adjusted.
- The actions taken have been applied and are successful based on the QS 9000 / ISO TS 16949 registrar assessment.
- Written authorization, by the Pierburg Supplier Quality Manager to exit Controlled Shipping Level 2.

VII. Assessment of Suppliers

The following characteristics are taken as assessment criteria:

A) Quality performance
- ppm evaluation
- Quality characteristics of the received goods
- Soft facts → PPAP / IMDS processing
  → Adherence to delivery dates, complaints processing
  → Complaints weighting according to effect
  → Certificates

B) Logistics performance
- Adherence to quantities
- Adherence to the dates
- VMI / Consignment stock
- Special freight / delivery

Supplier rating*:*

The supplier assessment within an ABC classification shall be cyclical according to a point assessment system.

Rating	Points
A	> 95 to < 100
AB	> 90 to < 95
B	> 65 to ≤ 90
C	< 65

Consequences:

Rating A → No continual improvement needed,
Rating AB → Agreement as to continual improvement measures,
Rating B → Agreement as to continual improvement measures,
Rating C → Decision as to improvement measures or
NBH = New Business Hold,

The supplier assessment shall be submitted to the supplier, and the supplier shall make the respective statement on improvement of the classification in case of AB-, B- & C- classifications.

VIII. Current Valid Documents

The defined requirements of the supplier guide are based on the following literature in the current valid edition:

• DIN EN ISO 9001

Quality management system – Requirements,

• ISO TS 16949

Technical specification ISO/TS 16949 - Quality management systems - Particular requirements for the application of ISO 9001:2000 for automotive production and relevant service part organizations

• DIN EN ISO 14001

Environmental management systems - Requirements with guidance for use
(ISO 14001:2004); German and English version EN ISO 14001:2004

• AIAG APQP

Advanced Product Quality Planning

• AIAG PPAP

Production Part Approval Process

• AIAG FMEA

Failure Mode and Effect Analysis

• AIAG MSA

Measurement Systems Analysis

• AIAG SPC

Statistic Process- Control

• AIAG CQI- 9 Assessment / Requirements to heat-treated products

Suppliers of heat-treated products shall assess compliance with AIAG provisions CQI-9 **"Special Process: Heat Treat System Assessment"** by annual verification.
This standard describes the requirements in respect of type and frequency of process monitoring, lab inspections and process-integrated inspections and tests in the scope of current operation of machines and plants for heat treatment and keeping the respective documents.

• AIAG CQI- 11 Assessment / Requirements to surface-treated products

Suppliers of surface-treated products shall assess compliance with AIAG provisions CQI-11 **"Plating System Assessment"** by annual verification.
This standard describes the requirements in respect of type and frequency of process monitoring, lab inspections and process-integrated inspections and tests in the scope of current operation of machines and plants for galvanic surface treatment and keeping the respective documents.

• **AIAG CQI- 12** Assessment / Requirements to plating

The goal of the CQI- 12 **"Coating System Assessment"** is the development of a coating management system that provides for continual improvement, emphasizing defect prevention and the reduction of variation and waste in the supply chain.

• **AIAG CQI- 15** Assessment / Requirements to welding

The CQI- 15 **"Welding System Assessment"** is developed to provide continual improvement, emphasizing defect prevention and the reduction of variation and waste in the supply chain.
The welding system assessment helps frame a common approach to a welding management system for automotive production and service-part organizations.

• **AIAG CQI- 17** Assessment / Requirements to soldering

The CQI- 17 **"Soldering System Assessment"** is developed to provide continual improvement, emphasizing defect prevention and the reduction of variation and waste in the supply chain.
The soldering system assessment helps frame a common approach to a soldering management system for automotive production and service-part organizations.

• **AIAG CQI- 23** Assessment / Requirements to plastic forming

AIAG's CQI- 23 **"Molding System Assessment"** is a common process approach to control molding processes and a methodology to evaluate and remediate current processes.
It also provides best practices for continual improvement, emphasizing defect prevention and the reduction of variation and waste in the supply chain

• **REACH**

The European Regulations (EC) No. 1907/2006 concerning Registration, Evaluation, Authorisation and Restriction of Chemicals entered into force in June 2007. Suppliers shall comply with all applicable REACH requirements that affect the products that they will supply to Pierburg. Pierburg expects that suppliers will have a dialogue with their own supply chain and with Pierburg regarding all applicable aspects of REACH.

• **Conflict Minerals**

Suppliers in all regions shall be able to verify that the tin, tantalum, tungsten and gold (3TG) contained within the products sold to Pierburg did not originate within the Democratic Republic of Congo or be able to determine the locations where the tin, tantalum, tungsten and gold originated within the Democtratic Republic of Congo.
Suppliers are to refer to AIAG for more information / details (www.aiag.org). As for additional information also refer to whitelist of suppliers (http://www.conflictfreesourcing.org/active-smelters-refiners)

• International Material Data System (IMDS)

To ensure compliance with the various legal and customer requirements, Pierburg requires from its suppliers to report material and substance information for all types of purchased materials, components or items supplied to Pierburg. All substances and/or materials shall be reported to Pierburg using the International Material Database System (IMDS).

Suppliers shall submit the required IMDS to Pierburg as soon as possible upon award of the new business, but in any case prior to the PPAP submission. The supplier IMDS information shall be subject to Pierburg review and approval. Once approved by Pierburg, the supplier of the material or component shall indicate such approval in the PPAP documentation supplied to Pierburg, regardless of the submission level requested.

• VDA Band1

Quality Evidence – Guideline for the Documentation and Archiving of Quality Requirements and Quality Records

• VDA Band 2

Quality Assurance of Supplies

• VDA Band 4

Product and Process FMEA, chapter 3

• VDA Band 6.3

Process Audit – Serial Production

• VDA Band 6.5

Product Audit

• Pierburg-Norm PN 02.040

Special Characteristics

• Pierburg conditions of purchasing

see order form

• Pierburg Packaging Data Sheet

• IMDS-Guide

Remarks related to creation of an IMDS Material Data Sheet (MDB)

• SPICE-Guideline for supplier

Information of requirements to the development process for the implementation and supply of electronic components to Pierburg according to ISO 15504

• Directive 2000/53/EC on end-of life vehicles

Official Journal of the European Communities

• TL D-8 12000 000 (includes REACH/ PFOS/….)

Protection of the Environment and Personal Health

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Annex 4

a) Form 4: - Process Steering

Annex 5

a) Form 5: - PPM Agreement

Annex 6

a) Form 6: - Capacity Verification

Annex 7

a) Form 7:- SuRe (Supplier Readiness)

Annex 8

a) Form 8:- Packaging Data Sheet