

AdduXi

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Quality Assurance Manual for Suppliers



Quality Assurance Manual for Suppliers Version 5

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Index	Pages	Date (dd/mm/yyyy)	Revision Information
1	1-17	24/11/11	Creation of document
2	1-17	23/12/2013	New follow-up system for supplier performances and ethics charter
3	1-15	02/06/2015	New calculation for logistic performance rate. Changed language due to translation interpretation. Added section IIIe. Added more controls for P.Q.A. and inbound material receipts including certificate of conformance.

4	1-17	28/11/2015	New calculation for logistic performance rate. Added frequency for communication of performance result. Changed address on cover page, special machine specifications added, various spelling and translation fixes
5	II-b-3 III-b-a III-b-1-b	03/02/2016	Added description of the rules for the calculation of logistic performance rate. Added annual recertification requirement (III-b/a/1), clarified vendor evaluation, misc updates. Added supplier acknowledgement via electronic dispatching Added mention regarding specific technologies. (press-fit) Added electronic dispatching (E-mail with receipt of distribution and of reading)

I/ Introduction

I-a/ Purpose and field of application

This Quality Assurance Manual for Suppliers is to be used as a basis for the development of the collaboration between AdduXi and its suppliers. This document defines the minimum requirements that are to be honored in terms of Quality, Safety and the Environment, by our sub-contractors.

This Quality Assurance Manual for Suppliers is sent to the supplier as part the initial RFQ process.

I-b / Expectations

AdduXi's expectations regarding all suppliers follows:

- Delivery parts and/or providing a service with a quality target of 100% conformity, 100% on time delivery;
- Continuous improvement of the products' quality and of productivity in order to meet the increasing pressure of international competitors.

I-c/ General purchasing conditions, ethics charters

Our purchasing conditions and ethics charter are available on our website:

www.adduxi.com and <http://www.adatis.ch/>

They are also available online and can be downloaded.

II/ Selection of suppliers

II-a/Initial evaluation of suppliers

An evaluation is performed to ensure our needs are met and enables AdduXi to obtain the Supplier's appropriate contact names and functions, current production processes, and future capabilities. This process may be carried out in through the following:

- By the Quality Manager and another person from the department concerned, at the sub-contractor's plant.
- By self-evaluation
- For the key sub-contractors, during a meeting between the departments concerned according to the capacity of the sub-contractor to meet the order's requests (e.g. mould makers)

Remarks: By "key" we mean sub-contractors that have historically achieved proven performance criteria.

This evaluation is conducted using the "supplier evaluation form".

⇒ This document is sent to the supplier with the initial RFQ.

The information supplied is then reviewed by the Quality and Purchasing managers (together in conjunction with the Project manager), to complete the supplier's initial evaluation.

Based on the evaluation, a supplier is ranked per the following:

- Classification 'A' => Registration in our supplier database
- Classification 'B' => The supplier is approved however must resolve open issues and provide corrective actions prior to registration in our supplier database
- Classification 'C' => The supplier is not approved and therefore not registered in our database

Supplier ranking details will depend upon the following:

- Customer mandated suppliers or sub-contractors
- Sub-contractors that have achieved third party certification (ISO TS 16949)

For these instances the « Supplier Evaluation Form » is to be completed and the sub-contractor is ranked according to the information provided, and if there are no findings or questions, the organization may be registered automatically in our supplier database.

II-b/ Supplier performance follow-up

II-b1/ Ranking system for suppliers : plastic materials, inserts, copper wire, miscellaneous components, carriers

Each delivery is evaluated according to the following:

	Points
Delivery compliant	20
Delivery with issue severity 1	-8
Delivery with issue severity 2	-15
Delivery with issue severity 3	-20

Annual evaluation system for suppliers : plastic materials, inserts, copper wire, miscellaneous components, carriers

An annual evaluation is carried out by the purchasing department. A score of 20 points is allocated and the annual score is calculated according to the rules defined below :

$$\text{Annual score} = ((\text{Qty of delivery} \times 20) - \text{Qty of points NC}) / \text{Qty of delivery}$$

Annual score	Level	Evaluation	System Adduxi
19 ≤ Score	A	Excellent	Green
18 ≤ Score < 19	B	Average	Yellow
Score < 18	C	Poor	Orange

Our goal is to assist our suppliers through continuous improvement are at level B and level C.

II-b2/ Annual evaluation system for suppliers : mold maker, machine manufacturers, maintenance equipment, services...

Once annually, an evaluation is performed between the applicable concerned departments led by Purchasing. An assessment is calculated per the following criteria:

Observance of deadlines, disruption and extra freight costs	5
Quality of product and/or service	8
Customer care level	3
Administrative follow-up	4

$$\text{Annual score} = \text{Sum of averages in each category.}$$

Annual score	Level	Evaluation	System Adduxi
19 ≤ Score	A	Excellent	Green
18 ≤ Score < 19	B	Average	Yellow
Score < 18	C	Poor	Orange

Our goal is to assist our suppliers that are at level B and level C through continuous improvements.

II-b3 /Delivery performance

Service Rate is calculated as follows :

$$\text{Service Rate} = \frac{(\text{Partial quantity 1} * \text{evaluation1}) + (\text{Partial quantity 2} * \text{evaluation2})}{\Sigma \text{ Total quantity delivered}}$$

Late deliveries may result in delays for production and line down situations. In this instance a non-conformity notice is issued and a contingency plan will be immediately requested from the supplier

	Grace period (Difference in working days)	Quantity of points per delivered part
Evaluation 1	≤ ± X days	100
Evaluation 2	> ± X days	1
<p>Example : Expected Delivery for 10,000 parts on January 20th with +/-5 days grace period.</p> <p>- 1st delivery on January 21st : 6,000 parts - 2nd delivery on January 30th : 4,000 parts (without taking into account Saturdays, Sundays and non working days) => ((6,000 x 100) + (4,000 x 1)) / 10,000 = 60.4 points</p>		
<p>Service Rate is calculated for each SKU. Monthly Service Rate takes into account the rates for which requested delivery date are in the considered month. Annual Service Rate is the average of each ordered and closed release during the calendar year.</p>		
<p>Service Rate is automatically calculated automatically in the Production Management System.</p>		

The evaluation result is sent to the supplier yearly for information ; if necessary, an action plan is required.

After the evaluation, purchasing department schedules an audit and visit program.

This program is built according to annual result, supplier answers, 8D relevance, degradation of a situation, critical product....

REMARK : supplier must inform Adduxi about any expedited shipping.

II-b4/Communication over Supplier Performance and expected action plan:

At a minimum, annual supplier performance results are sent to the supplier. Critical component suppliers will be evaluated quarterly. When scores do not meet required acceptance criteria, and an 8D is issued, assessment of response and follow-up will be performed by the purchasing department. If the 8D is rejected or more information is needed, an additional action plan is requested from the supplier.

Depending on the results of supplier performance, a supplier audit or visit will be performed. Purchasing will determine the priority of the visit and schedule an onsite review accordingly.

If a supplier's 8D or actions are not effective and the supplier puts AdduXi into a critical situation (resulting in further poor quality or delivery) additional action will be required. Based on the critical level of product (for example a critical supplied component or new product), an audit/visit may be scheduled or an action plan will be requested.

Note: the supplier must inform AdduXi of expedited shipments (and extra freight costs) made for AdduXi.

II -c/ Requirements regarding the Quality system and the Environment

Sub-contractors whose products are part of an item designed for the car industry must comply to ISO 9001 standard at minimum. They must commit themselves to develop their quality management system following the ISO / TS 16 949: 2009 technical specifications.

If the supplier has no certification, the definition of the sub-contractor follow-up and production is to be performed in collaboration with the customer.

II -d/ Safety and Environment

The supplier must be aware about safety regarding manufactured products, as well as manufacturing conditions.

All suppliers must consider possible environmental issues in the manufacturing process and have a documented plan to reach the ISO 14001 certification.

If the supplier is also required to adhere to other regulations (including REACH, ROHS, DEEE, VHU, etc...), AdduXi must be informed of the presence of any hazardous substance (heavy metals, CMR, SVHC) in the products delivered to us.

A material safety datasheet (MSDS) must be submitted to AdduXi and the supplier is to keep AdduXi informed of any updates of these documents.

All automotive parts must be registered into the IMDS system by the Supplier. AdduXi's IMDS number is **22623**.

Any manually handled load must not exceed **25kgs / 55 lbs**.

Packaging must be recyclable or reusable as much as possible.

Transportation is to be optimized.

II -e/ Supplier Audit

In conjunction with the customer, an evaluation of a new supplier or a new product, may result. An audit may be scheduled in order to validate the process, as necessary.

The audit procedure document is sent to the supplier once the audit is planned.

The evaluation of the product is defined jointly by the Engineering, Quality, and Purchasing departments.

As it pertains to the results of supplier performance, an audit program for supplier visits is defined by purchasing department; they will also determine priority and audit/visit plan.

If a supplier's 8D or actions are not effective and the supplier puts AdduXi into a critical situation (resulting in further poor quality or delivery) additional action will be required. Based on the critical level of product (for example a critical supplied component or new product), an audit/visit may be scheduled or in several cases an action plan will be requested.

III/ Product Quality

III-b/ Description of the Product Quality Assurance (P.Q.A.).

III-b/1 Specifications

The specification represents the customer's wishes, targets, and the customer's development criteria (functional specifications).

III-b/1/a Tool and special machine specifications

The tool maker is responsible for the tool's design. Tool drawings are designed in collaboration with AdduXi's Engineering department. The same can be said for special machines.

A detailed specification plan regarding the design of the tools has been drawn up. These are sent to all our mold-makers at RFQ time as well as upon new revisions.

A specification manual has also been created for special machines and will be provided to the supplier when applicable.

III-b/1/b Specifications regarding parts

During RFQ, AdduXi's Purchasing department, in collaboration with the Engineering department, distribute a « Supplier Feasibility Joint Commitment », which must be completed and approved by the supplier.

This document allows AdduXi to point to the most critical parameters or features of the component and to ensure that the supplier will take into account these elements seriously when submitting his price offer.

This document also allows linking with specific Terms and Conditions or to take into account a specific technology.

Upon agreement, the « sub-contractor's schedule » is given to the supplier.

This form defines a schedule for the production of parts and mass production.

It also allows AdduXi to define the required quality documents when presenting parts for official approval and for the quality target (P.P.M. = number of faulty or imperfect **Parts Per Million** parts delivered).

III-b/2 Approval of components

The official approval of the components is triggered through supply of Initial Samples (I.S.) and presentation of an official approval file (supplier PPAP).

III-b/2/a Initial Samples (I.S.) and the Production Part Approval

Process (PPAP)

Initial Sampling is to be carried out according to the production requirements.

Initial Samples and the PPAP files are to be provided in the following situations :

- For a new part or a new product (part, material that has not been delivered yet).
- A request from AdduXi to stop deliveries due to a quality problem.
- In case of repair following a (serious) defect on a part subjected to a prior official approval.
- If different types of materials are used other than already authorized materials for the part.
- When the existing tools become obsolete or are modified.
- When the production process has been modified.
- When the production tools or equipment are moved, sent to another plant or come from another plant.
- Upon change of supplier, material or service provider (e.g. thermic treatment, coatings)
- Etc...

The presentation of the initial samples and data are to be provided to the applicable AdduXi Project manager.

The package must include the following:

- Initial Sample Parts.
- Part drawing.
- A measurement report.
- A manufacturing flow chart.
- A material certificate of conformity.
- The corresponding coating treatment (if treated) certificate of conformity
- A F.M.E.C.A. procedure.
- An R & R (Repeatability and Reproductivity) analysis.
- A capability study which shows $PpK > 1.67$ and $Cpk > 1.67$.

Supplier must carry out their own formal internal approval process before launching mass production and show conformance to the ISO TS 16949 requirements.

First production delivery of parts is to take place only after a P.P.A.P. file has been officially approved by AdduXi's Quality department.

The suppliers are responsible for the materials and services supplied by their sub-contractors.

III-b/a/1 Requalification Process (PPAP)

Suppliers are required to complete an annual requalification for product used in production, including packaging. Default requirement will be to supply a level 3 PPAP based on the A.I.A.G. guidelines for PPAP. In some instances other means of requalification may be acceptable; this is to be agreed upon between AdduXi and the supplier prior to requalification.

III-b/2/b F.M.E.C.A.

F.M.E.C.A. (Failure Mode, Effects and Criticality Analysis) is a systematic method of analysis used to evaluate the probability of risks as well as their causes.

FMEA is a preventive tool allowing analysis and research of all causes that could lead to a nonconformity and consequently, to provide one or several corrective actions before production. Special characteristics of the product or of the process must be pointed out. This analysis is to be carried out by a team involving all related departments (Quality, Logistics, Purchasing, Engineering department, Production, The supplier is required to complete a D.F.M.E.A and P.F.M.E.A per AIAG (In USA) and other customer specific requirements; the information contained within this document must be shared with AdduXi.

III-b/3 Run at rate and Safe Launch Concept

For each new part, a run @ rate (R@R) shall be performed by the supplier to evaluate the capacity and production readiness of the process. The date for the R@R must be defined during the component review between the supplier and AdduXi. Supplier has to comply with a Safe Launch Concept (SLC). SLC plan must be submitted to AdduXi in an early stage for review and consecutively thereafter for verification of results.

III-b/4 Surveillance plan

A control plan must be generated for production activities.

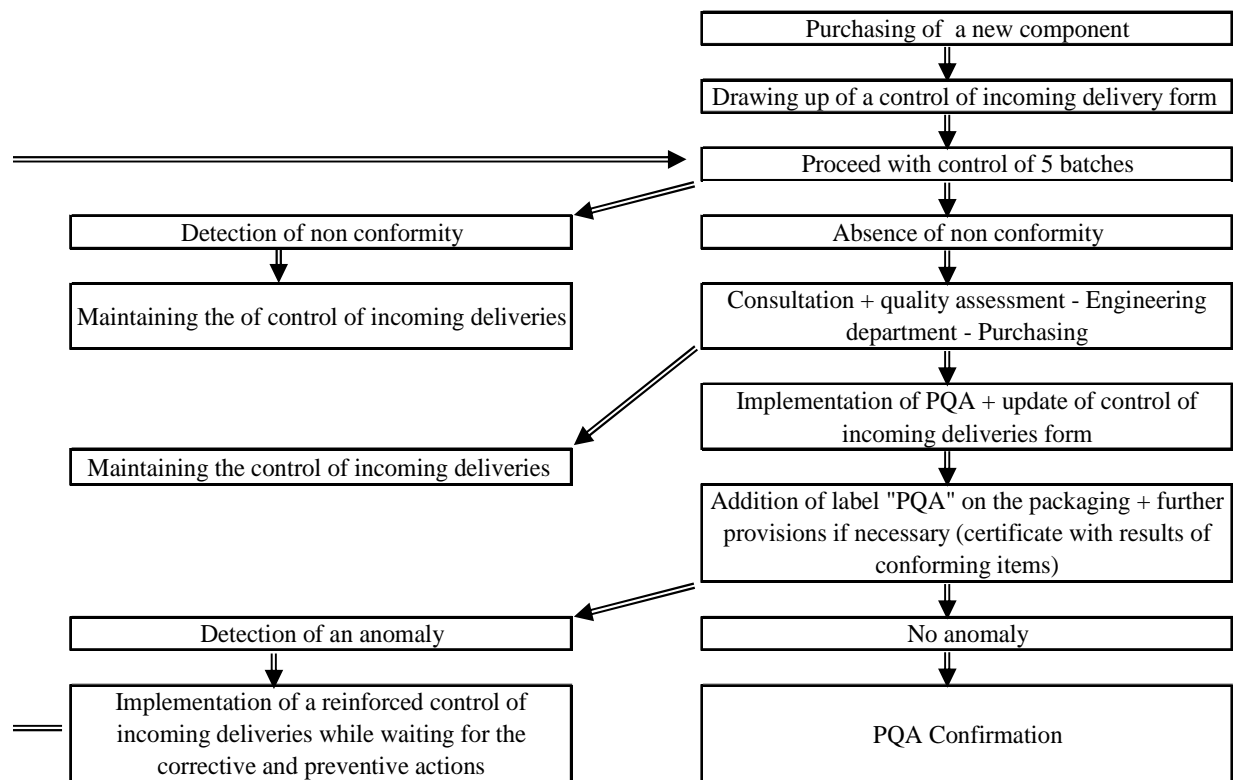
The control plan describes all the inspection operations that are to take place throughout the manufacturing process before and during mass production. The control plan must be according to the guide lines of AIAG (for USA) with the addition of any customer specific requests.

III-c Setting up of the Product Quality Assurance (P.Q.A.) for a component

Setting up a P.Q.A. is a principle aimed at involving the supplier continuously in the quality of their deliveries and to limit AdduXi's inspection of incoming deliveries. It stems from a group decision between Purchasing, Quality and Engineering departments. The decision is based on the following criteria: supplier standards, quality of received batches and the criticality of the part.

Critical suppliers will be required to provide a certificate of conformance/analysis report for each batch of material supplied to AdduXi with detailed critical dimensions and test results to minimize inspection needs at AdduXi. This activity may be mandated for each shipment and evolve into a skip lot approach. In some instances, 30 piece capability results will also be required. Inspection frequency may increase based on nonconformance findings.

Flow chart regarding the setting up of the P.Q.A.



III-d/ Nonconformity management

The supplier is responsible for the supply of products or services that meet requirements and specifications. For any nonconformity, the supplier is expected to perform problem solving

analysis, determine problem root cause / causes and to set up corrective and/or preventive actions in order to solve the problem and therefore, prevent recurrence. An 8D report must be provided.

III-d/1 Nonconformity

Defective components may be identified at any step of the process, from the inspection of incoming deliveries through usage of the product by the final customer.

Suppliers will be notified by a « notice of nonconformity » as soon as the nonconformance has been detected.

Depending on the urgency and the seriousness of the problem, nonconforming batch can be:

- Accepted with deviation or other supporting information about the defect.
- Rejected and sent back to the supplier.
- Accepted with sorting.
- Returned to supplier with no substitution.

III-d/2 Supplier Response

Upon receipt of a Quality Claim, the supplier must contact AdduXi's Quality department within 24 hours.

He is to acknowledge the request for corrective actions within 10 working days.

The supplier is to:

- Set up retaining actions.
- Define a corrective and preventive action plan, in order to avoid the recurrence of a non conformity.
- Complete an 8D report or a non conformity notice.
- Identify the batch number and the date on which the corrective action comes into force.
- Provide verification data of all corrections.

III –e/1 Charge backs and administrative fees

Any nonconforming part found will require replacement parts, a return or a credit note from the supplier.

Supplier nonconformances found will result in a \$ 250 / 250 euros administrative fee per occurrence. In the event that external sorting will be required by an outside source, the supplier

will be responsible for initiating the sort at Adduxi and carry sorting cost. Should the supplier not take action and ensure conforming parts are available for use, AdduXi may contract an outside source to perform the sort and charge the supplier back accordingly.

The supplier is to solve and bear the responsibility for all claims stemming from AdduXi and their customer concerning a product or a service that has been provided. This support can also be a refund and assistance to the customer. Any sorting required at AdduXi customer locations will be set up by AdduXi and charged back to the supplier. In the event that AdduXi personnel are required to perform sorting due to an immediate need for parts, a sorting fee will be invoiced.

IV/ Traceability and Filing

IV-a/ Traceability

The supplier must maintain traceability of products and their components that are delivered to AdduXi in order to limit the delivery volume of faulty products or parts in case of any nonconformity.

IV-b/ Filing

The supplier must archive all documents regarding the quality of product including the manufacturing process parameters and the delivery of the materials through the delivery of the product at our plant.

Such records must be kept for ten years for parts produced for use by the automotive industry (except for special requests).

At periodic and random intervals, AdduXi may request to see these documents, should a nonconformance be identified.

V/ Receipt from external supplies

V- a/ Labelling and packaging

In order to avoid any type of damage and/or quality deterioration, the supplier is to make sure that the products are delivered with adequate packaging, unless any special specification or deviation has been provided to the supplier during RFQ and during product development.

The sub-contractor is to make sure that labels and packaging are suitable for transportation and storage, in order to avoid deterioration.

A label identifying the product is required and is to be attached onto each packaging unit. It must contain the following information :

- AdduXi's part number.
- Number of parts per packaging.
- Batch number.
- Manufacturing date.
- A « P.Q.A. » label should be added by those suppliers having been approved on P.Q.A.

V-b/ Supplier's packing slip

Each delivery is to be carried out with a packing slip (sometimes referred to as a delivery note).

This document must contain the following information:

- AdduXi's part number.
- The parts' batch number.
- The quantity delivered per batch.
- AdduXi's order number.

A Certificate of Analysis may be requested for some components. A certificate of material conformity and metal finishing is to be supplied for the delivery for parts that have undergone a surface treatment. These certificates are to summarize all the information on the delivery note.

V-c/ Transport

Transportation of AdduXi products is expected to meet all current regulations (material, staff).

V-d/ Safety measures regarding supplies

If necessary and according to the product's criticality, a plan for the safety of inventory (raw materials and/or finished goods) may be requested. This request may originate from AdduXi or their customers.



Ethics-Charter

01



AdduXi bases its development on values and principles that clearly show its engagement to ethics and responsibility in all sectors of activity

Laws and rules

AdduXi applies valid laws and rules in all areas.

Loyalty and transparency

AdduXi follows the principle of loyalty towards its customers and suppliers, in order to build up lasting relationships based on mutual trust.

Health and safety at work

AdduXi improves - beyond legal requirements - the conditions of safety and protection at work. In particular AdduXi makes sure that all measures of risk prevention and safety at work are constantly applied; all suppliers working on site are asked to respect the same precautions.

Rights of the employees

AdduXi respects the rights of the employees. By principle no discrimination is accepted, neither during recruitment nor within the working relationships, and every employee has to be treated in full respect of his personal dignity and his person.

AdduXi offers a balanced work situation in terms of employment, payment, participation in the growth of the company and safety at work.

Environmental awareness

AdduXi actively supports environmental protection whilst organizing and improving its industrial plants.

Professional engagement

Every employee brings in his professional competence at the highest level and therefore contributes to the best results of the company.

AdduXi actively contributes to enlarge the competences of the employees, to encourage their independence and to support social innovation.

AdduXi takes care of a balanced situation in terms of employment, of payment, of participation in the increase of the company and safety at work.

Relationships to our surroundings

AdduXi commits itself to deliver to its customers high quality products and services in strict respect of all policies concerning safety and environmental protection.

AdduXi encourages its partners and suppliers to agree to and respect the principles of a sustainable development.

Finally AdduXi commits itself to assure a harmonious cooperation with its social, economic and financial environment and all its partners.



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Supplier Acknowledgement

Please return acknowledgment of document receipt and acceptance to :
Stacey.ellenwood@adduxi.com

Email Distribution and Read Receipts are considered valid acknowledgments.