

Supplier Manual



Rev.	Date	File	Originator	Approval	Classification	Page
7.0	26.02.2019	CG001147	Schaffrath, Marcus	Borghese, Horacio		1/32

Contents

1	Introduction	4
2	Basic requirements	5
2.1	Requirements in suppliers	5
2.2	Information security/data protection.....	5
2.3	Certifications	7
2.4	Willingness to provide information	7
2.5	Continuous improvement	7
2.6	Communications.....	8
2.7	Continuous flow of supplies / contingency plan	8
2.8	Material separation	9
3	Social responsibility.....	10
3.1	Compliance	10
3.2	Sustainability and environment.....	11
3.3	Work safety	11
3.4	Directives, regulations, and laws	12
4	Qualification and supervisory process	14
4.1	Qualification documentation	14
4.2	Audits	15
4.3	Supplier evaluation	17
5	Sampling	18
6	Additional requirements	19
6.1	Inspection dimension labeling	19
6.2	Test documentation	19
6.3	Traceability	22
6.4	Special release	22
6.5	Process change notification (PCN)	23
6.6	Product and process FMEA (failure mode and effect analysis).....	23
6.7	Process sign-off (PSO)	23
6.8	Parts handling review (PHR).....	23
7	Complaints management.....	25
7.1	General.....	25
7.2	8D report.....	25

Rev.	Date	File	Originator	Approval	Classification	Page
7.0	26.02.2019	CG001147	Schaffrath, Marcus	Borghese, Horacio		2/32

8	Documents and information exchange	26
8.1	Communications platform/EDE directory	26
8.2	AIXTRON standards and norms	26
9	Logistics.....	26
9.1	General.....	27
9.2	Packaging	27
9.3	Empties	29
9.4	Labeling.....	29
9.5	Heavy loads	30
9.6	Preservation.....	30
9.7	Unloading	30
9.8	Consignment checking.....	31
9.9	Fact-finding and assertion of damages.....	31
9.10	Address and opening hours for goods acceptance	31
10	Appendices	32

The specifications, requirements, and standards presented in this manual apply in their entirety to all suppliers, including their sub-suppliers (hereinafter collectively referred to as "the supplier" or "suppliers"), which supply materials, products, and services to AIXTRON SE (hereinafter referred to as "AIXTRON").

The descriptions presented serve to supplement the contractual terms and conditions. They do not replace or amend the components of the procurement terms, quality assurance agreements, or any other contractual documents. The latest version of this manual is published on AIXTRON's website (www.aixtron.com).

Rev.	Date	File	Originator	Approval	Classification	Page
7.0	26.02.2019	CG001147	Schaffrath, Marcus	Borghese, Horacio		3/32

1 Introduction

Our customers’ increasingly sophisticated expectations and global competition make it necessary to continuously improve all of our products, services and processes.

Customer satisfaction with the quality we offer in all aspects of our activities is the crucial factor determining AIXTRON’s success. It is therefore also significant for you as a supplier whose products are integrated into AIXTRON’s systems.

A “**zero defect strategy**” is absolutely necessary for all supplies. This can only be achieved and upheld when AIXTRON and its suppliers work **together** to pursue this objective.

Defect avoidance and continuous improvements are indispensable requirements which AIXTRON has to – and will – meet throughout its supply chain.

AIXTRON intends to expand its role as one of the world’s leading manufacturers of coating equipment for the semiconductor market. Our aim is to build long-term strategic relationships with our suppliers.

AIXTRON’s business partners:

- Are interested in a long-term partnership
- Offer effective support to enable us to meet our objectives
- Satisfy AIXTRON’s principles with regard to health and environmental protection, work safety, quality assurance, and corporate responsibility
- Offer high supply service enabling our customers’ wishes to be met rapidly and flexibly
- Guarantee consistently high product quality that satisfies both us and our customers
- Offer prices appropriate to the market that stand up to comparison with those offered elsewhere on the global market.

Rev.	Date	File	Originator	Approval	Classification	Page
7.0	26.02.2019	CG001147	Schaffrath, Marcus	Borghese, Horacio		4/32

2 Basic requirements

2.1 Requirements in suppliers

All suppliers are required to provide relevant data in accordance with the needs of the purchasing group or plant. This includes information about the business systems used, product portfolios, and the contact details of the principal contacts. Suppliers to AIXTRON are also required to meet specific financial and quality criteria in respect of their operations. Taken together, these factors define the supplier status. These key figures are reviewed at regular intervals and assist AIXTRON in developing its general procurement strategies.

2.2 Information security/data protection

For the duration of any cooperation, it may be necessary for AIXTRON and the respective supplier to exchange documents and information of a sensitive nature.

AIXTRON expects its suppliers to have taken the underlying steps needed to protect the confidentiality, availability, and security of the information in order to prevent any unintended publication and facilitate restricted access based on the “need to know” principle. All aspects of the requirements listed in the currently valid confidentiality agreement between AIXTRON and its suppliers must be met. The measures required also include protecting physical and logistical access to the IT infrastructure and applications which process and store information from AIXTRON. This also applies to infrastructure and applications outsourced to any third-party provider (e.g. cloud provider or software host).

Documents and information classified by AIXTRON as “CONFIDENTIAL” or “STRICTLY CONFIDENTIAL” must, as a minimum, be treated in accordance with the security standards defined by AIXTRON as set out below:

- Electronic information must be stored in encrypted form when not actively being processed.
- The IT systems used to store information must have multi-client capability, i.e. technical and organizational measures must be in place to store the information separately from information relating to other clients.
- Access to documents and information in IT systems must be protected with an appropriate password infrastructure.

Rev.	Date	File	Originator	Approval	Classification	Page
7.0	26.02.2019	CG001147	Schaffrath, Marcus	Borghese, Horacio		5/32

- Upon request, the supplier must provide documentary evidence showing which individuals were granted access to AIXTRON information.
- Printouts, materials, and other non-electronic information must be protected against unauthorized access by being stored securely (e.g. in a locked cupboard or room).

All confidential information and its effectuations, including reports, notes, printouts, descriptions, copies, and summaries, are and at all times remain the property of AIXTRON. If requested by AIXTRON, they must be destroyed by the supplier where this is reasonably possible (with the exception, for example, of copies automatically generated by internal backup systems).

If not covered by the requirements of the confidentiality agreement in its currently valid version, any forwarding of AIXTRON-related information to third parties when processing the order must be approved in writing by AIXTRON. Personal data covered by the requirements of the German Federal Data Protection Act (BDSG) and/or other national legislation must be treated with particular care.

In the event of any security incident affecting the confidentiality, availability, and security of AIXTRON-related information (e.g. hacker attack), AIXTRON must be informed within 48 hours by way of an e-mail sent to InfoSec@aixtron.com.

Rev.	Date	File	Originator	Approval	Classification	Page
7.0	26.02.2019	CG001147	Schaffrath, Marcus	Borghese, Horacio		6/32

2.3 Certifications

2.3.1 Company certifications

AIXTRON expects its suppliers to provide documentary evidence confirming their compliance with the current version of ISO 9001 (or higher-grade certification).

AIXTRON also urges its suppliers to obtain the following certifications:

- OHSAS 18001
- ISO 50001
- ISO 14001

In the event of the expiry, withdrawal, temporary suspension, or probation of a valid certification, the supplier must immediately notify all AIXTRON plants it supplies of such change in its certification status. AIXTRON must be informed within five working days of the withdrawal of any certification.

2.3.2 Product certifications

In specific cases, AIXTRON is requested to have products certified by independent third parties in accordance with relevant directives and standards (“third-party certification”). This also applies to our suppliers and forms part of the scope of supply. AIXTRON requests information on the type and scope of audits using its own internal templates:

- Request for documents on electrical components
- Request for documents on mechanical components

Furthermore, AIXTRON may require a test certificate pursuant to DIN EN 10204, particularly when special requirements apply with regard to corrosion resistance.

2.4 Willingness to provide information

The supplier undertakes to provide any information requested by AIXTRON concerning its financial, quality, environmental protection and work safety situation. AIXTRON may request this information on a regular basis to enable it to assess the supplier’s ongoing stability and functional capability. AIXTRON will make every effort to keep any operations-related and financial information confidential.

2.5 Continuous improvement

The supplier is obliged to implement a structured process to ensure the continuous improvement of all its products, processes (also at its sub-suppliers), operating

Rev.	Date	File	Originator	Approval	Classification	Page
7.0	26.02.2019	CG001147	Schaffrath, Marcus	Borghese, Horacio		7/32

procedures and services. It undertakes to continuously improve its quality, supply deadline compliance, flexibility, and cooperation with AIXTRON. Relevant improvement programs and measurement results may be requested by AIXTRON.

2.6 Communications

It is very important that the relationship between AIXTRON and its suppliers should be based on open and proactive communications. Any failure to meet requirements and/or unauthorized changes in the supply chain represent a high risk for AIXTRON and its customers if these are not communicated, processed, and resolved in a targeted manner and at an early stage of developments. This applies, for example, to:

1. All current and/or potential problems identified by the supplier
2. All changes in materials and/or processes (c.f. Chapter 6.5)
3. Changes at sub-suppliers
4. Changes to IT and support systems
5. Organizational changes (e.g. change in ownership structure, substantial reorganization measures)

Suppliers support all tests, validations, approvals, and applications resulting from product and process changes.

2.7 Continuous flow of supplies / contingency plan

Suppliers must have a contingency plan in place to ensure a continuous flow of supplies even in the event of any interruption to operations and/or problems with the supply of materials due to manmade incidents, natural disasters, power cuts, work stoppages, equipment or logistics failure. This contingency plan must be reviewed at regular intervals.

If a supplier discovers that supply bottlenecks may arise, it must inform the Purchasing Department at AIXTRON immediately.

For each of their production locations, suppliers must appoint a contact partner and a deputy furnished with the decision-making powers needed to address any problems arising in respect of the quality and/or supply of products. If any such problems arise, then the contact partners must be available at all times. The relevant contact details must be made available to the AIXTRON location to be supplied.

Rev.	Date	File	Originator	Approval	Classification	Page
7.0	26.02.2019	CG001147	Schaffrath, Marcus	Borghese, Horacio		8/32

2.8 Material separation

The production of components for the semiconductor industry requires the implementation of various measures intended on the one hand to maintain the corrosion resistance of stainless steels (as defined in DIN EN 10088) and on the other hand to minimize or avoid contamination with process residues.

In general, production departments in which stainless steels are worked and processed must be separated from those in which carbon steel (i.e. unalloyed high-quality and high-grade steel) is processed. This way, it can be ensured that dust and aerosols etc. are not deposited on the stainless steels, leading to corrosion (bimetallic corrosion, galvanic corrosion, or contact corrosion) at a later date.

Furthermore, we require the use of coolant lubricant emulsions (CLEs) in production, compliance with corrosion protection measures, and reviews of the heavy metal load. This mainly applies for cobalt.

Rev.	Date	File	Originator	Approval	Classification	Page
7.0	26.02.2019	CG001147	Schaffrath, Marcus	Borghese, Horacio		9/32

3 Social responsibility

3.1 Compliance

AIXTRON is convinced that adherence to external and internal regulations (“compliance”) is a key component of any sustainable and successful corporate governance. AIXTRON’s compliance principle entails documented adherence to all legal, regulatory, and company-internal requirements applicable to all business dealings.

All suppliers to AIXTRON are required to comply with all applicable requirements of national and international law and in particular not to take, or refrain from taking, any actions that could result in criminal liability due to corrupt behavior, fraud, or breach of trust, or could trigger insolvency, or infringe the requirements of competition law, import and export restrictions, the requirements of customs and tax regulations, or environmental protection regulations. The supplier undertakes to comply with AIXTRON’s procurement terms, its compliance code of conduct, and all related compliance guidelines to the extent that these include requirements applicable to the supplier.

The respectively valid versions of these documents can be consulted on AIXTRON’s homepage.

AIXTRON prohibits the offering, pledging, requesting or acceptance of cash or any other gratuities. This does not apply to socially acceptable gratuities offered for reasons of politeness or courtesy on a customary and generally approved scale. Suppliers must implement suitable guidelines and processes to detect and prevent corrupt activities. AIXTRON expects its suppliers to participate in all compliance-related audits, investigations, inquiries, certifications, and screening processes.

AIXTRON is aware that the supply chain stretches across various regions of the world and is committed to complying with global labor conditions and regulations that result in employees at all locations worldwide being treated with dignity and respect. AIXTRON therefore expects its suppliers to ensure, as part of their corporate responsibility, that applicable labor conventions (ILO Core Conventions) are complied with in the manufacturing of products and performance of services and to ensure that forced labor and child labor are not tolerated, that worker’s freedom of association is protected, that employees are not discriminated on account of their gender, ethnic origin, skin color, religion, sexual orientation, disability or age, and that any adverse consequences of their activities for people and the environment are avoided. Contact via Compl-Office@aixtron.com

Rev.	Date	File	Originator	Approval	Classification	Page
7.0	26.02.2019	CG001147	Schaffrath, Marcus	Borghese, Horacio		10/32

3.2 Sustainability and environment

AIXTRON aims to be the industry leader in the fields of occupational health and safety and the environment. AIXTRON therefore expects its suppliers to show the same commitment towards minimizing adverse environmental effects and ensuring safe and healthy working conditions. Suppliers must comply with or exceed all applicable health, safety, and environmental requirements. All activities that impact on these fields must be regularly supervised. Suppliers are expected to make continuous efforts to reduce the environmental impact of their products.

AIXTRON recommends certification under the environmental management norm ISO 14001 and encourages its suppliers to support their sustainability initiatives by efficiently managing and reducing their energy consumption with an effective energy management strategy (ISO 50001).

3.3 Work safety

At AIXTRON, the supply of technically flawless goods and services is based on the principle of "safety first". To ensure a high degree of safety, as well as of work, environmental, and health protection, it is crucial that managers should be aware of their responsibility. AIXTRON expects the same approach from its suppliers. Given that safety, as well as work, environmental, and health protection, can only be safeguarded by planning the respective measures at an early stage, the products and service applications must be developed and planned in line with the latest technological standards. It is clear that this approach also involves performing extensive risk analyses, hazard assessments, and risk assessments. It is also absolutely crucial that staff members should be aware of environmental, safety and health factors in all of their actions, formulate potential improvements, and thus actively participate in the ongoing process of implementing further improvements.

AIXTRON assumes that the employees and managers have suitable specialist qualifications and that adequate resources are available to manufacture the products and perform the services.

Suppliers are obliged to meet their responsibility towards society in terms of work, environmental, and health protection and to react flexibly to developments within society. Accordingly, the legal requirements are to be viewed as self-evident minimum standards.

Should any accidents or near-accidents occur, AIXTRON expects its suppliers to perform systematic analysis and devise effective and sustainable remedial actions – not only for the incident actually occurring but also for the future. To this end, it makes sense to work with recognized management systems. These systems should be

Rev.	Date	File	Originator	Approval	Classification	Page
7.0	26.02.2019	CG001147	Schaffrath, Marcus	Borghese, Horacio		11/32

continually developed further and always kept up to date in line with technological advances and changing circumstances.

The aim must always be to achieve “zero accidents”. Depending on the complexity of the plant, AIXTRON will perform inspections or building monitoring measures at the supplier. Suppliers are responsible for excluding the possibility of any hazard arising. Suppliers must instruct AIXTRON employees with regard to those risks that may arise in the course of performing these tasks and support/advise them. Suppliers must inform AIXTRON immediately about any incidents relevant to work, environmental, and health protection.

3.4 Directives, regulations, and laws

3.4.1 RoHS

AIXTRON basically expects its suppliers to comply with RoHS (restriction of the use of certain hazardous substances in electrical equipment, 2011/65/EU) in the version valid on the date of the respective supply.

3.4.2 REACH

AIXTRON supports the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) standards. Suppliers must comply with the applicable norms governing the classification, packaging, and labeling of hazardous substances and compounds, including those regulations implemented in respective national legislation for the Globally Harmonized System (GHS) developed by the United Nations for the classification and labeling of chemicals.

Suppliers must be familiar with its legal duties to provide information and meet these towards AIXTRON. Further information about this can be found on the website of the European Chemicals Agency (ECHA) (www.echa.europa.eu).

3.4.3 Conflict minerals

In 2010, the U.S. Congress passed the “Dodd-Frank Wall Street Reform and Consumer Protection Act” and thus laid down the disclosure obligations for all companies submitting reports to the U.S. Stock Exchange Commission (SEC). These regulations include determinations and disclosures as to whether so-called conflict minerals (gold, tantalum, tungsten, and tin) from the Democratic Republic of Congo and neighboring states are used in products or are required for their functionality or production.

Rev.	Date	File	Originator	Approval	Classification	Page
7.0	26.02.2019	CG001147	Schaffrath, Marcus	Borghese, Horacio		12/32

The European Union is also introducing a regulation governing trading with conflict resources as of 2021. This regulation obliges EU companies to identify, disclose, and work to counter risks in their supply chains.

To ensure compliance with these legal requirements, AIXTRON has established a process that regularly provides transparency as to the use and origins of conflict minerals.

For this, AIXTRON works with the "Conflict Minerals Reporting Template (CMRT)", a freely available and globally standardized questionnaire, to determine the origin of conflict minerals. Once a year, AIXTRON's direct suppliers are contacted by mail and requested to provide information on the origin of conflict minerals. AIXTRON expects its suppliers to apply this measure to their own suppliers as well. Only this way is it possible to ensure transparency concerning conflict minerals in the supply chain.

AIXTRON's declared aim is for all conflict minerals to be processed either from the recycling circuit or from minerals smelters certified within the "EICC/GeSI Conflict Free Smelter (CFS) Program".

Further information about conflict minerals can be found on AIXTRON's homepage or, for example, on the homepage of the CFSI.

<http://www.conflict-minerals.com>

Contact via conflictminerals@aixtron.com

Rev.	Date	File	Originator	Approval	Classification	Page
7.0	26.02.2019	CG001147	Schaffrath, Marcus	Borghese, Horacio		13/32

4 Qualification and supervisory process

All suppliers undergo AIXTRON’s internal approval process at the beginning of their business relationships with AIXTRON.

To this end, AIXTRON compiles and evaluates a variety of information, such as supplier self-disclosures, visit reports, etc. If the evaluation has a positive outcome, the supplier is approved on an unlimited basis. The supplier is obliged to notify AIXTRON of any changes with the potential to significantly influence the evaluation. The exact evaluation criteria can be found in the following chapters.

4.1 Qualification documentation

4.1.1 Supplier self-disclosures

The supplier provides AIXTRON with detailed self-disclosures (based on AIXTRON’s template). These disclosures enable AIXTRON to evaluate the supplier’s quality, organization, and economic efficiency and form the basis for all further activities.

4.1.2 Exclusivity agreement

Products which are manufactured by the supplier using expertise from AIXTRON are exclusively destined for supply to AIXTRON and may not be sold to third parties. This requires a separate exclusivity agreement.

4.1.3 Confidentiality agreement

Suppliers must ensure confidentiality with regard to the development of products and projects on behalf of AIXTRON, as well as to the related product information. This is contractually agreed in a confidentiality agreement (non-disclosure-agreement – NDA). Any publication referring to AIXTRON must be approved in writing by AIXTRON.

4.1.4 Manufacturing feasibility analysis/declaration

With the manufacturing feasibility declaration, the supplier certifies that it has recorded the assignment on a companywide basis and reviewed and evaluated all specifications (all features). The supplier must be in a position to manufacture the products in the required quality and quantity, taking due account of all of AIXTRON’s requirements and specifications. The supplier confirms this ability by signing the manufacturing feasibility declaration.

Rev.	Date	File	Originator	Approval	Classification	Page
7.0	26.02.2019	CG001147	Schaffrath, Marcus	Borghese, Horacio		14/32

4.2 Audits

Following advance notification, AIXTRON reserves the right to perform a system, process, or product audit at any time, also at short notice, to ascertain whether the quality assurance measures in place at the supplier are consistent with its requirements.

Should any quality-related problems arise that are attributable to services and/or supplies provided by sub-suppliers, the supplier must, at AIXTRON's request, perform an audit at the sub-supplier (if appropriate together with AIXTRON) and submit the findings to AIXTRON.

4.2.1 System audit

System audits are held when required or at regular intervals and are conducted by an AIXTRON auditor. Furthermore, AIXTRON reserves the right to commission external auditors. Audits may additionally be supported by specialists from other departments (e.g. procurement, development, production).

There are three types of special system audit: the pre-audit, the initial audit, and the follow-up audit.

The **pre-audit** is conducted to prepare decisions on the selection of (unknown) suppliers. This is particularly relevant when the contracts to be awarded involve technically sophisticated products. The core task of the pre-audit is to evaluate the quality capability, technical expertise, and potential of the respective supplier. This means that the supplier is assessed in terms of its production possibilities, products and processes, as well as with regard to the establishment of quality-resilient processes.

The **initial audit** forms the basis for the partnership between the supplier and AIXTRON. This involves examining previously selected processes at the supplier in detail. The audit findings are provided and explained to the supplier by way of an audit report. Within a week, the supplier subsequently defines suitable remedial measures, including a timeframe for their implementation, and communicates these in writing to the relevant audit manager.

Rev.	Date	File	Originator	Approval	Classification	Page
7.0	26.02.2019	CG001147	Schaffrath, Marcus	Borghese, Horacio		15/32

The approach used and evaluation in the **follow-up audit** are identical to those in the initial audit. The aim here is to review implementation of the measures from the preceding audit, as well as a selection of other processes where appropriate.

4.2.2 Audit evaluation

Points are awarded and suppliers evaluated in accordance with the following system:

Points	Evaluation of extent to which individual requirements are met
10	Requirements fully met
8	Requirements mostly met*; minor variances
6	Requirements partly met; major variances
4	Requirements inadequately met; severe variances
0	Requirements not met

*) "Mostly" is taken to mean that all relevant requirements can be effectively documented in more than around $\frac{3}{4}$ of all relevant applications and that no special risk applies.

Evaluation scheme for audit and classification of the supplier:

Degree of fulfilment [in %]	Evaluation	Classification	Comment
90 to 100	Quality-capable	A	Unrestrictedly approved for a specified range of parts, requirements fully met
70 to less than 90	Conditionally quality-capable	B	Conditionally approved for a specified range of parts, requirements mostly met
to less than 70	Not yet quality-capable	C	Supplier not approved, requirements not met, end of process

The supplier is granted supply approval from an audit result of >70%. For results of between 70% and 90%, the supplier is expected to increase its result to > 90% within one year.

4.2.3 Product and process audit

The supplier must perform product audits at regular intervals in order to document that all specific requirements, such as product dimensions, functionality, packaging, and labeling, have been met.

The supplier regularly performs internal process audits which are planned in advance for all products supplied to AIXTRON and for all processes involved in developing and manufacturing such products. These audits are based on the stipulated product specifications and features, as well as on additional factors relating to deliveries, such

Rev.	Date	File	Originator	Approval	Classification	Page
7.0	26.02.2019	CG001147	Schaffrath, Marcus	Borghese, Horacio		16/32

as logistics and packaging. Should any variances be identified, the supplier immediately takes all necessary corrective measures and ensures that such measures remain permanently effective.

4.3 Supplier evaluation

The supplier evaluation serves to monitor and differentiate between various quality standards at suppliers.



Chart 1: Supplier evaluation criteria

These key figures are in turn aggregated by AIXTRON’s Purchasing Department to provide an overall performance figure per supplier. The overall performance figure assists AIXTRON in evaluating and classifying its suppliers.



Chart 2: Detailing of supplier evaluation criteria

Rev.	Date	File	Originator	Approval	Classification	Page
7.0	26.02.2019	CG001147	Schaffrath, Marcus	Borghese, Horacio		17/32

5 Sampling

For every new system and every change made to a product, the developer responsible for the system or product determines the type of sampling to be used. The first products manufactured by a supplier are also subject to sampling. AIXTRON distinguishes between the following types of sampling:

Types of sampling			
No sample	Pre-sample	First sample	Re-sample

When requesting offers and placing orders, AIXTRON informs suppliers about the type of sampling to be applied to the given product. This enables suppliers to plan and account for corresponding audits and documentation.

The sampling process serves to verify, review, and document the capabilities required by AIXTRON.

Suppliers are required to comprehensibly present all of the features determined in drawings, specifications, and other related documents, as well as their respective tolerances, in the AIXTRON template of the first sample report. The document is deemed comprehensible when copies of the drawings etc. are attached to the first sample report and include the serial numbers of the features entered in accordance with requirements of the first sample report.

For serial deliveries, suppliers should account for the time required for the first sample process when agreeing to deadlines. As approval processes depend on the specific product involved, suppliers should consult the Purchasing Department to find out the time needed for the first sample release process.

When sampling is complete, a decision is taken as to the sample. AIXTRON uses the following audit findings, notes these in the first sample report, and communicates these to suppliers:

Decision	Comment
Released	First sample acceptable
Conditionally released	First sample partly acceptable
Blocked	First sample not acceptable

Rev.	Date	File	Originator	Approval	Classification	Page
7.0	26.02.2019	CG001147	Schaffrath, Marcus	Borghese, Horacio		18/32

6 Additional requirements

6.1 Inspection dimension labeling

Principal and critical features based on AIXTRON's factory standards are specially highlighted in the drawings and specifications. Manufacturing variances from the stipulated dimensions, tolerances, and other features are basically not permitted.

6.2 Test documentation

In general, suppliers should only submit that test documentation which is requested by AIXTRON in its order documents. Suppliers are free to decide whether to use AIXTRON's "measurement inspection sheet" or their own templates as test documentation. Either way, the documents must always include the following data:

- Order number
- SAP article number
- Drawing/document number
- Index and revision status
- Identification number
- Material

6.2.1 Digital archiving and recording of test documentation

- All requested test records must be provided to AIXTRON prior to order delivery.
- The documents are stored on the shared replacement drive (ExternalDataExchange, c.f. Chapter 8.1) and filed in the "Test documents" directory.
- This folder may only be used for test documentation.
- Only signed documents are recognized.

6.2.2 Permitted file formats

- Packed files (*.rar, *.zip, etc.) are not permitted.
- Coil measurement data (evaluations and identification number, records) must be submitted as Excel files.
- Measurement inspection sheets and all other test documentation must be submitted as PDF files.

Rev.	Date	File	Originator	Approval	Classification	Page
7.0	26.02.2019	CG001147	Schaffrath, Marcus	Borghese, Horacio		19/32

6.2.3 Individual parts and modules

- If the order involves individual parts, then the associated test documentation is also recorded individually.
- If the order involves a module, all associated test documentation must be aggregated in a PDF file.
- For identification purposes, a module only requires one identification number (WN0024) after the SAP material number. Please note! The SAP material number is not identical with the drawing number!

6.2.4 File name

Examples of the names of files submitted:

<i>SAP order number</i>	<i>- SAP material number</i>	<i>- Identification number</i>
45000.....	- 100075313	
45000.....	- 100075313	- 100057616011-4
45000.....	- 100075313	- 100057616011-8 to 22

Rev.	Date	File	Originator	Approval	Classification	Page
7.0	26.02.2019	CG001147	Schaffrath, Marcus	Borghese, Horacio		20/32

6.2.5 AIXTRON measurement inspection sheet

Measurement control sheet				Aixtron order no.:		4500012345	
Item name		Sample material		Supplier		Sample Ltd	
SAP Material no.:		10xxxxxxx		Rev. no.:	1	Supplier order no.:	
Drawing no.:				A		Supplier item no.:	
Quantity		5		First sample/Prototype		<input checked="" type="checkbox"/>	
Material				ID no.:			
No.:	Ref. dimension	Tolerance*	Actual dimension	Test dev.**	Ref. dimen. check	Test dev.**	Comments
1	10	-0.10	9.98	Cal. gauge			
2	5	-0.10	4.90	Cal. gauge			First samples are specified in the Aixtron order.
3	263		262.80	M01			Document engraved ID number or take over existing ID number.
4	62		62.0	M01			
5	10	-0.50	9.90	A20			
6	15	-0.10	14.95-14.99	MS2			Quantity of the total delivery or in reference to the quantity of the ID numbers specified in the measurement control sheet.
7	//	0.20	0.10	PMG			
8	Evenness	0.20	0.10	PMG			
9	M4		OK	Dorn			
10	Ra 2.0		1,2	RMG			
11							
12							
13							
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18							
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21							
22							
23							
24							

The SAP-material number has to be entered as a 9-digit number.

The Aixtron order number has to be entered as a 10-digit number.

First samples are specified in the Aixtron order.

Document engraved ID number or take over existing ID number.

Quantity of the total delivery or in reference to the quantity of the ID numbers specified in the measurement control sheet.

If more than one component of an item is measured, a measurement range from the smallest to largest size of all components has to be entered.

Internal company IDs for the respective measuring devices can also be entered here.

Samples

Comments:

Check the appropriate boxes. Do not forget to sign and date the document.

Record any installation and/or leak tests that have been performed here.

External constitution:				Function test:				Test result:			
Cleaned and treated	yes	<input type="checkbox"/>		Rotation test:		yes	<input type="checkbox"/>	no	<input type="checkbox"/>	Q-Note:	
Damaged	no	<input type="checkbox"/>	yes	<input type="checkbox"/>	(see Comment)	System test:		yes	<input type="checkbox"/>		no
Optional weld seam check	OK	<input type="checkbox"/>		Installation test:		yes	<input type="checkbox"/>	no	<input type="checkbox"/>	Release	
Flame polishing (quartz)	OK	<input type="checkbox"/>		Leak test:							yes
Supplier tester	Signature	Date	XXXXX	Background	E -				no		<input type="checkbox"/>
Aixtron tester	Signature	Date	XXXXX	Leakage rate	E -		after 1 min.		Special release		<input type="checkbox"/>

Boxes with a double-lined frame are to be completed by AIXTRON.

(*) Non-tolerated dimensions acc. to DIN 7168-m and 7168-f are not listed below the "Tolerance" field.

(**) Choice of test device based on requirements after selection of manufacturer.

Page 1

Rev.	Date	File	Originator	Approval	Classification	Page
7.0	26.02.2019	CG001147	Schaffrath, Marcus	Borghese, Horacio		21/32

6.3 Traceability

The supplier undertakes to ensure the traceability of the products it supplies. By labeling and thus safeguarding the traceability of its products, the supplier ensures that, should a defect be identified, all other products potentially suffering from the same defect can be identified immediately. This way, the affected products can be recalled if necessary. Furthermore, these parts are blocked until follow-up measures have been agreed between the supplier and AIXTRON.

Products are labelled, for example, by applying labels in accordance with AIXTRON's requirements. This labeling should include all relevant product data. With the assistance of the data recorded, it must, for example, be ensured that:

- All production data, audit and test results (actual values) can be allocated to the product
- All defective products can be identified.

Based on its own expertise, the supplier should determine which data relating to its products and processes is to be recorded in order to meet these requirements. If requested by AIXTRON, the supplier must disclose the procedure used to record this data.

6.4 Special release

Variances must be agreed with AIXTRON's Quality Department **prior to** delivery. The technical release should be noted on the measurement inspection sheet, with the name of the AIXTRON employee entered in the "Comments" section of the sheet.

Inquiries about special releases should be addressed to: quality@aixtron.com

Rev.	Date	File	Originator	Approval	Classification	Page
7.0	26.02.2019	CG001147	Schaffrath, Marcus	Borghese, Horacio		22/32

6.5 Process change notification (PCN)

Any planned changes that could influence the products to be supplied to AIXTRON must be communicated to AIXTRON in good time before they are introduced. Such notifications must be addressed as a minimum to the Purchasing Department. All changes must be approved by AIXTRON in writing.

These requirements are stipulated in mandatory form for all products. Among others, they include:

- Expiry, withdrawal, temporary suspension, or probation of any valid certification
- Change of production locations
- Conversion or substantial change in production process (including tools)
- Conversion or substantial change in production sequence
- Substantial changes in quality assurance
- Discontinuation of products

6.6 Product and process FMEA (failure mode and effect analysis)

An FMEA is a systematic approach used to evaluate the risk of defects (“failures”). Potential defects and their causes are assessed in terms of their failure potential. In the event of a critical assessment, e.g. a high risk priority figure, then suitable measures must be defined to avert these failures.

If AIXTRON explicitly requests FMEA documentation as a component of a given order, the supplier must submit the analysis to AIXTRON for inspection together with the product to be supplied.

6.7 Process sign-off (PSO)

AIXTRON only performs the process sign-off (PSO) for select parts. The purpose of a PSO is to review and document the capability of the production process at a given supplier for the respective AIXTRON product. The aim is to ensure that the supplier has understood all aspects of customer requirements and implemented these in a reproducible manner. A PSO is a systematic and sequential review of the serial production process at the supplier. This review is performed with designated trained production personnel and the serial production facilities, equipment, processes, materials, methods, and tools.

6.8 Parts handling review (PHR)

This evaluation is intended to ensure that the parts used throughout the process chain (packaging, internal transport, logistics, and assembly) are handled on a product-

Rev.	Date	File	Originator	Approval	Classification	Page
7.0	26.02.2019	CG001147	Schaffrath, Marcus	Borghese, Horacio		23/32

conformant basis. In this, due account must be taken of the processes respectively in place at AIXTRON and its customers.

The aim here is to avoid defect-related costs by jointly implementing preventive measures. Depending on the criticality of the parts/components, the PHR is performed together with the supplier at AIXTRON. This involves surveilling/auditing all assembling and handling conditions within AIXTRON.

At AIXTRON's request, the PHR is performed by the supplier and AIXTRON. Here, the supplier assumes a leading role. Based on the insights gained, the parties then cooperate to draw joint conclusions and subsequently work together to compile action plans. Any weak points identified must be remedied with suitable measures.

Rev.	Date	File	Originator	Approval	Classification	Page
7.0	26.02.2019	CG001147	Schaffrath, Marcus	Borghese, Horacio		24/32

7 Complaints management

7.1 General

A notice of complaint is sent when a defective product is identified. Each supplier receives a defect report for each objection thereby raised. This way, the supplier is always able to perform its own assessment on the quality of its work.

Complaints significantly influence the evaluation of the respective supplier. In individual cases, suppliers are required to cover the outlays (time, costs, materials) for which they are responsible.

For every objection raised, the supplier is obliged to provide AIXTRON with a statement/report that, as a minimum, includes the following points:

- Description of defect
- Cause of defect
- Emergency response actions
- Preventative actions

7.2 8D report

If requested by AIXTRON, the supplier is obliged to provide AIXTRON with an extensive 8D report. Receipt of the complaint is expected to be confirmed within 24 hours. All relevant damage limitation measures must be taken immediately.

The expected response time for the compilation of a **3D report** (establishment of team, description of problem, definition of emergency response actions) amounts to a maximum of **48 hours** following receipt of the complaint notice.

The **6D report** (establishment of team, description of problem, definition of emergency response actions, analysis of root causes, permanent corrections, review of documentation) is expected within **10 working days** following receipt of the complaint notice. The completion date for the full 8D report is determined on a case-by-case basis.

The review and conclusive evaluation of the complaint is the responsibility of AIXTRON's Quality Department.

The supplier is obliged to identify, record, and block all parts affected by the defect. It must inform AIXTRON immediately if defective parts have already been delivered to AIXTRON or one of its customers.

Rev.	Date	File	Originator	Approval	Classification	Page
7.0	26.02.2019	CG001147	Schaffrath, Marcus	Borghese, Horacio		25/32

8 Documents and information exchange

8.1 Communications platform/EDE directory

Where necessary, every supplier is provided with access to the external data exchange (EDE) drive. All data (especially sensitive data particular worthy of protection, such as drawings and so forth) is exchanged via this directory. It is not permitted to send such data by e-mail. Based on this technology, AIXTRON and its suppliers can share information easily, quickly, correctly, and securely. The Purchasing Department is the contact partner for any questions in this respect.

8.2 AIXTRON standards and norms

To safeguard the secure exchange of documents and information between AIXTRON and its suppliers, AIXTRON's plant norms and specifications are distributed using the EDE directory. The individual supplier undertakes to review at regular intervals that it is using the currently valid status of all documents. Furthermore, the supplier must provide evidence that it actually uses the information provided by AIXTRON and makes application of this information in all relevant activities.

9 Logistics

Logistics is becoming an ever more critical competitive factor. This also involves a well-functioning supply chain as the connective element between suppliers and customers. Our aim is therefore for all processes relating to the delivery of goods to run smoothly and efficiently. Logistical standards assist both suppliers and AIXTRON to meet this shared objective.

AIXTRON's logistics guidelines and standards should be clarified in detail with the relevant specialist department. They include, for example:

- Empties management
- Transport and delivery processes
- Packaging requirements
- Charge carriers and packaging

AIXTRON's golden rule is always:

Rev.	Date	File	Originator	Approval	Classification	Page
7.0	26.02.2019	CG001147	Schaffrath, Marcus	Borghese, Horacio		26/32

Safety first !!!

The unloading process by the transport company must always be performed in accordance with the currently valid version of German safety guidelines.

9.1 General

- By working with suitable loading aids, packaging, and load unit security fittings, the supplier must ensure that the products can be transported safely.
- Load units must be suitable for transport by floor-based conveyors (lift trucks).
- Pallets may not be loaded over and above the basic dimensions.
- If pallets may not be stacked, this must be clearly marked on the outside.
- All goods must be delivered on/with/in undamaged charge carriers.
- Suppliers must structure and manage their logistics processes in such a way that the quality of the stipulated volume of goods is guaranteed and the goods are delivered to the location and at the time stipulated by AIXTRON.

9.2 Packaging

- All packaging must be designed in line with ecological, economic, and quality criteria (agreed in liaison with AIXTRON).
- Packaging may not be any larger or more complex than absolutely necessary to protect the respective goods.
- Filling material must be reduced to a minimum.
- Use of single-origin packaging materials.
- Where disposable and reusable packaging is equal in economic and qualitative terms, reusable packing should be preferred.
- Specific design schemes and other factors are only permitted if the material to be transported has special needs and only after approval by AIXTRON.
- The goods must be individually packed in a packaging unit.
- Packaging units (cartons/bags) must be delivered homogeneously for each article, i.e. it is not permitted to package several different articles together.
- The delivery must be made on a neutral basis, i.e. the packaging must be neutral.
- For some parts, there are defined forms of packaging designed by AIXTRON to protect the parts. This packaging forms part of the scope of delivery covered

Rev.	Date	File	Originator	Approval	Classification	Page
7.0	26.02.2019	CG001147	Schaffrath, Marcus	Borghese, Horacio		27/32

by the order and is therefore mandatory for the supplier. In cases of doubt, detailed explanations (photos, specifications, etc.) can be requested from AIXTRON. Non-observance of this requirement will result in repackaging, the costs of which may be charged on to suppliers.

- For disposable and reusable packaging, recyclable packaging materials should be used and these should be labeled in accordance with the requirements of the waste disposal industry.
- Poolable reusable packaging (euro pallets, VDA "KLT", etc.) should be preferred over non-poolable reusable packaging.
- Reusable packaging should correspond to standard sizes.
- Reusable packaging must be designed in such a way that it can be completely emptied and easily cleaned and dried.

9.2.1 Reusable packaging

Standard load containers

- The packaging used must be agreed with the relevant AIXTRON employee in advance of the first delivery.

Special load containers

- Special load containers may only be used when product requirements make it impossible to use standard load containers. AIXTRON must in all cases have approved the use of special load containers in advance of delivery. Examples of these containers include large load containers, such as mesh box pallets with inserts, racks to transport sensitive goods, etc.

9.2.2 Disposable packaging

Permissible packaging: ABS, PS, PE, PP, EPP, wood (only for pallets)

Non-permissible packaging: PVC, food-based filling material, plastic composites

Rev.	Date	File	Originator	Approval	Classification	Page
7.0	26.02.2019	CG001147	Schaffrath, Marcus	Borghese, Horacio		28/32

9.3 Empties

To meet and safeguard joint quality, supply, and inventory targets, the following empties handling rules apply between AIXTRON and its suppliers.

Standard load containers: *Euro pallets*

These are exchanged upon delivery, which means that suppliers do not have any claim to the replacement of these euro pallets.

Euro pallets and euro mesh box pallets are governed by the rules of the European Pallet Association <http://www.epal-pallets.org/de/system/system.php>

9.3.1 Empties management

AIXTRON maintains empties accounts as a minimum for AIXTRON-specific empties and poolable VDA "KLT". The account balances may be requested from AIXTRON.

Corrections, with submission of the voucher copy (delivery note), must be received by the relevant empties management office within 14 calendar days. Otherwise, the account balance stated is deemed to have been confirmed by the supplier.

If, upon receipt of empties, the supplier identifies any defects (e.g. difference in quantity, contamination, or damage), it must immediately report this to AIXTRON, stating the delivery note, including photographic evidence, and a brief description of the defect. If the defect is already visible upon handover from the freight carrier, the driver of the freight carrier must note the defect on the delivery documents.

Differences in quantities or losses must be immediately settled at replacement value in line with the "costs-by-cause" principle.

9.3.2 Cleaning of empties

Empties must comply with the level of cleanliness required for the product and/or by AIXTRON's requirements. Cleaning is the responsibility of the supplier.

9.4 Labeling

- Goods must be identifiable from outside. Each packaging unit (carton, bag) must be provided with a label that clearly identifies the good and the quantity contained in the unit.
- Third-party and proprietary labels are not permitted.

Rev.	Date	File	Originator	Approval	Classification	Page
7.0	26.02.2019	CG001147	Schaffrath, Marcus	Borghese, Horacio		29/32

9.5 Heavy loads

AIXTRON defines heavy loads as **units > 50 kg**. These loads are subject to additional conditions.

- The center of gravity and weight must be labeled and visible from the outside.
- The lift points for cranes or other transport means must be labeled.

9.6 Preservation

Preservation must be agreed in line with the overall concept (chosen packaging, type of transport, characteristics of goods). Here too, order-specific and customer-specific requirements may apply.

9.7 Unloading

AIXTRON will refuse acceptance of the goods if they cannot be unloaded correctly.

9.7.1 Delivery with small vehicles (no unloading with drive-over bridge)

- The goods must be unloaded by the driver.
- Pallet deliveries must be capable of being unloaded from the vehicle by electric lifting trucks.
- If unloading by electric lifting truck is not possible, the driver must place all packages on a pallet provided at the loading ramp.
- Unloading outside the building (e.g. forklift trucks at the depot) is only possible when AIXTRON has provided advance agreement and been suitably notified.

9.7.2 Unloading on the loading bridge

Minimum dimensions for loading platform of delivery vehicle:

<i>Width:</i>	There must be enough space to place the 2.2 m wide drive-over bridge on the loading platform.
<i>Height of loading dock:</i>	min. 1.10 m
<i>Height of cargo area:</i>	min. 1.90 m

It has to be possible to unload the pallets without impediment.

Direct unloading may not be impeded by empty pallets placed in front of the goods to be unloaded or by goods not intended for AIXTRON.

Rev.	Date	File	Originator	Approval	Classification	Page
7.0	26.02.2019	CG001147	Schaffrath, Marcus	Borghese, Horacio		30/32

9.7.3 Delivery on euro pallets

Palletized goods may only be delivered on undamaged euro pallets meeting the requirements of DIN 14156-3. Damaged or non-original euro pallets count as disposable pallets and will not be exchanged. The pallet height (including the pallet itself) may not exceed 1.6 m. The permitted total weight per pallet may not exceed a maximum of 1,000 kg. The goods must be provided with edge protection and wrapped in PE stretch foil.

9.8 Consignment checking

AIXTRON confirms receipt of the consignment to the transport carrier. The volumes and characteristics of the individual articles are not checked at the time of handover. AIXTRON reserves the right to assert damages refund claims at a later date for any hidden damages or shortfalls in volumes.

AIXTRON does not perform any quality or functional checks directly upon receipt of the goods.

9.9 Fact-finding and assertion of damages

In the event of obvious transport damages, we immediately initiate and document a fact-finding process to identify the actual damages. It is incumbent on the bearer of the goods to pursue under its own responsibility any claims resulting from transport damages or volume discrepancies against third parties.

9.10 Address and opening hours for goods acceptance

AIXTRON SE
c/o Spedition Robertz KG
Industriestrasse 19
52134 Herzogenrath

Opening hours:

Mon.- Fri.
8.00 a.m. – 4.00 p.m.

Rev.	Date	File	Originator	Approval	Classification	Page
7.0	26.02.2019	CG001147	Schaffrath, Marcus	Borghese, Horacio		31/32

10 Appendices

OHSAS 18001	Occupational Health and Safety Assessment Series
ISO 50001	Energy management systems - Requirements with guidance for use
ISO 14001	Environmental management systems - Requirements with guidance for use
ISO 9001	Quality management systems - Requirements
VDI 3397	Metalworking fluids
DIN EN 10088-1	Stainless steels - Part 1: List of stainless steels
DIN EN 10088-2	Stainless steels - Part 2: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for general purposes
DIN EN 10088-3	Stainless steels - Part 3: Technical delivery conditions for semi-finished products, bars, rods, wire, sections and bright products of corrosion resisting steels for general purposes
DIN EN 10088-4	Stainless steels - Part 4: Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for construction purposes
DIN EN 10088-5	Stainless steels - Part 5: Technical delivery conditions for bars, rods, wire, sections and bright products of corrosion resisting steels for construction purposes
DIN 15146	Pallets; timber four-way-flat pallets
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals (EU Directive 1907/2006)
RoHS	Restriction of certain Hazardous Substances (EU Directive 2011/65/EU)

<http://www.conflict-minerals.com>

<http://www.echa.europa.eu>

<http://www.epal-pallets.org/de/system/system.php>

Rev.	Date	File	Originator	Approval	Classification	Page
7.0	26.02.2019	CG001147	Schaffrath, Marcus	Borghese, Horacio		32/32