



AIM ALFEN
INTEGRATED
MANAGEMENT
SYSTEM

QHSE and Sustainability requirements for suppliers

AIM-QHSE-GEN-3.09-01-MA-01

18-Oct-23 | Revision C0



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POWER TO ADAPT

Document data

Rev.	Purpose	Date	Initiated	Checked	Verified	Approved
C0	Issue for comments	18-Oct-23	HN	SP	MB	MR

Revision control		
Revision	Section	Change
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Applicability

The following chapters are applicable:

Chapter	Chapter title	Applicable
1	Introduction	<input checked="" type="checkbox"/>
2	Abbreviations & Definitions	<input checked="" type="checkbox"/>
3	References	<input checked="" type="checkbox"/>
4	General Requirements	<input checked="" type="checkbox"/>
5	Specific requirements – Commitment and System	<input checked="" type="checkbox"/>
6	Special requirements - Quality	<input type="checkbox"/>
7	Specific requirements – Materials and electronic components	<input type="checkbox"/>
8	Special requirements - Sustainability	<input type="checkbox"/>
9	Special requirements – (Information) Security	<input type="checkbox"/>
9.1	Physical Security	<input type="checkbox"/>
9.2	Information Security	<input type="checkbox"/>
10	Special requirements – Transport & Packaging	<input type="checkbox"/>
11	Special requirements – Health & Safety	<input type="checkbox"/>

Table 1 – Applicability Requirements

1 Introduction

Alfen B.V. and Alfen ICU B.V., Alfen Elkamo are part of Alfen N.V. (hereafter named Alfen). Sustainability is one of Alfen's core values (summarized in 'SPARK' which stands for Sustainable, Partner, Adaptive, Reliable and Knowledge). These characteristic values are our identity and show what we stand for as a company. This means that we consciously deal with environmental, social and innovative aspects around Alfen's activities and minimize the environmental and social impact of these activities. We apply the principles of Socially Responsible Procurement (SRP) when purchasing products.

Alfen focuses on sustainable products and processes, taking into account changes in legislation and regulations, requirements of customers and other stakeholders.

Alfen cannot successfully keep track of and reduce its environmental impacts without considering the entire supply chain. Good supplier collaboration is of the utmost importance in these efforts.

Alfen is committed to provide on time, quality products and services that meet our customers' needs in a safe and healthy manner and requires a commitment from our suppliers to provide the same to us. Creating win-win relationships reinforced by success remains an important pillar in meeting evolving customer expectations.

1.1 Scope

This document defines requirements for Quality, HSE and Sustainability for Suppliers and Subcontractors of Alfen.

1.2 Purpose

These requirements shall ensure that Suppliers and Subcontractors can deliver their products and services in accordance to social responsibility, occupational health and safety, environmental, quality and time requirements.

1.3 Guidance (take out when issuing document)

The intention of this document is to have a complete overview of all Alfen requirements and stakeholder requirements which Alfen has either adopted or needs to adhere to (i.e. legislation). Please select the document, save it and alter it to the needs of the respective commodity. Each altered document needs to be reviewed by the QHSE department prior issuance.

2 Abbreviations & Definitions

2.1 Abbreviations

Abbreviatin	Description
AIM	Alfen Integrated Management system
MSDS	Material Safety Datasheet
HSE	Health, Safety and Environment
IAF	International Accreditation Forum
VCA	Veiligheids Checklist Aannemers (Safety Checklist Subcontractors)
QHSE	Quality Health Safety Environment
FAI	First Article Inspection
FSC	Forest Stewardship Council
DRC	Democratic Republic of the Congo
EU	European Union
FAI	First Article Inspection
LCA	Life Cycle Analysis
MSDS	Material Safety Data Sheet
PPAP	Production Part Approval Process
PPE	Personal Protective Equipment
PSW	Parts Submission Warrant
OECD	Organisation for Economic Co-operation and Development
OEM	Original Equipment Manufacturer
SRP	Socially Responsible Procurement

Table 2 – Abbreviations

2.2 Definitions

Definition	Description
Supplier	Organization or person that provides a product. A supplier can be a manufacturer, or a dealer. The supply of the product is covered by a Purchase Order.
Manufacturer	Organization or person responsible for the manufacture or recovery of a product delivered directly or indirectly via a dealer.
Dealer	Organization or person that buys and resells products but is not a manufacturer.
Subcontractor	Organization or person that provides a product. The supply of a product is covered by a contract
Personal Data	Any information related to any identified or identifiable natural person, including but not limited to employees and customers of the parties, and any other data deemed as personal data under applicable personal data protection or privacy laws.
Make product	A product that is designed by Alfen and manufactured by a supplier
Circularity	A circular economy is an economic system of closed cycles in which raw materials, components and products lose their value as little as possible, renewable energy sources are used and systems thinking is central.
8D	Eight disciplines problem solving (8D) is a method developed at Ford Motor Company used to approach and to resolve problems, typically employed by engineers or other professionals. Focused on product and process improvement, its purpose is to identify, correct, and eliminate recurring problems. It establishes a permanent corrective action based on statistical analysis of the problem and on the origin of the problem by determining the root causes.
Product	Product delivered and/or Service rendered as required under the Contract
Work	Activities to be performed and deliverables prepared as part of Product
Worksite	Location / premises where the Work is performed

Table 3 - Definitions

3 References

3.1 AIM Documents

Ref.	Document Title	AIM Document Number	Extern Document Number
[101]	QHSE Policy Statement	AIM-QHSE-GEN-2.02-02-POL-01	
[102]	Code of Conduct	AIM-HRM-GEN-2.02-02-POL-04	
[103]	Supplier Code of Conduct	AIM-QHSE-GEN-2.02-02-POL-14	
[104]	Environmental Policy	AIM-QHSE-GEN-2.02-02-POL-08	
[105]	Modern Slavery Statement	AIM-QHSE-GEN-2.02-02-POL-06	
[106]	SPARK Values	AIM-QHSE-GEN-2.02-02-POL-02	
[107]	Information Security Policy Statement	AIM-ISEC-GEN-2.02-02-POL-09	
[108]	Production Part Approval Process	AIM-QHSE-ACE-2.08-01-WI-01	
[109]	Substance Abuse Policy Statement	AIM-QHSE-GEN-2.02-02-POL-11	

Table 4 – AIM Documents

3.2 External Documents

Ref.	Document Title	Alfen Document Number	Extern Document Number
[201]	Quality management systems – Requirements		ISO 9001:2015
[202]	Environmental management systems – Requirements with guidance for use		ISO 14001:2015
[203]	Occupational health and safety management systems – Requirements		ISO 45001:2018
[204]	Information Security management systems - Requirements		ISO 27001:2013
[205]	Restriction of Hazardous Substances		RoHS Directive 2015/86/EC
[206]	Safety Checklist Subcontractors		VCA 2017/6.0
[207]	Waste from Electrical and Electronic Equipment.		WEEE Directive 2002/96/EC
[208]	Registration, Evaluation, Authorization and restriction of CHemicals		REACH Regulation 1907/2006/EC

[209]	Modern Slavery Act 2015	Modern Slavery Act 2015 c.30 30-03-2015
[210]	Requirements for Sourcing FSC® Controlled Wood	FSC-STD-40-005 V3-1 EN
[211]	Packaging - Requirements for the use of European Standards in the field of packaging and packaging waste	EN13427:2004
[212]	Essential Requirements on packaging and packaging waste	Directive on Packaging and packaging waste 94/62/EC
[213]	Guidelines for regulating wood packaging material in international trade	IPPC ISPM 15
[214]	Production Part Approval Process	AIAG
[215]	Responsible Mineral Initiative	http://www.responsiblemineralsinitiative.org/reporting-templates/cmrt/
[216]	Responsible Mineral Initiative	http://www.responsiblemineralsinitiative.org/reporting-templates/cobalt-reporting-template/
[217]	Acceptability of Electronic Assemblies	IPC-610-G

Table 5 – External Documents

4 General requirements

Suppliers shall comply with:

- All applicable legal and regulatory requirements;
- the 'Code of conduct for suppliers' of Alfen [103]
- All specific requirements for QHSE defined in this document (see chapter 5 and onward).

Suppliers and Subcontractors shall be aware of any applicable legal requirements of the countries to which their product will be finally delivered either by themselves or by Alfen.

Suppliers and Subcontractors shall ensure that their sub-suppliers and Subcontractors are aware of the requirements defined in this document and that they comply with them.

Suppliers and Subcontractors shall inform Alfen of any improvement requirements and prohibition notices by local authorities within the last three years, which are related to the product and/or service delivered to Alfen.

Suppliers and Subcontractors shall meet the local requirements for insurance, incl. liability insurance.

NOTE Alfen supports the UN Global Compact, a global alliance of organizations and private businesses which seek to support the protection of human rights and labor standards, to encourage environmental responsibility and to combat corruption. The "Code of conduct for suppliers of Alfen" reflects the 'Ruggie' principles as well as the OECD guidelines [103].

4.1 Supplier approval

Supplier approval indicates Alfen has performed a financial, legal, safety, and overall sourcing risk assessment of the supplier and agrees to move forward with the qualification process. b. A supplier must be approved per Alfen supplier selection procedures prior to receiving a PO. Documents required for approval may include but are not limited to:

- Properly executed Non-Disclosure Agreement (NDA)
- Acknowledgement of compliance with Alfen integrity guidelines
- Completion and passing of required business and technical surveys
- A documented quality system
- Technical capability
- HSE compliance/employment/security practices
- Financial viability
- Customer service aptitude
- Strategic value
- Regulatory Compliance (e.g. REACH, RoHS, WEEE, etc.)
- Cyber Security

5 Specific requirements – Commitment and Systems

5.1 Organization and commitment

The supplier's top management shall demonstrate its commitment to QHSE and Sustainability via a written QHSE policy and a Sustainability policy stating the company's QHSE and Sustainability objectives and goals. As an alternative, a supplier can agree on all principles mentioned in the Alfen QHSE policy and Sustainability policy in writing.

The supplier shall have a designated and qualified internal or external professional representative for QHSE and Sustainability.

Reference: [101], [102], [104], [105], [107].

5.2 Management Systems

Suppliers are to maintain effective management systems that integrate environmental, occupational health and safety, human rights and labor, and ethics policies into their business and decision-making processes. This includes establishing appropriate objectives and targets, regularly measuring and assessing performance, and practicing continual improvement.

5.2.1 Certification requirements

The supplier shall have and maintain a valid certification according to the latest ISO 9001 or additional agreements are recommended / preferred.

Suppliers who – at the effective date of contract – have no adequate certified quality management system shall be subject to a case-by-case consideration.

Suppliers of such products and services, which are not directly used for the construction and production of process plants or parts of process plants or which are not installed in another context (e. g. facility management, etc.) in the process plant, do not require ISO 9001 certification. This applies also to products and services being ordered in another context, so called indirect material / service.

Dealers do not require an ISO 9001 certification or an equivalent certification, in case they can provide the appropriate certificates of the manufacturers of the delivered product.

In case the properties of the product have been modified by the dealer, the same requirements for the certification apply as for a manufacturer.

Environmentally critical suppliers shall be certified according to ISO 14001 or equivalent or additional agreements are made on applicable activities.

Environmentally critical suppliers are in any case: suppliers of surface treatment, casting or moulding, waste processors and cleaning companies.

Certifications according to VCA, ISO 45001 and ISO 14001 are recommended/ preferred.

Waste processors shall have a VIHB-certification for the relevant waste stream.

Subcontractors shall be qualified for the Work. Evidence must be supplied or shown when required (i.e. Welding: EN 1090).

Reference: [201], [202], [203], [204].

5.3 Hazard identification, risk assessment and training

The supplier shall establish and maintain a system for the identification and ongoing assessment of risks up to the fulfillment of the contractual requirements. This risk management system comprises at least:

- An analysis of potential risks at each stage of the product life cycle (design, development, industrialization, manufacturing, after-sales support, etc.) ideally in the form of FAI.
- An appropriate action plan to minimize the consequences of the risk and / or reduce its probability of occurrence
- A contingency plan in the event of a major incident such as a strike, a fire or natural disasters

Suppliers shall carry out QHSE risk assessments to identify and effectively eliminate or minimize work-related hazards to people through adequate protective measures and controls. All affected employees shall be periodically trained on the hazards related to their work as well as on the necessary protective measures. The respective training records shall be formally documented and archived by the supplier.

Suppliers shall pay special attention on and be able to prove the documented organization and coordination of hazardous work, such as work at height, work with ionizing or non-ionizing radiation, work in confined spaces, work with explosive atmospheres, work with burnable, self-igniting or other hazardous materials, etc.

5.4 Production Quality process

All production processes and production parameters that are applied to products delivered to Alfen shall be consistently and reproducibly documented. Used materials shall be documented from purchase to processing. Any checks and tests shall be adequately planned and their results be documented. Further details can be found in chapter 6.

5.4.1 Control of Special Process(es)

Suppliers must have special processes identified and specific, documented, and controlled procedures for each special process performed. The supplier shall establish and monitor process CTPs/CTQs. Only qualified/certified personnel shall be assigned to perform a special process. The supplier must develop a specific training plan and check the performance of the individual associate on a regular basis. Alfen reserves the right to request, review, and approve all special process procedures, training documents, and certification records.

Alfen considers the following as a special process:

- Coating
- Painting
- Laser drilling, cutting and marking
- Thermoset molding and compounding

- Welding
- PCBA (Printed Circuit Board) assembly and manufacturing
- Soldering
- Die Casting
- Injection moulding
- Forging and Hot Forming
- Plating and Surface Preparation

Subcontractor's special processes can be determined as:

- Lifting
- Excavation
- Civil works
- Electrical work

5.5 Occupational Health and Safety

Suppliers will protect their employees from any chemical, biological and physical hazards and physically demanding tasks in the workplace as well as from risks associated with any infrastructures used by their employees. Suppliers will provide appropriate controls, safe work procedures, preventative maintenance and necessary technical protective measures to mitigate health and safety risks in the workplace. When hazards cannot be adequately controlled by these means, suppliers will provide employees with appropriate personal protective equipment. Safety information relating to hazardous materials – including compounds in intermediate materials – shall be available to educate, train and protect workers from hazards. A safe and healthy working environment also includes as a minimum potable drinking water, adequate lighting, temperature, ventilation and sanitation and, if applicable, safe and healthy company living quarters. Further details can be found in chapter 11.

5.6 Process Safety

Suppliers will have safety programs in place for managing and maintaining all their production processes in accordance with the applicable safety standards. Suppliers will address product-related issues and their potential impact during all stages of the production process. For hazardous installations, the supplier will conduct specific risk analyses and implement measures that prevent the occurrence of incidents such as chemical releases and/or explosions.

5.7 Transparency

Suppliers shall disclose to Alfen within 48 hours of any incident related to production or processing materials for Alfen orders:

- All supplier on-site incidents of worker fatality or accidents resulting in an injury.
- Any actual or alleged priority finding related to Alfen Supplier Code of Conduct compliance whether discovered by Supplier or by a third party including, but not limited to:
 - underage workers,
 - forced labor,
 - health and safety issues posing immediate danger to life or risk of serious injury,

- significant excessive overtime as defined by the Electronic Industry Citizenship Coalition (EICC), and/or
- violation of environmental laws posing serious and immediate potential or actual harm to the immediate or surrounding community.

In addition, suppliers are to provide clear, timely, accurate and appropriate reporting to Alfen upon request.

5.7.1 Substance of Initial Disclosure; Protecting Privacy.

Suppliers shall in the first instance disclose to Alfen only that an incident (as described above) has occurred and provide basic information regarding the incident. To protect the privacy of individuals involved, initial disclosures should be made without reference to Personal Data. Should Alfen require additional information, Suppliers shall comply with all applicable data protection and privacy laws when transferring or sharing information with Alfen.

5.8 Violation of the requirements

If suppliers violate the requirements defined in this document, in addition to other contractual consequences, Alfen reserves itself the right to carry out additional supplier inspections and/or audits until the deviations are overcome.

6 Special requirements – Quality

A distinction can be made between ‘Make’ or ‘Buy’ parts. ‘Make’ parts are manufactured based on an Alfen design or requirements. ‘Buy’ parts are considered ‘off the shelf’ parts. For the latter are paragraphs 6.1, 6.2, 6.3 and 6.4 applicable. For ‘Make’ parts the complete chapter is applicable.

6.1 Verification Review of Purchased Product and Production Process

The supplier shall allow Alfen, an approved 3rd party representative or our customers the right to verify, at the supplier’s premises that the (subcontracted) products and processes conform to specified requirements. Prior to conducting such verification reviews, the responsible Alfen contact shall specify both the arrangements and method of performing the reviews.

6.2 Traceability, Product Identification and Packaging Delivery Performance

The supplier shall provide 100% conformance to the delivery requirements as specified by the Alfen receiving site. Costs incurred by Alfen as a result of a delivery non-conformance caused by a supplier shall be the responsibility of the supplier. Suppliers shall submit 8D reports for delivery non-conformances.

6.3 Continuous Improvement

The supplier shall continually improve quality, delivery, cost and other services provided. To aid in fulfilment of this requirement the supplier’s organization shall establish, monitor, prioritize, and act upon key performance objectives and targets. The objectives and targets should be established based upon (at a minimum) business plans, management systems, product quality, process capability, and customer satisfaction goals. Actions taken to regain previously sustained levels of performance are corrective actions, not continuous improvement.

Alfen reserves the right to visit any supplier site to assess its continuous improvement programs and lean manufacturing practices, and make recommendations for improvement. In addition, Alfen may deploy personnel to focus on specific improvement issues.

6.4 Production Part Approval Process

Alfen has adopted elements of the Production Part Approval Process (PPAP) process for critical parts to demonstrate that a supplier has developed their design and production process to meet the Alfen and client’s requirements. In case a supplier provides a product which is subject to one of the special processes (as identified under chapter 5.4.1), a product is considered critical and adherence to the PPAP is expected to be followed and the following documents are required (this to be further aligned between Alfen and the supplier:

- Design records;

- Process flow diagram;
- PFMEA;
- Control plan or equivalent;
- Inspection report;
- Checking aids documentation;
- Packaging proposal;
- PSW

The Supplier is responsible to ensure that all required items for the PPAP are fulfilled. For clarification issues, the supplier should contact the Alfen Quality Engineer. Requests for PPAP submissions to the Supplier will be identified in the Purchase order, and will include instructions for PPAP shipment/delivery (this document). English is the required language for PPAP submissions. Any exception must be approved by Alfen.

All PPAP documentation must be submitted in one PDF file (no zipfiles or other formats) where document titles and numbers are stated so documentation can be distinguished and if possible with bookmarks. If this option is unavailable, we request to add a table of contents to the document.

All documentation can be sent to ppap-ace@alfen.com with the article number in the subject. If the file is too big for e-mail, the file must be send via a secured file transfer.

Accepted PPAP's will be communicated to the Supplier with an authorized PSW, signed by the Alfen representative. The signature indicates only that Alfen has accepted the package from the supplier. The supplier is responsible for the content and the accuracy of the information submitted in the package. When PSW is signed, the supplier can start mass production.

PPAP documentation must be based on production samples. The following information must be described on the packaging for samples or prototypes:

- Alfen part number;
- Quantity;
- A marking that these are prototypes or samples and may not be used in production.

The following must be described on the part or assembly:

- Alfen part number;
- Supplier name;
- Unique number;
- A marking that these are prototypes or samples and may not be used in production.

6.4.1 Design Records

Design records can be an approved drawing(s) (print) in the Alfen template, authorized by Alfen, and at the correct level for the part being submitted or a specification. Any exceptions must be approved by Alfen prior to submission. Copies of the Suppliers own drawing is not acceptable – unless this has been formally approved by Alfen prior to the submission. The submitted drawing or design record revision must match the drawing revision on the Purchase Order. Dimensions, Material / Performance tests or specifications shall be sequentially numbered/ballooned for reference purposes.

The following PCB design records are submitted from Alfen to Supplier:

BOM w/ free choice components --> supplier to submit final BOM where free choice components are replaced with: distributor, manufacturer and series per component.

- PCB specification sheet → supplier to comply;
- Gerber files → supplier to comply;
- PCB assembly instruction → supplier to comply;

6.4.2 Process flow diagram

A Process Flow Diagram is a diagram which clearly identifies all process steps utilized through the entire manufacturing process of the part. There is no prescribed format for the Process Flow, except that it should identify the part or family of parts to which it applies and is revision controlled including a record of all changes made to the document. The document should also include the proper approvals and authorizations.

In addition to this, the reader should be able to correlate the process steps to the content of the Control Plan with keyed or numbered process steps, and also differentiate as a minimum:

- Receiving
- Manufacturing stages
- Movement of parts between processes
- Storage
- Inspection stages
- Shipping

The Process Flow Diagram will identify critical processes that affect significant part features/dimensions at each appropriate station.

Note: It is acceptable for the Supplier to submit a “Quality Plan”, which typically shows an integrated Process Flow and Control Plan as one document.

6.4.3 Control plan or equivalent

The Control Plan defines all of the controls employed to assure the quality of the part through the entire manufacturing route, taking particular consideration for Special Characteristics.

The format of the Control Plan should be consistent with the Alfen template (See appendix B). Where Alfen specific requirements are given, the Alfen QHSE Manager will communicate the requirements in alignment with Strategic Purchasing.

The Control Plan should evidence:

- Review and update as appropriate, to any changes that affect product, manufacturing processes, measurement, logistics, or supply sources.
- Process numbering should cross-reference to those detailed within the Process Flow (incoming receiving through shipping).
- Clearly and easily identifiable significant/critical controls, safety, government compliance and regulatory items.
- All special product/process characteristics
- Drawing specifications requiring inspection.

- Engineering performance test requirements
- Include lot control and traceability controls
- Revision block for history

Evaluation methods should detail precise types of measuring equipment (gauge), i.e., it is not acceptable to just enter “Micrometer”; the correct definition would be “1 – 25mm Digital Micrometer”. All quoted gages and test equipment are to be available, as required.

6.4.4 Inspection results

There is no prescribed format for the Inspection, except that it should reflect the outcome of the results derived from the control plan (CTP and CTQ) and that the results are all within the parameters identified (Acceptance criteria).

Checking Aid Documentation

The supplier to review the attached proposed testing programme and to come back to Alfen to confirm it can comply or to propose an alternative testing programme. The final testing programme will be formalized in the aforementioned control plan under chapter 5.4.4.

For the development of Checking Aid documentation, the following minimum requirements are applicable:

- Validation report
- Firmware: source code and binair code;
- Maintenance plan
- Software description and electrical scheme
- Testpoints used

6.4.5 Packaging evaluation

The packaging proposal to be issued to Alfen by Supplier hereby taking into account the requirements of chapters 6.6.3, 7.1 and 7.2. The Supplier confirms with the submission of the packaging proposal that the aforementioned requirements are met and that there will be no defect parts due to the packaging and transport thereof.

In the packaging evaluation the following information must be described:

- Bill of packed materials;
- Packaging method (supported with pictures);
- Dimensions of packaging;
- Any requirements on the packaging;
- Label requirements: article number and production date;

6.4.6 PSW

The Part Submission Warrant (PSW) is the approval sheet authorized by the Supplier and qualifying the part as acceptable for submission. In effect, it is a summary pass off for all of the other data collated within the PPAP submission.

It is a requirement that all fields of the PSW are completed prior to submission; otherwise, the entire PPAP will be rejected automatically. Blank fields are not acceptable – “NA” will suffice in lieu of a blank field. A separate PSW is required for each part number being submitted – unless agreed otherwise by Alfen. The PSW shall be approved by an ‘authorized person’ at the Supplier prior to submission. The PSW format is Alfen specific (See appendix C).

6.4.7 Submission of PPAP deliverables

Alfen has a dedicated mailbox where Supplier can send its PPAP deliverables to: PPAP-ACE@alfen.com Only documents send via this email address are considered formal submitted documents. Issuance of documents to Alfen personal email addresses are considered unofficial flash copies.

6.5 Control of nonconformities

It is in the interest of bot Alfen and supplier, to identify non-conforming parts as quickly as possible. Alfen shall take all necessary action(s) to protect the supply of conforming product to Alfen.

If the circumstances require, the supplier may be asked to ship replacement parts and to have staff in place for sorting and replacement. Depending on the type of non-conformance and the material situation, parts will be either scrapped or returned for rework by the supplier. Additional costs associated with the handling and actions within Alfen, administrative as well as costs for adjusting, sorting, disassembly , etc. may be charged back to the supplier.

When notified of a technical non-conformance, suppliers are requested to react in accordance with the following timeline by utilizing the 8D methodology:

Time scale	8D phase
24 hours	D 1 + 2
48 hours	D 3
10 working days	D4 - 5
20 working days	D6

Table 6 – Escalation path control of non-conformities

Supplier to use its own 8D report if available otherwise the Alfen template has to be used. Each time a nonconformance or a defect has been documented, the causes for the problem must be investigated and reported.

6.6 Deviation requested by the supplier

In the case where the supplier wishes to request a deviation to supply parts that do not fully comply with Alfen requirements, the supplier must inform Alfen and request approval.

The minimum information required in writing is:

- Date of request
- Supplier name, code and contact information
- Purchase order number
- Alfen location or Alfen Subcontractor the component is shipped to.
- Description of deviation being requested (specifically, what Alfen requirement is not being met).
- Number of pieces affected, or date deviation is to expire.

6.7 First In – First Out (FIFO)

The suppliers must secure that no obsolete material is shipped to Alfen, The supplier shall perform first in / first out (FIFO) inventory management practices.

7 Specific requirements – Materials and electronic components

7.1 Hazardous materials

Suppliers shall prevent hazardous materials from harming people or the environment, such as the soil or bodies of water, etc.

- Asbestos containing materials (ACM) shall not be used and/or applied.
- Suppliers shall have available the MSDS for all hazardous materials used or applied in the production process.
- Suppliers shall submit MSDS for all delivered hazardous materials.
- Any hazardous materials included in a product delivered to Alfen (including hydraulic oils and lubricants) shall be approved by Alfen in advance.
- Suppliers delivering products for Alfen to the EU or products intended for use in the EU shall ensure that the requirements of REACH are complied with within the specified time, in particular preregistration and registration.
- Alfen shall not be obliged in any way to carry out the (pre)registration. Suppliers are aware that their products cannot be used if the requirements of REACH are not completely and properly complied with.
- Suppliers shall provide products and / or components to Alfen which are compliant with the latest RoHS directive.
- Suppliers shall provide electronic products and / or components which pass applicable WEEE compliance.

Reference: [205], [207], [208].

7.2 Wood

From the suppliers it is expected that all wood used in products, components or packaging shall be certified under the FSC system. Proof of this will be provided by using the FSC's 'tick tree' logo to indicate that products are certified under the FSC system. Alfen reserves itself the right to carry out additional supplier inspections and/or audits in case additional traceability regarding FSC scheme is required [210].

7.3 Cardboard

From the suppliers it is expected that all cardboard used in packaging shall be certified under the FSC system at minimum. Additional requirements can be set.

Proof of this will be provided by using the FSC's 'tick tree' logo to indicate that products are certified under the FSC system. Alfen reserves itself the right to carry out additional supplier inspections and/or audits in case additional traceability regarding FSC scheme is required.

Cardboard packaging is also provided with the recycling logo for paper and cardboard [211], [212].

7.4 Conflict Minerals

Conflict Minerals Suppliers are expected to ensure that parts and products supplied to Alfen are DRC conflict-free (do not contain metals derived from “conflict minerals”; columbitetantalite (tantalum), cassiterite (tin), gold, wolframite (tungsten), or their derivatives such that they do not directly or indirectly finance or benefit armed groups through mining or mineral trading in the Democratic Republic of the Congo or an adjoining country).

Suppliers are to establish policies, due diligence frameworks, and management systems, consistent with the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas, that are designed to accomplish this goal [215].

7.5 Cobalt

Cobalt Battery-related direct suppliers to Alfen are to establish policies, due diligence frameworks, and management systems consistent with the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High Risk Areas, designed to respond to and mitigate child labor risks associated with the aforementioned [216].

7.6 Electronic components

7.6.1 Counterfeit

Counterfeit electronic components becomes more and more a threat to the industry. Therefore Alfen accepts only electronic components purchased directly from the OEM or via an OEM approved distributor. Independent distributors are not allowed.

7.6.2 Acceptance of alternative components

Whereas the supplier has components that can be used as an alternative to the prescribed components or that are listed as free of choice, the supplier needs to request acceptance from Alfen first prior making any commitments. Please note that the requirements as stated above under chapter 6.6.1 are applicable as well. The supplier remains fully responsible for the correct functioning of the proposed and accepted alternative component.

7.6.3 Dual Use

Dual-use items are goods, software and technology that can be used for both civilian and military applications. The EU controls the export, transit and brokering of dual-use items so the EU can contribute to international peace and security and prevent the proliferation of Weapons of Mass Destruction (WMD).

- UN Security Council Resolution 1540
- The Nuclear Non-Proliferation Treaty
- the Chemical Weapons Convention
- the Biological Weapons Convention

Alfen is committed that their products can only be used for civilian purposes only as is agreed upon in key multilateral export control regimes such as the Australia Group, the Wassenaar Arrangement, the Nuclear Suppliers Group and the Missile Technology Control Regime. It is expected from suppliers that

they will provide a dual use statement with their supplied products and / or refrain from using products / components as listed in the respective dual use lists as part of the aforementioned agreements.

7.6.4 ESD

Electronic components are sensitive to ESD hence appropriate measures are required from the suppliers during the production, packaging and transport of the electronic components to ensure that electronic components are not subject to ESD.

7.6.5 Workmanship

The supplier shall ensure that the workmanship of the Electronic components will meet (or even exceed) the requirements of IPC-610G [217].

7.7 Traceability ACE components

The aim of this chapter is to describe the requirements for Alfen designed components (like: PCBA's, plastics and housings) or purchased components where Alfen may dictate the requirements of traceable related codes. Purchased components which are not special designed for Alfen are excluded from this requirement if the supplier uses their own traceability process.

7.7.1 Code content

The code should be built up like the following:

AAAAAAAAAAAAASSSSFFFFFYMMDDSNNNNNNNNNNNNNNNNN

The clarification is:

- | | |
|------------------|---|
| AAAAAAAAAAAAAA | = Article number of Alfen; (Fixed number of characters, last character is spare) |
| SSSS | = Alfen supplier code (Fixed number of characters; supplied by Alfen) |
| FFFF | = Fixture / jig ID (Fixed number of characters or 0000 if fixture or jig is not applicable) |
| YY | = Year (last two numbers of the year) |
| MM | = Month |
| DD | = Day (day number of the month) |
| S | = Shift (D for day shift / E for evening shift / N for night shift) |
| NNNNNNNNNNNNNNNN | = Unique serial number (Supplier can use maximum 15 characters) |

Example:

1231231231-ICU1234500021221201D00011345

The information what can be retrieved from this data string is:

- | | |
|-----------------------|----------------|
| Alfen article number: | 1231231231-ICU |
| Supplier code: | 12345 |
| Fixture ID: | 00021 |
| Year: | 22 |

Month: 12
Day number of the month: 01
Production shift: D
Serial number: 00011345

7.7.2 Code location

To secure Alfen’s component traceability process it is mandatory to have the code visible after Alfen’s mounting process. The exact location will be checked by Alfen during the design phase of a new component. This check is part of the final approval. The approved location will also be specified on drawing.

The supplier is allowed to have two identical codes on one component if the production process at the supplier requires another location than what Alfen requires.

The serial number should be visible on the component.

Below is an example of the location of a PCBA which can be scanned after it’s been mounted in production.

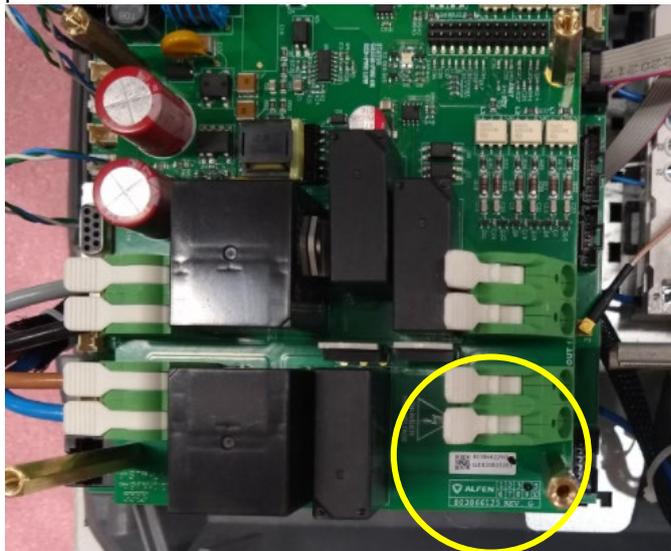


Figure 1 – Example traceability identification

7.7.3 Type of code

Alfen is able to scan several types of barcodes, QR codes and DMC codes. This chapter shows the expected type of codes and the quality definition. The supplier is responsible for the quality of the code and should proof that this conforms our requirements. Alfen will perform several tests order to validate the readability and stability of the code.

7.7.4 Barcode

It's required that the barcodes are based on Code-39 and should have a quality grade C (or higher) based on the ISO-15416 standard.



Figure 2 – Example Code-39 and should have a quality grade C

7.7.5 QR-codes

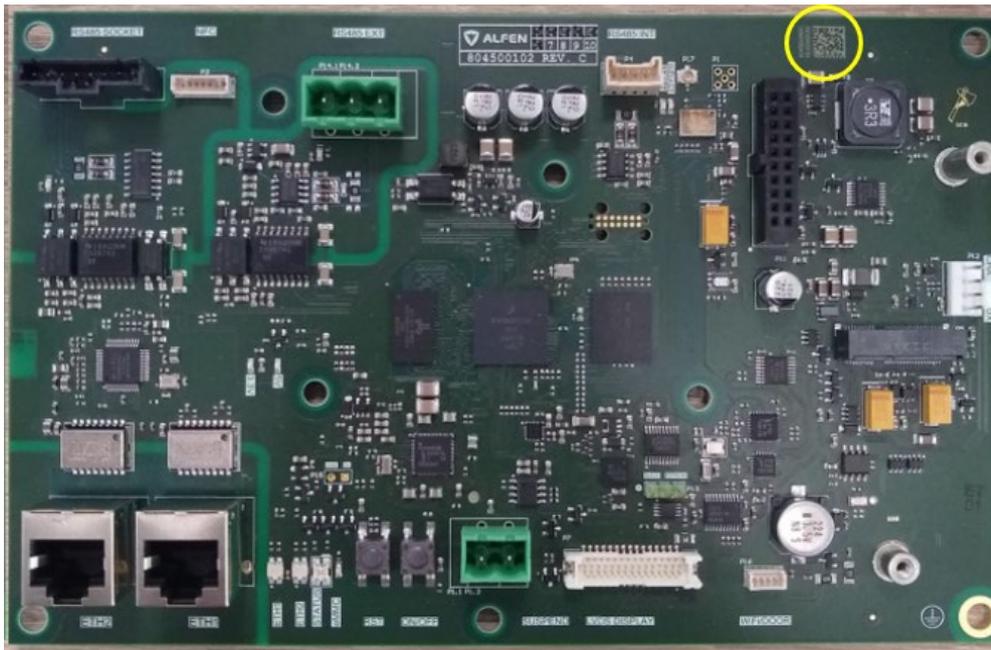
All printed QR codes should have at least a quality grade C (or higher) based on ISO/IEC 15415 standard. The minimum size of the QR code should be at least 6x6 mm on PCBA's. Other components like housings and sheet metal should be at least 15x15mm.



Figure 3 – Example QR code

7.7.6 DMC codes

All engraved codes need to have a quality grade C (or higher) based on the ISO-29158 (AIM DPM). This standard is focusing on direct part marking. The size of the DMC is similar to the QR code requirement of 6x6mm for PCBA's and other components like sheet metal and housings is 15x15mm.



8 Special requirements - Sustainability

8.1 Environmental Performance Improvement

Suppliers are to understand and reduce the environmental impacts of their operations and of the products and services they provide to Alfen. This will include programs that promote efficient and responsible use of energy, water, and other resources; promote utilization of renewable energy; minimize the use of hazardous materials; promote reuse and recycling, and reduce emissions to air, soil, and water, including greenhouse gas (GHG) emissions.

8.2 Waste and emissions management

Suppliers will have systems in place to ensure the safe handling, movement, storage, recycling, reuse and management of waste, air emissions and wastewater discharges. Any of these activities that have the potential to adversely impact human or environmental health will be appropriately managed, measured, controlled and handled prior to release of any substance into the environment. Suppliers will have systems in place to prevent or mitigate accidental spills and releases into the environment.

8.3 Life Cycle Analysis

For specified products the Subcontractor shall deliver a Life Cycle Analysis (LCA) of the relevant product or similar product with a similar structure. The LCA results include at least the climate impact, or carbon footprint, expressed in CO₂ equivalents, calculated according to the guidelines of the Greenhouse Gas Protocol: 'Product Life Cycle Accounting and Reporting Standard' or similar guidelines that clearly define the scope.

The total result include at least the life cycle phases of raw material extraction, production, (downstream) transport and use. End-of-life is optional; if end-of-life is quantified in the LCA, the end-of-life results must be shown separately.

8.4 Circularity

Alfen aims to have insight in the circularity of specified products and uses the 10R circularity model (See Figure 1 Levels of circularity) that distinguishes the different levels. The higher up the ladder, the better.

Circularity requirements can be set for specific products

Levels of circularity: 10 R's

Order of priority

High



- Refuse:** prevent raw materials' use
- Reduce:** decrease raw materials' use per unit of product
- Redesign:** rethink product in view of circularity
- Reuse:** use product again (second hand)
- Repair:** maintain and repair product
- Refurbish:** revive product
- Remanufacture:** make new product from second hand
- Re-purpose:** re-use product but with other function
- Recycle:** salvage material streams with highest possible value
- Recover:** incinerate waste with energy recovery

Low

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Figure 4 Levels of circularity

9 Special requirements – (Information) Security

9.1 Physical Security

Supplier or Subcontractor will have good security practices across their supply chains. Suppliers will maintain processes and standards that are designed to assure the integrity of each shipment to Alfen from its origin through to its destination and all points in between. Supplier or Subcontractor are expected to implement the necessary and appropriate measures in their area of responsibility to ensure that Alfen products, their workable components or raw materials as well as the corresponding know-how do not end up in the hands of counterfeiters or third parties and do not leave the legal supply chain.

9.1.1 Worksite Specific Security measures

Worksite specific Security measures shall include, but not be limited to: security policy, security criteria, risk assessments, security guidelines, travel security, perimeter security, surveillance, access control, vital point protection, communications, security coverage, security incident reporting, emergency response, etc.

Supplier or Subcontractor shall ensure that Worksite specific measures are implemented or adhered to.

9.1.2 Access to Worksite

Supplier or Subcontractor shall have implemented procedures preventing unauthorized people on the Worksite. Supplier or Subcontractor shall ensure that anybody entering or leaving the WORKSITE is registered.

9.2 Information Security

Supplier or Subcontractor shall have an information security management system that meets or is similar to the requirements of ISO 27001, at least the following measures shall be taken:

- a. In the event of an information security incident (single or a series of unwanted or unexpected information security events that have a significant probability of compromising business operations and threatening information security) that may affect Alfen's products, information or reputation, Alfen shall be notified within 24 hours.
- b. Supplier or Subcontractor shall implement a process for resolving and managing information security incidents.

Supplier or Subcontractor shall provide a description of the information that must be provided or made accessible and methods to provide or make the information accessible. The Alfen Solution Architecture template will be used for this purpose.

With regard to services information and communication technology services, the Supplier or Subcontractor shall disclose Alfen's security requirements throughout the supply chain if the supplier outsources parts of information and communication technology services they provide to Alfen.

With regard to information and communication technology products, the Supplier or Subcontractor shall disclose Alfen's security requirements throughout the supply chain if the products contain components sourced from other suppliers.

Supplier or Subcontractor shall implement a monitoring process and acceptable methods to validate that delivered products and services in the field of information and communication technology comply with declared security requirements.

Supplier or Subcontractor shall implement a process for identifying components of products or services that are essential for maintaining functionality and therefore require increased attention and monitoring if they are built outside the organisation, in particular if the end supplier outsources parts of components of products or services to other suppliers.

Supplier or Subcontractor shall implement specific processes to manage the life cycle and availability of information and communication technology components and related security risks. This includes managing the risks of components that are no longer available because suppliers no longer exist or because suppliers no longer supply these components in connection with improved technology.

10 Special requirements - Transport and packaging

10.1 Packaging

Prevention, separation and recycling of waste is in line with Alfen's ambition to be a sustainable company. Focus on reduction of waste is primarily a spearhead for us.

In order to reduce our waste generated on-site, Alfen introduced the Waste Prevention & Recycling Program (see also chapter 8.4). As part of this program we aim to use only packaging which fulfils its essential functions by selecting the most appropriate materials, format and weight and building in recyclability wherever possible. We do not accept materials that may adversely impact on Quality, Health, Safety and Environment during the entire product life cycle including disposal.

The following are a few actions a supplier might take to help support Alfen in reaching our goals.

- Multiple-use logistics resources?
- At a minimum, provide your product in easy to recycle packaging, such as cardboard, wood, or metal. For this use our list for preferred packaging materials (See appendix A).
- Use minimal packaging, providing materials in bulk packaging, on pallets, in blankets, etc.
- Take back, for reuse or recycling, all packaging for your product.
- Offer “just-in-time” delivery to minimize damage to materials during on-site storage.
- Provide information and support for accurate estimating.
- Take back all unused product.
- Provide your product in pre-cut sizes or pre-assembled for our project.
- Identify any recycled-content in your product.
- Offer alternative products with recycled-content.

The packaging must comply with the “Essential Requirements on packaging and packaging waste”. Preferable via standard EN13427 and included sub standards (European standards regarding packaging and packaging waste to meet the requirements in EU-directive 94/62/EC.

All wood packaging must comply with ISPM 15 (International standard for phytosanitary measures): Guidelines for regulating wood packaging material in international trade

Additional requirements can be set like EU-Ecolabel or similar for packaging.

Reference: [211], [212].

10.2 Transportation

The Supplier is expected to reduce environmental impact from transportation by using surface transport (road, sea or rail) whenever possible.

- The Supplier is expected to use fuel-efficient vehicles when transporting goods or providing services for Alfen.
- The Supplier must be prepared to provide information about environmental aspects of transportation of goods to Alfen, for example mode of transport, packaging material and dimensions, and production locations.

Additional requirements can be set like usage of bio-diesel, EURO 6 minimum, Lean and Green.

11 Special requirements – Health and Safety

11.1 Responsibilities and Obligations

Supplier or Subcontractor is responsible for the health and safety of all persons involved in the performance of the Work and delivery of the Product. This includes persons involved in operation and/or maintenance of delivered equipment and facilities.

Supplier or Subcontractor has the obligation to ensure that Work is performed and Product is delivered in accordance with all applicable legislation, regulations, project HSE requirements and general accepted HSE working practices.

This obligation includes ensuring compliance by any of its Subcontractors and Suppliers.

The HSE requirements as contained in this document shall not relieve Subcontractor of any of its obligations and liabilities under the Contract or at law.

Subcontractor will use its own experience to take into account the specific risks and hazards associated with the Work and develop the most appropriate HSE provisions.

Subcontractor shall identify and resolve any unsafe conditions, acts or situations observed during execution of the Work.

11.2 Cost

Subcontractor shall bear the cost and impact on the work time schedule resulting from or connected with any of the following actions:

- Meeting all HSE requirements and regulations.
- Performing the Work or delivering the Product in accordance with accepted working practices.
- Measures taken by Alfen when Subcontractor is failing to take the necessary measures and actions to ensure adequate HSE performance.

11.3 Alfen Representative

Alfen Representative shall have the right to stop the Work on Worksite until the moment Subcontractor is able to proceed in manner where the safety and health is not exposed to unacceptable risks. However, this will not relieve Subcontractor of any of its obligations and liabilities under the Contract or at law.

11.4 HSE Policy, Objectives and Key Performance Criteria

11.4.1 Project HSE Policy, Objectives and Key Performance Criteria

Alfen takes responsibility to protect workers and the public from injuries and to control emissions and wastes to below harmful levels to reduce damage to the environment and property.

To that effect Alfen will:

- Perform all work safely, diligently, carefully and in a good and workman like manner in accordance with sound generally accepted industry standard.
- Make every reasonable effort to minimize risk to people and environment.
- Encourage personnel to pro-actively challenge work processes and practices and to make positive contributions towards changing hazardous or potentially hazardous situations.
- Require all Subcontractors and Suppliers to comply with this policy.
- Instruct employees on safety rules & standards and emergency procedures.
- Mitigate, on the basis of Risk Assessments, the risks and develop contingency procedures for all parts of the Work.

Anyone working on the project shall have the right to:

- Stop work:
 - that is unsafe
 - leads to an unsafe Product.
- Refuse:
 - an unsafe job
 - to deliver unsafe Product

11.4.2 Objectives

The objectives are:

- To include HSE related activities into work planning.
- To ensure that HSE roles and responsibilities are clearly defined and communicated to those responsible for the work.
- To prevent all injuries at the work place.
- To provide a safe and healthy workplace.
- To eliminate emissions, effluents and discharges that are known to have a negative effect on the environment.
- To avoid damage or losses.
- To continuously monitor and improve safety performance.

11.4.2.1 HSE Policy, Objectives and Key Performance Criteria

Supplier or Subcontractor shall ensure that they adhere to the Alfen (project) HSE Policy, Objectives and Key Performance Criteria.

Supplier or Subcontractor shall ensure that all staff involved in the Work is fully aware of and committed to the Alfen (project) HSE Policy, Objectives and Key Performance Criteria.

11.5 HSE Regulations, Standards & Specifications

11.5.1 Compliance to National and International Laws

Supplier or Subcontractor shall comply with all applicable national and international laws and regulations. This includes ensuring compliance by any of its subcontractors.

11.5.2 Government Authorizations

Supplier or Subcontractor shall obtain and maintain all government required health and safety permits, licenses or approvals required for performing the WORK where applicable.

11.5.3 Project HSE Requirements

Supplier or Subcontractor shall comply with all project HSE requirements as specified in the contract, including but not limited to specifications, codes and standards. This obligation includes ensuring compliance by any of its Subcontractors.

11.5.4 Identification of new HSE Legislation, Regulations, Codes and Standards

Supplier or Subcontractor shall have implemented a system to identify new HSE related legislation, regulations, codes and standards.

11.6 Project HSE Management System

In case a subcontractor is contracted to execute the work on an Alfen project the following is applicable. In case a Supplier delivers a product and there is additional installation and / or commissioning works as part of the Works involved, these requirements are applicable too.

11.6.1 Effective HSE Management System

Supplier or Subcontractor shall have effectively implemented prior to execution of the WORK an HSE management system that meets HSE requirements as outlined in these requirements.

Supplier or Subcontractor shall be cooperative in allowing Alfen to review and approve the HSE management system and shall promptly implement actions to eliminate any deficiencies identified.

11.6.2 Worksite specific Project HSE Plan and Procedures

Supplier or Subcontractor shall adhere and implement for each project Worksite the Alfen project specific HSE Plan and Procedures, which outline the Alfen (and Client) HSE requirements for that project.

11.6.3 Documents, Information and Data Control

Supplier or Subcontractor shall have implemented a system to ensure that documentation, including Alfen HSE documents, and records, are identified, verified, up-to-date and available to workforce and Alfen at Worksite.

11.7 HSE Organization, Responsibilities & Resources

11.7.1 Sufficient and Adequate Resources

Supplier or Subcontractor shall allocate sufficient and adequate resources (staff, equipment, consumables) to ensure required HSE performance at any time when performing the Work.

11.7.2 Line Management and Workforce

Supplier or Subcontractor shall ensure that staff is competent and has the authority and resources to perform their work in a safe and healthy manner.

11.7.3 HSE Management Representative

Supplier or Subcontractor shall assign for this project an HSE Management Representative having the responsibility, authority and accountability for implementation of the Alfen project HSE Policy, Objectives and Key Performance Criteria and HSE requirements.

11.8 HSE Competence, Qualifications & Training

11.8.1 Competence Assurance

Supplier or Subcontractor shall ensure that staff has sufficient knowledge, skills and competence to complete the WORK in conformance with HSE requirements.

For this purpose Supplier or Subcontractor shall have documented and implemented procedures to assure the competence of staff, including subcontractors, performing activities that may affect health and safety.

Alfen shall have the right to review documentation to verify knowledge, skills and competence level of staff.

11.8.2 Training

Supplier or Subcontractor shall have implemented plans and procedures to maintain and increase HSE competence of staff.

In case Alfen observes that competence, qualification and training requirements do not comply with project requirements, Supplier or Subcontractor will arrange additional training to resolve this.

11.9 Health Assurance

11.9.1 Medical Fitness

Supplier or Subcontractor shall ensure that all staff working on the project are fit for duty.

For this purpose Supplier or Subcontractor shall have implemented a system for assessing medical fitness of every person working on the project.

11.9.2 Alcohol and Drugs Abuse

Supplier or Subcontractor shall adhere to the Alfen substance abuse policy [109].

11.9.3 Hygiene

Supplier or Subcontractor shall ensure implementation of preventive measures to mitigate health risks due to hygiene hazards.

11.9.4 Working / Rest Time

Supplier or Subcontractor shall ensure reasonable working/rest time ratios for all staff working on the project (including Subcontractor) which will be in line with National legislation.

11.10 HSE Awareness & Commitment

11.10.1 Visible management commitment

Supplier or Subcontractor management shall demonstrate a visible commitment to HSE performance and promote actively realization of HSE objectives (e.g. participation in safety walkthroughs, kick-off meetings, HSE reviews etc.).

11.10.2 Workforce Participation

Supplier or Subcontractor shall actively ensure participation of all workforce and all levels of supervision and management in HSE matters.

Supplier or Subcontractor shall actively consult workforce for improving HSE performance.

11.11 Awareness

CONTRACTOR shall continually reinforce the Alfen HSE policy, objectives, requirements and risks as related to the Work.

This reinforcement is established by means of (but not limited to):

- The assignment of HSE Management Representative for the project.
- Induction and familiarization.
- Participation in regular HSE meetings.
- Participation in drills and exercises.

11.12 HSE Risk Management

11.12.1 General

Subcontractor or Supplier shall have risk assessed all activities and products related to the project or in case when they are working under the supervision of Alfen, made themselves aware of the risks related to the activities and products. This ranges from high level to low level activities / products and from routine tasks and regular operations to project specific activities / products.

11.12.2 Participation in Risk/Hazard Assessments

Subcontractor or Supplier shall supply sufficient and competent staff to participate and/or conduct in risk and hazard assessments related to the Work as required by Alfen.

11.12.3 Work Place Risks

Subcontractor or Supplier shall have conducted and documented Task Risk Analysis (TRA) to identify risks associated with routine activities at the work place. All (non routine) activities at the workplace not covered by TRA shall be risk assessed separately. Where activities are carried out under supervision of Alfen, they have to be aware of the identified risks.

Subcontractor or Supplier's workforce shall be aware with the precautions to be taken as determined in TRA's (or additional work place risk assessments).

11.13 Incident Investigation and Reporting

Subcontractor or Supplier shall report to Alfen any incident related to the Works that has or could have caused injury, and/or harm to people, assets, environment or reputation of stakeholders.

This includes, but is not limited to: Lost Time Incidents, Fatalities, First Aid, Medical Treatment, Near Hits / Near Misses, Unsafe Conditions / Unsafe Acts, Security Incidents, Environmental Spills, Environmental Accidents, Loss of Assets (Equipment / Material), Loss of production related to the scope of work for Alfen.

Subcontractor or Supplier shall classify incidents as per the definitions as identified in the previous paragraph.

Subcontractor or Supplier shall submit to Alfen a verbal and written notification of the incident a.s.a.p., but not later than 24 hours, after occurrence. The final incident report will be submitted in less than 3 calendar days or working days in case of weekends and festive days after occurrence.

Subcontractor or Supplier shall keep Alfen informed of the progress and status of the incident investigation.

Subcontractor or Supplier shall present to Alfen:

- The root cause analysis results.
- The plan of action for eliminating the root causes, including action owners, completion dates, communication of changes, controls to verify that reoccurrence has been prevented.

Subcontractor or Supplier and Alfen may form a joint incident investigation team.

In the event Alfen wishes to conduct a separate incident investigation then Subcontractor or Supplier shall provide adequate assistance.

Subcontractor or Supplier shall circulate the lessons-to-be-learnt from incident investigation to share experience across the various parties.

11.14 Emergency Response Planning

Subcontractor or Supplier shall develop for each Worksite a project specific Emergency Plan. Such Emergency Plans shall be based on the potential emergencies associated with the WORK related to this project at that specific Worksite, including but not limited to fire, pollution, medical, security, weather, environmental emergencies.

Such Worksite specific Emergency Plans shall cover:

- Emergency organization, responsibilities and authorities.
- Procedures for internal and external communications (e.g. Alfen, fellow contractors, (local) authorities, relatives, media response, etc.), including contacting details.
- Systems and procedures for damage control (e.g. response teams, passive safety systems, fire fighting, rescue, refuge, evacuation, medical treatment, repatriation, etc.).
- Systems and procedures for training (response teams), exercises, drills, testing emergency systems.

Subcontractor or Supplier shall ensure that Worksite specific Emergency Plan(s) are available to all relevant parties. In case subcontractor or supplier works under the supervision of Alfen it is expected that the Subcontractor or supplier informs and adheres to the Worksite specific Emergency response arrangements in place.

Subcontractor or Supplier shall conduct or participate in regular drills and exercises to verify effectiveness of the Worksite specific Emergency Plan(s) and to train the staff for emergency situations. Records of drills and exercises shall be maintained.

11.15 HSE Meetings

11.15.1 Project Kick-off Meeting

Subcontractor or Supplier shall organize or participate in project kick-off meetings prior to start of the Work on a Worksite to inform staff on project particulars, including HSE requirements and procedures. Alfen will attend or organize these to reinforce the HSE policy and requirements. Subcontractor or Supplier shall keep records of attendees list.

11.15.2 HSE Induction Programme

Subcontractor or Supplier shall ensure that each individual will attend an HSE induction programme at mobilization to Worksite. Individuals shall receive a booklet containing the Worksite specific HSE instructions. Subcontractor or Supplier shall keep records of date and attendance.

11.15.3 Daily HSE Talk

Subcontractor or Supplier's line management shall conduct daily HSE talks to address HSE aspects of near term work. Date, subject and attendance shall be recorded.

11.15.4 Regular HSE Management Meetings

Subject to project duration, the Subcontractor or Supplier shall organize or attend regular HSE management meetings, attended by senior management, line management and employees representatives, to review HSE performance and the effectiveness of the HSE management system. Minutes shall be recorded.

11.15.5 Ad hoc HSE Meetings

Subcontractor or Supplier shall arrange or participate in ad hoc meetings, to address and manage HSE project risks, when considered appropriate.

11.16 Monthly HSE Report

Subcontractor or Supplier shall submit each calendar month the monthly (or provide input in the Alfen) QHSE report as part of the overall monthly reporting.

The monthly QHSE report shall address:

- HSE performance as set against the project HSE Key Performance Criteria (See project specific H&S Plan).
- Monthly HSE performance statistics (incl. graphs).
- Overview of previous month on HSE events and activities last month
- Next month outlook on activities / deliverables planning, milestones, incl. status overview of HSE deliverable documents.
- Areas of concern.

The monthly report shall be in the format as provided by Alfen.

11.17 Personal Protective Equipment (PPE)

Subcontractor or Supplier shall ensure that its staff and those of subcontractors are aware of and understand the Alfen PPE requirements.

Subcontractor or Supplier shall ensure that anyone on the Worksite always wears the PPE in accordance with the applicable PPE requirements. PPE shall be in accordance with recognized international standards.

11.18 Hazardous Substances

Subcontractor or Supplier supplied hazardous substances (or product or material) used for the Work shall meet Alfen specifications as well as any manufacturer, supplier or government requirements for transportation, labeling, packaging, storage, use and disposal (See also chapter 7.1).

Subcontractor or Supplier shall identify every substance considered as hazardous by local regulations or international standards.

For the substances up-to-date Material Safety Data Sheets (MSDS) shall be available on the Worksite to all staff in the English and the language appropriate for the staff. Subcontractor or Supplier shall provide MSDS sheets to Alfen upon request in English.

11.19 Housekeeping

CONTRACTOR shall have and implement a policy for proper housekeeping.

11.20 Weekly Worksite tour

Subcontractor or Supplier's Representative or Worksite Manager and COMPANY's Representative shall perform a weekly WORKSITE tour to observe compliance to project HSE requirements.

11.21 Safe Worksite

Subcontractor or Supplier's shall ensure that Worksite is suitable and safe for performing the WORK.

Subcontractor or Supplier's will perform or participate in a Site-Readiness Survey to verify if Worksite is in compliance with project HSE requirements.

11.22 Safe Construction Equipment

Subcontractor or Supplier shall provide construction equipment that is safe and fit for purpose. It shall be maintained in good operating condition with uninterrupted and valid certification. Subcontractor or Supplier shall not use construction equipment outside the limits of the manufacturer's specification and/or as not accepted by recognized Certifying Authority.

11.23 Certification Construction Equipment

For the construction equipment Subcontractor or Supplier shall maintain appropriate and uninterrupted valid certification in accordance with applicable laws and Contract requirements.

Valid inspection reports and certificates for all construction equipment shall be available at Worksite (either hardcopy or via internet connection). This includes, but is not limited to: shovels, bull dozers, forklifts, trucks, cranes, lifting equipment, rigging and slinging, boilers, pressure vessels, portable power tools, scaffolding, workshops, etc. etc.

Appendices

Number	Title
Appendix A	List of preferred packaging material
Appendix B	Template Control Plan
Appendix C	Template PSW

Appendix A List of Preferred packaging Materials
(AIM-FACI-GEN-3.09-01-LI-01)

Appendix B Template Control Plan
(AIM-QHSE-GEN-2.08-02-TM-01)

Appendix C Template PSW
(AIM-QC-GEN-2.08-01-TM-01)