



**HORSTMAN DEFENCE SYSTEMS LIMITED**

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**Supplier Quality Requirements**

Doc No.

**SQR 01**

# Supplier Quality Requirements

**Document No: SQR 01 Rev 3.4**

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**Revision Status**

Paragraph	Iss.	Description	Date	Approval
	1.0	Initial issue of document	21/06/2010	AAC / PW
2.2 3 4.6 4.11 4.14 4.17.1 4.18.2 4.20.2 4.20.3	2.0	Contract Review Supplier Qualification & Performance FAIR & sub sections Right of Access Non conforming Product & all sub-sections Drawing Prints & Digital Files Production Permit Preservation of Steel Parts Preservation of Non Steel Parts	31/01/2012	RPP / MD
Circulation page 2.2	3.0	Changes in line with AS9100 plus further updates to email addresses	02/12/2014	SE
Circulation page 2.2 Introduction page 2.4 3 4.6 4.12 4.14.4 4.14.7 4.21 6.1	3.1	Personnel changes within HDS and updates to email addresses, also corrections of grammar and simplification of text	10/2/2015	SE
5.4	3.2	Simplification of txt	25/08/2015	SE
1.3	3.2	Addition of txt to instruct that where the accreditation status of a supplier changes then this must be notified to HDSL	25/08/2015	SE
4.15	3.3	Clarification of Purchase Order terminology with change from MAX to Syteline	14/11/2016	SE
4.11 4.22 4.23 4.24	3.4	Additions for requirements of AS9100:2016	31/08/2017	SE



## Circulation

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### Horstman

Above + Horstman Management Team

File Location

HDS SQR 01 Rev 3.4 Supplier Quality Requirements Manual.pdf

### Suppliers

All suppliers contained in the Authorised Supplier List maintained within the Horstman MRP system:

That supply deliverable product;

or carry out operations on a deliverable product;

or supply tooling (inclusive of oils, coolants & cutting fluids) that will be used to produce a deliverable product or are contained within a deliverable product.



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## Introduction and Purpose of this Document

Horstman Defence Systems Limited (HDSL) based in Bath, is a world leader in military vehicle suspension systems. We have an international customer base in Europe, the Middle and Far East and the USA.

Our reputation is built on innovative design, reliable products supplied on time and at a competitive cost. HDSL has extensive in-house machining and assembly capability but also requires reliable suppliers and sub-contractors who can deliver quality components, on-time at the right price.

A major element of the requirements that we place on our suppliers and sub-contractors is the need for a quality product, with the correct paperwork that demonstrates this conformance. This Supplier Quality Requirements Document details the general and specific requirements that HDSL requires its suppliers to comply with during the Purchase Order review, material procurement, manufacture, assembly, test, inspection, packaging and despatch of the ordered products or services.

Horstman relies on its supply base to permit it to maintain its enviable reputation and the requirements detailed in this document will ensure that we will be the military vehicle suspension supplier of choice for many years to come.

.....  
Mark Allembly  
APQP Director, HDSL

.....  
Steve Ellis  
Head of Quality- HDSL



## Section 1 - Introduction

### 1.1 Revision Control

Purchased products or services shall be manufactured, inspected and tested in accordance with the specifications, standards & document revision stated at the time of purchase order acknowledgement.

Further copies of this document are available upon request from the Purchasing or Quality staff of Horstman Defence Systems Limited (hereafter referred to as HDSL).

### 1.2 Application

All suppliers of products, materials and/or services shall adhere to all applicable requirements specified herein.

### 1.3 General Quality Systems Requirements

Suppliers shall provide evidence of third party certification to a minimum of ISO 9001. Accreditation to other Quality Management Systems such as AS 9100 or TS 16949 will provide further evidence of ability to achieve HDSL quality requirements.

Note – Where accreditation has lapsed, is removed/suspended by a regulatory body or the supplier gains new accreditation then HDSL Purchasing and/or Quality must be notified.

## Section 2 - Expectations

### 2.1 Basic Quality / Delivery

The target for HDSL suppliers to achieve is zero defects & 100% on-time delivery. Suppliers must provide the exact product, service, quantity and pricing as stated within the acknowledged purchase order.

### 2.2 Contract Review

Suppliers shall establish and operate a Contract Review Process, to fully review every incoming order from HDSL. A register shall be maintained to identify the status of the Contract Review for each part on each order and matrix all standard and additional requirements, identifying which apply, the register shall also identify HDSL delivery requirement and all changes from the original order. The Contract Review process shall as a minimum assess the suppliers technical capabilities to supply the part as defined, machine availability, tooling availability, suppliers own gauging availability, requests for gauge loans shall only be accepted where the gauge order lead time is beyond the purchase order lead time, the contract review shall establish that all deviations from the specified part requirements have been authorised by Horstman, to do this the supplier shall request permission to deviate from the specified requirement using the Horstman Production Permit Request Form F013 latest issue.

### 2.3 Cooperative Management Attitude

HDSL is committed to reach its customers quality & delivery expectations through continuous improvements. Our supplier's top level management are expected to share our commitment and fully support achieving these goals.

### 2.4 Continuous Improvement

HDSL's expectation is that all suppliers review their processes and products on a continuous basis to further improve their processes and HDSL designs.



An aspect of continuous improvement being implemented at HDSL is the use of statistical process control. In specific cases, suppliers will be requested to measure and/or produce data for critical features or dimensions.

### **2.5 Quality Planning**

HDSL suppliers shall carry out a review of the quality requirements of the parts that they have been requested to produce to ensure that all possible issues have been identified and resolved before part production commences.

### **2.6 I.T. Capabilities**

Suppliers are required to have e-mail, internet access & document scanning capabilities.

### **2.7 Confidentiality**

HDSL shall only disclose proprietary information to suppliers on a need-to-know basis in accordance with an established confidential relationship via a HDSL Non-Disclosure Agreement which must be signed by an authorised member of staff at both companies. The information supplied may be in a variety of formats, including but not limited to, bills of materials, solid models, 2D and electronic drawings, software, etc. Suppliers, in turn, shall take the utmost care in protecting all proprietary information. This includes notification to HDSL prior to the transfer of proprietary information to a third party; wherein HDSL shall make the decision to initiate a Non-Disclosure Agreement with them as well. All originals and copies of proprietary data must be destroyed when they are no longer needed or must be returned to the originating source when requested.

**PROPRIETARY DOCUMENTS ARE NOT TO BE DISCLOSED TO CUSTOMERS OR COMPETITORS OF HDSL WITHOUT PRIOR AUTHORISATION FROM THE HDSL**

## **Section 3 - Supplier Qualification & Performance**

HDSL's suppliers are selected, evaluated, monitored and developed using controlled methods. To be approved or remain a supplier to HDSL relies on the supplier's ability to consistently deliver defect free products and/or services & meet on-time delivery requirements.

### **3.1 Supplier Monitoring & Rating**

Suppliers will be monitored on a rolling 12 month basis for quality and on-time delivery. A supplier must remain in good standing with HDSL to remain on the Approved List. Failure to do so will result in the supplier being informed that they are placed on new business hold pending a corrective action for improvement.

### **3.2 Supplier Quality Program / System Requirements**

HDSL requires each supplier to develop a Quality Management System with a goal of compliance with ISO 9001 to assure that the requirements of HDSL's supplied product or service are satisfied. HDSL supplier quality requirements are specified within this document and shall be considered as minimum requirements for supplier approval.

Objective evidence shall be available verifying that such a system exists and is being maintained. Procedures and records shall be available for examination by an authorised HDSL Quality representative.





### 3.2.1 Notification Responsibilities

If there is a change in the supplier's facilities, utilised equipment, upper level management or sub-tier suppliers, HDSL must be notified of any such changes in writing. In addition, if a supplier loses an accrediting agency certification or is put on suspension by a registrar, the supplier shall notify the HDSL Purchasing and Quality representative of the occurrence in writing within 10 working days. When a supplier's certificate expires, a copy of the new Certificate shall be forwarded to the HDSL Quality representative.

### 3.2.2 Sub-Tier Supplier Management

- 3.2.2.1 It is HDSL's requirement that suppliers maintain responsibility for all sub-tier suppliers, flow down Purchase Order requirements, and provide requirements and guidance to their supply base consistent with the Purchase Order provisions.
- 3.2.2.2 The supplier shall have a process in place to ensure that all sub-tier suppliers have and maintain the ability to provide defect-free material and services in accordance with HDSL delivery requirements.
- 3.2.2.3 The supplier shall ensure that all sub-tier suppliers provide timely response to quality concerns.
- 3.2.2.4 If a situation arises where HDSL must take an active role with a sub-tier supplier to address a specific concern, HDSL will do so only after supplier notification and discussion.

## Section 4 - General Requirements

### 4.1 Purchase Order/Contract

The Purchase Order is a legal contract between HDSL and the supplier. Only HDSL's written authorisation may be used to deviate from the Purchase Order.

### 4.2 Advance Product Quality Planning (APQP)

HDSL have adopted the APQP process in order to improve the quality of our products by carrying out up-front quality planning to ensure that all product requirements are identified and checked and verified before production begins. Suppliers are key to the success of this approach as experts in their field. HDSL will involve suppliers in the APQP process and incorporate their input into the final design.

### 4.3 Changes to Approved Product and Processes

Suppliers and sub-suppliers are not permitted to make any unauthorised changes to a product (e.g. material, component, subassembly, etc.) or the process used to produce a product that has been previously accepted by HDSL via FAIR, process/product approval or accepted deliveries of components or services. This includes changes to Manufacturing Control Plans or Quality Plans if applicable.

The appropriate HDSL Purchasing or Quality representative shall be notified of intentions to change a product or process PRIOR to making any changes. The supplier

shall submit a request (Production Permit for example) detailing the changes, including a fully detailed reason for the change request, and await written approval to proceed with the change from HDSL Purchasing/Quality.

#### **4.4 Traceability Verification**

Unless authorised otherwise, the supplier must maintain traceability throughout all steps of the manufacturing process, including any external processing. All suppliers to HDSL shall have a lot identification system that distinguishes one lot from another when shipping finished or raw product. All component / product lots must be traceable to raw material lots. The supplier shall ensure that the supplied products are legibly marked in accordance with the Purchase Order and drawing requirements.

#### **4.5 Certificate of Conformity**

Where required by the Purchase Order, a copy of the supplier's Certificate of Conformance (C of C) shall be submitted with each shipment of material, product and/or service. The C of C shall be signed by an authorised person, certifying that all product and/or services meet the requirements of the Purchase Order, including drawings and specifications at the prescribed level of the product and shall include:

- Company's name and address
- Date of Certification
- HDSL Purchase Order number and line number
- HDSL part number and revision
- Part Description
- Quantity
- Applicable material and test specifications and revision identification
- Raw material heat lot number (if applicable)
- Reference to Test Reports for all raw material, traceable by heat lot number
- Identification of exceptions (these would be a Concession or Production Permit)
- Signature and title (if required)

It is the supplier's responsibility to review Test Reports and Certificates of Conformity from supplier-purchased material, treatments or services. All sub-tier supplier C of C's for material or treatments shall be retained by the supplier. Copies shall be delivered to Horstman with each delivery and be held on file by the supplier and are to be available for audit review. HDSL assumes responsibility only for conformance of material that is free issued.

In the case of the rejection of a material batch and subsequent re-delivery, All associated paperwork shall be re-supplied in support of the re-delivery.

#### **4.6 First Article Inspection Process**

The supplier is required to prepare and maintain a First Article Inspection System compliant to IAQG EN (AS) 9102, which records every part number supplied to HDSL and its FAIR Status. The purpose of a FAIR is to determine that the entirety of the manufacturing processes have the ability (NOT Capability, which requires further evidence) to produce the defined part. Part definition is primarily by drawing, supported but not superseded by the purchase order, other than where covered by a Production Permit, note that a Concession only covers parts that have been found post manufacture not to conform to the defined criteria and cannot be used in advance, only



a Production Permit can be used in advance. In both cases the FAIR will be limited to a Partial FAIR and the subsequent production batch shall address the non-conformance. The FAIR exercise is also good for ensuring that all the requirements are fully understood, parts should not be delivered prior to completion of the FAIR.

#### **4.6.1 Resubmission Guidelines**

Production process or supply chain changes require a new (Partial) FAIR covering the change aspects. HDSL shall be notified prior to any changes on parts that have been previously submitted with a FAIR, the previous FAIR is thereby suspended awaiting a New (Partial) FAIR. Failure to inform Horstman of any such change prior to the event will be treated very seriously by Horstman and may result in the immediate suspension of the supplier.

Horstman Supplier Quality may periodically audit each supplier and during that audit will review the current manufacturing methods in use on parts in manufacture either at that time or that have been delivered since the last audit, the purpose being, to determine that the manufacturing process and supply chain has not changed since the most recent FAIR.

Process changes that differ to those specified on the most recent FAIR, prior to the batch in progress.

Typically the changes include but are not limited to:

- Use of a process or material other than that used in the previously approved part.
- Production from new or modified tools (except perishable tools), dies, moulds, patterns, etc., including additional or replacement tooling.
- Production following any refurbishment or rearrangement of existing product specific tooling or equipment.
- Production from tooling and equipment transferred to a different plant location or from an additional plant location.
- Change of a supplier for parts or services. (eg.: material heat treatment, surface treatment, welding) that affect customer fit, form, function, durability, or performance requirements.
- Break in production or product produced after tooling has been inactive for volume production for 24 months, However in certain cases this will be 6 months and so specified on the order.
- Any change in material, including not only raw material but also chemical compounds or processes (i.e. paints, adhesives, sealers, lubricants, plating, heat treatment processes, etc.) which become part of a finished product; this includes changing to an engineering approved alternative material or any change in the sequence of operations.
- Change in the test/inspection methods or new technique (no effect on acceptance criteria)
- Upon request of HDSL's Purchasing or Quality Representative.

#### **4.7 Supplier Tooling, Gauges and Returnable Containers**

Supplier tooling (dies, patterns, moulds, special tooling) and gauging shall be permanently marked with a unique serial number and company name so that the ownership of each item can be easily determined. Any returnable containers, HDSL or



customer, shall be permanently marked with the company name of ownership. For HDSL or other customer owned tooling, a HDSL or customer asset tag may also be required.

The supplier shall establish planned preventive maintenance procedures on all tooling. Evidence of procedure execution shall be made available upon request. Planned preventive maintenance schedules and tool history records shall be documented and available for review.

No supplier tooling shall be sold or consigned to another entity without proper notification and written consent from HDSL. In such cases, or in case of tooling relocation to an alternative supplier location or facility, it is the supplier's responsibility to contact HDSL regarding supplying a new FAIR Report.

#### **4.8 General Inspection & Test Requirements**

All inspection and testing shall be conducted:

- In accordance with the Purchase Order/specific design requirements.
- With equipment that is appropriate for the required characteristics and tolerances.
- Under conditions consistent with the nature of the part and manufacturing processes.
- In accordance with any specific inspection instructions.
- Using measuring equipment that is calibrated and documented, as defined by the applicable Quality Management System.

##### **4.8.1 Visual Inspections**

Where possible, acceptance criteria for visual inspections are to be defined and quantified by visual means such as photographs and/or actual part samples. HDSL reserve the right to reject any product that exhibits an unusual visual condition.

##### **4.8.2 Dimensional Inspection / Material Testing**

In the event that the supplier does not have the necessary equipment to conduct the required inspections and tests, an accredited third-party inspection source is to be utilised at the supplier's expense. In the case of special circumstances, an agreement may be made that HDSL may provide appropriate gauges, under suitable control, to the supplier to allow him to carry out the required inspections. Alternatively, HDSL will carry out the required inspection on receipt of the goods. If HDSL are required to carry out the required inspection due to the inability of the supplier to do so, this may have a detrimental affect on the supplier's overall quality rating.

##### **4.8.3 Material Test Reports**

The supplier shall request and maintain a certified Test Report for each heat/lot of material used in the production of the purchased product. The Test Report shall contain, as a minimum, the test requirements, actual test results (mechanical properties/chemistry results), heat/lot number and the corresponding specification number and revision level. This information is to be provided with the Certificate of Conformity and also made available on demand if requested.

##### **4.8.4 Performance Test Reports**

The supplier, where applicable, shall maintain a certified Test Report for those products that have functional or safety performance test requirements specified as design



requirements. Examples of functional or safety performance tests include push-out and torque-out tests for fasteners, pinch points, static and dynamic strength tests, flammability tests/certifications. The Test Report shall contain, at a minimum, the test requirements, actual test results, heat/lot number, and corresponding specification number and revision level.

#### **4.8.5 P.M.A. (Particular Material Appraisal)**

When a PMA requirement is stated on a HDSL drawing or Purchase Order, we require, on delivery of the material or finished part, supporting test certification specific to the delivered batch as per the PMA requirements.

Certification is required for each cast or heat number stating the test results carried out as per the requirements of the PMA reference.

#### **4.8.6 Measurement Records**

Records of inspection measurements carried out to determine compliance to HDSL drawings and specifications are to be formally documented and maintained to demonstrate compliance with identified Purchase Orders, engineering and/or material specifications, and contract requirements.

All data shall be retained on file, and made available for inspection by HDSL personnel upon request. At HDSL discretion, Inspection Reports may be requested to be submitted with the product shipment.

#### **4.9 Flow Down of Customer Requirements**

HDSL customers often require the flow down of their Contract requirements to all sub-suppliers and sub-contractors. These requirements will be discussed individually with affected suppliers and sub-contractors to ensure that all issues are identified and resolved.

##### **4.9.1 Quality Plan**

The requirement for a Quality Plan will be dictated by Project need, criticality and/or a request from either the end customer or HDSL as appropriate. The format is to follow the example contained with AQAP-2105 Edition 2 NATO Requirements for Deliverable Quality Plans. The Quality Plan shall indicate the manufacturing route; levels of inspection and other controls proposed by the supplier and shall demonstrate that all contractual requirements have been fulfilled. Once accepted by HDSL Quality, the Quality Plan shall become a contractual document and all subsequent amendment proposals must be submitted to HDSL Quality for approval prior to implementation.

##### **4.9.2 Control Plan**

The requirement for a Manufacturing Control Plan will be dictated by Project need and part criticality, and may be a request from the end customer or HDSL. Format and content of the Plan is to be agreed with the HDSL Quality Representative.



#### **4.10 Sampling Plan**

The requirement for a Sampling Plan will be dictated by Project need and part criticality, and also may be requested by the end customer or HDSL. Format and content of the Plan is to be agreed with the HDSL Supplier Quality.

#### **4.11 Right of Access**

During the performance of a contract, HDSL reserves the right of access to all areas of the supplier's facility and applicable sub-tier suppliers for HDSL and/or customer and regulatory agency representatives to verify the products or services. The supplier's quality control, inspection system and manufacturing processes will be subject to review, verification and analysis, as such any person duly authorised by the Company shall not unreasonably be refused permission by the Supplier to enter any works, warehouses or other premises under the Supplier's control to inspect any tools or materials procured or used for the manufacture of the Goods or the process of manufacture carried out by the Supplier or the completed Goods themselves before despatch.

##### **4.11.1 Source Inspection**

**4.11.1.1** The items and supporting quality documentation covered by the Purchase Order may be subject to HDSL, Customer or Government source inspection and/or witnessing of tests prior to shipment. HDSL reserve the right to invoke source inspection at any time throughout the performance of this Contract at no cost to HDSL. In order to accommodate source inspection representatives, the supplier shall make facilities, equipment, M&TE, inspection records and assistance available.

**4.11.1.2** Customer Source Inspection - Suppliers are requested to provide a minimum of 5 working days advance notification of requests for source inspection. Written requests for source inspection must be submitted to HDSL Supplier Quality.

**4.11.1.3** Government Source Inspection – Suppliers are requested to provide a minimum of 5 working days advance notification of requests for Government source inspection. Written requests for source inspection must be submitted to the HDSL Supplier Quality.

Source inspection shall NOT replace supplier inspection or relieve the supplier of its responsibility for furnishing an acceptable part or parts.

**4.11.1.4** HDSL Supplier Quality will issue a Source Release Certificate, when no further inspection is required at HDSL upon receipt, a copy of the SRC shall be referenced and included with the suppliers CofC.

#### **4.12 Measuring & Test Equipment (M&TE)**

The supplier shall maintain calibration for all M&TE such as gauges, tools, jigs, fixtures and dies used to verify conformity to requirements of the Purchase Order. The calibration shall be in accordance with a recognised Standard, such as ISO 10012 or ANSI/NCSS Z540-1, shall be carried out by a certified laboratory and shall address the criteria described in the selected Standard. Measuring and test equipment must also



meet all requirements imposed in applicable Specifications such as those addressing special processes.

#### **4.13 Inspection Records & Status**

##### **4.13.1 Records of Compliance**

Records of compliance shall be formally documented and maintained to ensure the suppliers products/services comply with the identified purchase specifications, engineering and/or material specification, and contract requirements.

- A. Records shall provide traceability to specific product/process information including;
  - 1. Part/drawing number revision level and quantity
  - 2. Applicable specifications with revisions
  - 3. Testing or manufacturing facility
  - 4. Heat/lot number (if required)
  - 5. Procedure with revision traceability (if applicable)
  - 6. All actual data compared to requirements to indicate acceptability of the product
  - 7. Government contract number (if applicable)
  - 8. All actual data compared to requirements to indicate acceptability of the product
  - 9. The inspectors name, signature and level of certification (if applicable)
  - 10. Date of inspection
- B. Product work instructions and process control procedures/plans (including machining, assembly, inspection and testing instructions) must be an integral part of the suppliers process and will be subject to revision control.
- C. Computer data files (such as .DXF files) supplied by HDSL are for reference only and do not relieve the supplier from providing product that conforms to procurement requirements.
- D. Inspection variable and/or attribute data must be documented on dimensional inspection report or equivalent and retained on file. All data must be made available to HDSL personnel upon request. At HDSL discretion, inspection reports will be requested to be submitted with the product shipment.
- E. A Control Plan or equivalent may already exist as part of previous contract requirement. A revised Control Plan will require to be submitted following any changes in the supplier's process.
- F. Unless otherwise agreed, all suppliers records must be written in the English language and specified in the unit of measure designated within the drawing of standard.

##### **4.13.2 Status Identification**



The supplier will maintain a positive system for identifying the inspection and testing status of supplied product. Identification may be accomplished by means of stamps tags, routing cards, move tickets, tote box cards or other control devices. Such controls will be of a design distinctly different from HDSL inspection identification.

#### **4.14 Nonconforming Product**

The supplier is responsible for establishing controls to ensure that products/services that do not conform to the specified requirements are identified, segregated, sentenced and controlled to: prevent inadvertent use, prevent reoccurrence and improve related processes.

##### **4.14.1 Supplier Detection**

In the event that the supplier identifies a non-conformance with products or material, they shall notify HDSL Supplier Quality. The supplier shall contain by quarantine each suspect batch and withhold shipment of all such batches until authorization from HDSL. See General Inspection & Test Requirements 4.8

##### **4.14.2 Horstman Detection**

Non-conformances or quality system deficiencies detected by HDSL shall be reported to the supplier via email or telecom and may result in the issue of a CAR (Corrective Action Report).

##### **4.14.3 Containment**

The supplier is responsible for the containment of non-conforming product at their facility, in transit, and at HDSL. If suspect product has been shipped, the supplier shall notify HDSL Supplier Quality and Purchasing representatives within 24 hours and provide complete traceability information for all shipped known or suspect non-conforming product, including but not limited to identification of batch/lot number, purchase order number, delivery number, part identification and dates of shipment. Horstman will inform the supplier on requirement for a representative to be sent to HDSL within 24 hours of notification, to assist in verification and containment of the non-conforming product and to coordinate any required screening or rework activities.

##### **4.14.4 CAR**

The Supplier shall take prompt containment and corrective action to remove and correct all identified non-conformances.

CARs shall be documented for all non-conformances using a Form Registered in the suppliers QMS, the form shall include as a minimum:

- A record of the identified or reported non-conformance
- Identification of Root Cause:
  - Root Cause is the reason which caused the non-conformance
  - Root Cause isn't a failure to detect the non-conformance, though a detection failure should be addressed with a preventive action.
- Containment Action shall list what actions were taken to identify all parts that contain the non-conformance, no matter where they are currently located. Then what actions were taken to remove and replace those parts.
- Preventive Actions shall list the improvement actions that require implementation to prevent reoccurrence.





- A copy of the CAR as above shall be emailed to Horstman Supplier Quality.
- Further to the CAR. An analysis is required to identify similar items that may be affected by the identified Root Causes and Preventive Actions, these actions shall also be taken to prevent an occurrence of the non-conformance on those parts

**CAR Closure**

The CAR will remain open until a HDSL Supplier Quality has evidence that the action has been completed and is effective. If the corrective actions are not completed in a timely manner, this may place the supplier in the “at risk” category.

**4.14.5 Cost of Non-Conformance**

All costs associated with non-conforming material (including freight, handling, material replacement, inspection costs and rework) may be charged back to the supplier. Supplier authorisation to return nonconforming product is required within 24 hours of notification. Without this authorisation, product may be returned at the discretion of HDSL and costs charged accordingly.

**4.14.6 Horstman Returns Policy**

Notification of intention to return product shall be made to the suppliers known head of quality or nominated person, who has delegated authority for quality within the supplier’s quality department.

- The supplier shall inform HDSL within 24 hours stating the intended date of collection and proposed actions.
- The goods shall be rectified or replaced and redelivered to HDSL within 7 days of the notification. The supplier shall not over run the 7 day period without prior authorisation from HDSL Purchasing in writing (not verbal).
- Re-delivery, the purchase order requirements apply in full, previously received delivery documents are cancelled upon rejection and shall be resupplied if still pertinent to the new delivery, therefore a full set of delivery documentation is a requirement with the new delivery, this includes but is not limited to A new Delivery Note and Certificate of Conformity (reprints of the suppliers own original delivery documents will not be accepted), material certs, treatment certs and other applicable documents as stated on the purchase order.
- NOTE: the new Certificate of Conformity for the re-delivered parts shall state the CAR number (if issued).

**4.15 Identification Marking**

The supplier shall assure that supplied products are legibly marked as per the specified drawing method, or purchase order requirement. The identification marking shall be as permanent as the normal life expectancy of the item and be capable of withstanding the intended operating environment and cleaning procedures. Legibility shall be required for ready readability and be applicable after the specified protective coatings are applied.

When not otherwise specified, as a minimum the following shall be marked;

- A. Drawing Number (inclusive of any suffix) Drawing Issue as stated on the Purchase Order or most recent Amendment.
- B. The Purchase Order Number shall be marked in full, followed by /1 to /∞ accordingly e.g. “P123456” If the Purchase Order Number refers to a Horstman Defence Systems Job order number, then this J, number (i.e. J123456) must also be marked on the part where



applicable. The drawing or purchase order may also require the Horstman Cage Code K2454 to be marked.

- C. Any application of coatings shall maintain manufacturer marking and identify the finisher and process date.
- D. Finished and unfinished (i.e. not completed to a drawing requirement) product shall be identified using identification methods in accordance with MIL-STD-130.

Where marking method is “optional”, notify your procurement representative if marking method changed from prior shipment.

#### **4.16 Part / Component Cleanliness**

The supplier shall furnish parts/components free of mill scale, rust, carbon deposit (“smut”), weld splatter or any surface contaminant that will be detrimental to the items appearance, surface finish or functional performance (i.e. contamination that is detrimental to the adhesion of coatings). Any part not meeting this criterion is subject to return to supplier for correction.

#### **4.17 Technical Documentation**

The supplier shall have available all design records, drawings & specifications for the products manufactured, including components or details of assemblies and technical standards noted on the drawings. For parts identified as catalogue parts, this may consist of functional specification or a reference to a recognised industry standard. Documents are to indicate the date of the design record and the change level and shall include any authorised engineering change documents used in conjunction with the part drawings.

##### **4.17.1 Drawing Prints & Digital Files**

HDSL may forward digital copies of drawings to the supplier, to aid machine programming etc. All Manufacturing shall be verified using the information on the Issued Print. If a difference has been identified the dimensions and tolerances for each characteristic are to be taken from the Issued Print and not the digital file.

##### **4.17.2 Vendor Item Drawing**

Drawings identified as “Vendor Item Drawings” contain a list of recommended approved sources of components and the source’s item identification. Written authorisation from HDSL Quality representative is required if the identified drawing approved source of product or item is not utilised.

##### **4.17.3 Source Controlled Drawings**

Drawings identified as “Source Controlled” contain a list of approved sources of components and the source’s item identification. A Production Permit must be submitted and may be approved by HDSL Engineering and Quality representatives to allow deviation from the identified drawing source of the item.

##### **4.17.4 ITAR Controlled Drawing**

Supplier acknowledges that HDSL may provide technical data subject to Export Control laws and any drawings will be indicated as “ITAR-controlled”. This technical data (drawings as well as components) will not be disclosed to any foreign persons (or dual citizens) or foreign commercial entities, including employees, consultants,



subcontractors, vendors or suppliers. The technical data will only be utilised for the manufacture of articles required by the purchase order.

The supplier will convey the same requirements to their sub-tier suppliers. The supplier also agrees to destroy or return all such technical data upon completion of the purchase order.

#### **4.18 Request for Acceptance of Non-Conforming Product**

The supplier is responsible for ensuring that the product or service fully complies with all requirements of the drawing/specification. In the event that non-conforming material is produced or it is determined prior to production, that specific elements cannot be produced in the way specified, then the supplier is to request either a Production Permit, in advance of production/supply or a Concession, if the production has already taken place. Electronic copies of both Concession and Production Permit are available through HDSL Purchasing/Quality representatives.

##### **4.18.1 Concession**

A Concession Form is to be completed when non-conforming product has been produced and the supplier thinks that it may be possible that it can be used as produced. All attempts at rework to ensure conformance to requirements are to have been exhausted before a Concession request is made to HDSL Purchasing / Quality.

##### **4.18.2 Production Permit**

If issues are identified during production preparation, such as an obsolete material (it is the suppliers responsibility to ensure the material is no longer readily available or inform HDSL of other reason for request, this will be reviewed by HDSL and the Production Permit may be declined where material is known to be available or reason is not acceptable) specification, then a Production Permit request is to be made to HDSL Purchasing/Quality to obtain permission to deviate from specification **BEFORE** production is commenced.

#### **4.19 Free Issue Material / Customer Property**

Any raw material or semi-finished parts that are supplied as part of the suppliers Purchase Order requirements are to be identified, controlled and verified in accordance with the supplier's Quality Management System. If any of this material is lost, damaged or found to be unsuitable for use, HDSL is to be informed and records maintained.

#### **4.20 Packaging & Shipping Requirements**

Any agreed shipping specifications must be adhered to in all instances. Unless otherwise agreed, the method of packaging and shipment of product may be at the supplier's discretion. Product must be protected against "in-transit" and "storage damage", "deterioration and contamination" and anything else that would render the product unfit for its intended use. The product shall be packaged so that the product weight and/or size does not adversely impact the type of transportation chosen. Refer to procurement terms and conditions for specific shipment damage liability. The Purchase Order has a QA attachment stating specific packaging and shipping requirements.

**4.20.1 Supplier Label Requirements**

A supplier label shall be applied to each shipped container, box or package. Any deliveries which have multiple parts, purchase orders or line numbers must have multiple labels depicting the correct quantities.

**4.20.2 Preservation of Steel Parts**

The outer packaging shall be sufficient to prevent water ingress during transportation.

The packaging and preservation shall be sufficient to prevent corrosion for a minimum period of 6 months in normal indoor storage conditions.

Bubble wrap shall not come into direct contact with any steel surface, pre wrapping such as tissue paper or similar shall be used.

All steel parts, unless stated otherwise on the drawing or purchase order, shall be fully coated with Castrol Rustilo or Horstman approved equivalent (WD40 shall not be used for corrosion prevention without prior Horstman approval).

**4.20.3 Preservation of Non Steel Parts**

The outer packaging shall be sufficient to prevent water ingress during transportation.

Bubble wrap shall not come into direct contact with any metallic surface, pre wrapping such as tissue paper or similar shall be used.

All parts shall be suitably cleaned to prevent contamination / deterioration, where stated on the drawing or purchase order special cleaning and packing processes shall be followed.

**4.21 Records Retention**

- A. Supplier shall have a system for maintaining control of records of compliance to applicable procurement documents, drawings, specifications and standards as previously defined.
- B. Unless otherwise indicated on the Purchase Order, records shall be maintained for a minimum of 10 years after final shipment. Before disposal, supplier must contact HDSL Quality Assurance for authorisation of disposal or instructions for forwarding records to HDSL for retention.
- C. Supplier shall provide records to HDSL upon request. All requests for records shall be satisfied by the supplier within (5) working days.

**4.22 Ethical Behaviour**

The Supplier shall perform all necessary due diligence to ensure that it and its suppliers comply with the requirements of the Modern Slavery Act regulations and to ensure that their supply chains are free of Human Trafficking. The supplier shall also operate in an ethical manner and ensure that their supply chain also act in an ethical manner.

**4.23 Counterfeit Goods**

The Supplier shall perform due diligence In order to ensure that Counterfeit parts shall not be supplied or installed in the Purchaser's products by the Supplier. The Supplier shall warrant that only new, unused, authentic, genuine and legitimate items shall be supplied. Any counterfeit goods supplied will be rejected and disposed of at Horstman Defence Systems Limited at the suppliers cost with relevant third parties notified i.e. CAA.



#### 4.24 Product Safety

It is the responsibility of HDS staff to ensure that products are designed, assembled and tested to ensure they are fit for purpose, and safe to operate, for the full product lifecycle, in their intended installed operational environment.

It is the responsibility of the Supplier to ensure that any product or service supplied meet the stated specific requirements with regards to manufacture, quality and product safety, and that the supplied product or service shall also comply with any related laws and safety standards, and where laws and standards do not exist, apply reasonable standards.

### Section 5 - Specific Product Requirements

#### 5.1 Shelf Life Material

- A. This applies to synthetic rubber (elastomeric) products, potting compounds, shrinkable tubing, epoxies, shelf life materials shall contain the following as a minimum:
  - 1. Lot traceability by run, batch, lot or date of manufacture.
  - 2. Shelf life expiration date (as required by specification)
  - 3. Storage conditions to achieve shelf life, if not stated on the material package.
  - 4. Other information to be applied to the label will be defined by the HDSL Quality Department
- B. Product shall be permanently marked including:
  - 1. Date of expiration or "best if used by" designation
  - 2. Traceability to run, batch, lot or date of manufacture.
- C. The method of product marking shall not be detrimental to form, fit or function. As dictated by size or configuration, optional marking methods may be applied.
- D. Product must have a minimum of 85% shelf life remaining upon receipt at HDSL unless otherwise stated on the purchase Order.

#### 5.2 Hazardous Material Control

Applicable specification requirements apply for usage, procurement and shipping of hazardous material, including special surface finishing processes such as paint, zinc or chrome plating or anodising which may contain volatile organic compounds (VOC).

All supplied items must be labelled by the manufacturer in accordance with applicable code. As a minimum, in order to assure the proper storage and disposal of hazardous or potentially hazardous material, every shipment shall be clearly marked with the following, as applicable:

- A. Product Name
- B. Manufacturers Name and contact information
- C. Manufacturers Item Number
- D. Manufacturers Batch Number or Lot Number
- E. Date of Manufacture
- F. Expiration Date, as applicable
- G. Hazardous Chemical Label
- H. HDSL Purchase Order Number
- I. HDSL Item Number (if applicable)

#### 5.3 Special Processes Approval



Special processes are listed on the appropriate drawing and include such processes as:

- Bonding
- Heat Treatment
- Painting/Coating
- Welding
- Plating
- Non-Destructive Testing
- Destructive Testing

Refer to the site specific addendums for special process approval requirements.

- A. Suppliers must ensure that documentation supporting process control is available prior to initial processing. This shall include:
1. Training/certification of operators and inspectors to specific drawing and specification requirements.
  2. Detailed special process procedure with revision control.
  3. An audit of the supplier's process to the requirements of the applicable specification performed by either a HDSL representative or a third-party (i.e., NADCAP) who has knowledge of the specific process.
- B. Product shipped to HDSL prior to approval/authorisation will be rejected unless the HDSL responsible Quality representative has waived this requirement, in writing.
- C. Changes to process, product, or specification require approval prior to implementation (e.g., manual weld to robotic weld process).
- D. When a special process is performed by a facility other than the supplier shown on the HDSL's purchase order, a copy of the certificate furnished by the sub-tier supplier must be retained and available upon request to HDSL. Approval of the sub-tier supplier must be obtained by HDSL prior to initial processing.

#### **5.4 Fastener Quality Assurance Requirements**

The supplier shall implement and maintain a fastener quality assurance program that complies with the latest revision of the Fastener Quality Act and as stated in the contract/purchase order provisions. SAE Grade 8.1 or 8.2 fasteners are not an acceptable substitute for Grade 8 fasteners. The supplier's fastener quality assurance program may be subject to periodic, scheduled, quality system evaluation.

Fastener lots should be homogeneous, this is defined as a lot in which all of the fasteners are of the same size, type, grade, plating, and manufacture.

#### **5.5 Environmental Requirements**

Horstman are working towards the implementation of the Environmental Management System ISO 14001. We already comply with all current legislation regarding Packaging and Waste Regulations and we expect all suppliers to comply with all environmental and waste regulations that apply to their industry sector.



## Section 6 - Reference Documents & Forms

### 6.1 Reference Documents

BS EN 9100 Quality Management Systems – Requirements for Aviation Maintenance Organisations

BS EN ISO 9001 Quality Management Systems – Requirements

BS EN ISO 14001 Environmental Management Systems

AQAP 2110 NATO QA Requirements for Design, Development & Production

AQAP-2105 `NATO Requirements for Deliverable Quality Plans

MIL-STD 130 Identification Marking of U.S. Military Property

### 6.2 Acronyms mentioned in Document Text

APQP	Advanced Product Quality Planning	IAQG	International Aerospace Quality Group
CofC	Certificate of Conformance	M&TE	Measurement & Test Equipment
CAR	Corrective Action Report	NADCAP	National Aerospace & Defence Contractors Accreditation Program
FAIR	First Article Inspection Report – EN 9102	RAN	Rejection Advice Note
GQAR	Government Quality Assurance Representative	SRC	Source Release Certificate
CAA	Civil Aviation Authority	ITAR	International Trade in Arms Regulations