

SUPPLIER QUALITY REQUIREMENTS (SQR)

Document Number: 509, Ver. 17

Amphenol Tel-Ad Quality Department

Change Description	Version	Date	Process	Edit By	Approved By
Validation of processes Section 11.6	12	03.12.16	----	Shlomo L.	Moti L.
Environmental requirements, section 3.9	13	25.12.17	----	Shlomo L.	Oren I.
Add a link to Appendix E-B509	14	25.05.19	----	Tehilla S.	Shlomo L.
Adding sections 3.10-3.13: Product safety, ethics, quality awareness and environmental awareness	15	25.02.20	----	Tehilla S.	Shlomo L.
Add packaging requirement - chapter 3 Add 2.1.13 (Environmental affidavit)	16	30.10.23	----	Shlomo L.	Itsik H.
Add 4&5 in sections 2.1.1 - CE/UL marking requirement - Preventing supplying counterfeit & obsolescence components	17	27.01.25		Shlomo L.	Itsik H.



Contents

CHAPTER 1. INTRODUCTION.....	3
1.1. BACKGROUND	3
1.2. RESPONSIBILITY	3
CHAPTER 2. METHOD.....	3
2.1. GENERAL QUALITY REQUIREMENTS FROM ALL THE VENDORS	3
2.2. SUPPLIER EVALUATION.....	5
2.3 EXCEPTIONAL APPROVAL	3
2.4. QUALITY REQUIREMENTS – SHEET METAL	5
2.5. QUALITY REQUIREMENTS – MACHINING TECHNOLOGY	6
2.6. QUALITY REQUIREMENTS – PCB:	6
2.7. QUALITY REQUIREMENTS – CHEMICAL MATERIALS	7
2.8. QUALITY REQUIREMENTS – RUBBER	7
CHAPTER 3. PACKAGING	7
CHAPTER .4 END OF DOCUMENT.....	7

Chapter 1. Introduction

1.1. Background

For every purchase order issued by Amphenol Tel-Ad, the Vendor will meet the following quality requirements.

This Directive will describe the requirements in detail, according to technology, and will be referenced in each purchase order, as a reminder of the level of quality required by the Vendor receiving the order.

1.2. Responsibility

Amphenol Tel-Ad's Quality Manager and the Purchase Manager are responsible for the execution and maintenance of this SQR.

Chapter 2. Method

2.1. General Quality Requirements from all the sub-contractors.

2.1.1 Standards Requirements:

- 1) The supplier shall have a Quality Management System (QMS) that conforms to ISO 9001.
- 2) The supplier will have an environmental management system that complies with AS 9100 or/and ISO 13485 if it is required by the agreement between the companies.
- 3) In exceptional cases, the work will be transferred to the subcontractor who is not approved by ISO 9001, according to these terms:
 - There is no objection to the part of the customer.
 - Subcontractor whose employees have no more than 10 employees.
 - Positive experience in working with the subcontractor.
 - Undertaking the subcontractor to fully implementation of this procedure by signing this document or sending an email confirmation.
 - Received a written approval from the Quality Assurance manager at Amphenol Tel-Ad.
- 4) Preventing supplying counterfeit & obsolescence components according to standards: AS5553 & AS6174.
- 5) For those items in which CE/UL marking is required, the CE/UL item must be supplied subject to the P/N orders with CE/UL marking requirement.

2.1.2 Drawings

- 1) Only the most up-to-date drawing may be used. It must be verified that the revision of the order conforms to the revision that is being used.
- 2) If any questions arise regarding the drawing, or any other issue, the issue must be addressed to the purchasing department.
- 3) Revision to the drawings will be done only by the purchaser in writing. As an exception, temporary approval may be provided in writing until a certain date, by the design engineer or by the Quality Manager, with the approval of the relevant purchaser. The approval will be documented and saved in the engineering department, purchasing department and quality department. A remark about the revision will appear in the PN information in the ERP system at Amphenol Tel-Ad (Priority).
- 4) The Subcontractor shall ensure that he has all the tools, facilities, and resources necessary to supply the order according to all the requirements. In case of doubt or discrepancy, it is the supplier's responsibility to notify Amphenol Tel-Ad and request missing or updated documents or drawings or clarifications as necessary before performing the work. Do not rely on an old drawing from previous orders or drawings that are received with the request for a quotation.

2.1.3 Approved COC/COT Report:

The relevant COC/COT report for each type of delivery to Tel-Ad, as well as RoHS compliance (if the PN is RoHS compliant), will be attached to

- each delivery shipment (one copy attached to the shipping slip, and one copy attached to the parts).
- 2.1.4 Off-the-shelf products shall not be supplied beyond 24 months from the date of manufacture, except for components / materials with a Limited shelf life (such as adhesives, coating / casting materials, etc.)
- 2.1.5 Detailed shipping slip including: PN, quantity, Tel-Ad purchase order number.
- 2.1.6 Packing: the packing must be planned to protect the parts when in transit/storage. For specific details of each technology please see below. The merchandise will be free from mold and fungi.
- 2.1.7 Marking and identification: the parts and their packaging must be identified by embedding a mechanical part, or by a durable sticker.
- 2.1.8 Upon request, the representative of Amphenol and / or the representative of the final customer shall be entitled, but not be obliged, at any time to inspect, monitor and supervise, including but without limitation during an audit, the quality management system, and the quality assurance activities of the supplier at the supplier's premises.
- 2.1.9 The supplier shall keep all production and inspection documents (at least 10 years).
- 2.1.10 The supplier shall perform full traceability to the items supplied.
- 2.1.11 The supplier has full responsibility for the quality and reliability of the items and its compliance with the standards' requirements.
- 2.1.12 **Certification of employees:**
- Cable Manufacturing - Employees must be qualified to meet the IPC620 standard.
 - PCB- Employees must be qualified to the IPC610 standard.
 - Mechanical equipment - the employees must be qualified and skilled to perform all the relevant activities.
- 2.1.13 **Environment:**
- Subcontractors in Israel must be qualified to ISO 14001 standard or sign on an environmental affidavit that will be forward on behalf of Amphenol Tel-ad to the subcontractors.
 - Packaging materials (excluding plastic bags) must be recyclable.
- 2.1.14 **Corrective action:**
- CAR must be sent within two weeks of receiving a customer complaint. Each request will include root cause analysis, conclusion derived from it, the corrective action and internal communication.
 - If the part has been corrected, the corrective action report must be attached to the returning item, in addition to the test report.
- 2.1.15 **RMA** – CAR due to RMA will be provided to the Vendor within 48 hours. The Vendor is required to present corrective action within 3 workdays. Action or repair within 14 days, as mentioned in clause 9, is appropriate in all instances except when urgent action is required as per the requirement of Tel-Ad purchasing.
- 2.1.16 **Delivery Warranty** – the Vendor is responsible for the delivered parts until they reach Tel-Ad gates (except for cases where delivery is done by Tel-Ad). The Vendor will be charged for any damage caused by transport or packaging. The Vendor will be charged damage costs and with defining corrective / preventive action.
- 2.1.17 Product safety- The Vendor has a contribution to product safety and adaptation of the product to the requirements therefore he must be aware of it and he needs to ensure that his employees are aware of it.
- 2.1.18 Ethics-The vendor must work in accordance with the ELECTRONIC INDUSTRY CODE OF CONDUCTEICC (EICC) to ensure that working conditions in the supply chain are safe, that workers are treated with respect and dignity and those business operations are environmentally responsible.
- 2.1.19 Quality awareness- The vendor needs to implement a quality management system and to ensure that his employees are aware of their contribution to product, their contribution to product safety and the importance of ethical behavior.

2.1.20 Environmental requirements awareness -The vendor must commit compliance with environmental requirements according to law. And it needs to ensure that its employees are aware of the importance of environmental protection.

2.2. Supplier evaluation

The supplier's evaluation will be performed in accordance with internal procedure No 06-00. Supplier evaluation will be done to at least 6 selected suppliers/subcontractors (subject to Amphenol procurement procedure No. 6-00) Supplier evaluation will be performed by the Quality Manager in cooperation with the purchasing manager every six months. Suppliers who have a score of consistently less than 60 for at least 2 consecutive quarters will consider continued activity with these suppliers. Suppliers who do not meet the requirements at the prescribed times will be deprived of their status as approved supplier.

Department	Type	Topics Examined	Maximum score
Quality	Yield	Specifying an examination at the source, specifying a check, customer complaints, and specifying a response to corrective action	50
Purchasing	OTD	On time delivery	35
	Service	Support, flexibility, availability (Evaluate)	15

Score	Need from Subcontractor reference response
>60<79	MQI-Memorandum for Quality Improvement
<59	CAPA-Corrective/Preventive Action for Quality improvement

2.3. Exceptional Approval

In some cases, a part which is supplied by the Vendor may contain an irreparable deviance. The Vendor will contact the Quality Control department to approve the deviance. There are several reasons for approving or rejecting the deviance:

- 1) The deviance is considerable and reflects on one of the 3 'F's – Fit, Form, Function. The Quality Control department rejects the deviance.
- 2) The deviance is not critical and does not reflect on one of the 3 'F's. The Quality Control department will approve the deviance in writing.
- 3) For deviances reflecting on one of the 3 'F's – approval or rejection may be provided only by the engineering group.
- 4) The Quality Control department is responsible for providing the approval in writing to the Vendor.

2.4. Quality Requirements – Sheet Metal & Plastic

- 2.4.1 Each part will be identified by embedding the manufacturing identification code on the part in a hidden place.
- 2.4.2 Painted tin (external) – must be wrapped in application nylon or paper suitable for wrapping painted parts.
- 2.4.3 Each part must be wrapped in bubble packing, with the bubbles on the outside.
- 2.4.4 Each part will be packed in a separate compartment, with a barrier between the different parts.
- 2.4.5 Assemblies must be packed in carton boxes or on pallets (parts which are over 1 meter in size must be packed separately in a carton box and placed on a pallet). The packing must fit the part dimensions and must not exceed the pallet dimensions. The parts must be properly attached to the pallet or the packaging to prevent damage in transit.

2.4.6 Reports:

- 1) NPI or item after changing-100% dimension report.
- 2) Certificate of coating/finishing.
- 3) Certificate of raw material and compliance to required color/hue.
- 4) Part in production: random dimension report. Certificate of raw material and compliance to required color/hue.
- 5) Approval from the auditor for the packing in respect to the requested requirements

2.5. Quality Requirements – Machining Technology

Request/Report summary		Description
1	Dimension test Report	<ul style="list-style-type: none"> • Prototype or first item production or item after engineering change, must check 100% dimension and provide report. • Series production Part must check sample test report according to ANSI/ASQC Z1.4, level 2, AQL (Acceptable Quality Level) 1.5%. The report will include critical measurements
2	Final inspection Report	Visual inspection (scratch, crack, stain, corrosion, dust, etc.)
3	COC of Material	Verification of raw material according to the drawing requirement from the metal supplier that identify the same spec of the drawing.
4	COC of Paint and/or Plating Report	Verification of Paint and/or plating according to the drawing requirements. The drawing spec should appear in the COC.
5	Adhesion sample test	From every batch (Test by 3M adhesive tape)
6	Salt spray tests (only for coating)	Corrosion tests in artificial atmospheres - Salt spray tests 72 hours according to ISO 9227
7	Approval color chip	Must provide a color chip in Prototype or first item production
8	Part identification	Each part should identify by imprinting/sticker, including manufacturer ID & part number, By English language, on a hidden place.

All items must be inspected by ATA source inspection (except Amphenol Tel-ad approvals by mail)

Note: we will not accept parts without source inspection approval by stamp on the invoice.

2.6. Quality Requirements –PCB assembly:

- 2.6.1 Each PCB will be marked with a sticker with the code of the lot number, PN (Part Number), revision & SN (Serial Number), according to the drawing requirements.
- 2.6.2 Each PCB will be marked with a sticker or Stamp with the EL & QC.
- 2.6.3 Each PCB will be packed in an antistatic silver bag, fit to the dimensions of the PCB.
- 2.6.4 Usability tag will be outside of the bag and not inside.
- 2.6.5 The PCB lot will be delivered in a wavy carton box. Each PCB will be placed in a separate compartment. The barriers will be antistatic.
- 2.6.6 The test report including tests according to requirement and packing tests will be attached to the delivery.
- 2.6.7 The SN (Serial Number) contents will be noted in the shipping slip.
- 2.6.8 To avoid purchasing a fake component, it is mandatory to purchase components only from the manufacturer or from an agency approved by the manufacturer.
- 2.6.9 All components must be original nonfactor according to customer BOM (Bil of Materials)

2.7. Quality Requirements – Chemical Materials




- 2.7.1 Each chemical material will have an MSDS (material safety data sheet) attached.
- 2.7.2 Each bottle/container/package will have an identification label, expiration date, and original manufacturing date! If there are several bottles/containers/packages etc. in one larger package, the expiration date must be noted separately on each unit.
- 2.7.3 Only products whose manufacturing date is less than three months earlier may be provided.
- 2.7.4 In case regulatory approvals are necessary, they must be provided with delivery.

2.8. Quality Requirements – Rubber






- 2.8.1 Each package will be for the number of items mentioned in the Purchase Order. In the absence of a request, the items will be packed to prevent deformation of the parts.
- 2.8.2 The packing will be in a suitable size to prevent rubber part deformation.
The part or parts will be packed in an airtight and light protective, welded packing, such as a black polyethylene bag at a thickness which prevents light, or lamination.

Chapter 3. Packaging

3.1 Packing instructions for Items: Cables, mechanical parts and racks product

Request	PIC for Pack reference	
<p style="text-align: center;">Parts weight < 2KG</p> <p>3.1.1 Each part-Painted/coated surface for mechanical part (External) must be wrapped by wrap nylon or paper intended.</p> <p>3.1.2 Each part should be packed in wrapped bubbles nylon- See Example PIC 2-each part pack.</p> <p>3.1.3 Group of part should be packed separately by packing box with partition-See Example PIC 1 Rack panels pack</p>	 PIC 1	 PIC 2
<p>3.1.4 Every part should be packed in wrapped bubbles nylon and in the carton box.</p> <p style="text-align: center;"><u>Rules for selecting cartons:</u></p>		
Parts weight (KG)	Carton's type	
2>10	Single corrugated Carton	
11-20	Double corrugated Carton	
21-40	Three corrugated Carton	

3.2 Package Cabinets or Racks

Request	PIC for Pack reference			
<p>In general, each cabinet must be packaged in a package designed specifically for this cabinet. In the absence of a dedicated packaging, below the guidelines:</p> <p>3.2.1 The pallet must be biggest of Rack min 50 mm around.</p> <p>3.2.2 Rack must be wrapping by nylon, protected by Cardboard corners and Foam Sponge before outside carton box assembly.</p> <p>3.2.3 The packed rack must be closed with pallet by 4 plastic bands minimum.</p> <p>3.2.4 Add silica jell bags acc. to customer request.</p> <p>3.2.5 The palette must be in ISPM 15 standard.</p> <p>3.2.6 Acceptable packed must be include:</p> <ul style="list-style-type: none"> - bubbles nylon wraparound - Cardboard corners - Rack fixing to the pallet by screws or bands 	Target Pack for Cabinet	Target Pack for Rack	Acceptable	Pack for Enclosure
				
<p style="text-align: center;">An example of unacceptable</p> 	<p style="text-align: center;">An example of unacceptable</p> <ol style="list-style-type: none"> 1. The packaging is damaged. 2. The pallet is Broken. 3. The packing stands out of the pallet. 4. Missing bands 5. Miss markings 			