

QUALITY ASSURANCE MANUAL



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However Tss4U can not take any responsibility for damages, injuries, etc., direct and/or indirect caused by the use of this manual. Because of continuous research and product improvement the specifications are subject to change without notice.

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2. QUALITY POLICY

2.1 POLICY

Our policy is to serve our clients and maintain a prominent position in our industry.

We intend to achieve this goal by a process of continuously improving the quality of our services, systems and products.

In this context we define quality to mean complete conformance to agreed customer requirements.

Accomplishing this policy depends on the commitment by all of us to participate in total quality improvement.

Every one of us at every level is responsible for:

Identifying precisely the quality requirements of our customers, whether internal or external – and

Ensuring that the services, systems and products we deliver meet all those requirements - specifications, designs, materials, schedules and safety – first time, every time.

By working together we shall achieve continuing improvement in the quality of every aspect of our work and so improve our performance and competitiveness.

2.2 GOAL

Meet the needs of our customers both internally and externally through a process of systematic quality improvement in the way we conduct our business.

Measure the improvement in quality as we move towards our target – zero defects.

Be responsible for quality improvement so that we each provide and receive information, data, material and services – right first time, every time.

Quality, on cost and timely delivery shall be our competing factors.

2.3 MEANS

The Quality Manual states how the policy and the goal shall be achieved.

Every employee shall act in accordance with the aims of this Quality Manual.

2.4 PURPOSE

This Quality Manual is developed to ensure that the quality policy described is fulfilled.

2.5 RESPONSIBILITIES

The Quality Co-ordinator is responsible that the quality policy of the company is fulfilled.

The Department Manager is responsible for the implementation of the quality system within his own department.

2.6 PROCEDURE

The quality system is described in the Quality Assurance Manual, which together with the quality control procedures of the departments will secure the quality of the systems, products, materials and services, hereinafter referred to as the "goods".

The quality of the goods is a result of the co-operation of all functions within the company. The responsibility for quality therefore rests with each department and its employees.

All departments shall operate according to the quality control procedures to achieve the performance standard required. These procedures shall be continuously evaluated. Proposals for improvement shall be submitted to the Quality Co-ordinator.

3. THE QUALITY SYSTEM

3.1 QUALITY ASSURANCE MANUAL

PURPOSE

The purpose of this Quality Assurance Manual is to document the planned and disciplined activities for the development, design, engineering, production, assembly, sales and supply of products such as that the above policy is fulfilled to the satisfaction of the corporate management and to provide an information to our customers of the Quality Programme implemented.

This Quality Assurance Manual, in conjunction with the quality instructions of Tss4U, provides an objective communication within the company and between Tss4U and its customers in order to establish a mutual degree of confidence that the required quality demands and needs shall be accomplished.

RESPONSIBILITY

The Quality Co-ordinator is responsible for the quality system.

The Quality Co-ordinator is responsible for the keeping up, distribution and registration of this Quality Assurance Manual.

PROCEDURE

Tss4U's Quality Assurance Manual has been drawn up in accordance with existing international and/or national standards.

English is the language of this manual.

4. ORGANISATION

4.1 ORGANISATION

PURPOSE

This section describes the Tss4U organisation from a quality control point of view.

QUALITY RESPONSIBILITY

The Quality Co-ordinator has the responsibility to co-ordinate and to supervise the quality system within Tss4U.

The Quality Co-ordinator's responsibility includes establishment and maintenance of a quality system, which is capable of obtaining the company's quality objectives and the customer's quality requirements.

5. TERMS AND DEFINITIONS

(Definitions/Clarifications)

5.1 TERMS

APPROVAL

A declaration that a product or service corresponds to the specified requirements.

BATCH (OR LOT)

Means an identifiable collection of items, quantity of material of a single type, grade, class, size or composition, produced in the same plant under essentially the same conditions at essentially the same time.

CHARACTERISTICS

Any distinct property or attribute of an item, process or service that can be described and measured to determine conformance or non-conformance to specified requirements.

CONTRACT

The formal agreement and other contract documents, legally binding between the customer and the contractor, which specify terms and conditions that must be complied with to successfully complete the agreed work.

CONTRACTOR

Owner, architect, engineer, consultant, manufacturer, erector, installer, fabricator or whoever performs, or contracts to perform either, for his own use or for that of another and against or without remuneration, any work agreed to in the contract.

CUSTOMER

The party or his representative issuing a contract for procuring items and services.

CUSTOMER AUDIT

A planned and systematic inspection carried out by the customer's representative or customer's assigned inspection company to ensure that the procedure for quality assurance is followed in all respect by Tss4U B.V..

The following will not be regarded as a customer audit:

- A customer's visit made for the purpose of acquiring information or checking the quality progress of a specific order.
- An evaluation of the quality assurance within Tss4U B.V. in connection with a visit.

DEVIATION

The difference between an observed value of a product characteristic and the specified value.

FINAL INSPECTION

The inspection which is carried out by the Quality Co-ordinator to verify that all the stipulated quality controls have been implemented and that the delivery satisfies all the specified requirements for documentation.

INSTRUCTION

A set of directions, orders and recommended rules for guidance and use for the execution of work described under the contract. Description of a specific allocation of work and an established pattern of action in specific situations.

MANUFACTURE

A collective term for development, design and production of a product.

NONCONFORMANCE

A deficiency in characteristics, documentation or procedures which renders the quality of an item or service unacceptable or indeterminate or not fully in compliance with specified requirements.

Examples of non-conformance include:

physical defects, test failures, incorrect or inadequate documentation, or deviations from prescribed processing, inspection or test procedures.

PROCEDURE

A document that states the purpose and scope of an activity or established method and specifies how to perform it.

PRODUCTION

A collective term for purchase, fabrication, quality control and warehouse storage.

QUALITY

Degree of excellence in meeting with specified requirements.

QUALITY ASSURANCE

All systematic undertakings, which are necessary to ensure that quality is planned, achieved and assured.

QUALITY AUDIT

A planned and systematic inspection of the company's quality assurance to verify that it

complies with the requirements.

QUALITY INSPECTION

That part of the quality assurance, which, through measurements, tests or investigations, determines if the product or service complies with the established quality requirements.

SPECIFICATIONS

A detailed description of the requirements for a product or service.

SUPPLIER

A person, company or organisation with the goal and ability to offer and provide goods and services for sale.

TECHNICAL DATA

Drawings, specifications, calculations and other technical data, including prototypes if applicable.

TESTING

A check to determine if systems, parts or components meet the specified requirements by exposing them to physical, chemical, environmental or operational stresses.

VERIFICATION

A check to confirm by investigation the correctness that an activity, product or service complies with the specified requirements.

6. DOCUMENTATION

6.1 QUALITY SYSTEM DOCUMENTS

- Quality Assurance Manual
- Quality Records
- Test Reports
- Calculation Reports
- External Documents
- Maintenance and spare part instruction
- Document Control

6.2 PREPARATION OF DOCUMENTS

Documents are prepared within the responsible departments.

6.3 QUALITY RECORDS

PURPOSE

Verifying that inspection has been executed and that the quality of the product or service fulfils the requirements.

SCOPE

This section covers quality records such as inspection reports, certificates and final test documents.

RESPONSIBILITIES

Quality records shall be produced by the person who performs inspection or testing.

The Manager Projects is responsible for keeping the documentation of the quality records up to date.

The Purchaser is responsible for reviewing the subcontractors or suppliers' quality records.

PREPARATION OF QUALITY RECORDS

Inspection reports of separate details are made in accordance with an inspection plan, which is prepared by the Manager R, D&E.

Final test documents shall be prepared at final tests.

FILING

Original records are registered and filed in a clear, accessible and safe manner. Inspection reports are filed for a period of at least 3 years.

6.4 TEST REPORTS

PURPOSE

Verification of function, performance and design.

SCOPE

This section covers test reports documenting results of tests.

RESPONSIBILITIES

Test reports shall be produced by the person who performed the test.

All test reports shall be reviewed and approved by the Manager Projects.

CONTENT

Test reports shall verify conformity to standards or requirements and may indicate recommended actions for alignment with said standards or requirements.

FILING

The test reports are distributed among a controlled circulation. Originals of test reports are filed in a clear, accessible and safe manner and saved for a period of at least 3 years.

6.5 CALCULATION REPORTS

PURPOSE

Design verification.

SCOPE

This section covers calculations made during the various stages of a project.

RESPONSIBILITIES

Calculations shall be made by engineering.

CONTENT

The calculation notes shall contain calculations verifying that the product fulfils the requirements.

FILING

Calculation results are registered and filed in a project file or together with matters concerning the customer's order. Calculation Reports are filed for a period of at least 5 years.

6.6 EXTERNAL DOCUMENTS

SCOPE

This section covers documents received from a customer as basic data for a certain case.

RESPONSIBILITIES

The documents shall be filed by the person who is responsible for the case.

6.7 MAINTENANCE AND SPARE PART INSTRUCTION

SCOPE

This section covers all technical instructions, which the customer needs to maintain, repair or overhaul a unit.

RESPONSIBILITIES

Appointed documentalist is responsible for the preparation and production of the maintenance and spare parts lists.

6.8 DOCUMENT CONTROL

PURPOSE

To ensure that the necessary documents are produced, issued and filed.

SCOPE

This section covers handling of the quality system documents.

RESPONSIBILITIES

The Manager Projects shall approve the quality system documents.

The Quality Co-ordinator is responsible for submission, revision and distribution of the quality manual.

The Manager R, D&E is responsible for submission, revision and distribution of drawings, assembly instructions, process lists, working instructions and inspection instructions.

REGISTRATION

All documents shall be registered.

DISTRIBUTION

All documents will be distributed according to controlled distribution lists.

REVISION

Revised documents will be identified by issue number and date.

MODIFICATION

Modified drawings and instructions will be distributed together with a written notification. Earlier issues shall be returned to the Manager R, D&E.

7. DEVELOPMENT AND DESIGN

7.1 DEVELOPMENT OF NEW PRODUCTS

PURPOSE

The purpose of this section is intended to guide development work so that the desired quality of design and product is achieved.

SCOPE

This section covers the responsibilities and the procedures when developing a new product.

ROUTINE

The search for new product ideas is made according to the guidelines in the marketing plan. The Manager R, D&E is therefor responsible.

Make or buy decision is taken by the General Manager.

PROTOTYPE STAGE

During this stage the principal solution for the fulfilment of a requirement is selected and a prototype is made.

FINAL STAGE

This stage is the pre-start to the serial production and the production process is tuned to a prototype run.

During all stages feedback from laboratory tests, from production and other experiences will improve the design in order to fulfil the specified requirements.

Before serial production is approved, the design is reviewed and after acceptance the recommendation is made to proceed with the product.

FILING

All documents related to a product development project are filed by the Manager R, D&E in a clear and safe way.

7.2 CUSTOMER ORDERED DESIGN

PURPOSE

Adaptation of an existing product or design of a product to customer requirements.

SCOPE

This section covers responsibilities and procedures for customer ordered designs.

RESPONSIBILITIES

The Manager R, D&E is responsible that customer ordered designs fulfil the requirements. For each customer ordered design a responsible Project Co-ordinator is appointed.

PROCEDURE

Custom design is made to adapt an existing product to meet requirements from a customer, or to develop a new product.

A customer ordered design should be verified by calculations and by laboratory tests (if necessary). For each customised product the assigned Project Co-ordinator verifies the required and agreed modifications to an existing product or the agreed specifications for a new product.

7.3 DESIGN VERIFICATION

PURPOSE

This procedure describes how the design during the development process shall be verified by calculations, laboratory tests and, if deemed necessary, by field tests.

SCOPE

Design verification shall be carried out during prototype, final stage and serial production. The same procedure is valid for custom-made design.

RESPONSIBILITY

The Manager R, D&E is responsible for calculations and necessary tests being carried out and documented.

PROCEDURE

During the development the design shall be verified as the development procedure prescribes.

Testing shall make sure that the product fulfils the specified requirements.

All aspects of the specified requirements shall be met in the complete product.

The prototype shall fulfil all the demands specified for final products.

Before testing and taking them into production, all new developed prototypes will be visually, mechanically and electrically inspected.

The prototype tests are performed on a part, unit or system, which is manufactured with

methods, which differ from the ones used in series production.

Deviation in prototype parts, units or systems, which may have influence on the test or the assessment of the results, shall be considered in planning of the test.

The test shall be documented in a test report, distributed to parties concerned and filed.

The test shall describe the status of the tested product, the test procedure and the test result compared to the specified requirements.

If necessary the test report ought to have a recommendation for further steps.

7.4 PUTTING OUT TO CONTRACT

PURPOSE

This procedure describes how products, which have to be assembled by third parties, will be put out to contract.

SCOPE

Prototypes, which will be taken into production, can be put out to contract for assembly.

RESPONSIBILITY

The Manager R, D&E, in consultation with the Purchaser, is responsible for contracting the right firm and for putting out to contract.

PROCEDURE

Before a prototype will be taken into production by a third party, audits, former documented results and proved quality deliverance will be performed before a final selection is made. New results will be documented.

The contracted firm will get a full set of necessary documents, inclusive of but not limited to drawings and calculations.

7.5 MATERIAL STANDARD

SCOPE

This sector covers material standards, which are used in the production.

CHOICE OF MATERIALS

For the choice of materials the article codes and filing system is used.

7.6 DRAWING REVIEW

PURPOSE

This procedure describes how to ensure that drawings for production are complete and that necessary supplementary instructions are produced.

SCOPE

This section covers all manufacturing drawings being used in production.

RESPONSIBILITIES

The Project Co-ordinator is responsible for the correctness of drawings issued.

DRAWING REVIEW

Drawings are reviewed by the Project Co-ordinator or appointed designer with respect to completeness so that they are unambiguous and correspond with the current standard. Approval is indicated by signing.

8. PURCHASE

8.1 ASSESSMENT OF SUPPLIER

PURPOSE

The purpose of this section is to act as guide and checklist when choosing a new supplier or when (re)evaluating current ones

SCOPE

The procedure is primarily to be used with regard to suppliers of critical, special quality and costly parts. The application is to be decided by the purchase department, in consultation with the Manager Projects and/or the Marketing and Sales Department.

RESPONSIBILITY

Responsible for the approval of the supplier is the Purchaser. This in consultation with the Manager Projects.

8.2 PURCHASE PLANNING

PURPOSE

The purpose of this section is to create the best possible opportunity to obtain the right product, at the right price, at the right time and of the right quality.

SCOPE

The level of complication, the value and the importance of the purchased goods effects the extent of application of the checklist below.

RESPONSIBILITY

The Purchaser is responsible for the accomplishment of the purchase planning and decides how detailed this work shall be carried out.

CHECKLIST

Order Documentation Purchase Documents

*	Item nr.	order instructions
*	Material/analysis	"
*	Delivery terms	"
*	Payment terms	"
*	No. of annexes	"

*	Packing requirements	"
*	Tolerance requirements	"
*	Shipping marking	"
*	Performance	"
*	Identification supplier	"
*	Surface quality	"
*	Total price	"

Construction and process examiner

Prior to order a review together with the selected supplier shall be made whereby, among others, the following should be discussed:

- * Drawings
- * Choice of materials
- * Tolerances
- * Manufacturing process
- * Machining
- * Inspection instructions
- * Delivery time
- * Packing

Market demands

Stipulations regarding origin, country, quotas, trade barriers and other restrictions in the choice of material and supplier shall be considered.

8.3 CO-OPERATION WITH THE SUPPLIER

PURPOSE

In connection with deliveries an acceptance inspection according to the inspection instruction is effected.

It is of great importance that the supplier is fully informed immediately about any faulty delivery to enable him to take the corrective measures.

SCOPE

Our aim is to entrust the supplier with the inspection of the goods and to involve him in our development work.

We should have discussions with the most important suppliers.

An excellent co-operation and information exchange between us and the supplier will give us better products in respect of price, quality and delivery time.

RESPONSIBILITY

The Purchaser is responsible for establishing supplier co-operation in applicable extent. As and when required the Purchaser will call on assistance from other departments.

9. IDENTIFICATION

9.1 IDENTIFICATION

PURPOSE

The purpose of this instruction is to ensure that all materials are identified throughout all processes so that materials are prevented from being mixed up or disappearance.

SCOPE

Procedures for identification of:

- * Purchased goods.
- * Products in work and in stock.
(Semi manufactured)
- * Finished products.

RESPONSIBILITY

The Manager R, D&E stipulates documentation for identification of goods and products.

Logistics is responsible for received goods being correctly identified and marked.
Logistics is responsible for the storage of goods.

Logistics is responsible for received goods being reported to the purchase and planning department.

The Manager Projects supervises that all goods in work (interstock) are identified.

Appointed designer stipulates how to mark finished products.

The Manager Projects supervises that finished products are packed and marked according to the prescribed rules.

Logistics is responsible that the identity of packed products is in conformity with the transport documents.

PROCEDURES

Purchased goods of type catalogue goods is identified by means of the suppliers marking system and dimension control.

Purchased goods specific for Tss4U B.V. is identified by means of prescribed marking.

Goods in working progress and in stock are identified by means of prescribed documents and markings showing the results of performed operations and controls.

9.2 HANDLING, TRANSPORT AND PACKING

PURPOSE

The purpose of this instruction is to describe the working methods within Tss4U B.V. in order that material and products shall not be damaged or mixed up during processing and delivery.

SCOPE

- Procedures for acceptance, unpacking, placing and storage of material and components.
- Procedures for handling, transport and storage of material and components in work.
- Procedures and prescriptions for handling, transport, storage and packing of finished products.

RESPONSIBILITY

Logistics stipulates general procedures for unpacking and packing, as well as storage of material.

The Manager Projects supervises that staff handling the goods, has knowledge of valid procedures and handling goods.

The appointed Project Coordinator prepares procedures for material, components and products requiring special treatment during handling, transport or storage.

Procurement issues rules and instruction for packing and packaging of finished products.

PROCEDURES

Space for handling of material and storage shall be organised to easily preserve good order.

Storage room and transport equipment shall be organised to avoid resorting or risk for damages during storage and handling.

At delivery of material, components or products suitable or prescribed method of packaging or delivery is stated. For goods of special quality or size adapted storage and handling equipment shall be available.

The flow of material shall be unambiguously ruled by procedures and documents.

Material flow in the store shall be in conformity with the principle:
first in - first out.

Transport shall be carried out by skilled staff.

Packing and packaging of products for delivery to customers shall be carried out in such way that external handling can follow without causing damage to the product.

10. INSPECTION AND TESTING

10.1 ARRIVAL INSPECTION

PURPOSE

The purpose of this instruction is to describe how Tss4U B.V. assures that purchased material complies with the requirements set out in the documentation.

SCOPE

- * Purchased components manufactured in accordance with Tss4U B.V. documentation.
- * Standard products (catalogue goods).

RESPONSIBILITY

The Purchaser is responsible for up-to-date documentation to suppliers.

To guarantee that requirements are satisfied at arrival, Tss4U B.V. shall have the possibility to participate in inspection with the supplier.

Tss4U B.V. Purchasing Department and the Manager Projects shall agree upon the kind of inspection to be carried out and where to perform them.

Inspection instructions shall be approved by the Manager R, D&E.

PROCEDURES

Inspection co-operation shall exist between suppliers and Tss4U B.V..

Tss4U B.V. carries out statistic acceptance inspection at receipt of material from suppliers. The extent of inspection for other goods is based on experience and applicable standards.

For receipt of standard products (catalogue goods) identification shall be checked and transport damages settled.

10.2 FINAL INSPECTION

PURPOSE

The purpose of this instruction is to describe how Tss4U B.V. ensures that delivered products comply with the requirements set out in the production documentation.

SCOPE

Functional tests are carried out according to the production documentation.

The product is inspected according the production documentation.

Documentation and filing of obtained results are carried out.

Products that do not comply with the requirements set out are corrected and reported.
If correction is not possible separate storage will take place.

RESPONSIBILITY

The Manager R, D&E is responsible for establishing testing instructions and for prescribing the extent of testing.

Working Instructions for the standard testing and inspection results will be achieved and kept up to date by the Quality Co-ordinator.

The Manager R,D&E determines test equipment and is responsible for the compliance of requirements set out.

PROCEDURE

Testing is carried out by qualified staff.

Electrical results are written down and archived.

Nonconformity reports are written about products that do not comply with the requirements set out in the specifications.

10.3 MEASURING EQUIPMENT

PURPOSE

The purpose of this instruction is to describe how Tss4U B.V. ensures that the used inspection equipment complies with the Tss4U B.V. requirements for accuracy and reliability.

SCOPE

Inspection equipment used at arrival inspection, production inspection and final inspection.

Supplier who performs inspections for Tss4U B.V. shall follow this or equivalent instructions.

RESPONSIBILITY

The Manager R, D&E is responsible for the inspection equipment being in compliance with established requirements for accuracy and reliability and is responsible for maintenance procedures being available and complied with.

PROCEDURES

Inspection equipment is selected so that established requirements can be verified.

Measuring and inspection equipment is adjusted and calibrated versus reference equipment.

Reference equipment is periodically calibrated by authorised measurement centres in order to obtain trace ability to international standards.

Inspection and measuring equipment is adjusted and calibrated by specially trained staff.

Latest calibration or maintenance as well as planned calibration or maintenance are documented.

Periodically calibrated equipment shall be marked.

For equipment of special type a service agreement is made with the supplier or authorised measurement centre.

11. CORRECTIVE ACTIONS

11.1 NONCONFORMANCE

PURPOSE

This procedure describes how non-conforming services, systems, products or materials – hereinafter referred to as the “goods” - shall be identified and handled within Tss4U B.V. to make sure that non-conforming goods will be segregated from correct goods.

SCOPE

The procedure describes how non-confirming goods shall be identified and segregated.

RESPONSIBILITY

The Project Manager is responsible for identifying and segregating goods, which do not fulfil the requirements.

The Project Manager is responsible for necessary actions described in accordance with the procedure for non-conformance.

The Project Manager is responsible for final inspection of the goods.

PROCEDURE

When discovered, non-conforming items are marked by Quality Inspection Personnel.

The identification is made by a label that will be placed together with the goods or by marking on the goods.

The goods bearing the non-conforming label or non-conforming marking are set aside from the normal flow of work.

The disposition of non-conforming goods may take the form of scrapping, re-working, using a concession, or returning to the supplier.

Disposition of the goods is decided upon by representatives of Projects and/or R, D&E and the supplier (particularly where re-work is concerned).

When a non-conforming good is used as a concession from Engineering, a specific record is kept. If it is used as a concession from the customer, a copy of the letter of concession is kept on file.

In case of purchased items, an inspector's report on purchased material is issued for future corrective action by the supplier.

Re-worked items are re-inspected to assure conformance.

Quality Inspection removes the defective tag and signifies that the items now conform.

Quality Inspection reports the conformity to the Project Manager.

11.2 CORRECTIVE ACTIONS

PURPOSE

To establish the procedure to correct conditions which have caused non-conformance.

SCOPE

Procedures for reporting correction of procedures, documents and “goods”, which do not correspond to specified requirements.

RESPONSIBILITY

The Project Manager reports non-conformance discovered by inspection of incoming purchased “goods” or by inspection of products in process or during manufacturing or at final inspection.

The Project Manager reports field or service complaints.

The Quality Co-ordinator shall analyse the non-conformance reports and shall supervise that corrective actions will be carried out.

PROCEDURE

Non-conformance discovered by inspection of incoming or purchased items shall be handled as the procedure describes.

Non-conformance, re-working and scrapping in process shall be reported.

Customer complaints shall be identified and registered.

The cause for non-conformance shall be analysed.

Actions to prevent re-occurrence shall be decided and implemented.