

Examination Procedure Rubrik / Title Electrical equipment delivery inspection	Beteckning / Document KBE EP-191
	Utgåva / Issue 1 (E)
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	Ersätter / Supersedes -

1 Scope

This Examination procedure is applied in implementation of delivery inspection and constitutes the technical part of delivery admission respecting electrical equipment.

2 Objective

Verify that all equipment and documentation that will be delivered, meets the stated requirements before that delivery admission is given.

3 Method

3.1 Prerequisites

Before delivery inspection the equipment must have undergone the specified type and routine inspection according to a predetermined and by the *Purchaser* approved inspection plan.

The performed verifying test shall be documented and show that the products meets specified requirements.

The documentation shall be legible, the current equipment (unique article number) shall be deduced and it could be presented to the *Purchaser* during the delivery inspection.

The first page shall refer to underlying documents and contain information about the reviewer who approved the inspection documentation.

Certificates and protocols shall reference to inspection plan and to the component

All measuring and test equipment that are used by the *Manufacturer* during inspection and test should be calibrated and traceable to nationally accepted methods.

The documentation of equipment calibration results shall be filed and be presented during the delivery inspection if requested by the *Purchaser*.

The *Manufacturer* should be able to present actual design and inspection documentation according to:

The design basis that will be reviewed shall include drawings, part lists, devices, and spare parts.

The inspection documentation that will be reviewed shall include certificates, test instructions, and test results presented in a test protocol of performed type and routine tests.

The equipment shall be marked and designated according to requirements and in agreement with the *Purchaser*.

A delivery inspection could in certain cases even include a FAT in addition to the normal inspection and *Manufacturer's* tests which shall be prepared and performed according to KBE EP-192 and/or KBE EP-185.

3.2 Performance

A Delivery inspection consist of, among other things, the order , approved inspection plans, approved drawings, examination procedure, descriptions, material specifications, norms, standards, type test documents, manufacturing and inspection.

3.2.1 Review of manufacturing and inspection documentation.

The documentation review shall take place to an applicable extent, include the below specified items and fulfill requirements in the purchase order. The quality and inspection documents shall, at time of delivery inspection, be reviewed, approved and compiled in a foreseeable manner.

The *Purchaser* shall have the possibility to take part in a delivery inspection. To inspect the documentation that as a minimum verifies:

- That at manufacturing and testing applies the right edition of approved drawings, instructions and inspection plans.
- Qualified staff for working operations such as soldering, tests etc.
- Testing and inspection (type test and manufacturing inspection) has been implemented and witnessed by identified parties, documented and approved according to the agreed extent of inspection.
- The existence of acceptable and approved requirement certificates according to inspection plan.
- Components/devices shall be identified to the documentation.
- Any deviation has been documented and approved.

3.2.2 Product's visual and dimensional inspection.

The inspection shall be performed to an applicable extent, include the following items and fulfill the *Purchaser's* given requirements in the order.

Check that:

- The equipment is complete and undamaged (No visual damages)
- The delivery corresponds to the specifications and requirements indicated in the order.
- The equipment fulfils the *Manufacturer's* own regulations.
- Correct marked data; voltage, frequency, measuring range, data inputs/outputs.

- The mechanical function of the devices moving parts works properly.
- Printed Circuit Boards are made in a workmanlike manner and fulfill the requirements according the documented standards/ procedures.
- Cable installations are workmanlike performed; marking, color on protective earth, sectional area, bundling, extension, risk of mechanical and thermal damages, termination cable parts.
- After manufacturing the equipment shall be cleaned from dirt (inclusive plummet, flux) and other unknown article and material.
- Surface and anticorrosion treatments are performed according to specifications and in a workmanlike manner.

3.2.3 Review/Inspection of equipment's marking and designation

The inspection to applicable extent shall include the following items and fulfill the requirements specified in the order.

Check that:

- The equipment is marked correctly according to technical data, agreements and shall be traceable to related documentation.
- Components and parts are marked with serial numbers, article numbers and traceable to certificates.
- The marking shall not cause any damage to the equipment.

3.2.4 Conformance to applicable EU directives.

The inspection should at least embrace present EU directives for the product and applicable instructions for the product usage.

3.2.5 When applicable, FAT according KBE EP-185 and/or KBE EP-192

The Supplier performs the FAT in the presence of the *Purchaser* according to the agreed extent specified in the test procedures.

Check that:

- The prerequisites and performance correspond to stated requirements specified in KBE EP-185 and/or KBE EP-192
- All deviations are documented and resolved.
- Test protocol and test results are presented in a report.

3.2.6 Issuing technical delivery release note

After finish of the inspection, review and test, a technical delivery release note is issued if the product is approved for delivery.

How the technical delivery release note shall be documented shall be approved by the *Purchaser*.

4 Acceptance Criteria

Delivery inspection, in order to be approved by the *Purchaser*, must fulfill the following aspects:

- The quality and inspection documentation shall be presented to a sufficient extent.
- Approved visual inspection.
- If FAT is performed, the results shall be approved.
- Any open items shall be documented in a report. The report shall state how the open items are to be handled and who is responsible.

5 Documentation

The *Purchaser's* writes a memo that summarizes the following:

- Reference to the *Purchaser's* order.
- The approved units (name, type designation, serial number).
- Quantity.
- To which plant, system and object part is the equipment intended.
- Contents of what has been inspected.
- Possible non conformities and restrictions.
- *Manufacturer's* signature (required in those cases where restrictions are given to confirm that the *Manufacturer* accepts those)
- The *Purchaser's* representative signature and release date.

The Memo is distributed to the participants for review.

After performed technical delivery inspection a technical delivery release could be given where the Memo constitutes a part of the delivery release.

The *Purchaser* keeps the original and a copy is sent to the *Supplier/Manufacturer*.

6 Checklist

The list below should be used as workout basis between the *Supplier/Manufacturer* and the *Purchaser* at the delivery inspection of electrical equipment.

Check	Note / Reference	OK
Review of Quality and Inspection documents <i>(serial number, type and routine inspection, inspection records, calibrated instruments and tools, certificates, etc.)</i>		
Inspection plan <i>(TBE/KBE-procedures, deviations, etc.)</i>		
Carrying out and review of other design documents <i>(drawings, device lists, installation instructions, instructions, commissioning, etc.)</i>		
Visual inspection of equipment <i>(Labelling, marking, cables, terminations, soldering, damages, etc.)</i>		
FAT <i>(Testing according to the test program)</i>		
FAT-report <i>(Test accountable, date, reference to standard/instruction, acceptance criteria, measured values etc.)</i>		
Carrying out and documenting of the subsequent activities <i>(Protocol, open item list– What? By who? When?)</i>		
Delivery admission <i>(Approved? Approved with restrictions? Open items?)</i>		