

**1. GENERAL CONDITIONS**

- These QUALITY REQUIREMENTS apply to starters and define the warranty given by the supplier.
- The supplier warrants the starters delivered to be in compliance with the QUALITY AND SAFETY REQUIREMENTS, as defined in section 3.
- For quality approval of a starter shipment, an inspection may be performed by the recipient, based on sampling plans according to the QUALITY AND SAFETY REQUIREMENTS in section 3. of these QUALITY REQUIREMENTS.

**2. CONDITIONS OF ACCEPTANCE AND REJECTION**

- Lots inspected in accordance with this specification and found to comply with the requirements shall be accepted. Lots which do not comply may be rejected.
- In case of a rejection, the recipient shall communicate the results of the inspection, as well as manufacturing date, lot number and product description of the rejected material immediately to the supplier.
- The supplier will determine the further treatment of a rejected lot and instruct the recipient, accordingly.
- Changes or amendments to this specification become only valid after these have been mutually agreed upon in writing.

**3. QUALITY AND SAFETY REQUIREMENTS****3.1 DEFINITION OF TERMS.**

- Inspection lot is the quantity of products from which a sample is to be draw and inspected to determine conformance with the acceptability criteria. It consists of starters of a single type.
- Test quantity is the number of individual glowbottles to be tested to determine conformance with the acceptability criteria.
- Test unit is one starters.
- Defect is a non-conformity of an inspected unit with the respective quality specification.
- Defective unit is a starters which contains one or more defects, or a box or a label with faulty information.

**3.2 DEFINITION OF DEFECTS****3.2.1 QUALITATIVE DEFECTS**

May be identified by visual inspection without extensive test equipment.

**3.2.1.1 CRITICAL DEFECTS (CODE CA-..)**

Are likely to result in unsafe conditions for individuals using or maintaining the product, or to be seriously detrimental to commercial interest.

**CODE****CA-01 ALIEN BRAND**

On starter housing, box or label.

**CA-02 SHORT CIRCUIT (STARTER WITH METAL CAN)**

Insulation resistance between pins and metal can 500 K-ohm, test voltage: 500 VDC.

**CA-03 LOOSE BASE**

Base disassembles from the starter can during insertion or removal from the starter holder.

**CA-04 BURNED ENCLOSURE/MELTED**

Glowbottle overheats melting the plastic enclosure.

**CA-05 LOOSE BIMETAL**

The bimetal in the glowbottle is not welded to the electrode leaving the starter inoperative or causing burn-out.

**CA-06 OTHER CRITICAL**

Any other critical defect that is not mentioned in this list.

**3.2.1.2 VITAL DEFECTS (CODE VA-..)**

Render a product inoperative or otherwise useless.

CODE

VA-01 MISSING PRODUCT.

Quality of product is less than specified on packing unit.

VA-02 MIXED PRODUCT

Two or more starter types in the same box.

VA-03 WRONG ETCH OR LABEL

Type designation on can or label missing or wrong.

VA-04 LOOSE PINS

Before or after insertion into starter holder or gauge.

VA-05 BUTTON DEFECT (COP ONLY)

Missing button, or released button as received.

VA-06 INOPERATIVE.

Glowbottle without gas or inner not crimped to base. Lamp does not start.

VA-07 SHORT CIRCUITIT (GB. COND.)

Bimetal is soldered to the opposite electrode or the electrodes of the glowbottle are making contact between them.

VA-08 POOR SOLDER

Electrodes are not properly soldered to the pins.

VA-09 PERFORATED CONDENSER

Mylar tape on the condenser it's perforated.

VA-10 ELECTRODE OUT

Starter with a glowbottle electrode out of the pin base, not permitting electrical contact and leaving the starter inoperative.

**VA-11 VITAL BROKEN TIP**

Glowbottle tip is broken provoking gas leakage and making the product inoperative.

**VA-12 CRACKED GLOWBOTTLE**

Breaking through which the gas on the glowbottle leaks.

**VA-13 BROKEN BEAD**

Broken piece of the glass bead is loose inside the glowbottle.

**VA-14 TEST (CONDENSER)**

Starter that requires a condenser and doesn't have one.

**VA-15 BROKEN ELECTRODE**

Electrode that brakes on the knots; the starter becomes inoperative.

**VA-16 BURNED/DAMAGED ELECTRODE**

Glowbottle with burned or damaged electrodes; the starter becomes inoperative.

**VA-17 NO GAS**

Gas leak in the glowbottle caused by glass fracture; the starter becomes inoperative.

**VA-18 BAD AGING**

Glowbottle with incomplete aging cycle becomes unstable, this prevents the starter from igniting the fluorescent lamp.

**VA-19 NO SEAL**

A Glowbottle without seal has a poor subsection of the electrodes, facilitates the gas leakage and leaves the starter inoperative.

**VA-20 DEFECTIVE BEAD**

Deformed, high, low or bent bead towards the walls of the glowbottle; the starter becomes inoperative.

**VA-21 OTHER VITAL**

Any other vital defect that is not mentioned in this list.

**3.2.1.3 MAJOR DEFECTS (Código MA-..)**

Reduce materially the usability of the product or constitute a severe appearance defects.

**CODE****MA-01 BROKEN ENCLOSURE**

Starter enclosure with complete or partial burst anywhere on it's surface, giving access to internal electrical components. Also considered as a product appearance defect, visible to the client.

**MA-02 ARCING**

Electric discharge between electrodes.

**MA-03 GLOW CURRENT**

Incandescent glowbottle with rms current  $\geq 5\text{mA}$  after lamp starting, that causes blinking in the intensity of the fluorescent lamp (flickering).

**MA-04 BROKEN BASE**

Base of the starter with fracture or burst visible to the client. Not yet coming off the enclosure but it is weak.

**MA-05 LOOSE PIN**

Pin of the starter base not well riveted to the base and is prone to become loose.

**MA-06 OTHER MAYOR**

Any other major defect than is not mentioned in this list.

**3.2.1.4 MINOR DEFECTS (CODE NA-..)**

Constitute a departure from the expected visual appearance of the product.

**CODE****NA-01 ILLEGIBLE ETCH/LABEL**

Etch or label partially illegible, or in any way indistinct.

**NA-02 DIRTY STARTER**

Foreign material on can such as ink or grease spots.

**NA-03 POOR ASSEMBLY**

Starter base is poorly assembled, but does not separate from can.

**NA-04 DEFORMED OR DAMAGED CAN**

Metal can does not have its original shape.

**NA-05 ELECTRODE OUT**

Starter with electrode, from the glowbottle or the capacitor, out of the pin base.

**NA-06 DISALIGNED BASE**

The base of the starter is not aligned with the ribs of the starter enclosure.

**NA-07 BURNED BASE**

Starter base exposed to overheat and shows burns.

**NA-08 BAD SOLDERING**

Starter component has an opaque, not uniform or poor solder joint.

**NA-09 STOPPED EARS**

The fins of the aluminum jar do not bend to hold the base.

**NA-10 LOOSE MATERIAL (TO INNER)**

Starter with loose internal component.

**NA-11 ENCLOSURE WITH HOLE**

Starter enclosure with a hole on the top in a batch of starters without hole.

**NA-12 ENCLOSURE WITHOUT HOLE**

Starter enclosure without a hole on the top in a batch of starters with hole.

**NA-13 OTHER MINORS**

Any other minor defect than is not mentioned in this list.

**3.2.2 QUANTITATIVE DEFECTS**

Are a failure to comply with measurable, quantitative products performance and safety parameters which are numerically defined

**3.2.2.1 QUANTITATIVE DEFECTS (CODE QA-..)**

See respective Product Technical Specification (code CFAE-..) for parameter values.

**3.3 SAMPLING PLAN**

Quality assessment is based on inspection of a sample which is drawn at random from an inspection lot (see section 3).

The sample size and acceptability of a lot determined by the use of a double sampling plan in accordance with ANSI/ASQ Z1.4-2003 / IEC Publication 410 associated with the designated inspection levels and AQLs.

### 3.4 ACCEPTABLE QUALITY LEVEL (AQL)

#### 3.4.1 QUALITATIVE DEFECTS

DEFECTS CLASS	CODE	INSPECTION LEVEL	AQL
Critical	CA-	II	*
Vital	VA-	II	0.65
Mayor	MA-	II	1.0
Minor	NA-	II	4.0

\* One or more defects lead to rejection of the whole inspection lot.

#### 3.4.2 QUANTITATIVE DEFECTS

See respective Product Technical Specification (code CFAE-...) for inspection level and AQL definition.