

8. QUALITY ASSURANCE

8.1 - QUALITY SYSTEM

Process control

All key etching and forming process parameters are automatically controlled and recorded.

Statistical analysis

Process parameters and products characteristics are statistically analysed to avoid major deviations.

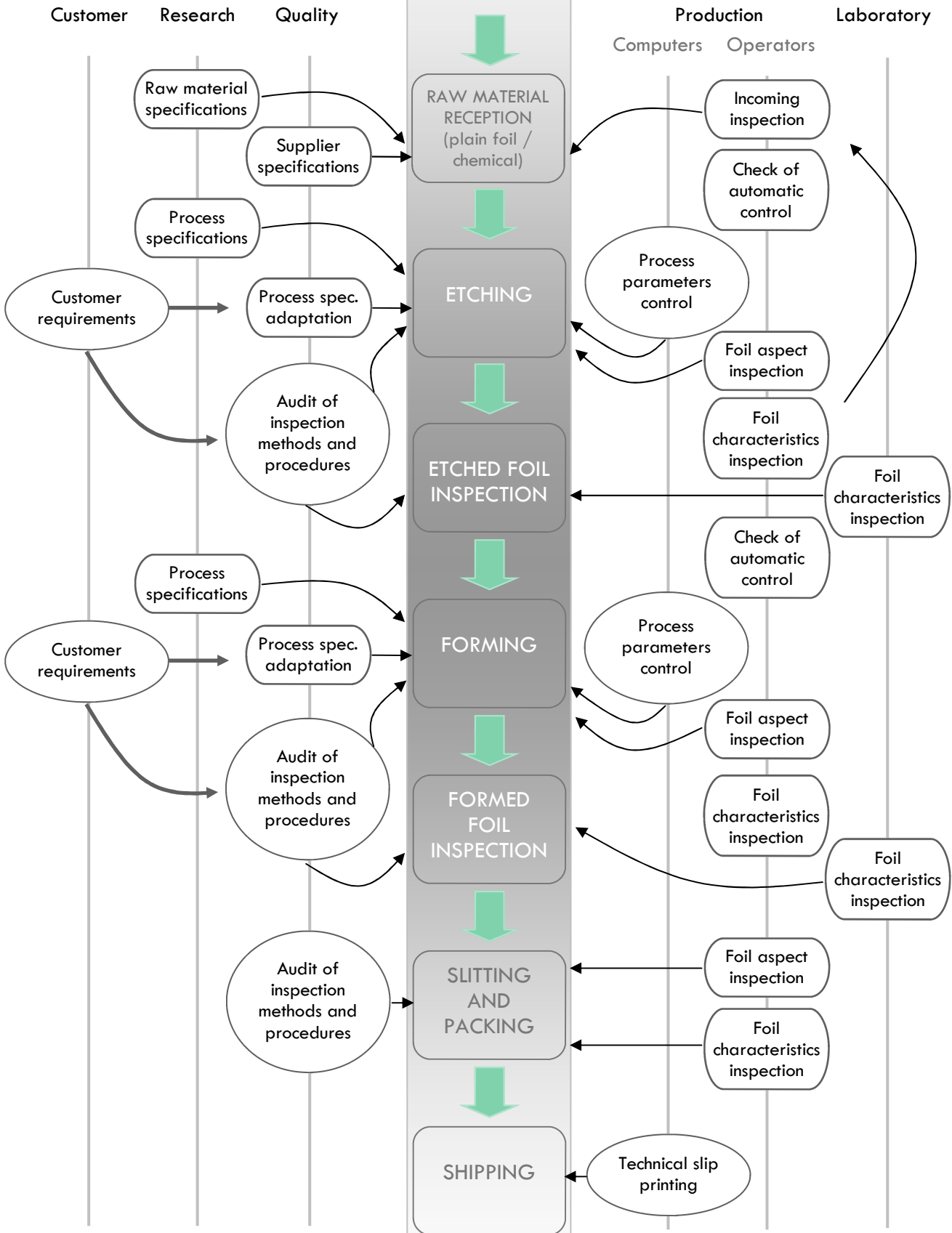
Traceability

The full traceability of products is assured from the plain foil reception down to shipment to customer.

Products characteristics and some process parameters for etching and forming are collected in the IT system and kept during one year.

8.2 - QUALITY FLOW CHART

SATMA'S PRODUCTION'S PROCESS AND QUALITY FLOW CHART



QUALITY ASSURANCE

8.3 - GUARANTEES

The following guarantees apply to all our products for six months from the shipping date provided that they have been stored in the original packing in a room with low relative humidity.

Capacitance

The guarantees of capacitance deviation inside each roll around the average nominal capacitance are statistically defined for 95% of the measurements carried out according to our test methods.

Dielectric characteristics for formed foils

The time T (sec) to reach Vn (Volt) is less than $V_n/3 + 15$

For 95% of the measurements carried out according to M6D test, the maximum stabilized voltage Vm is greater than or equal to Vn.

Hydration resistance

Formed foils

The rise time to reach Vn after boiling is less than 60 sec.

Dimensions

Length of rolls

The tolerance of the length shown on the packing slip is $\pm 1 \%$.

Thickness.

The thickness tolerance around the nominal thickness and for 95% of the measurements is $\pm 8\%$ for anode foil, $\pm 15\%$ for cathode foil.

Mechanical characteristics

For 95% of measurements, the bending strength (PL3) and the bursting strength (EC1) are higher or equal to the minimum values shown in the different tables.

Chloride content

Chloride content (S1) of all foils is lower than 0.5 mg per active square-meter (1 mg per geometrical square-meter).

Surface aspect

For all foils, the appearance of one roll may be slightly different from another. They may look different because of variances in raw foil, production process, etc. Minor defects such as colour variation, spots, hydroxide deposit, pinholes, wrinkles, non-uniform appearance, etc...shall not be reasons for rejection as long as they are not proven to be electrically and/or mechanically harmful to the capacitor.

Storage and handling

It is recommended that the products should be stored in their original packaging and protected from sunlight, oil, humidity or any chemical agent.

The handling of the foil should be done with protective gloves to avoid any further corrosion or negative effects in capacitors.

SATMA PPC cannot accept any responsibility for damage or impact on capacitor performance in case of failure to take such precautionary measures.

8.4 - CLAIMS

If you are facing a problem with our products, please gather and send us following information that is essential for the claim settlement :

- Order number
- Shipping date
- Foil type and forming voltage
- Roll number
- Claimed quantity
- Reason for the claim. Please detail causes and the consequences in your system.
- Your technical data from incoming inspection or capacitor production
- Sample sheet (if possible full width, 300 mm long) and / or capacitors produced with the defective foil

We will analyse all available information and products / production data to find out the cause of the deviation.

In case of damage due to transportation, please make a conditional acceptance of the products to the haulage contractor and if possible, please take pictures of the damage. Then send us all information and pictures to complete the file for the insurance company.