

**INS039 : Standards control table**

| Control mean   | Control by measure (M) or by attribute (A)             | AQL | Standard | Level | Mode (Switching rules on page 2) | Sample | A | R |
|--|--|-----|----------|-------|----------------------------------|--------|---|---|
| <b>Dimensions dependant of a category A process (Pressing – sintering, cylindrical machining, flat machining, tumbling, rolling, brushing)</b> |  |     |          |       |                                  |        |   |   |
| Linear pitch, hole location  | Optical measurement system                             | M   | fixed    |       |                                  | 5      | 0 | 1 |
| Inner diameter   | Go / No go pin gauge                                   | A   | ISO 2859 | I     | Normal                           |        |   |   |
| Outer diameter   | Micrometer, dial indicator, optical measurement system | M   | ISO 3951 | I     | Normal                           |        |   |   |
| Thickness  | Dial indicator   | M   | ISO 3951 | I     | Normal                           |        |   |   |
| Width, length  | Caliper, micrometer                                    | M   | ISO 3951 | I     | Normal                           |        |   |   |
| Chamfer, radius, transition  | Optical measurement system                             | M   | ISO 3951 | S4    | Normal                           |        |   |   |
| <b>Dimensions dependant of a category B process (CNC machining, lathing, enlarging, honing flat and cylindrical)</b>                           |  |     |          |       |                                  |        |   |   |
| Linear pitch, hole location  | Optical measurement system                             | M   | fixed    |       |                                  | 10     | 0 | 1 |
| Inner diameter   | Go / No go pin gauge                                   | A   | ISO 2859 | II    | Normal                           |        |   |   |
| Outer diameter   | Micrometer, dial indicator, optical measurement system | M   | ISO 3951 | II    | Normal                           |        |   |   |
| Thickness  | Dial indicator   | M   | ISO 3951 | II    | Normal                           |        |   |   |
| Width, length  | Caliper, micrometer                                    | M   | ISO 3951 | II    | Normal                           |        |   |   |
| Chamfer, radius, transition  | Optical measurement system                             | M   | ISO 3951 | S4    | Normal                           |        |   |   |
| <b>Geometrical tolerance</b>   |  |     |          |       |                                  |        |   |   |
| Co-axiality  | Roller bench, optical measurement system               | M   | ISO 3951 | S4    | Normal                           |        |   |   |
| Parallelism, perpendicularity  | Dial indicator   | M   | ISO 3951 | S4    | Normal                           |        |   |   |
| Circularity  | roundness/ cylindricity instrument                     | M   | ISO 3951 | S4    | Normal                           |        |   |   |
| Other geometrical tolerance  |  | M   | ISO 3951 | S4    | Normal                           |        |   |   |
| <b>Surface finish</b>  |  |     |          |       |                                  |        |   |   |
| Ra   | Rugosimeter  | M   | fixed    |       |                                  | 5      | 0 | 1 |
| <b>Aspect</b>  |  |     |          |       |                                  |        |   |   |
| Visual inspection (depending on products)  | Eyes, binocular  | A   | ISO 2859 | II    | Normal                           |        |   |   |
| Visual inspection - HPLC (pistons, balls & seats)  | Binocular  |     |          |       |                                  | 100%   |   |   |
| UV inspection (optional)   | Fluorescent Penetrants                                 | A   | ISO 2859 | S4    | Normal                           |        |   |   |
| <b>Other measurements</b>  |  |     |          |       |                                  |        |   |   |
| Optical Axis   | Polarizing binocular                                   | A   | fixed    |       |                                  | 5      | 0 | 1 |
| Leakage 0-12 bubbles   |  | A   | ISO 2859 | II    | Normal                           |        |   |   |
| Leakage 0-3 bubbles  |  | A   |          |       |                                  | 100%   |   |   |
| Tensile resistance, compression resistance   | According to specific customer's requirement           |     |          |       |                                  |        |   |   |

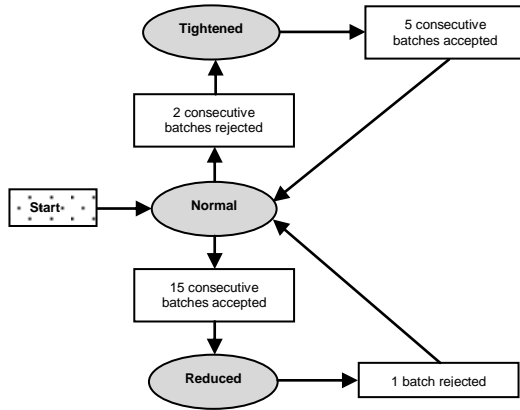
**Exceptions :**

- For other dimensions with a tolerance range greater or equal than 0.2 mm, the sample is reduced to the lower level (from II to I and from I to S4)
- ISO3951 (coef k) is not applicable if, by the share of manufacturing process (for example: machining on batch, turning on train, ... ), the distribution of parts don't follow a normal distribution and for a tolerance range less or equal than 10µ. In this case the acceptance at limits of tolerance is applied.

The above specifications correspond to standard Ceramaret procedures and are given only for information purpose. However, the accuracy and completeness thereof are not guaranteed.

**INS039** : Standards control table

Switching rules between mode Normal – Tightened – Reduced (Only for families 21 – 27 – 28 – 29 – 31 – 32 – 33 – 34 – 35 – 36)



The above specifications correspond to standard Ceramaret procedures and are given only for information purpose. However, the accuracy and completeness thereof are not guaranteed.