## QUALITY 3:

## Application:

Less visible sides of consumer goods, telecommunications equipment, medical equipment, professional equipment and visible sides of products for the automotive industry

## General:

The quality of the treated products is inspected for the points below. Inspections can only be carried out on annealed products.

## Covering capacity:

The products' visible sides have to be fully covered. Inspection is carried out when products are collected.

## Esthetical inspection:

Inspections take place in an adequately lit workplace (e.g. 500 Lux under a $90^{\circ}$ angle).
Inspection distance: 1 metre for industrial products
1,5 metre for Qualicoat specification (entry off a building) 3 metre for Qualicoat specification

Only very slight anomalies are admissible which have been caused by;
Mechanical processing;
Grinding and scouring scratches, Sawdust splinters.
Extrusion techniques;
Extrusion stripes,
Press residue.
Joining techniques;
Weld spots,
Seams.
Technical spot welds are admissible
Application of coating;
Orange structure,
Spray fog,
Dust (see below)
Pitting.

The following dust pockets are admissible:

Nr.1.: afmeting $0,25 \mathrm{~mm}^{2}$.
Nr.2.: afmeting $0,50 \mathrm{~mm}^{2}$.
Nr.3.: afmeting $1,00 \mathrm{~mm}^{2}$.
Nr.4.: afmeting $2,00 \mathrm{~mm}^{2}$.
-
0

## Profiles:

4 times No. 2 per metre on the primary optical plane.

## Profile surfaces:

On a visible section bearing a surface up to $2 \mathrm{dm}^{2}$ :
$1 \times$ No. 1 and $1 \times$ No. 2.
On a visible section with a surface of 2 to $4 \mathrm{dm}^{2}$ :
On a visible section with a surface of 4 to $8 \mathrm{dm}^{2}$ :

On a visible section with a surface of 8 to $12 \mathrm{dm}^{2}$ :
$2 \times$ No. 1 and $1 \times$ No. 2.
$3 \times$ No. 1 and $1 \times$ No. 2.
$3 \times$ No. 1 and $2 \times$ No. 2.
On a visible section with a surface of 12 to $20 \mathrm{dm}^{2}$ :
$4 \times$ No. 1 and $2 \times$ No. 2.
Avoid the concentration of dust particles in one place.
Dust particles should be consistent in colour.

## Frequency of controls during production:

## Qualicoat products;

In a daily production the first sprayed products or the first charge is inspected, then in a continuous production line every 4st charge and in a batch-type installation the firtst charge of each new batch.

## Industrial products;

In a daily production the first sprayed products, then 10 products an hour.
Smaller products with a sample size of $10 \%$ distributed amongst the entire assignment undergo inspection.

## Structure:

The visible sides of products should, when using a structure coating, meet the customer-approved model.

## Coating thickness: (ISO 2360 (1982))

(*) Applied in two layers for maritime or heavy-duty loads. When carrying out measurements, the rim of the measuring post has to be distanced at least 3 mm from the product's angle or framework.

When measuring multi-layered systems thickness of the layer has to be measured on surfaces that can be touched with a 200 mm bulb.

Universally applicable coating thickness requirements:
Inside application in wet paint: minimum $25 \mathrm{~m} \mathrm{\mu}$;
Outside application in wet paint: minimum $50 \mathrm{~m} \mathrm{\mu}$;
Outside application in powder: average $60 \mathrm{~m} \mathrm{\mu}$
Outside application in wet paint: minimum $100 \mathrm{~m} \mathrm{\mu}$ (*)
Outside application in powder: average $60 \mathrm{~m} \mu$
Outside application in powder: minimum $40 \mathrm{~m} \mathrm{\mu}$
Outside application in powder: average $90 \mathrm{~m} \mathrm{\mu}$ (**)
(*) For Maritime or heavy-duty industrial loads, applied in at least two layers.
(**) For Maritime or heavy-duty industrial loads, applied in 2 layers.
The lowest measured values may not exceed the 30\% (Qualicoat 20\%) mark below the prescribed average value.

A product undergoes 5 measurements distributed over the surface.

## Frequency of controls during production:

In a daily production the first sprayed products or the first charge is inspected, then in a continuous production line 5 products or 1 charge an hour and in a batch-type installation 5 products of each new batch.

Smaller products with a sample size of 10\% distributed amongst the entire assignment undergo inspection.

## Gloss factor: (ISO 2813 (1978))

Measurements are carried out with a reflectormeter that bears a $60^{\circ}$-measurement angle.
The gloss factor is expressed in \% gloss.
Admissible tolerance:

$$
\begin{array}{lll}
\text { gloss factor } & 0-30 \% & +/-5 \% \text { gloss } \\
\text { gloss factor } & 31-70 \% & +/-7 \% \text { gloss } \\
\text { gloss factor } & 71-100 \% & +/-10 \% \text { gloss }
\end{array}
$$

Because gloss factor in textured paints cannot be measured, it is inspected visually by comparing it with an approved sample.
If the optical plane is not suited for carrying out measurements, the gloss factor is then compared visually with an approved sample.

## Frequency of controls during production:

In a daily production the first products undergo inspection, after that one measurement per hour.

The first charge is inspected in smaller assignments; subsequently the rest of the assignment is visually compared with the first charge.

Adhesion: (ISO 2409 (1992))
Adhesion is thus inspected that no damage is created on the visible side.
A 1 mm incision breakpoint is observed for a coating thickness up to 60 microns, and 2 mm for a higher coating thickness.

Potential damage to adhesion can be tested by sticking a tape on the coated surface, rub it well and leave as is for 60 seconds, then pull the tape off in one tug. No peeling must take place.

## Frequency of controls during production:

In a daily production the first charge undergoes inspection, then 1 product at every 4-hour interval.
In smaller assignments the first product undergoes inspection.

## Curing:

The monitoring liquid for testing curing depends on the type of coating and is carried out in compliance with the instructions of the powder or lacquer manufacturer.

The non-visible side undergoes inspection.

## Frequency of controls during production:

In a daily production the first charge undergoes inspection, then 1 product at every 4hour interval.
In smaller assignments one product of each new batch undergoes inspection.

## Colour:

Colour has to be consistent and render good covering capacity. The anomalies can be specified in Delta-E values, in compliance with the specifications provided by the powder or lacquer supplier.

If so desired, the supplier can also supply measurement reports with the delivered raw material. Visual inspection is carried out during production.

## Anomalous requirements:

If anomalous requirements are agreed to with a principal, these requirements have to be observed rather than the abovementioned norms.

## Sample size to be carried out by the principal:

| Order size | Sample size | Admissible rejects |
| ---: | :---: | :---: |
| $1-10$ | all | 0 |
| $11-200$ | 10 | 1 |
| $201-300$ | 15 | 1 |
| $301-500$ | 20 | 2 |
| $501-800$ | 30 | 3 |
| $801-1300$ | 40 | 3 |
| $1301-3200$ | 55 | 4 |
| $3201-8000$ | 75 | 6 |

