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**PPF-BF62
PAINT FILM FLEXIBILITY TESTER
OPERATING INSTRUCTION**

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Profile

The film flexibility tester is mainly used to measure the film flexibility of paint and varnish, which is one of the main indicators to measure the performance of paint. It has great reference value for the selection and application of coating varieties. It has great reference value for the selection and application of coating varieties.

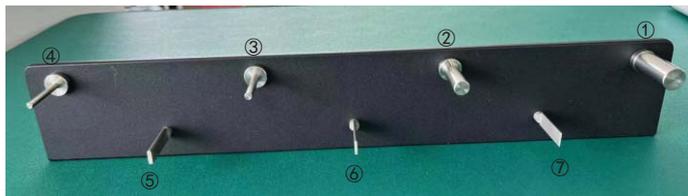
The paint film flexibility tester is a special instrument to evaluate the performance of the coatings of paints, varnishes and related products against cracking or peeling off from the metal plate when they are bent around axis bars with different diameters (expressed in mm) under standard conditions.

working principle

The bending radius is different from the ductility of the film to the substrate. According to the cracking or peeling of the film at different bending radii, the flexibility of the film is judged.

Materials and instruments

1. Tinplate: thickness 0.2 ~ 0.3mm, size 120×25mm
 2. 4 x magnifier
 3. Flexibility tester: As shown in the figure: it is composed of seven steel shaft rods of different diameters, fixed on the seat frame, the seat frame can be screwed on the side of the table of the test bench.
The dimensions of the mandrel is as follows:
Each shaft rod is 35mm in length
- | | |
|-------------|--|
| Shaft rod 1 | Diameter: $\Phi 15(-0.05)\text{mm}$ |
| Shaft rod 2 | Diameter: $\Phi 10(-0.05)\text{mm}$ |
| Shaft rod 3 | Diameter: $\Phi 5(-0.05)\text{mm}$ |
| Shaft rod 4 | Diameter: $\Phi 4(-0.05)\text{mm}$ |
| Shaft rod 5 | Cross section is $10 \times 3 \pm 0.1\text{mm}$, curvature radius is $1.5 \pm 0.1\text{mm}$ |
| Shaft rod 6 | Cross section is $10 \times 2 \pm 0.1\text{mm}$, curvature radius is $1 \pm 0.1\text{mm}$ |
| Shaft rod 7 | Cross section is $10 \times 1 \pm 0.1\text{mm}$, curvature radius is $0.5 \pm 0.1\text{mm}$ |



operating steps

1. Polish the test board with emery cloth or steel sandpaper No. 0, and wipe with rosin water. Or paint according to the product standard of the sample.

If the product standard permits, the iron plate can be cleaned only with rosin water, without grinding

2. Unless otherwise specified, or according to the drying time of the paint film stipulated in the product standard, press the sample tightly on the shaft rod 1 with the diameter of 15 mm, the paint film is facing up, and bend 180° about the shaft rod with the force of two thumbs within 2 ~ 3S

3. If the film is observed with a 4x magnifying glass after bending, and there is no crack and spalling phenomenon, bend and observe on each shaft bar labeled 1, 2, 3, 4, 5, 6 and 7 mm in sequence. In the process of the test, when the film does not crack and peeling, the minimum diameter of the shaft rod is the flexibility of the film.

4. In general, it can be directly bent on the shaft rod specified in the product standard to determine whether it is qualified. The flexibility of the film can be expressed in millimeters of the diameter of the shaft rod.

For example:

The flexibility did not change when finally bending with a 10 mm diameter shaft rod (nor when bending on a 15 mm diameter shaft rod), while damage or film cracking or peeling occurred when bending on a 5 mm diameter shaft rod. Then, 10 mm is the minimum diameter to pass through.

If the flexibility of the sample does not change when bending with a 1 mm diameter shaft rod, it also indicates that no damage to the film is caused by bending on all shaft rods

Test environment condition

To make the results correct, the test was carried out at $23\pm 2^{\circ}\text{C}$ and $50\pm 5\%$ relative humidity.

Precautions

1. The result of the test with other magnification should be indicated.
2. No cracking or peeling occurs when the shaft rod with the smallest diameter is used. In this case, the diameter of the shaft rod should also be indicated
3. If the plate is aluminum, its long edge should be parallel to the calendaring direction.
4. When the instrument is not in use for a long time, all shaft rods should be coated with anhydrous petroleum jelly.