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Paints and Varnishes – Determination of Resistance to Liquids

色漆和清漆 耐液体介质的测定

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Paints and Varnishes –

Determination of Resistance to Liquids

This Standard equivalently adopt the international standard ISO 2812-1974 *Paints and Varnishes – Determination of Resistance to Liquids*.

1 Theme Contents and Scope

This Standard specifies the method for determining the resistance to the action of liquids for paint films (single coating or composite coatings) or painted specimens of paints and varnishes. It can be divided into three test methods including immersion method, absorbent medium method and titration method. It shall be determined by the requirements of the test materials and resistance of the coating when using.

2 Normative References

GB 912 Ordinary Carbon Structural Steel and Low Alloy Structural Steel Sheet – Technical Specification

GB 1727 General Methods for Preparation of Coating Films

GB 1764 Methods of Test for Measurement of Dry Film Thickness of Paints

GB 2520 Electrolytic Tin Steel Plate and Steel Belt

GB 3186 Sampling Paint Products

GB 3880 Aluminum and Aluminum Alloy Sheet

GB 9271 Paints and Varnishes – Standard Panels for Testing

3 Sampling

The sampling shall be carried out according to the provisions of GB 3186.

5 Test Procedures – Method-A (Immersion Method)

5.1 Liquid materials for test

The test liquid specified in the product standard.

5.2 Test temperature

Unless otherwise specified, the test shall be carried out at 23±2°C.

5.3 Precautions for test

5.3.1 It is best to take the method of immersing the individual test piece in the test solution tank; because when using the test solution with high conductivity, there may be electrolytic effects; so the method is more necessary.

5.3.2 It may be convenient to immerse the whole test piece in the test solution tank; but the test piece shall be of the same nature to ensure that the test solution is not affected by the test piece.

5.3.3 The immersed test piece shall be at least 30mm away from the inner wall of the tank. If several test pieces are immersed in the same tank, the distance from each other shall be at least 30mm. The test piece shall be insulated from its support.

5.4 Procedure-A: Using single-phase liquid

5.4.1 Pour a sufficient amount of test solution into a suitable container to completely or partially (2/3) immerse the specified test piece (test bar or test plate). The test piece can be immersed in a nearly vertical position by a suitable holder.

5.4.2 In order to reduce the loss of test solution due to evaporation or splashing, the container shall be covered.

5.4.3 If air sparging is specified to agitate or circulate this liquid, the sparging shall be a slow flow of air to remove grease. If specified so, the test solution or distilled water shall be added at an appropriate time to compensate for the loss of liquid, with the aim of maintaining the original volume or concentration.

5.4.4 When the end of the specified soak period is reached, if an aqueous solution is used, rinse the test piece thoroughly with water. If it is a non-aqueous test solution, rinse it with a solvent known to be non-destructive to the coating, wipe the surface with a suitable absorbent paper or cloth to remove the residual liquid; and immediately check the change in the coating of the test piece, which can be compared with the unsoaked test piece. If a recovery period is specified, this inspection and comparison shall be repeated after the specified recovery period.

5.4.5 If it is necessary to inspect the substrate for corrosion, remove the coating by the specified method.

5.5 Procedure-B: Using two-phase liquid

5.5.1 The painted test piece is placed in a suitable container with a suitable holder so that it is in a nearly vertical position. For the test plate, its broad side is horizontal.

5.5.2 Prepare each test solution immediately before use.

5.5.3 Unless otherwise specified, pour the dense liquid from the side of the container until the test pieces (bars and plates) are immersed to a depth of 60mm. Be careful not to contaminate specimens above this level when operating.

5.5.4 Unless otherwise specified, add a second liquid in the same way until the test piece is completely submerged. Cover the container and let it stand without stirring.

5.5.5 After reaching the specified immersion period, take out the test piece from the test solution; gently wipe the test solution on surface with a suitable absorbent paper or cloth; and immediately check the change of the test piece coating that comes into contact with each liquid phase. If necessary, compare with similarly prepared unsoaked specimens. If a recovery period is specified, the inspection and comparison shall be repeated after the specified recovery period.

5.5.6 During the halfway inspection of the test piece, the sample plate does not need to be taken out; otherwise, it shall be cleaned immediately and the immersing operation shall be repeated (see 5.5.1, 5.5.2 and 5.5.3).

5.5.7 If it is necessary to inspect the substrate for corrosion, remove the coating by the specified method.

6 Test Procedure – Method-B (Using Absorbent Medium)

6.1 Test materials

6.1.1 Moisture-absorbing tray: It shall not be affected by the test solution itself. Generally, laminated cardboard with a thickness of 1.25mm and a diameter of about 25mm can be used.

6.1.2 Test solution according to product standard.

6.1.3 Appropriately sized watch glass.

6.2 Test temperature

Unless otherwise specified, tests shall be carried out at 23±2°C.

6.3 Procedures

Immerse the moisture-absorbing tray in the appropriate amount of test solution; then allow the excessive liquid to drip dry and place the tray on the test plate so that the tray is evenly

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