

Performance Testing of the Finished Shielding Paint Coat

Technical Bulletin

SUMMARY: This bulletin describes the testing of the finished shielding paint coat for electrical conductivity / resistance. This testing is done in order to ensure optimum performance of the high-frequency shielding paints **HSF54 / HSF54-FA**. A similar procedure with slightly different results for resistance applies for **HSF71** (natural binder based).

REQUIREMENTS for testing of paint coat:

- 1) For testing the shielding paint coat needs to be dry. As water evaporates over time, the conductivity of the shielding paint coat improves. Minimum time to allow for drying is 12 to 24 hours, depending on environment temperature and humidity.
- 2) Use ohmmeter in measuring range "fine" (e. g. 0 to 200 Ohms). Distance between measuring probes should be one inch. Perform test in different locations of finished shielding paint coat. Use reliable / calibrated instruments only.

DESIRED RESULTS:

HSF54 / HSF54-FA:

For these shielding paint types, the resistance will be between **3.0 and 5.0 ohms** when using paint roller application. When using immersion baths or showering techniques the resistance can be as low as 2.5 ohms. All numbers given are for **a coverage of 7.5 square meters per liter of paint**.

HSF71:

For this shielding paint type, the resistance will be between **5.5 and 7.0 ohms**, using regular paint roller application. Numbers given are for **a coverage of 7.0 square meters per liter of paint**.

POSSIBLE CAUSES FOR LOW CONDUCTIVITY / INFERIOR SHIELDING of finished paint coat:

1) Wrong preparation of paint:

In case the paint has been sitting on a storage shelf for many months, some particles may settle to the ground of the paint container, and the paint on the surface will be quite thin (like black water) in appearance. **Paint container should always be shaken gently for two minutes before each application of paint, holding the paint container upside down.** This will produce a homogenous mixture of all ingredients and will result in superior shielding performance.

2) Dilution with water or other paints:

YSHIELD high-frequency shielding paints are a very delicate mixture of ingredients, to guarantee good handling qualities and excellent shielding performance. In case the paint is diluted with water or other paints (or any other substances), shielding performance may drop, and it may drop dramatically.

3) Use of wrong equipment for application:

High quality **professional paint rollers with 10 to 15 mm fiber length (pile height) are recommended** for application of the shielding paint. Other modes of application are immersion baths or different shower techniques e. g. to coat plastic parts. Application with lacquer rollers or brushes may result in low shielding performance!

4) Excessive coverage / application of excessively thin paint coat:

The shielding paint coat is performance tested for different coverages (e. g. 5 to 10 square meters per liter of paint, for single layer and double layer application). Max. coverage for high-frequency shielding paints is 10 square meters per liter. If one liter of the shielding paint is used for an area larger than 10 square meters, the paint coat will be excessively thin and conductivity and shielding performance will suffer.

In case you have any further inquiries on this subject please e-mail to contact@yshield.com.