



YSHIELD EMR-Protection, Am Schulplatz 2,
94099 Ruhstorf, GERMANY. Phone: 0049-(0)8531-
31713-8, Fax: 0049-(0)8531-31713-5, Email:
info@yshield.com, Internet: www.yshield.com

Shielding Paint HSF54

Product features

Intended use

Electro-conductive coating for the protection against **high-frequency (HF)** radiation and **low-frequency (LF)** electric fields. **Interior and exterior application.**

Areas of application

- **Living areas:** protection against HF-radiation from cell phone towers, TV and radio broadcasting antennas, radar, digital standard cordless telephones and wireless networks. Protection against low-frequency electric fields from power supply lines.
- **Industry:** to prevent interception of data from wireless networks („data-stealing“) and to prevent interception of potentially bugged conference rooms.
- **Medicine:** protection of sensitive technical equipment; to guarantee that important medical data is derived correctly and will not be altered by electromagnetic interference (EMI).
- **Further applications:** schools, nurseries, hotel rooms, hospital rooms, etc.

Perfect corrosion resistance

Without metal particles and therefore extremely **durable and not oxidizing.**

Attenuation / Shielding effectiveness

Tested and certified by the Microwave Laboratory of the **University of the German Federal Armed Forces** in Munich, Germany according **MIL-STD 285** and **IEEE-Standard 299-1997**. An expert report is available upon request.

Technical data

- Attenuation: **single-layer 36 dB** (shielding effectiveness 99.975 %) at 7.5 m²/l; **double-layer 43 dB** (shielding effectiveness 99.995 %) at 3.75 m²/l.
- Typical single-layer coverage: indoor ~ 7.5 m²/l; outdoor ~ 5 m²/l.
- Adhesive tensile strength for pure organic final coatings: < 0.25 N/mm². ETAG 004 for thermal insulation composite systems stipulates < 0.08 N/mm². Therefore usable directly under final renderings.
- Surface: viscoplastic, not suitable as final coat.
- Water vapor permeability: ~ 0.1 m = **highly breathable**
- VOC-content: 0.2 g/l = **very low-emission.**
- Density: 1.2 kg/l.
- Viscosity: 500 mPas (Brookfield), low viscosity.
- Non-volatile content (solids): 52 %.
- pH-value: 7.5 – 8.5.
- Packaging units: 1 / 5 / 20 Liter.
- Frost resistance in delivery form: 3 frost/thaw cycles.
- Storage suitability: 1 year (see paint container).
- Color: black.

Safe material handling

Safety measures

Please follow the usual safety measures carefully! This paint has a high coloring power, so please proceed with care. Wipe off stains immediately with damp cloth. Do not let stains dry up. In case paint gets on skin or in eyes, rinse with lots of cold water immediately.

VOC-content

This product contains 0.2 g/l VOC. The EU limit value for this product (category A/a) is 75 g/l (2007) and 30 g/l (2010).

Ingredients

Water, pure acrylic binder, graphite, carbon black, additives, preservative (chlorine-free isothiazolinon-mixture MIT/BIT). Allergic persons please call 0049-(0)8531-31713-8.

Grounding

Grounding regulation

- **In compliance with DIN / VDE instructions all shielded areas have to be grounded by a licensed electrician!** All the following procedures apply: Precaution against dangerous currents to prevent electrical accidents according to DIN 57100 / VDE 0100 part 410 and part 450. Grounding procedures according to DIN 57100 / VDE 0100 part 410 and part 450. Visual inspection and verification testing according to DIN 57100 / VDE 0100 part 610, paragraph 4 and 5, and EMC (electromagnetic compatibility) according to VDE 0100.

Required grounding accessories

- **For grounding we only recommend our special grounding accessories, which are not included in the delivery. Interior:** Ground-connection-set ES in combination with Ground-strap EB. **Exterior:** Ground-connection-set ES-A.
- Take notice of our extra grounding instruction!

Protection

- **In all shielded areas / shielded rooms a personal protection circuit-breaker must be installed!**
- Always switch off power supply before starting to perform shielding work / before application of shielding paint.

Handling

Area of application

Typical use for interior and exterior walls and for ceilings. Floor space: Bulk laid floor coverings (carpets, laminat, etc.) can be laid directly onto the shielding paint. In case of glued floor coverings (carpets, cork, laminate, etc.) the shielding paint has to be aftertreated with a solvent free priming coat to improve the adhesion. We advise against bonding e.g. real-wood parquets, the adhesive tensile strength of this shielding paint is probably insufficient.

Interior surface coating system

- Drill holes for the ES grounding plate.
- Ground-strap EB has to be applied uninterrupted, starting at ES, in one piece through all shielded surfaces.
- Apply the shielding paint in one or two layers, depending on the favored shielding effectiveness. Apply second coat of shielding paint to the area where the ground connection plate will be mounted.
- Allow the paint 24 hours to dry.
- Fix the ES steel-plate.
- More procedures see „Final coat“.

Exterior surface coating system

- Level out the mounting surface for ES-A grounding plate.
- Drill holes for the ES-A grounding plate.
- Apply the shielding paint in one or two layers, depending on the favored shielding effectiveness. Apply second coat of shielding paint to the area where the ground connection plate will be mounted.
- Allow the paint 24 hours to dry.
- Fix the ES-A ground connection set.
- More procedures see „Final coat“.

Application temperature

Minimum application temperature: +5°C / 41°F.

Attention

- Stay at least 2 cm away from power outlets and light switches with the shielding paint.
- Color stains should be removed immediately.

Underground / Preparation

- Underground needs to be solid, clean, degreased and dry.
- **Absorbent or porous surfaces must be prepared with a prime coat.**
- Old coats of paint or old wallpapers which can be etched by water, should be removed
- Smooth surfaces should be abraded.

Preparation

The conductive particles deposit on the bottom of the paint container after a while on storage. **Therefore shake the paint container well in all directions before opening. For the 5-liter-bins: After opening stir well, best with an electric paint stirrer!**

Compatibility

This paint is ready for use. **Never mix with water or other coating materials!**

Application

- **Use a first-class paint roller with fibers 10-13 mm long (pile height).**
- **Lacquer-rollers, foam-rollers or brushes are not recommended!**
- **To achieve a constant attenuation of EMR, it is essential to apply this paint with equal thickness; do not skip areas!** Always soak the paint roller with the equal amount of paint and try to coat equal surfaces!
- This paint contains 6 mm long carbon fibers for ground-connection-armoring, spraying with airless equipment is nevertheless possible with bigger nozzles.
- Depending on environment temperature and humidity, this paint needs **24 hours** to dry.

Final coat

- The soft surface of this paint has to be protected against mechanical damage and humidity. **Interior:** cover with two layers of water based emulsion paint (also known as latex or vinyl paint), with good hiding power. Alternatively with wallpapers, glass fabrics, synthetic resin plasters etc. **Exterior:** cover with two layers of hydrophobic water based emulsion facade paint. Alternatively with synthetic resin facade plasters.
- **Do not use mineral bonded systems like silicate paints, clay paints, lime cement paints, plasters, spackles, etc.** These products may cause adhesion problems! If you intend to use any of those products as a top coat - on your own risk - always test for proper adhesion before application!

Consumption

The consumption depends on the character and absorbency of the underground. Typical interior productiveness: 7.5 m²/l. Typical exterior productiveness: 5 m²/l. Rule: the higher the consumption, the better the shielding effectiveness.

Storage

- **Store cool and frost free.**
- Keep away from children.
- Once the paint container has been opened, close tightly after usage and store cool.
- Shelf live: 12 months after date of production (see label on paint container).

Disposal

- Empty containers can be recycled. Dried up leftovers of paint can be disposed of in household waste.
- Take liquid leftovers to waste collection centers
- **Do not dispose of in sink, water or ground.**

Further information

- For professional users an MSDS is available upon request.
- **Like all electrical products and installations EMR-shielding products can and do pose a risk to consumer safety if improperly handled. YSHIELD therefore disclaims all responsibility for damages to persons and materials due to improper handling, application, installation or grounding of YSHIELD products.**