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Technical data sheet HSF54

Product features

Intended use

Electro-conductive coating on basis of a pure-acrylic binder for the protection against high-frequency electromagnetic fields and low-frequency electric fields. Interior and exterior application on walls, ceilings and floors.

Areas of application

In **private areas** for the protection against cell phone towers, TV and radio broadcasting antennas, radar, digital standard cordless telephones, wireless networks or power supply lines. In **commerce, science, research and defence facilities** to prevent interception of data from wireless networks (data-stealing), to protect potentially bugged conference rooms or to shield technical equipment. At **military facilities** or **airports** to protect against radar. In the **medicine** to prevent wrong measurements in patients (ECG/EEG). In the **industry**, e.g. at car- or computer producers in development departments. In **prisons** to hamper unauthorized cellular calls. **Further applications:** Data centers, technical rooms, schools, nurseries, hotel rooms, hospital rooms, recording studios, etc.

Corrosion resistance

Without metal particles and therefore long-term **durable and not oxidizing**.

Attenuation

Attenuation depending on application in one layer **30-40 dB** (shielding effectiveness of 99.9 - 99.99 %) or in two layers **35-45 dB** (shielding effectiveness of 99.97 - 99.997 %). The shielding attenuation is **regularly tested in our own laboratory** or by **Professor Dipl.Ing. Pauli** at the University of the German Federal Armed Forces in Munich due to the standards ASTM D4935-10 and/or IEEE-STD-299-2006. The expert reports are available upon request.

Technical data

- Attenuation depending on application: Single-layer 30-40 dB, double-layer 35-45 dB.
- Coverage: Indoor 7.5 m²/l; outdoor 5 m²/l.
- Adhesive tensile strength: 1.9 N/mm².
- Surface: Viscoplastic, not suitable as final coat.
- Sd-value: ~ 0.1 m = highly breathable.
- VOC-content: < 0.5 g/l = very low-emission.
- Density: 1.25 kg/l.
- Viscosity: 500 mPas.
- Non-volatile content (solids): 52 %.
- pH-value: 7 - 8.
- Packaging units: 1 / 5 liter.
- Frost resistance in delivery form: 3 frost/thaw cycles.
- Shelf life: 1 year (see paint container).
- Color: Black.

Safe material handling

Safety notes

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. Do not inhale spray mist! Use and let dry only in well ventilated areas! Do not eat, drink or smoke during painting! Rinse thoroughly immediately after skin or eye contact!

VOC-content

This product (Cat. A/a) contains < 0.5 g/l VOC. The EU limit value is 30 g/l (by 2010).

Ingredients

Water, pure-acrylic binder, graphite, carbon black, additives, preservative. Paint contains MIT (2-Methyl-4-isothiazolin-3-on) and BIT (1,2-Benzisothiazolin-3-on) as preservation substances. Information for allergic persons under telephone number 0049-8531-31713-8.

Grounding

Grounding regulation

Only skilled electricians listed in the register of your electricity supplier are permitted to execute grounding measures! Pay attention to the following points: Protective measures against electric shock to DIN 57100/VDE 0100 part 410 + part 540, grounding to DIN/VDE 0100 part 410 + part 540, visual inspection and process testing to DIN/VDE 0100 part 610 part 4+5 and EMC to VDE 0100. **Grounding measures are only permitted in TNS or TT networks! Grounding measures may never be executed in network forms with combined PEN wiring! A leakage/fault circuit breaker (FI/RCD) with less than 30 mA must be installed.** Find more information on this in our grounding instructions sheet.

Grounding accessories

For grounding we only recommend our special grounding accessories. Interior: Grounding set ESW in combination with grounding strap EB2. Exterior: Grounding set ESA.

Handling

Area of application

Typical application 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. Pay attention, that the shielding paint is not damaged! 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 the shielding paint is probably insufficient.

Interior approach

• Drill holes for ESW grounding plate. • Ground-strap EB2 has to be applied uninterrupted in one piece through all painted surfaces, as stated in our grounding instructions sheet. • 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 grounding plate ESW will be mounted. • Allow the paint 24 hours to dry. • Fix the ESW grounding plate. • More procedures see „Final coat“.

Exterior approach

• Level out the mounting surface for grounding plate ESA. • Drill holes for the grounding plate ESA. • 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 grounding plate ESA will be mounted. • Allow the paint 24 hours to dry. • Fix the ESA grounding plate and glue the top cover. • More procedures see „Final coat“.

Application temperature

Minimum application temperature: +5°C / 41°F. This temperature applies also for the drying time!

Underground

Excellent adhesion on various undergrounds like existing emulsion paints, sheetrock, wall-paper, cement, plaster, masonry, wood, etc. Always consider: The underground needs to be solid, clean, degreased and dry. Absorbent or porous surfaces must be prepared with a primer. Old coats of paint or old wallpapers which can be etched by water, should be removed.

Preparation

The conductive particles deposit on the bottom of the paint container after a prolonged storage. There-fore shake the paint container well or mix it thoroughly with an electrical paint stirrer.

Compatibility

The shielding paint is ready for use. Never mix with water or other coating materials!

Application

• Use a first-class paint roller with a pile height of 10-13 mm. • Limited usable are lacquer-rollers, foam-rollers or brushes, the coating layer often gets too thin for a good attenuation! • To achieve a constant high attenuation, it is essential to apply the shielding 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! • The pigmentation size is under 200 µm, spraying with airless equipment is possible with bigger nozzles. • Allow to dry for 24 hours.

Final coat

To protect the soft/viscoplastic surface of this shielding paint against mechanical damage and humidity, we recommend two top coats. • **Interior:** With high-quality, good covering, plastic bonded dispersion emulsion paints or dispersion silicate paints (e.g. KEIM Biosil, Ecosil, Optil). Natural resin paints are usable with some limitations. Alternatively paste over with wallpapers, glass fabrics, etc. • **Exterior:** With high-quality, good covering, highly hydrophobic dispersion emulsion paints or silicon resin paints. • **Under plaster:** Due to an adhesive tensile strength of 1.9 N/mm² in conformity with ETAG 004 for EIFS-systems (stipulates minimal 0.08 N/mm²), this shielding paint is also usable directly under pure plastic bonded plaster. Never use mineral plasters, no adhesion! • **Never use:** Pure mineral bonded coatings with clay, loam, chalk or silicate adhere very bad on this shielding paint, they should never be used!

Consumption

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

Further information

Storage

Store cool and frost free. Keep safe from children. Once the paint container has been opened, close tightly after usage and store cool. Shelf live: See the batch sticker on the paint container.

Disposal

Utensils should be cleaned immediately after use with water and soap. Containers must be absolutely empty for recycling. Dried up paint remainders may be disposed of with the household garbage. Do not let escape into sewerage, water bodies or ground.

Safety data sheet

The safety data sheet is available under telephone number 0049-8531-31713-8.