



EMR Shielding Solutions Inc.
10 Westcreek Drive, Unit 17
Woodbridge Ontario L4L 9R5
Canada

Tel: 416-583-2005
USA Tel : 310-746-3686
info@emrshieldingsolutions.com
www.emrss.com

Technical data sheet - Shielding paint

Product features

Intended use

Electro-conductive base coatings to shield high-frequency electromagnetic fields and/ or low-frequency electric fields. Low-frequency magnetic fields are not shielded.

Area of application

Walls and ceilings: Unrestricted possible. You find the suitability for interior or exterior application in the table above.

Floor areas: • Bulk laid floor coverings (carpets, laminate, etc.) can be laid directly onto the shielding paints. Pay attention, that the shielding paints are not damaged! • In case of glued floor coverings (carpets, cork, laminate, etc.) the shielding paints have 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 most shielding paints are probably insufficient. An exception is the shielding paint PRO54, the high adhesive strength is sufficient even for polyurethane or epoxy resin glues.

Under plaster: Due to high adhesive tensile strengths applicable directly under pure organic bonded plaster.

Corrosion resistance

All shielding paints does not contain metal particles. Based on carbon they are long-term durable and not oxidizing.

Shielding attenuation

The shielding attenuation is regularly tested in our own EMC laboratory. We have measurement setups due to the following standards: ASTM D4935-10, IEEE Std 299-2006, IEEE Std 1128-1998, ASTM A698/A698M-07. You find the test reports on our website on the corresponding product pages.

Safe material handling

Safety notes

All paints have 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! Absolutely make sure, that all areas are well ventilated during use and drying time. Do not eat, drink or smoke during painting! Rinse thoroughly immediately after skin or eye contact!

VOC-content

RF-IE50: 0.18 g/l VOC.
RF-IE50 PLUS: 0.19 g/l VOC.
The EU limit value for cat. A/a is 30g/l (by 2010).

Ingredients

RF-IE50/ RF-IE50 PLUS: Pure acrylics dispersion, graphite, water, carbon black, additives, preservative (BIT, INN, MIT).

Preservative: If stated above, the shielding paint contains MIT (2-Methyl-4-isothiazolin-3-on) and BIT (1,2-Benzisothiazolin-3-on) as preservation substances.

Grounding

Grounding regulation

Large area shieldings executed with shielding materials are no electrical equipment but „new conductive parts“ according to IEC 826-03-03 or IEC 195-06-11 and thereby a new method of DIN VDE 0100-100:2009-06. By connecting the material(s) to the potential equalization they are an inherent part of the electrical system. Generally accepted rules of technology have to be respected.

According to the latest state of technology it is important to distinguish between protective equipotential bonding and functional equipotential bonding (FEB). The protective equipotential bonding (green/yellow cable) is a protective measure and ensures, in the event of contact voltage, the immediate action of safety devices (e.g. line safety switch). The function of the functional equipotential bonding (transparent cable) is the reduction of emission of low frequency electrical fields on large area shieldings (i.e. prevention of leaking electrical field).

Please find more information in our "Technical data sheet - Grounding".

Grounding accessories

To obtain an accurate grounding, we exclusively recommend our grounding accessories. For interior use: Grounding plate GW or GB in combination with grounding strap EB2. For exterior use:

Grounding plate GE. Please find more information in our "Technical data sheet - Grounding".

Handling

Interior approach

• Prepare the underground with a primer. • Drill holes for the grounding plate. • The ground-strap has to be applied uninterrupted in one piece through all to be painted surfaces, as stated in our grounding instructions sheet. • Apply the shielding paint in one or two layers, depending on the favored shielding attenuation. Apply second coat of shielding paint to the area where the grounding plate will be mounted. • Allow the paint 24 hours to dry. • Fix the grounding plate. • For further procedure references please follow up at subitem „Final coat“.

Exterior approach

• Prepare the underground with a primer. • Level out the mounting surface for the grounding plate. • Drill holes for the grounding plate. • Apply the shielding paint in one or two layers, depending on the favored shielding attenuation. Apply second coat of shielding paint to the area where the grounding plate will be mounted. • Allow the paint 24 hours to dry. • Fix the grounding plate and glue the top cover. • For further procedure references please follow up at subitem „Final coat“.

Application temperature

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

Underground

Excellent adhesion on almost all under-grounds like emulsion paints, dry construction boards, wallpaper, cement, plaster, masonry, wood, many plastics, etc.

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.

Priming coat

Absorbent or porous surfaces necessarily must be prepared with a primer. In case of not using a primer, the binding agent will infiltrate together with the water in the substrate. In addition, this will lead to an aggravation of the physical characteristics of the shielding paints. **Optical control:** Paint a small test area and let dry. When the surface is silver shimmering, the underground is too much absorbent. When the surface is pure black, the underground is adequate primed.

Preparation

The conductive particles deposit on the bottom of the paint container. **Shake the paint container well and mix it thoroughly after opening with an electrical paint stirrer for at least one minute.** For our 1-liter bins please use our stirrer RM4.

Compatibility

All shielding paints are 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. To achieve a constant high attenuation, it is essential to apply the shielding paint with equal thickness and to ensure a full faced converting; do not skip areas! Always soak the paint roller with the equal amount of paint and try to coat equal surfaces! • Limited usable are lacquer-rollers, foam-rollers or brushes, as the coating often gets applied too thin for a good attenuation! • Airless spraying is possible with nozzles bigger than 525 (0.25 inch / 0.64 mm), smaller nozzles get choked sometimes. • Application methods in technical coatings: Knife coating, dip-coating, roll application, etc.

Drying time

• Allow to dry for 12-24 hours before overcoating. • Protect from rain at least for 12 hours. • The coating is entirely cured after 7 days.

Final coat

To protect the soft, viscoplastic surfaces of the shielding paints against mechanical damage and humidity, we recommend to apply 2 top coats.

Worldwide variably paints are available. Therefore a guarantee for specific properties or the suitability of the product for a specific application purpose cannot be derived from the data given. We always recommend to apply a paint coat on a test area before processing.

Interior: With high-quality, good covering, plastic bonded dispersion emulsion paints or dispersion silicate paints. Alternatively paste over with wallpapers, glass fabrics, etc.

Exterior: With high-quality, good covering, highly hydrophobic dispersion emulsion paints or silicon resin paints.

Mineral paints: Pure mineral bonded coatings with clay, loam, chalk or silicate often adhere bad on the graphite surface of the shielding paints, and therefore must never be used!

Ecological paints: It is difficult to give a common recommendation. • Problematic: Slaked lime paints, natural resin dispersions, casein glue paints, clay paints or pure silicate paints. • Well suited: Dispersion silicate paints.

Under plaster:

Due to the high adhesive tensile strenghts of the shielding paints, these are applicable (in conformity with ETAG 004 for EIFS-systems, minimum 0.08 N/mm²) after prior priming under plastic bonded plaster. Never use mineral plasters, no adhesion!

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**.

Tip: Referring to customer feedbacks we know, that our shielding paints are often applied far too thin. For a good levelling, our paints are of low viscosity and that's why our customers tend to a thin coating. The problem is, that a **spreading rate of more than 7.5 m²/l leads to a decrease in attenuation!** We request to apply the shielding paints quite thick, even if this seems to be prodigal to you.

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.

Period of storage

At least 12 months, 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.

Identification marks

Produktcode: M-DF01 (GISCODE)
Water hazard class: 1 (VvVwS)
Waste code: 08 01 12 (AVV)
Hazardous ingredients: –
ADR: –
UN-number: –
Transport hazard class: –
Environmental dangers: –

Safety data sheet

The safety data sheet is available upon request.

Disclaimer

Aforesaid informations have been asserted to the state of processing and application technology. As we don't have any influence on processing and application, no liability can be accepted out of the contents of this information sheet. Processors are in either case bounded to a skilled evaluation of the processing, in consideration of the product attributes and fitness. Details and notwithstanding details, transcending the content of this information sheet, require our confirmation in writing.

Our general terms and conditions are valid as mentioned. With this newest edition of our technical data sheet all previous versions loose their validity.

Country of origin

Germany