ITAL SHIELD S.R.L.S.
☎ +39 (328) 2147399 | +39(340) 9995323
www.italshield.com | Email: info@italshield.com

ITAL SHIELD
PROTEZIONE ELETTROMAGNETICA

SHIELDING POWDER

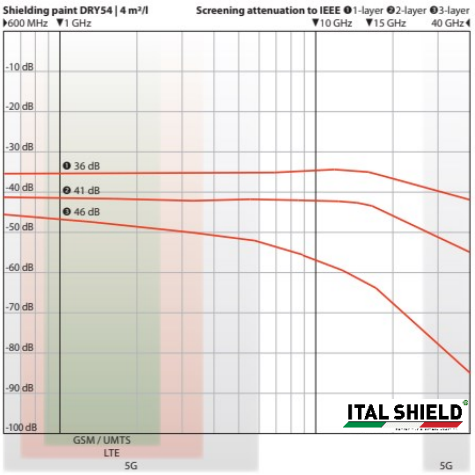
SHIELDING PAINT DELIVERED IN POWDER FORM
VERY LONG DURABILITY – TO BE MIXED WITH WATER
Attenuation up to 84 dB at 40 GHz.

- **Shielding Paint Properties**: This paint is designed for attenuating high-frequency radiation (HF) and low-frequency electric fields (LF). It possesses breathable qualities and is formulated without plasticizers, emissions, or preservation agents.
- **Specialized Paint Formulation**: This product is a unique paint designed for extended shelf life. It is supplied in a powdered form, devoid of any preservatives. It offers shielding capabilities of up to 84 dB at a frequency of 40 GHz. While its shielding attenuation, adhesive tensile strength, abrasion resistance, and film hardness might not compare favorably with some other paints, it excels in reduced packaging waste, lower international shipping costs, and an exceptional cost-to-performance ratio. Its coarse pigmentation and low viscosity make it user-friendly, allowing for an even film upon application.
- **Mixing Properties**: Upon mixing, the powdered shielding paint maintains a consistency almost akin to water, ensuring minimal dust generation. This is attributed to the rapid integration of the powder with water. After a 15-minute settling period, the paint thickens, making it ideal for application, ensuring uniform shielding upon drying.
- **Cost Efficiency**: One of the standout features of DRY54 is its cost-effectiveness. It is priced at approximately half the cost of our liquid-based paints, enabling users to cover double the area at the same expense.
- **Packaging and Preservation**: To ensure longevity and protect against moisture, the powder is sealed in a bag and then subjected to triple vacuum-packing using three separate bags. This meticulous packaging process guarantees that the product remains moisture-free, even after prolonged storage.
- **Preparation Guidelines**: For optimal mixing of the powder with water, the following tools and precautions are recommended: digital scales for precise measurement, a protective face mask and safety goggles for personal safety, a good paint stirrer for effective mixing, a mixing bucket, an electric drill (or a powerful electric screwdriver), and an allocation of 15-30 minutes for the entire process.
- **Extended Shelf Life**: Powder paints inherently have a prolonged shelf life due to the absence of water content.
- **Preservative-Free Formulation**: The nature of powder paints eliminates the need for preservatives, reducing potential chemical additives.
- **Frost Resistance**: The absence of water in the formulation minimizes the risk of damage from freezing conditions.
- **Eco-Friendly Packaging**: Powder paints result in a significant reduction in plastic waste, ranging from 50-80% compared to liquid paints.
- **Cost-Efficient Shipping**: The compact nature of powder paints can lead to delivery cost savings of up to 60%.
- **Enhanced Transit Safety**: In the event of packaging breaches during transportation, powder paints pose a lesser risk of spillage or contamination.
- **Flexibility in Usage**: Users have the convenience of extracting smaller quantities from the packaging for minor repair tasks without compromising the remainder of the product.

ITAL SHIELD S.R.L.S.
☎ +39 (328) 2147399 | +39(340) 9995323
www.italshield.com | Email: info@italshield.com

ITAL SHIELD
PROTEZIONE ELETTROMAGNETICA

SCREENING ATTENUATION:



- **At a yield of 4 sqm/liter:**

  At 1 GHz: Single layer 36 dB | Double layer 41 dB | Three layer 46 dB

- **At a yield of 8 sqm/liter:**

  At 1 GHz: Single layer 30 dB | Double layer 36 dB | Three layer 40 dB

- **Grounding:** The shielded walls must be grounded! We recommend our grounding tape and grounding plates, which have been studied for the perfect adhesion with this product. **With an electrically conductive surface, our product has to be integrated into the functional-equipotential bonding (FEB). Please find suitable grounding accessories under "Grounding".**
- **Frost resistance**: this product is delivered as a powder and thus frost resistant.
- **Ingredients**: Untreated natural graphite, carbon black, pure acrylics powder, additives, no preservative agent.
- **Technical data**: Please find all technical data and the application details in our technical data sheet.

NO NANOTECHNOLOGY

- **Ecological Compliance**: Our shielding paints are formulated adhering to stringent ecological standards.
- **Low-Emission Carbon Black**: In our formulations, we utilize the carbon black variant with the minimum possible emissions currently available in the market.
- **Natural Graphite Utilization**: We incorporate untreated natural graphite, ensuring the purity and safety of our product.
- **Exclusion of Graphene**: We have chosen not to include graphene — a nanomaterial whose potential hazards remain undetermined.
- **High-Frequency Shielding (HF):** This product is specifically engineered to attenuate high-frequency electromagnetic fields (HF). The referenced decibel (dB) values pertain to a frequency of 1 GHz unless specified otherwise. Shielding measurements are taken within the range of 600 MHz to 40 GHz, in compliance with the standards set by ASTM D4935-10 or IEEE Std 299-2006.
- **Low-Frequency Shielding (LF):** With its electrically conductive surface, this product is designed to shield against low-frequency alternating electric fields (LF).

Ready for 5G
These products are designed to shield against all 5G frequencies. In the shielding diagrams, you will find two gray bars representing the 5G frequency spectrums: FR1 (600 MHz – 6 GHz) and FR2 (24 GHz – 40 GHz).

LET'S LOVE OURSELVES,
BE PROTECTED

For more information: info@italshield.com – tel.+39/328/2147399 (+W.app-Telegram)

ITAL SHIELD S.R.L.S.
☎ +39 (328) 2147399 | +39(340) 9995323
www.italshield.com | Email: info@italshield.com

ITAL SHIELD
PROTEZIONE ELETTROMAGNETICA

TECHNICAL SHEET:

Form of product	Powder
Type of product	Shielding Paint
Ingredients	Natural graphite, carbon black, pure acrylics powder, additives, no preservation agent.
Application	Both Interior and Exterior
Coverage per Layer	4-8 sqm per liter
Substrates	Almost all
Shielded Frequencies	HF+LF
Attenuation	1 layer: from 36 to 42 dB 2 layer: from 41 to 54 dB 3 layer: from 46 to 84 dB
Ecologic sustainability	Very high
Binding agent	Pure acrylate
VOC content	0.12 grams/liter
Preservatives	No preservatives
Color	Black
Adhesive strength	4,1 N/mm²
Viscosity Brookfield	1000 mPas
SD Value	0,1 m
PH Value	8
Density	1,10 Kg/liter
Frost resistance	Permanent
Shelf life	60 months
Characteristics	Excellent adhesion on all absorbent undergrounds such as emulsion paints, dry construction boards, wallpaper, cement, plaster, wood, etc.

WARNINGS:

All coatings have a high coloring capability, so please proceed with care. Wipe off stains immediately with damp cloth - do not let them dry up. Do not inhale spray mist or all powders! Make sure to air properly during processing and drying time! Do not eat, drink, or smoke during painting! Rinse thoroughly immediately after skin or eye contact

Extensive shielding with shielding materials are external conductive parts", that have to be grounded with the connection to the equipotential bonding FEB

We solely recommend to use our own grounding accessories for grounding. Further information on this can be found in our "Technical data sheet Grounding

Wear a respirator (breathing mask) and safety glasses! Work with two persons. One person mixes while the other person adds the powder. Only add enough powder so that the paint on the surface stays in motion. Work slowly to avoid too much dust.

PREPARATION AND APPLICATION:

- **The substrate** needs to be clean, degreased and dry. Absorbent or porous surfaces must be pretreated with a primer. Old coats of paint or wallpapers (which can be etched with water) must be removed.
- **Substrate Preparation**: Begin by treating the substrate with our primer, especially for absorbent or porous surfaces. Without the primer, the binding agent, along with water, will penetrate the substrate, potentially compromising its physical properties of the shielded wall.
- **Grounding Plate Preparation**: Drill the necessary holes to accommodate the grounding plate.
- **Grounding Tape Application**: It's crucial to apply the grounding tape seamlessly and continuously across all surfaces designated for painting, as delineated in our grounding instructions documentation.
- **Shielding Paint Application**: Depending on the targeted shielding attenuation level, administer the shielding paint in one, two, or three distinct layers.
- **Finalizing Grounding Plate**: Once the paint has adequately dried, firmly secure the grounding plate in its pre-defined position.
- **Minimum air and substrate temperature** for processing: 5°C / 41°F. This temperature also counts for the drying time!

INSTRUCTIONS:

- **The powder must be mixed with water.** The amount of water must be measured exactly to the gram with a digital scale! The used bucket needs to be at least twice as big as the paint volume to be mixed. Use a mixer (stirrer) large enough to move all the paint in the bucket.
- **Personal Protective Equipment:** It's essential to wear a respirator and safety glasses to ensure personal safety during the mixing process.
- **Engage in a two-person operation**. While one individual is responsible for the mixing process, the second individual should gradually introduce

Powder package	**5 liter Package**
Needed bucket	> 10 liter bucket
Water quantity:	3.5 liter water

the powder.

- **Add the powder judiciously** to maintain a consistency that keeps the paint fluid and in motion on the surface.
- **Mix the water and powder** at a controlled pace, to minimize dust generation.
- As soon as all the powder is in the water, **stir for several minutes at maximum speed**. By doing so, the paint becomes nearly liquid like water.
- **Let it rest** with a closed lid for 15-30 minutes for thickening.
- **Stir again as long as necessary** until the thickened paint gets more liquid again and looks homogeneous.
- **The paint is now ready to be used**. Mixed paint needs to be used up within 2-7 days, depending on the water quality!

APPLICATION:

- **Preferred Tool**: For optimal results, utilize a premium-grade paint roller with a pile height ranging from 10-13 mm. Consistent shielding attenuation is contingent upon uniform paint application. Ensure thorough and even coverage, avoiding missed sections. Consistently load the paint roller with a uniform quantity of paint and aim to cover equivalent surface areas with each application.
- **Spraying Technique**: The paint can be applied using airless spraying methods. Compatible nozzle sizes for this purpose range from 0.2 mm to 0.5 mm.
- **Allow to dry for 24-48 hours before repainting**. Protect from rain for at least 48 hours.

- **One layer** of paint is recommended if you want to save costs.
- **Two layers** of paint are the happy medium and make sense as you can level out thinner painted areas of the first layer, you achieve a high redundancy.
- **Three layers** of paint only make sense if you need to achieve the maximum dB value (see chart)
- **Variable Consumption**: The rate of paint consumption is contingent on the substrate's quality and absorbency.
- **Thicker Coat**: A more substantial coat typically provides coverage of 4 m^2/l, and the indicated shielding attenuation is associated with this yield.
- **Thinner Coat**: A more sparing application results in a yield of 8 m^2/l, with a consequent reduction in shielding attenuation by approximately 5-10 dB.

FINISHING:

- **Surface Protection**: For enhanced protection against mechanical wear and moisture, it's recommended to apply two final coats to the viscoelastic and black surfaces.
- **Paint Compatibility**: Given the diverse range of paints accessible globally, it's not feasible to guarantee compatibility for all combinations. **Notably**, many purely mineral-based and eco-friendly paints may exhibit poor adhesion to the graphite-rich surface of our shielding paints.
- **Preliminary Testing**: Prior to full-scale application, it's prudent to conduct a test application on a sample area to assess compatibility and adhesion.
- **For Interiors:** With high-quality, well covering, plastic bonded dispersion emulsion paints or dispersion silicate paints. Alternatively paste over with wallpapers, glass fabrics, etc
- **For Exteriors**: With high-quality, well covering, highly water- repellent dispersion emulsion paints or silicon resin paints.
- **Under plaster or tiles**: Due to the high adhesive tensile strength (> 1 N/mm^2) applicable after prior priming under plastic bonded plaster. Never use purely mineral plasters, they do not adhere!

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

Water hazard class:	1 (VwVwS)
Waste code:	08 01 12 (AVV)
Hazardous ingredients:	-
ADR:	-
UN-number:	-
Transport hazard class:	-
Environmental dangers:	-

DISCLAIMER AND GUIDELINES ON PROCESSING AND APPLICATION:

Current Information: The details provided herein represent the most recent advancements in processing and application methodologies.
Liability Limitation: As we have no control over individual processing and application practices, we cannot accept liability based on the contents of this informational document.
Confirmation for Deviations: Any information that extends beyond or differs from the content of this document requires our explicit written approval.
Terms and Conditions: Our standard terms and conditions remain applicable.
Previous Versions: With the issuance of this latest technical data sheet, all prior editions are rendered obsolete.