Please note!

emfturtal

EMF SHIELDING PAINT / POWDER PLV / 2.5 LITRES / 0.66 US GALLONS / FOR INDOOR USE

Important processing and safety instructions

EMF-TURTAL shielding paint (powder) is an electrically conductive primer coating, especially for large-area shielding of electromagnetic fields. Always use the contents of a complete 2.5 l bag (PLV 2.50 litres / 0.66 US gallons / 1 bag) as individual components may separate during transport to achieve optimum shielding performance. The shielding paint EMF-TURTAL / PLV 2.5 litres / reliably shields low-frequency as well as high-frequency radiation. Both alternating electric fields (e.g. alternating voltages in appliances, cables and installations) and electromagnetic waves are shielded or diverted. (e.g. radio transmitters, 4G (LTE), 5G, GSM, directional radio, WLAN, mobile and cordless phones).

Application: EMF-TURTAL shielding paint PLV 2.5 (powder) – conductive primer coating for interior use
Suitable for use on primed, non-absorbent substrates such as gypsum, concrete, stone, plasterboard, gypsum fibreboard as well as on woodchip wallpaper, paper wallpaper, coloured fleece and emulsion paints. Unsuitable substrates are e.g. glue and lime paints, oil paints, plastic, metal, painted wood, glass or substrates with wallpaper adhesive residues.

Substrate: Excellent adhesion to almost all substrates such as old paint, plasterboard, wallpaper, plaster, concrete, polystyrene, wood (untreated, unpainted, not waxed or oiled).

Paintable: Suitable for use on primed, non-absorbent substrates such as gypsum, concrete, stone, plasterboard, gypsum fibreboard as well as on woodchip wallpaper, paper wallpaper, coloured fleece and emulsion paints. Do not use wallpaper OVER the shielding paint, as the wallpaper paste could dilute it and reduce its protective effect and the adhesion of wallpaper to shielding paint is not recommended or guaranteed by us. In any case, avoid all clay-based paints. We advise against purely mineral paints (clay, pure silicate). We also advise against natural or organic silicate paints, lime and casein paints – always carry out a test before use, as not all paints adhere in the same way to graphite and graphene!

Suitable tools: We recommend qualitative paint rollers (acrylic paint roller) with a diameter of approx. Ø 1.8 - 2.1 cm. **Preliminary work:** The working ambient temperature should be at least 8° Celsius. Pour the complete bag contents of EMF-TURTAL PLV 2.5 into a 10 litre / 2.64 gallon bucket and stir vigorously with a machine paint stirrer and a drill or cordless screwdriver while adding 1.75 litres of water for at least 10 minutes. **Gradually dilute further with a little water in 50 ml increments until the shielding paint runs off the whisk in a good liquid consistency** (like liquid honey). Stir the entire mixture well with a wall paint stirrer for at least 10 minutes until the shielding paint runs off the stirrer in a good liquid state. After mixing, leave to stand for approx. 10 - 20 minutes and then stir again. Now the shielding paint can be applied with the acrylic roller. When applying each new coat, stir again to distribute all particles evenly.

The carrier material: The substrate must be load-bearing, dust-free, clean, dry, solid, grease-free and free of bleed-through and colouring substances. A pre-primed substrate is ideal. Thoroughly wash off and degrease old distemper and other chalking or unstable old coats (remove completely with a lye or silicone remover). Remove old, loose coats of paint and thoroughly wash off wallpaper adhesive residues from the substrate. Clean dusty surfaces very well and sweep them off. Remove binder adhesions and sintered skin on plaster surfaces on walls. Remove loose plaster and wall parts and repair with similar material. Clean mineral substrates – which are affected by mould – well with soda ash or treat them with other commercially available or treat them with other commercially available mould protection agents.

Shielding base coat: At least two coats of the shielding paint must be applied. Apply the shielding paint (base coat) very evenly + without adhesion using an acrylate roller. **Tipp:** The second coat of EMF-TURTAL shielding paint can be applied more easily if it is diluted with approx. 5 % more water.

Consistency: First stir the mixed shielding paint vigorously with a mechanical paint stirrer, dilute the shielding paint with water until the consistency of the paint runs off the stirrer like liquid honey.

Basic treatment: All untreated and absorbent substrates (all rough plasters, plasterboard, gypsum fibre) must be primed. Do not prime emulsion paints, but clean well. Untreated paper wallpapers such as woodchip wallpaper and painter's fleece should also be primed before painting.

Instructions for earthing with with earthing fleece: Remove the protective film from the self-adhesive earthing fleece tape. For we recommend applying a saturated layer of shielding paint along the skirting board (on a strip) and then sticking the fleece directly into the still wet, saturated layer of paint and working it in. If necessary, the earthing tape fleece can be applied in such a way that the skirting boards cover this later. This should be done in the immediate vicinity of a socket. We recommend fixing the earthing tape fleece to at least half of the wall length to ensure optimum earthing. When attaching the earthing plate, use a little shielding paint at the end of the earthing tape/fleece to ensure optimum contact between the earthing plate and the freshly painted earthing tape/fleece. If you are also painting the ceiling, also lay the earthing tape up to the ceiling at a distance of approx. 5 cm from the edge of the wall. Each wall and ceiling surface should be separately earthed with an earthing fleece. After attaching the earthing fleece, allow the earthing tape / fleece to dry thoroughly together with the applied paint. Then the second layer of paint can be applied. We do not recommend the use of copper earthing tape for reasons of appearance and practicality.

Cleaning the tools: Clean thoroughly with water immediately after use and rinse out. **Reach:** On smooth, non-absorbent and previously primedsurfaces/subfloors, one pack of PLV 2.5 is sufficient for approx. 10 – 12.5 m^2 with one coat. On rough, plastered and absorbent surfaces / substrates, a considerable additional consumption must be expected. For optimum shielding, at least two coats / two paint layers of shielding paint are required. Exact consumption values must be determined on the object. **Drying time:** Can be painted over after approx. 2 to 4 hours – Fully dry after approx. 8 hours. (Ventilate well!) **Storage:** Store frost-free, airtight and below 25° Celsius. Can be stored in powder form (unopened original packaging!) for approx. three years - if stored dry and frost-free. When mixed with water, we recommend that the shielding paint is applied quickly after mixing. After each working step, it is absolutely necessary to stir again thoroughly with the machine stirrer (see above) to ensure an even distribution of the particles / shielding. **Disposal of product residues:** Please do not dispose of paint residues in the waste water. Paint residues can be disposed of in household waste after drying. Empty packaging should be disposed of via the recyclables collection. **Labelling: Not applicable – no dangerous goods! Important notes & safety instructions: The earthing may only be connected by qualified personnel (electricians). As the shielding paint is electrically conductive, live parts must never be brought into contact with the paint! Non-compliance can lead to injuries or death!** Protect eyes and skin when processing the shielding powder (wear protective goggles and gloves). In case of eye or skin contact, rinse (out) with plenty of water and consult a doctor if necessary (eyes). Wear a dust mask during application and avoid inhalation when pouring / spilling from the bag. The base coat has exceptional staining power. Surfaces, especially glass, ceramics, metal, plastic and wood must be cleaned immediately from product splashes. To protect against product splashes, cover surrounding surfaces before painting and remove product splashes immediately with water (risk of irreversible stains!). Please note possible allergies to acrylic.

Keep out of reach of children! When painting over, the shielding paint may discolour after drying – as some commercially available wall paints contain a lot of water – but it can still be painted over without any problems. Even though the EMF-TURTAL PLV 2.5 shielding paint shields and reflects the incident high-frequency radiation, mobile and DECT telephones may still function weakly even after using the shielding paint. The radiation intensity through coated walls in rooms is nevertheless reduced to a minimum.

<u>Important</u>: Please make absolutely sure that neither WLAN nor mobile phones are used in a shielded room, as the shielding paint has reflective properties and thus the radiation within a room can be amplified by reflections. We recommend that before any shielding measure is taken, the radiation exposure (and the direction of the radio radiation) be determined by specialist personnel in order to avoid undesirable – possibly negative – effects. Please ask a building biologist - or find a qualified trade fair expert in your area. For professional high-frequency shielding, it may also be necessary to shield your windows and doors.

Fire behaviour: This product is flame retardant.
Further important information can be found in this safety data sheet.
Indoor application: Ceiling, Interior wall
Contents: A complete packaging unit of PLV 2.5 (powder) results in a total of up to 2.75 litres of shielding paint (electrically conductive base coat) when about 1.75 litres of water are added.
Packaging volume: Per 2.5 litre packaging unit – Dimensions per stand-up pouch:
34.0 cm (height) x 25.0 cm (width) x 10.0 cm (thickness)
Filling weight: 1.175 g

Substrates: Excellent adhesion to almost all substrates such as old paint, plasterboard, wallpaper, plaster, concrete, polystyrene, wood (unpainted, natural, untreated), etc. **For more details, see the processing instructions above.**
Paintable: Should preferably be painted over with dispersion paint (opacity class 1) for indoor use. Do not wallpaper + use wallpaper OVER the shielding paint, as the wallpaper paste could dilute it and reduce the shielding effect. We also do not recommend or guarantee the adhesion of wallpaper to shielding paint. **In any case, avoid all clay-based paints.** We do not recommend natural or organic silicate paints, lime and casein paints – therefore always carry out a test before use, as not all paints adhere equally well to graphite and graphene! We therefore do not recommend purely mineral paints such as clay or pure silicate. **Anschluss: Muss zwingend geerdet werden! Wir empfehlen die Verwendung eines Erdungs-Sets mit Erdungsplatte für den Innenbereich, welches Sie in unserem Shop unter Erdungszubehör finden.**

Important notes: The electrical installation (fuse boxes) must consist of at least two RCDs (often generally 300 mA and one for the bathroom and 30 mA for the water rooms). To dissipate extremely low-frequency electric fields, the earthing resistance should ideally be less than 10 ohms. Consult a qualified electrician. Please note that the earth has no influence on the elimination of high frequencies, but only on safety and extremely low-frequency electric fields.

Colour: Anthracite-Black
Field type: LF (low-frequency alternating electric fields), HF (high-frequency electromagnetic fields)
Ingredients: Pure acrylic binder, graphite and graphene

VOC content: 0.2 g/l (the EU limit for category A/a has been 30 g/l since 2010)

Shelf life: Can be stored in powder form unopened (in original packaging!) and in a dry place (not above 25° Celsius) for up to three years. This powder is largely frost-resistant for transporting parcels in winter.

The information described has been determined on the basis of the latest experience available to us. Due to the processing methods and environmental influences as well as the varying nature of the substrates, liability for the general legal validity of the individual recommendations can be excluded.

Important: Always mix the complete contents of a whole bag of PLV 2.5 (for optimum shielding results, please never use only a part from the packaging unit!), as heavier particles settle during transport.

Before each application – before applying each new coat of paint (paint), it is essential to stir again using a mechanical stirrer. Also stir again for 5 minutes before applying the second or third coat (for a uniformly good screening result), as particles may settle in the bucket during the drying time of the first, second or third coat!

Please observe the instructions and processing information printed on the product packaging (back label)!

The information described has been determined on the basis of the latest experience available to us. Due to the processing methods and environmental influences as well as the varying nature of the substrates, liability for the general legal validity of the individual recommendations can be excluded.

Please note!

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EMF SHIELDING PAINT / POWDER PLV / 2.5 LITRES / 0.66 US GALLONS / FOR OUTDOOR USE

Important processing and safety instructions

EMF-TURTAL shielding paint (powder) is an electrically conductive primer coating, especially for large-area shielding of electromagnetic fields. Always use the contents of a complete 2.5 l bag (PLV 2.50 litres / 0.66 US gallons / 1 bag) as individual components may separate during transport to achieve optimum shielding performance. The shielding paint EMF-TURTAL / PLV 2.5 litres / reliably shields low-frequency as well as high-frequency radiation. Both alternating electric fields (e.g. alternating voltages in appliances, cables and installations) and electromagnetic waves are shielded or diverted. (e.g. radio transmitters, 4G (LTE), 5G, GSM, directional radio, WLAN, mobile and cordless phones).

Application: EMF-TURTAL shielding paint PLV 2.5 (powder) – conductive primer coating for outdoor use
Suitable for use on primed, non-absorbent substrates such as exterior facades, concrete, stone, plasterboard, gypsum fibreboard and emulsion paints. Unsuitable substrates are e.g. glue and lime paints, oil paints, plastic, plastic, metal, treated and painted wood, glass or substrates with wallpaper adhesive residues.

Substrate: Excellent adhesion to almost all (primed) substrates such as old coatings, plaster, concrete, polystyrene, wood (untreated, unpainted, not waxed or oiled).

Overpaintable: Should preferably be overpainted with emulsion paint of opacity class 1 (highest opacity for exterior facade paints). Apply in dry weather and at least 10 degrees Celsius outside temperature. The wet base coat should not be exposed to frost during painting and drying. **In any case, avoid all clay-based paints.** We advise against purely mineral paints (clay, pure silicate). We also advise against natural or organic silicate paints, lime and case-in paints – always carry out a test before use, as not all paints adhere to graphite and graphene in the same way!

Suitable tools: We recommend qualitative paint rollers (acrylic paint roller) for the application of the base coat.

Preliminary work: The working environment temperature should be at least 8° Celsius. Pour the complete contents of the bag of EMF-TURTAL PLV 2.5 into a 10 litre / 2.64 gallon bucket and stir vigorously with a mechanical paint stirrer and a drill or cordless screwdriver while adding 1.75 litres of water for at least 10 minutes. **Gradually dilute further with a little water in 50 ml increments until the shielding paint runs off the whisk in a good liquid consistency (like liquid honey).** Stir the entire mixture well with a wall paint stirrer for at least 10 minutes until the shielding paint runs off the stirrer in a good liquid state. After mixing, let stand for approx. 10 to 20 minutes and then stir again. Now the shielding paint can be applied with the acrylic roller. When applying each new coat, stir again to distribute all particles evenly.

Carrier material: The substrate must be load-bearing, dust-free, clean, dry, solid, grease-free and free from and free of bleed-through and colouring substances. A pre-primed substrate is ideal. Thoroughly wash off and degrease old distemper and other chalking or unstable old coats (remove completely with lye remover using a lye or silicone remover completely). Remove old, loose coats of paint and thoroughly wash off wallpaper adhesive residues from the substrate. Clean dusty surfaces very well and sweep them off. Remove Binder adhesions and sintered skin on plaster surfaces on façade walls. Remove loose plaster and wall parts and repair with similar material. Clean mineral substrates - which are infested with mould - well with soda or treat them well with soda or treat them with other commercially available mould protection agents.

Shielding primer coating: At least two coats of the shielding paint must be applied. Apply shielding paint (base coat) very evenly + without adhesion using an acrylate roller. **Tip:** The second coat of EMF-TURTAL Shielding Paint can be applied more easily if it is diluted with approx. 5 % more water.

Consistency: First stir mixed shielding paint vigorously with a machine paint stirrer, dilute the shielding paint with water until the consistency of the paint is well runny – like liquid honey – from the stirrer.

Basic treatment: All untreated and absorbent substrates (all rough plasters, concrete, plasterboard, gypsum fibre) must be primed. Do not prime emulsion paints, but clean well. We also recommend priming untreated protective tiles for exterior facades before painting.

Notes on earthing with earthing fleece: Remove the protective film from the self-adhesive earthing fleece tape. When using earthing fleece, we recommend applying a saturated layer of shielding paint along the edge of the outer facade (on a strip) and then sticking the fleece directly into the still wet, saturated layer of paint and working it in. We recommend fixing the earthing tape fleece to at least half of the wall length to ensure optimum earthing. When attaching the earthing plate, use a little shielding paint at the end of the earthing tape/fleece to ensure optimum contact between the earthing plate and the freshly painted earthing tape/fleece. Each exterior façade surface/wall should be separately earthed with an earthing fleece. After fixing the earthing fleece, allow the earthing tape / fleece to dry thoroughly together with the applied paint. Then the second layer of paint can be applied. We do not recommend the use of copper earthing tape for optical and practical reasons.

Cleaning the tools: Clean thoroughly with water immediately after use and rinse out. **Reach:** On smooth, non-absorbent and previously primed surfaces/subfloors, one pack of PLV 2.5 is sufficient for approx. 10 - 12.5 m2 with one coat. On rough, plastered and absorbent surfaces/subfloors, considerable additional consumption must be expected. For optimum shielding, at least two coats / two paint layers of shielding paint are required. Exact consumption values must be determined on the object. **Drying time:** In dry weather and outside temperatures above 10 degrees Celsius, recoatable after approx. 2 to 4 hours – Fully dry after approx. 8 hours. **Storage:** Store frost-free, airtight and below 25° Celsius. Can be stored in powder form (unopened original packaging!) for approx. three years – if stored dry and frost-free. When mixed with water, we recommend that the shielding paint is applied quickly after mixing. After each working step, it isabsolutely necessary to stir again thoroughly with the machine stirrer (see above) to ensure an even distribution of the particles / shielding.

Disposal of product residues: Please do not dispose of paint residues in the waste water. Paint residues can be disposed of in household waste after drying. Empty packaging should be disposed of via the recyclables collection.

Labelling: Not applicable – no dangerous goods!

Important notes & safety instructions: The earthing may only be connected by qualified personnel (electricians). As the shielding paint is electrically conductive, live parts must never be brought into contact with the paint! Non-compliance can lead to injuries or death! When processing the shielding powder, protect eyes and skin (wear protective goggles and gloves). In case of eye or skin contact, rinse (out) with plenty of water and consult a doctor if necessary (eyes). Wear a dust mask during processing and avoid inhalation when pouring / spilling out of the bag. The base coat has exceptional staining power. Surfaces, especially glass, ceramics, metal, plastic and wood must be cleaned immediately from product splashes. To protect against product splashes, cover surrounding surfaces before painting and remove product splashes immediately with water (risk of irreversible stains!). Please note possible allergies to acrylic. **Keep out of the reach of children!**
When painting over, the shielding paint may discolour after drying – as some commercially available wall paints contain a lot of water – but it can still be painted over without any problems.

Even though the EMF-TURTAL PLV 2.5 shielding paint shields and reflects the incident high-frequency radiation, mobile and DECT telephones may still function weakly even after using the shielding paint. The radiation intensity through coated walls in rooms is nevertheless reduced to a minimum.

Important: Please make absolutely sure that neither WLAN nor mobile phones are used in shielded rooms, as the shielding paint has reflective properties and thus the radiation within a room can be amplified by reflections. We recommend that before any shielding measure is taken, the radiation exposure (and the direction of the radio radiation) be determined by specialist personnel in order to avoid undesirable – possibly negative – effects. Please ask a building biologist – or find a qualified trade fair expert in your area. For professional high-frequency shielding, it may also be necessary to shield your windows and doors.

Fire behaviour: This product is flame retardant.
Further important information can be found in the enclosed safety data sheet.
Application: Outdoor application, indoor floors (under flooring)
Connection: Must be earthed by a qualified electrician! We recommend the use of an earthing set with earthing plate for outdoor use, which you can find in our shop under earthing accessories.
The earthing must never be carried out via the lightning conductor!
Content: A complete packaging unit of PLV 2.5 Outdoor (powder) with the addition of 1.75 litres of water produces a total of up to 2.75 litres of shielding paint (electrically conductive base coat) – ready for painting.
Packaging volume: 2.5 litre unit Dimensions per stand-up pouch: 34.0 cm (height) x 25.0 (width) x 10.0 cm (thickness)
Filling weight: 1.225 g

Substrate: Excellent adhesion to almost all substrates, e.g. facades with old paint, plasterboard, plaster, concrete, polystyrene, wood (natural and untreated, unpainted, unoiled, unwaxed), etc. For further details, please refer to the application data sheet. Absorbent substrates should always be primed first! For uneven, textured substrates, higher paint consumption must be expected due to the higher surface area.

Paintable: Must always be painted over with facade paint (opacity class 1 - highest opacity class) for outdoor use! Direct weather influences on the shielding paint have a long-term negative effect on the shielding performance! Outdoor application only in dry weather and temperatures above 10°C.

The intended use of our shielding paint (electrically conductive base coat) is as a shielding primer under the facade paint.
We advise against the use of purely mineral paints (clay, pure silicate). Do not use clay-based paints for overpainting. We also do not recommend natural or organic silicate-based emulsion paints, we advise against lime and casein paints – always carry out a test before use, as not all paints adhere equally well to graphites / graphene!
Connection: Must be grounded by a qualified electrician! We recommend the use of an earthing set with earthing plate for outdoor use, which you can find in our shop under earthing accessories. The earthing must never be carried out via the lightning conductor! Important notes: The electrical installation (fuse boxes) must consist of at least two residual current circuit breakers (RCDs) (often generally 300 mA and one for the bathroom and 30 mA for the water rooms). To prevent absorb extremely low-frequency electric fields, the earthing resistance should ideally be less than 10 ohms. Check with a qualified electrician. Please note that the earth has no influence on the elimination of high frequencies, but only on safety and extremely low-frequency electric fields.

Colour: Anthracite-black
Field type: LF (low-frequency alternating electric fields), HF (high-frequency electromagnetic fields)
Ingredients: Pure acrylic binder, graphite and graphene
VOC content: 0.2 g/l (the EU limit for category A/a has been 30 g/l since 2010)

After mixing the PLV 2.5 powder for outdoor use with water, we recommend that the shielding paint (electrically conductive base coat) be applied quickly – within approx. three days.

Shelf life: Can be stored in powder form unopened (in original packaging!) and in a dry place (not above 25° Celsius) for up to three years. This powder is largely frost-resistant for transporting parcels in winter.

Important: Always mix the complete contents of a whole bag of PLV 2.5 (for optimum shielding results, please never use only a part from the packaging unit!), as heavier particles settle during transport. Before each application – before applying each new layer of paint (coating) it is essential to stir again using a mechanical stirrer. Also stir again for 5 minutes before applying the second or third coat (for a uniformly good screening result), as particles may settle in the bucket during the drying time of the first, second or third coat!

Please observe the instructions and processing information printed on the product packaging (back label)!

The information described has been determined on the basis of the latest experience available to us. Due to the processing methods and environmental influences as well as the varying nature of the substrates, liability for the general legal validity of the individual recommendations can be excluded.