

YSHIELD®

ELECTROMAGNETIC SHIELDING SOLUTIONS

TEKNİK VERİ FORMU
KORUYUCU BOYALAR

TECHNICAL DATA SHEET
SHIELDING PAINTS

Bu broşürde yazan Türkçe bilgiler üretici YShield®firmasının aslı İngilizce/Almanca olan broşüründeki İngilizce kısımlardan, ARCE Elektronik A.Ş. tarafından bilgilendirme amaçlı, aslına uygun olarak Türkçe'ye tercüme edilmiştir. Almanca kısımlarının orijinal hallerine broşür devamında (8-14. sayfalar) ulaşabilirsiniz. Herhangi bir durumda İngilizce/Almanca asıl bilgiler geçerlidir.

ARCE

ARCE ELEKTRONİK A.Ş.
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Teknik veri sayfası - Koruyucu boyalar

Technical data sheet - Shielding paints

	HSF54	PRO54	ECO54	DRY54	MAX54
Ürün türü Product type	Koruyucu boya Shielding paint	Koruyucu boya Shielding paint	Koruyucu boya Shielding paint	Koruyucu boya Shielding paint	Koruyucu boya Shielding paint
Teslimat Delivery	Sıvı Liquid	Sıvı Liquid	Sıvı Liquid	Toz Powder	Sıvı Liquid
Uygulama alanı Application	İç ve Dış Mekan Interior, Exterior	İç ve Dış Mekan Interior, Exterior	İç Mekan Interior	İç Mekan Interior	İç ve Dış Mekan Interior, Exterior
Sarfiyat Coverage	4 – 8 m ² /l	4 – 8 m ² /l	4 – 8 m ² /l	4 – 8 m ² /l	4 – 8 m ² /l
Yüzeyler Substrates	Neredeyse hepsi Almost all	Neredeyse hepsi Almost all	Neredeyse hepsi Almost all	Neredeyse hepsi Almost all	Neredeyse hepsi Almost all
Kalkanlama Attenuation	HF + NF HF + LF	HF + NF HF + LF	HF + NF HF + LF	HF + NF HF + LF	HF + NF HF + LF
Kalkanlama Attenuation	1-kat/layer 46 dB - 59 dB 2-kat/layer 53 dB - 81 dB	1-kat/layer 37 dB - 45 dB 2-kat/layer 43 dB - 71 dB	1-kat/layer 44 dB - 53 dB 2-kat/layer 53 dB - 78 dB	1-kat/layer 40 dB - 45 dB 2-kat/layer 48 dB - 75 dB	1-kat/layer 47 dB - 60 dB 2-kat/layer 55 dB - 87 dB
Ekoloji Ecology	Yüksek High	Yüksek High	Çok Yüksek Very high	Yüksek High	Yüksek High
Bağlayıcı madde Binding agent	Saf akrilat Pure acrylate	Saf akrilat Pure acrylate	Silikat, akrilat Silicate, acrylate	Saf akrilat Pure acrylate	Saf akrilat Pure acrylate
VOC-içeriği VOC-content	0.18 g/l	0.16 g/l	0.0 g/l	0.12 g/l	0.19 g/l
Konservasyon Preservation	64 ppm BIT 34 ppm INN	58 ppm BIT 15 ppm INN	Konservasyonsuz No preservation	Konservasyonsuz No preservation	64 ppm BIT 34 ppm INN
Sertifikasyon Certification	TÜV-SÜD TM-07	TÜV-SÜD TM-07	TÜV-SÜD TM-09	TÜV-SÜD TM-07	TÜV-SÜD TM-07
Yangın davranışı Fire behaviour	DIN EN 13501-1	DIN EN 13501-1			
Renk Color	Siyah Black	Siyah Black	Siyah Black	Siyah Black	Siyah Black
Yapışma gücü Adhesive strength	4.8 N/mm²	4.8 N/mm²	4.3 N/mm ²	3.5 N/mm ²	3.6 N/mm ²
Viskozite Viscosity	10000 mPas	6000 mPas	9000 mPas	8000 mPas	9000 mPas
Sd-değeri Sd-value	0.0052 m	0.0030 m	0.0033 m	0.0051 m	0.0054 m
PH-Değeri pH value	8	8	11.5	8	8
Yoğunluk Density	1.22 kg/l	1.29 kg/l	1.29 kg/l	1.12 kg/l	1.24 kg/l
Donmaya karşı daya- nıklılık/Frost resistance	5 döngü 5 cycles	5 döngü 5 cycles	5 döngü 5 cycles	Kalıcı permanent	5 döngü 5 cycles
Raf ömrü Shelf life	12 Ay 12 months	12 Ay 12 months	12 Ay 12 months	60 Ay 60 months	12 Ay 12 months



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Kullanım amacı Application

Yüksek frekanslı elektromanyetik alanları ve/veya düşük frekanslı elektrik alanlarını engellemek için kullanılan elektriksel olarak iletken kaplamalar.

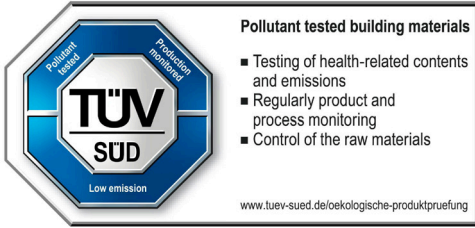
Electrically conductive base coatings to shield high-frequency electromagnetic fields and/or low-frequency electric fields.

TÜV-SÜD Sertifikasyonu TÜV-SÜD certification

HSF54, PRO54, ECO54, DRY54, MAX54, GK5

Tüm ürünlerimiz TÜV-Süd tarafından denetlenmektedir. Kalite güvencesiyle üretim süreci, emisyon davranışı ve koruyucu maddelerin ekonomik kullanımı kontrol altındadır.

We have all products monitored by TÜV-Süd. The production process with quality assurance, the emission behavior and the economical use of preservatives are subject to control.



Önemli güvenlik yönergeleri Important safety guidelines

Tüm boyalar yüksek leke tutma özelliğine sahiptir ve dikkatli kullanılmalıdır. Sıçramaları hemen ıslak bir bezle silin ve kurmasına izin vermeyin. Sprey buharını veya kuru tozları solumayın! Uygulama ve kuruma sürecinde iyi havalandırma sağlayın. Boya uygularken yemek yemeyin, içecek tüketmeyin veya sigara içmeyin. Göz veya ciltle temas halinde, derhal bol su ile yıkayın!



All coatings have a high staining capacity and should be processed with care. Wipe off splashes immediately with a wet cloth and do not allow it to dry. Do not inhale spray mist or dry powders! Ensure thorough ventilation during the application and drying process. Avoid eating, drinking or smoking while applying the paint. In case of contact with eyes or skin, rinse thoroughly with water immediately!

VOC-İçeriği VOC-content

2. sayfadaki tabloya bakınız. Kategori A/a için AB limit değeri 30 g/l'dir (2010 yılı itibariyle).

View chart on page 2. The EU limit value for cat. A/a is 30 g/l (as of 2010).

İçindekiler Ingredients

YSHIELD® HSF54

Su, doğal grafit, saf akrilik dispersiyonu, karbon siyahı, katkı maddeleri, koruyucu (BIT, INN).

Water, natural graphite, pure acrylics dispersion, carbon black, additives, preservation (BIT, INN).

YSHIELD® PRO54

Su, saf akrilik dispersiyonu, karbon lifleri, karbon siyahı, katkı maddeleri, koruyucu (BIT, INN).

Water, pure acrylics dispersion, carbon fibers, carbon black, additives, preservation (BIT, INN).

YSHIELD® ECO54

Su, potasyum silikat, doğal grafit, karbon siyahı, saf akrilik dispersiyonu, katkı maddeleri, koruyucu madde içermez.

Water, potassium silicate, natural graphite, carbon black, pure acrylics dispersion, additives, no preservation agent.

YSHIELD® DRY54

Doğal grafit, karbon siyahı, saf akrilik tozu, katkı maddeleri, koruyucu madde içermez.

Natural graphite, carbon black, pure acrylics powder, additives, no preservation agent.

YSHIELD® MAX54

Su, doğal grafit, saf akrilik dispersiyonu, karbon siyahı, katkı maddeleri, koruyucu (BIT, INN).

Water, natural graphite, pure acrylics dispersion, carbon black, additives, preservation (BIT, INN).

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YSHIELD® GK5

Saf akrilik dispersiyon, katkı maddeleri, koruyucu (BIT, INN).

Pure acrylics dispersion, additives, preservation (BIT, INN).

**Konservierungsmittel
Preservative**

Tabloda belirtilmişse, ürün koruma amacıyla BIT (1,2-Benzisothiazolin-3-on) ve INN (Çinko Pirition) içerir. Alerji hastaları için 0049-(0)8531-410790 numaralı telefondan bilgi alınabilir.

If stated in the chart, the product contains BIT (1,2-Benzisothiazolin-3-on) and INN (Zink-Pyrithion) for preservation. Advice for allergy sufferers via phone 0049-(0)8531-410790.

**Topraklama
Grounding****Erdungsvorschriften
Topraklama düzenlemeleri**

Geniş alanlar koruyucu malzemelerle kaplandığında, 'harici iletken parçalar' oldukları için eşpotansiyel bağlama sistemine bağlanarak topraklanmaları gerekir.



If large areas are shielded with shielding materials, they have to be grounded via a connection to the equipotential bonding system, as they are 'external conductive parts'.

**Topraklama bileşenleri
Grounding components**

Topraklama için yalnızca topraklama bileşenlerimizi tavsiye ediyoruz. Daha fazla bilgi için 'topraklama teknik veri sayfamıza' bakabilirsiniz.

We only recommend our grounding components for grounding. Further information can be found in our 'technical data sheet for grounding'.

**Fiber katkı maddesi AF3
Fiber additive AF3**

Tüm koruyucu boya larımız, püskürtülerek uygulanabilmeleri için çatlak köprüleme özelliğine sahip karbon lifleri içermeyecek şekilde formüle edilmiştir. Bu katkı maddesi, topraklama bandı olmasa bile, yüzeyde çatlak oluşması durumunda topraklamayı köprüleyen uzun, elektriksel olarak iletken karbon lifleri içerir. **Tüm büyük yüzeyler için önerilir!**

All our shielding paints are formulated without crack-bridging carbon fibers so that they can be sprayed. This additive contains long, electrically conductive carbon fibers that bridge the grounding in the event of cracks in the substrate, even without grounding tape. **Recommended for all larger surfaces!**

**İşleme
Processing****Stratejik yaklaşımın özeti
Strategic approach in brief**

- Yüzeyi GK5 astarı ile ön işlemden geçirin. • Topraklama plakası için delikler açın. • Topraklama talimatlarında belirtildiği gibi, boyanacak tüm yüzeylere topraklama kayışını tek parça halinde yapıştırın. • İstenen koruma zayıflamasına bağlı olarak bir, iki veya üç kat koruyucu boya uygulayın. • Kuruduktan sonra topraklama plakasını vidalayın. • Daha fazla ayrıntı için "Son kat kaplama" bölümüne bakın.

- Pre-treat the substrate with GK5 primer.
- Drill holes for grounding plate. • Glue the grounding strap in one piece across all surfaces to be painted, as specified in the grounding instructions. • Apply one, two or three layers of shielding paint depending on the desired shielding attenuation. • After drying, screw the grounding plate on. • See "Final coating" for further details.

**İşlem sıcaklığı
Processing temperature**

Hava ve yüzey sıcaklığı 5°C'nin altında olduğunda uygulamayın. Kurutma sırasında sıcaklık 5°C'nin altına düşmemelidir.

Do not apply below 5°C air and substrate temperature. Temperature must not fall below 5°C while drying.



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Yüzey Substrate

Yüzey kir, ayırıcı maddelerden arındırılmış ve kuru olmalıdır. Emici veya gözenekli yüzeyler öncelikle astar ile işlem görmelidir. Su ile çözülebilen eski boya veya duvar kağıdı katmanları çıkarılmalıdır.

The substrate must be free of dirt, separating substances and dry. Absorbent or porous surfaces must first be treated with a primer. Old coats of paint or wallpaper that can be dissolved by water must be removed.

HSF54, PRO54, MAX54

Boya, alçıpan, duvar kağıdı, sıva, beton, strafor, ahşap, cam, birçok plastik türü vb. gibi neredeyse tüm yüzeylere mükemmel yapışma özelliği.

Excellent adhesion to **almost all substrates** such as paint, drywall, wallpaper, plaster, concrete, polystyrene, wood, glass, many plastics, etc.

DRY54

Boya, alçıpan, duvar kağıdı, sıva, beton, ahşap vb. gibi **tüm emici yüzeylere** iyi yapışma özelliğine sahiptir.

Good adhesion to all **absorbent substrates** such as paint, drywall, wallpaper, plaster, concrete, wood, etc.

ECO54

Boya, alçıpan, duvar kağıdı, sıva, beton, ahşap vb. gibi tüm emici yüzeylere iyi yapışır. **Önemli: İçerisinde potasyum silikat bulunduğundan, alçı bazlı yüzeylerde kullanılamaz.**

Good adhesion to all **absorbent substrates** such as paint, drywall, wallpaper, plaster, concrete, wood, etc. Important: With potassium silicate as an ingredient, it cannot be used on gypsum-based substrates.

Astar Primer

Emici yüzeyler, GK5 astarımızla ön işlem den geçirilmelidir. Astar kullanılmadığı takdirde, bağlayıcı ve su yüzeye emilir ve fiziksel özellikleri bozulur.

Absorbent substrates have to be pre-treated with our GK5 primer. Without a primer, binder and water will be absorbed into the substrate and the physical properties will deteriorate.

Kaç katman? How many layers

Maliyetten tasarruf etmek istiyorsanız **tek kat boya** önerilir. **İki kat boya**, ilk katın daha ince bölgelerini eşitleyerek yüksek düzeyde koruma sağlayabileceğiniz için mantıklıdır. **Üç kat boya** ise yalnızca en yüksek koruma zayıflamasını elde etmek istiyorsanız mantıklıdır.

A single layer of paint is recommended if you want to save costs. **Two layers** make sense as you can even out thinner areas of the first layer, while achieving a high level of redundancy. **Three layers** only make sense if you want to achieve the highest shielding attenuation.

Katman başına uygulama oranı Application rate per layer

Uygulama oranı, alt tabakanın durumuna ve emiciliğine bağlıdır. Tipik olarak kalın bir kaplama 4 m²/l'lik bir alanı kaplar; belirtilen koruma zayıflaması bu kaplama için geçerlidir. İnce bir kaplama ise 8 m²/l'lik bir alanı kaplar ve bu da yaklaşık 5-10 dB daha az koruma zayıflamasına neden olur.

The application rate depends on the condition and absorbency of the substrate. A typically thick coat has a coverage of 4 m²/l - the specified screening attenuation applies to this coverage. A thin coat has a coverage of 8 m²/l - which results in ~ 5-10 dB less shielding attenuation.

Hazırlık Preparation

HSF54, PRO54, ECO54, MAX54

İletken parçacıklar dibе çöker. Açtıktan sonra kabı çalkalayın ve elektrikli karıştırıcı ile homojen bir şekilde karıştırın. 1 ve 5 litrelik kaplar için AR42 boya karıştırıcımızı öneriyoruz. Su bazlı ürünler her zaman kullanıma hazırdır. Asla su veya diğer boya ürünleriyle karıştırmayın.

The conductive particles settle at the bottom. Shake the container and stir homogeneously with an electric stirrer after opening. We recommend our AR42 paint stirrer for the 1 and 5 liter containers. Water-based products are always ready to use. Never mix with water or other paint products.

DRY54

Toz boya suyla karıştırılmamalıdır. Su miktarı, dijital bir terazi kullanılarak gramına kadar tam olarak ölçülmelidir! Kova, karıştırılacak boya miktarının en az iki katı büyüklüğünde olmalıdır. Kovadaki tüm boyayı hareket ettirebilecek kadar büyük bir karıştırıcı kullanın.



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The powder needs to be mixed with water. The amount of water must be measured exactly to the gram using a digital scale! The bucket must be at least twice as large as the amount of paint to be mixed. Use a stirrer that is large enough to move all the paint in the bucket.

Toz paket / Kova / Su miktarı: 3 litre / > 5 litre / 1,8 litre için toz (1,8 kg tozu 1,8 kg suyla karıştırın)

Powder package / Bucket / Water quantity: Powder for 3 liter / > 5 liter / 1.8 liter (mix 1.8 kg powder with 1.8 kg water)

Solumun maskesi ve koruyucu gözlük takın!
Çiftler halinde çalışın. Bir kişi karıştırırken diğeri tozu eklesin. Boyanın yüzeyde hareket etmesini sağlayacak kadar toz ekleyin. Tozu en aza indirmek için yavaş çalışın..

Wear a respirator mask and safety goggles!
Work in pairs. One person stirs, the other adds the powder. Only add enough powder to keep the paint moving on the surface. Work slowly so that there is as little dust as possible.

Toz tamamen suya karıştıktan sonra, **birkaç dakika boyunca maksimum hızda karıştırın!**
Boya neredeyse su kadar sıvı hale gelecektir.
When the powder is completely mixed into the water, stir at maximum speed for several minutes!
The paint will become almost as liquid as water.

Boyayı artık kullanabilirsiniz. Suyun kalitesine bağlı olarak, karıştırdığınız boyayı 2-7 gün içinde tüketin!

The paint can now be used. Depending on the water quality, use up the mixed paint within 2-7 days!

Uygulama Application

- Uygulama için 6-13 mm hav yüksekliğine sahip yüksek kaliteli bir boya rulosu kullanmanızı öneririz. İyi bir koruma etkinliği için, boyanın kalınlığının ve tüm yüzeye eşit şekilde uygulanması çok önemlidir! Ruloyu her zaman aynı miktarda boya ile ıslatın ve aynı büyüklükteki alanları boyamak için kullanın!
- Kısa havlı boya ruloları, köpük rulolar veya fırçalar, boya katmanını eşit olmayan şekilde uyguladıkları için yalnızca sınırlı ölçüde uygundur.
- 0,2 - 0,5 mm arasında değişen delik boyutlarıyla havasız püskürtme mümkündür.
- We recommend using a high-quality paint roller with a pile height of 6-13 mm for application. For good shielding effectiveness, it is very important to

apply the paint evenly in thickness and over the entire surface! Always soak the roller with the same amount of paint and use it to paint areas of the same size! • Short-pile paint rollers, foam rollers or brushes are only suitable to a limited extent, as they apply the paint layer unevenly.

- Airless spraying is possible with hole sizes ranging from 0.2 - 0.5 mm.

Kuruma süresi Drying time

İkinci kat boyayı sürmeden önce 24-48 saat kurumaya bırakın. En az 48 saat yağmurdan koruyun.

Allow to dry for 24-48 hours before recoating. Protect from rain for at least 48 hours.

Son kat Final coat

Viskoplastik ve siyah yüzeyleri mekanik gerilme ve nemden korumak için iki katmanlı bir son kat boya uygulamanızı öneririz. Dünya çapında birçok farklı boya çeşidi bulunduğu için, belirli bir kombinasyonu asla garanti edemeyiz. Ayrıca, birçok saf mineral kaplama ve eko boya, koruyucu boyalarımızın grafit yüzeyine iyi yapışmaz. Her zaman bir test yüzeyinde deneme katmanı uygulamanızı öneririz.

To protect the viscoplastic and black surfaces from mechanical stress and moisture, we recommend a two-layer top coat. As there are many different paints available worldwide, we can never guarantee a specific combination. In addition, many purely mineral coatings and eco paints do not adhere well to the graphite surface of our shielding paints. We always recommend a test coat on a test surface.

İç mekanlarda: Yüksek kaliteli, iyi örtücülüğe sahip, plastik bağlayıcılı emülsiyon boyalar veya emülsiyon silikat boyalar kullanılabilir. Alternatif olarak, duvar kağıdı, cam elyaf kumaş vb. ile kaplanabilir.

Indoors: With high-quality, well-covering, plastic-bonded emulsion paints or emulsion silicate paints. Alternatively, cover with wallpaper, glass fabric, etc.

Im Außenbereich: Mit hochwertigen, gut deckenden, hoch wasserabweisenden kunststoffgebundenen Dispersionsfarben oder Silikonharzfarben.

Dış cephe: Yüksek kaliteli, iyi örtücülüğe sahip, yüksek su geçirmezlik özelliğine sahip plastik bağlayıcılı emülsiyon boyalar veya silikon reçine boyalar ile.



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Sıva veya fayans altında: Yüksek yapışma çekme dayanımı ($> 1 \text{ N/mm}^2$) sayesinde, organik bağlayıcılı sıva altında (astar uygulandıktan sonra) kullanılabilir. Saf mineral sıvalar asla kullanılmamalıdır, çünkü bunlar yapışmaz!

Under plaster or tiles: Can be used under organically bonded plaster (after priming), due to the high adhesive tensile strength ($> 1 \text{ N/mm}^2$). Never use purely mineral plasters, as these do not adhere!

Daha fazla bilgi Further information

Depolama Storage

Serin, donmayan ve çocukların erişemeyeceği bir yerde saklayın. Açılmış kapları sıkıca kapalı ve serin bir yerde muhafaza edin.

Store in a cool, frost-free place and out of the reach of children. Keep opened containers tightly closed and in a cool place.

Saklama süresi Period of storage

HSF54, PRO54, ECO54, MAX54, GK5

En az 12 ay, parti etiketine bakın.

At least 12 months, see batch sticker.

DRY54

Son kullanma tarihi 60 aydır, ambalaj üzerindeki parti etiketine bakınız. İç ambalajın vakumunun bozulmamış olması gerekmektedir.

60 months, see batch label on the packaging. The vacuum of the inner packaging must be intact.

İmha etmek Disposal

Aletleri kullanımdan hemen sonra sabun ve suyla temizleyin. Sadece boş kapları geri dönüşüme gönderin. Kurumuş malzeme artıkları evsel atık olarak atılabilir. Kanalizasyon sistemine, su yollarına veya toprağa karışmasına izin vermeyin.

Clean tools immediately after use with soap and water. Only dispose of empty containers for recycling. Dried material residues can be disposed of as household waste. Do not allow entry into the sewage system, waterways or soil.

Tanımlama işaretleri Identification marks

Ürün Kodu: M-DF01 (GISCODE)

Su tehlikesi sınıfı: 1 (VvVwS)

Atık kodu: 08 01 12 (AVV)

Tehlikeli bileşenler: -

ADR: -

UN numarası: -

Taşıma tehlikesi sınıfı: -

Çevresel tehlikeler: -
Product code: M-DF01 (GISCODE)

Water hazard class: 1 (VvVwS)

Waste code: 08 01 12 (AVV)

Hazardous ingredients: -

ADR: -

UN-number: -

Transport hazard class: -

Environmental dangers: -

Güvenlik bilgi formu Safety data sheet

Güvenlik bilgi formu mevcuttur:

info@yshield.de

The safety data sheet is available:

info@yshield.de

Yasal Uyarı Disclaimer

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ARCE Elektronik A.Ş. tarafından bilgilendirme amaçlı, aslına uygun olarak Türkçe'ye tercüme edilmiştir. Lütfen 1. sayfadaki bilgilendirmeyi okuyunuz.

YSHIELD®

ELECTROMAGNETIC SHIELDING SOLUTIONS

**TECHNISCHES MERKBLATT
ABSCHIRMFARBEN**

**TECHNICAL DATA SHEET
SHIELDING PAINTS**

Technisches Merkblatt - Abschirmfarben Technical data sheet - Shielding paints

	HSF54	PRO54	ECO54	DRY54	MAX54
Produktart Product type	Abschirmfarbe Shielding paint	Abschirmfarbe Shielding paint	Abschirmfarbe Shielding paint	Abschirmfarbe Shielding paint	Abschirmfarbe Shielding paint
Lieferung Delivery	Flüssig Liquid	Flüssig Liquid	Flüssig Liquid	Pulver Powder	Flüssig Liquid
Einsatzbereich Application	Innen, Aussen Interior, Exterior	Innen, Aussen Interior, Exterior	Innen Interior	Innen Interior	Innen, Aussen Interior, Exterior
Ergiebigkeit Coverage	4 – 8 m ² /l	4 – 8 m ² /l	4 – 8 m ² /l	4 – 8 m ² /l	4 – 8 m ² /l
Untergründe Substrates	Fast alle Almost all	Fast alle Almost all	Fast alle Almost all	Fast alle Almost all	Fast alle Almost all
Schirmung Attenuation	HF + NF HF + LF	HF + NF HF + LF	HF + NF HF + LF	HF + NF HF + LF	HF + NF HF + LF
Abschirmung Attenuation 1-40 GHz (4 m ² /l)	1-lagig/layer 46 dB - 59 dB 2-lagig/layer 53 dB - 81 dB	1-lagig/layer 37 dB - 45 dB 2-lagig/layer 43 dB - 71 dB	1-lagig/layer 44 dB - 53 dB 2-lagig/layer 53 dB - 78 dB	1-lagig/layer 40 dB - 45 dB 2-lagig/layer 48 dB - 75 dB	1-lagig/layer 47 dB - 60 dB 2-lagig/layer 55 dB - 87 dB
Ökologie Ecology	Hoch High	Hoch High	Sehr hoch Very high	Hoch High	Hoch High
Bindemittel Binding agent	Reinacrylat Pure acrylate	Reinacrylat Pure acrylate	Wasserglas, Acrylat Silicate, acrylate	Reinacrylat Pure acrylate	Reinacrylat Pure acrylate
VOC-Gehalt VOC-content	0.18 g/l	0.16 g/l	0.0 g/l	0.12 g/l	0.19 g/l
Konservierung Preservation	64 ppm BIT 34 ppm INN	58 ppm BIT 15 ppm INN	Keine Konser- vierung / No preservation	Keine Konser- vierung / No preservation	64 ppm BIT 34 ppm INN
Zertifizierung Certification	TÜV-SÜD TM-07	TÜV-SÜD TM-07	TÜV-SÜD TM-09	TÜV-SÜD TM-07	TÜV-SÜD TM-07
Brandverhalten Fire behaviour	DIN EN 13501-1	DIN EN 13501-1			
Farbe Color	Schwarz Black	Schwarz Black	Schwarz Black	Schwarz Black	Schwarz Black
Haftzugfestigkeit Adhesive strength	4.8 N/mm²	4.8 N/mm²	4.3 N/mm ²	3.5 N/mm ²	3.6 N/mm ²
Viskosität Viscosity	10000 mPas	6000 mPas	9000 mPas	8000 mPas	9000 mPas
Sd-Wert Sd-value	0.0052 m	0.0030 m	0.0033 m	0.0051 m	0.0054 m
PH-Wert pH value	8	8	11.5	8	8
Dichte Density	1.22 kg/l	1.29 kg/l	1.29 kg/l	1.12 kg/l	1.24 kg/l
Frostbeständigkeit Frost resistance	5 Zyklen 5 cycles	5 Zyklen 5 cycles	5 Zyklen 5 cycles	Dauerhaft permanent	5 Zyklen 5 cycles
Lagerstabilität Shelf life	12 Monate 12 months	12 Monate 12 months	12 Monate 12 months	60 Monate 60 months	12 Monate 12 months

Verwendungszweck Application

Elektrisch leitfähige Grundbeschichtungen zur Abschirmung hochfrequenter elektromagnetischer Felder und/oder niederfrequenter elektrischer Felder.

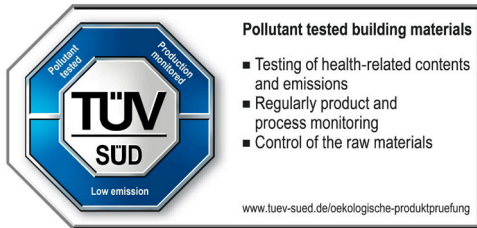
Electrically conductive base coatings to shield high-frequency electromagnetic fields and/or low-frequency electric fields.

TÜV-SÜD Zertifizierung TÜV-SÜD certification

HSF54, PRO54, ECO54, DRY54, MAX54, GK5

Wir lassen alle Produkte vom TÜV-Süd überwachen. Der Fertigungsprozess mit Qualitätssicherung, das Emissionsverhalten und der sparsame Einsatz von Konservierungsmitteln unterliegen der Kontrolle.

We have all products monitored by TÜV-Süd. The production process with quality assurance, the emission behavior and the economical use of preservatives are subject to control.



Wichtige Sicherheitshinweise Important safety guidelines

Alle Beschichtungen haben ein hohes Färbevermögen und sollten mit Umsicht verarbeitet werden. Spritzer sofort nass abwischen und nicht eintrocknen lassen. Spritznebel, Sprühnebel und Pulver nicht einatmen! Während der Verarbeitung und Trocknung für gründliche Belüftung sorgen! Essen, Trinken und Rauchen während des Gebrauchs der Farben ist zu vermeiden! Bei Berührung mit den Augen oder der Haut sofort gründlich mit Wasser abspülen!



All coatings have a high staining capacity and should be processed with care. Wipe off splashes immediately with a wet cloth and do not allow it to dry. Do not inhale spray mist or dry powders! Ensure thorough ventilation during the application and drying process. Avoid eating, drinking or smoking while applying the paint. In

case of contact with eyes or skin, rinse thoroughly with water immediately!

VOC-Gehalt VOC-content

Siehe Tabelle auf Seite 2. Der EU-Grenzwert für Kat. A/a liegt bei 30 g/l (ab 2010).

View chart on page 2. The EU limit value for cat. A/a is 30 g/l (as of 2010).

Inhaltsstoffe Ingredients

YSHIELD® HSF54

Wasser, Naturgraphit, Reinacrylatdispersion, Carbon Black, Additive, Konservierung (BIT, INN).

Water, natural graphite, pure acrylics dispersion, carbon black, additives, preservation (BIT, INN).

YSHIELD® PRO54

Wasser, Reinacrylatdispersion, Carbonfasern, Carbon Black, Additive, Konservierung (BIT, INN).

Water, pure acrylics dispersion, carbon fibers, carbon black, additives, preservation (BIT, INN).

YSHIELD® ECO54

Wasser, Kaliwasserglas, Naturgraphit, Carbon Black, Reinacrylatdispersion, Additive, kein Konservierungsmittel.

Water, potassium silicate, natural graphite, carbon black, pure acrylics dispersion, additives, no preservation agent.

YSHIELD® DRY54

Naturgraphit, Carbon Black, Reinacrylatpulver, Additive, kein Konservierungsmittel.

Natural graphite, carbon black, pure acrylics powder, additives, no preservation agent.

YSHIELD® MAX54

Wasser, Naturgraphit, Reinacrylatdispersion, Carbon Black, Additive, Konservierung (BIT, INN).

Water, natural graphite, pure acrylics dispersion, carbon black, additives, preservation (BIT, INN).

YSHIELD® GK5

Reinacrylatdispersion, Additive, Konservierung (BIT, INN).

Pure acrylics dispersion, additives, preservation (BIT, INN).

Konservierungsmittel Preservative

Wenn in der Tabelle angegeben, enthält das Produkt BIT (1,2-Benzisothiazolin-3-on) und INN (Zink-Pyrithion) zur Konservierung. Beratung für Allergiker unter Telefon 0049-(0)8531-410790.

If stated in the chart, the product contains BIT (1,2-Benzisothiazolin-3-on) and INN (Zink-Pyrrhion) for preservation. Advice for allergy sufferers via phone 0049-(0)8531-410790.

Erdung Grounding

Erdungsvorschriften Grounding regulations

Großflächige Abschirmungen mit Abschirmmaterialien sind "fremde leitfähige Teile", die durch den Anschluss an den Potentialausgleich geerdet werden müssen.



If large areas are shielded with shielding materials, they have to be grounded via a connection to the equipotential bonding system, as they are 'external conductive parts'.

Erdungskomponenten Grounding components

Zur Erdung empfehlen wir ausschließlich unsere eigenen Erdungskomponenten. Informationen dazu finden Sie im „Technischen Merkblatt Erdung“.

We only recommend our grounding components for grounding. Further information can be found in our 'technical data sheet for grounding'.

Faser-Additiv AF3 Fiber additive AF3

Alle unsere Abschirmfarben sind ohne rissüberbrückende Carbonfasern formuliert, damit sie spritzbar sind. Dieses Additiv enthält lange, elektrisch leitfähige Carbonfasern, die im Fall von Rissen im Untergrund die Erdung auch ohne Erdungsband überbrücken. **Zu empfehlen auf allen größeren Flächen!**

All our shielding paints are formulated without crack-bridging carbon fibers so that they can be sprayed. This additive contains long, electrically conductive carbon fibers that bridge the grounding in the event of cracks in the substrate, even without grounding tape. **Recommended for all larger surfaces!**

Verarbeitung Processing

Strategisches Vorgehen in Kürze Strategic approach in brief

- Untergrund mit Grundierung GK5 vorbehandeln.
- Löcher für Erdungsplatte bohren. • Erdungsband in einem Stück über alle zu streichenden Flächen kleben, wie im Erdungshinweis angegeben.
- Abschirmfarben je nach gewünschter Schirmdämpfung ein-, zwei- oder dreilagig auftragen. • Nach Abtrocknen Erdungsplatte anschrauben. • Weiter siehe „Endbeschichtung“.
- Pre-treat the substrate with GK5 primer.
- Drill holes for grounding plate. • Glue the grounding strap in one piece across all surfaces to be painted, as specified in the grounding instructions. • Apply one, two or three layers of shielding paint depending on the desired shielding attenuation. • After drying, screw the grounding plate on. • See "Final coating" for further details.

Verarbeitungstemperatur Processing temperature

Nicht unter 5°C Luft- und Untergrundtemperatur verarbeiten. Die 5°C dürfen auch bei der Trocknung nicht unterschritten werden.

Do not apply below 5°C air and substrate temperature. Temperature must not fall below 5°C while drying.

Untergrund Substrate

Der Untergrund muss frei von Verschmutzungen, trennenden Substanzen und trocken sein. Absorbierende oder poröse Oberflächen müssen zunächst mit einer Grundierung behandelt werden. Alte Farbanstriche oder Tapeten, die durch Wasser aufgelöst werden können, sind zu beseitigen.

The substrate must be free of dirt, separating substances and dry. Absorbent or porous surfaces must first be treated with a primer. Old coats of paint or wallpaper that can be dissolved by water must be removed.

HSF54, PRO54, MAX54

Hervorragende Haftung auf **fast allen**

Untergründen wie Farbanstrichen, Trockenbauplatten, Tapeten, Putz, Beton, Styropor, Holz, Glas, vielen Kunststoffen, usw.

Excellent adhesion to **almost all substrates** such as paint, drywall, wallpaper, plaster, concrete, polystyrene, wood, glass, many plastics, etc.

DRY54

Gute Haftung auf allen **saugfähigen Untergründen** wie Farbanstrichen, Trockenbauplatten, Tapeten, Putz, Beton, Holz, usw.

Good adhesion to all **absorbent substrates** such as paint, drywall, wallpaper, plaster, concrete, wood, etc.

ECO54

Gute Haftung auf allen **saugfähigen Untergründen** wie Farbanstrichen, Tapeten, Putz, Beton, Holz, usw. Wichtig: Mit Kaliwasserglas als Inhaltsstoff nicht direkt auf gipsbasierten Untergründen verwendbar.

Good adhesion to all **absorbent substrates** such as paint, drywall, wallpaper, plaster, concrete, wood, etc. Important: With potassium silicate as an ingredient, it cannot be used on gypsum-based substrates.

**Grundierung
Primer**

Saugfähige Untergründe müssen mit unserer Grundierung GK5 vorbehandelt werden. Ohne Grundierung zieht das Bindemittel mit dem Wasser in den Untergrund ein und die physikalischen Eigenschaften verschlechtern sich.

Absorbent substrates have to be pre-treated with our GK5 primer. Without a primer, binder and water will be absorbed into the substrate and the physical properties will deteriorate.

**Wie viele Lagen
How many layers**

Einlagiges Streichen ist zu empfehlen, wenn man Kosten sparen möchte. **Zweilagig** ist der goldene Mittelweg und macht Sinn, weil man dünnere Stellen des ersten Anstrichs ausgleichen kann, man erzielt eine hohe Redundanz. **Dreilagig** macht nur Sinn, wenn man das letzte dB herausholen möchte.

A **single layer of paint** is recommended if you want to save costs. **Two layers** make sense as you can even out thinner areas of the first layer, while achieving a high level of redundancy. **Three layers** only make sense if you want to achieve the highest shielding attenuation.

**Verbrauch pro Lage
Application rate per layer**

Der Verbrauch ist abhängig von der Beschaffenheit und Saugfähigkeit des Untergrundes. Ein typisch dicker Anstrich hat eine Ergiebigkeit von 4 m²/l – für diese Ergiebigkeit gilt die angegebene Schirmdämpfung. Ein dünner Anstrich hat eine

Ergiebigkeit von 8 m²/l – was etwa 5-10 dB weniger Schirmdämpfung ergibt.

The application rate depends on the condition and absorbency of the substrate. A typically thick coat has a coverage of 4 m²/l - the specified screening attenuation applies to this coverage. A thin coat has a coverage of 8 m²/l - which results in ~ 5-10 dB less shielding attenuation.

**Vorbereitung
Preparation****HSF54, PRO54, ECO54, MAX54**

Die leitfähigen Partikel setzen sich am Boden ab. Gebinde aufschütteln und nach dem Öffnen mit einem elektrischen Rührer homogen aufrühren. Für die 1- und 5-Liter-Gebinde empfehlen wir unseren Rührquirl AR42. Wässrige Produkte sind immer gebrauchsfertig. Niemals mit Wasser oder anderen Anstrichmitteln vermischen.

The conductive particles settle at the bottom. Shake the container and stir homogeneously with an electric stirrer after opening. We recommend our AR42 paint stirrer for the 1 and 5 liter containers. Water-based products are always ready to use. Never mix with water or other paint products.

DRY54

Das Pulver muss mit Wasser angerührt werden. Die Wassermenge muss auf das Gramm genau mit einer digitalen Waage gemessen werden! Der Eimer muss mindestens doppelt so groß sein wie die anzurührende Farbmenge. Verwenden Sie einen Quirl, der groß genug ist, damit sich die gesamte Farbe im Eimer bewegt.

The powder needs to be mixed with water. The amount of water must be measured exactly to the gram using a digital scale! The bucket must be at least twice as large as the amount of paint to be mixed. Use a stirrer that is large enough to move all the paint in the bucket.

Pulverpackung / Eimer / Wassermenge:

Pulver für **3 Liter** / > 5 Liter / **1,8 Liter**
(1,8 kg Pulver mischen mit **1,8 kg Wasser)**

Powder package / Bucket / Water quantity:

Powder for **3 liter** / > 5 liter / **1.8 liter**
(mix 1.8 kg powder with 1.8 kg water)

Atemschutzmaske und Schutzbrille tragen!

Arbeiten Sie zu zweit. Eine Person rührt, die andere Person gibt das Pulver zu. Immer nur so viel Pulver zugeben, dass die Farbe an der Oberfläche in Bewegung bleibt. Langsam arbeiten, damit es möglichst wenig staubt.

Wear a respirator mask and safety goggles!

Work in pairs. One person stirs, the other adds the powder. Only add enough powder to keep the paint

moving on the surface. Work slowly so that there is as little dust as possible.

Wenn das Pulver im Wasser ist, **mehrere Minuten lang maximal schnell rühren!** Die Farbe wird dabei fast so flüssig wie Wasser.

When the powder is completely mixed into the water, **stir at maximum speed for several minutes!** The paint will become almost as liquid as water.

Die Farbe kann nun verarbeitet werden. Angerührte Farbe, je nach Wasserqualität, in 2-7 Tagen aufbrauchen!

The paint can now be used. Depending on the water quality, use up the mixed paint within 2-7 days!

Auftragsverfahren Application

- Zum Auftragen empfehlen wir eine hochwertige Malerwalze mit einer Florhöhe von 6-13 mm. Für eine gute Schirmdämpfung ist eine gleichmäßig dicke und vollflächige Verarbeitung sehr wichtig! Tränken Sie die Walze mit immer gleich viel Farbe und streichen Sie damit immer gleich große Flächen! • Eingeschränkt geeignet sind kurzflorige Lackierwalzen, Schaumstoffwalzen oder Pinsel, damit wird die Farbschicht ungleichmäßig aufgetragen. • Airless sprühen ist möglich, mögliche Lochgrößen von 0,2 bis 0,5 mm.
- We recommend using a high-quality paint roller with a pile height of 6-13 mm for application. For good shielding effectiveness, it is very important to apply the paint evenly in thickness and over the entire surface! Always soak the roller with the same amount of paint and use it to paint areas of the same size! • Short-pile paint rollers, foam rollers or brushes are only suitable to a limited extent, as they apply the paint layer unevenly.
- Airless spraying is possible with hole sizes ranging from 0.2 - 0.5 mm.

Trocknungszeit Drying time

Vor dem Überarbeiten 24-48 Stunden trocknen lassen. Mindestens 48 Stunden vor Regen schützen.

Allow to dry for 24-48 hours before recoating. Protect from rain for at least 48 hours.

Endbeschichtung Final coat

Um die zähelastischen und schwarzen Oberflächen vor mechanischer Beanspruchung und vor Feuchte zu schützen, empfehlen wir einen

zweilagigen Deckanstrich. Da es weltweit unterschiedlichste Farben gibt, können wir niemals eine Garantie für eine bestimmte Kombination geben. Zudem haften viele rein mineralische Beschichtungen und Ökofarben nur schlecht auf der Graphitoberfläche unserer Abschirmfarben. Wir empfehlen immer einen Testanstrich auf einer Probefläche.

To protect the viscoplastic and black surfaces from mechanical stress and moisture, we recommend a two-layer top coat. As there are many different paints available worldwide, we can never guarantee a specific combination. In addition, many purely mineral coatings and eco paints do not adhere well to the graphite surface of our shielding paints. We always recommend a test coat on a test surface.

Im Innenbereich: Mit hochwertigen, gut deckenden, kunststoffgebundenen Dispersionsfarben oder Dispersionsilikatfarben. Alternativ überkleben mit Tapeten, Glasgeweben, usw.

Indoors: With high-quality, well-covering, plastic-bonded emulsion paints or emulsion silicate paints. Alternatively, cover with wallpaper, glass fabric, etc.

Im Außenbereich: Mit hochwertigen, gut deckenden, hoch wasserabweisenden kunststoffgebundenen Dispersionsfarben oder Silikonharzfarben.

Exterior: With high-quality, well-covering, highly water-repellent plastic-bonded emulsion paints or silicone resin paints.

Unter Putz oder Fliesen: Aufgrund der hohen Haftzugfestigkeiten (> 1 N/mm²) nach vorheriger Grundierung unter organisch gebundenen Putzen verwendbar. Niemals rein mineralische Putze verwenden, diese haften nicht!

Under plaster or tiles: Can be used under organically bonded plaster (after priming), due to the high adhesive tensile strength (> 1 N/mm²). Never use purely mineral plasters, as these do not adhere!

Weitere Informationen Further information

Lagerung Storage

Kühl, frostfrei und für Kinder unzugänglich lagern. Anbruchbinde fest verschlossen und kühl aufbewahren.

Store in a cool, frost-free place and out of the reach of children. Keep opened containers tightly closed and in a cool place.

The safety data sheet is available:
info@yshield.de

Haftungsausschluss Disclaimer

Vorstehende Angaben wurden nach dem neuesten Stand der Entwicklung und Anwendungstechnik zusammengestellt. Da Anwendung und Verarbeitung außerhalb unseres Einflusses liegen, kann aus dem Inhalt dieses Merkblattes keine Haftung abgeleitet werden. Der Verarbeiter ist in jedem Fall verpflichtet, unter Berücksichtigung der Produkteigenschaften und der Produkteignung die Bearbeitung fachmännisch zu beurteilen. Über den Inhalt dieses Merkblattes hinausgehende oder abweichende Angaben bedürfen unserer schriftlichen Bestätigung. Es gelten unsere allgemeinen Geschäftsbedingungen. Mit Herausgabe dieses technischen Merkblattes verlieren vorangegangene ihre Gültigkeit.

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Lagerdauer Period of storage

HSF54, PRO54, ECO54, MAX54, GK5

Mindestens 12 Monate, siehe Chargenaufkleber.

At least 12 months, see batch sticker.

DRY54

60 Monate, siehe Chargenaufkleber auf der Verpackung. Das Vakuum der Innenverpackung muss intakt sein.

60 months, see batch label on the packaging. The vacuum of the inner packaging must be intact.

Entsorgung Disposal

Reinigung der Werkzeuge sofort nach Gebrauch mit Wasser und Seife. Nur restentleerte Gebinde zum Recycling geben. Materialreste können eingetrocknet als Hausmüll entsorgt werden. Nicht in die Kanalisation, Gewässer oder ins Erdreich gelangen lassen.

Clean tools immediately after use with soap and water. Only dispose of empty containers for recycling. Dried material residues can be disposed of as household waste. Do not allow entry into the sewage system, waterways or soil.

Kennzeichnungen Identification marks

Produktcode: M-DF01 (GISCODE)
Wassergefährdungsklasse: 1 (VwVwS)

Abfallschlüssel: 08 01 12 (AVV)

Gefährliche Inhaltsstoffe: -

ADR: -

UN-Nummer: -

Transportgefahrenklasse: -

Umweltgefahren: -

Product code: M-DF01 (GISCODE)

Water hazard class: 1 (VwVwS)

Waste code: 08 01 12 (AVV)

Hazardous ingredients: -

ADR: -

UN-number: -

Transport hazard class: -

Environmental dangers: -

Sicherheitsdatenblatt Safety data sheet

Das Sicherheitsdatenblatt ist erhältlich:
info@yshield.de