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YSHIELD
EMR - PROTECTION

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Technical data sheet - Sheet products series Yxx

	YCF-60-100 Wallpaper Fleece	YCF-80-100 Wallpaper Fleece	YCF-100-100 Wallpaper Fleece	YCP-60-100 Wallpaper	YCP-80-100 Wallpaper	YCP-100-100 Wallpaper	YMP-60-150 Building membrane
Picture							
Shielding HF/LF/MF	HF / LF / -			HF / LF / -			HF / LF / -
Shielding attenuation	60 dB	80 dB	100 dB	60 dB	80 dB	100 dB	60 dB
Ecology	**Very high**			**Very high**			**High**
Base material	Wallpaper base fleece certified to FSC© Mix Credit			Wallpaper base paper certified to PEFC™ und FSC©			PP-membrane, 3-layered
Coating	Zinc			Zinc			Zinc
Width	100 cm			100 cm			150 cm
Grammage	190 g/m²	230 g/m²	340 g/m²	190 g/m²	230 g/m²	340 g/m²	270 g/m²
Thickness	0.20 mm	0.21 mm	0.22 mm	0.20 mm	0.21 mm	0.22 mm	0.5 mm
Tensile strenght	Low: 2.7 - 4.4 kN/m			Very low: 2.1 - 3.9 kN/m			High: 210-300 N / 5 cm
Color	White / gray			Beige / gray			Gray / gray
sD-value	Follows	Follows	Follows	Follows	Follows	Follows	0,02 m
Electr. resistance	40 mΩ/☐	8 mΩ/☐	4 mΩ/☐	40 mΩ/☐	8 mΩ/☐	4 mΩ/☐	40 mΩ/☐
Moisture resistance	Limited			Limited			**Good**
Corrosion resistance	Typically good for zinc			Typically good for zinc			Typically good for zinc
Windproof	No			No			**Yes**
Waterproof	No			No			**Yes**
Application area (examples)	Interior: Base wallpaper for wall, ceiling			Interior: Base wallpaper for wall, ceiling			Exterior: Roof sheating membrane, facade membrane; Interior: Drywall installations
Processing (examples)	Glueing with wallpaper paste for heavy wallpapers (e.g. Metylan Spezial / Direct)			Glueing with wallpaper paste for heavy wallpapers (e.g. Metylan Spezial / Direct)			Stapling, glueing, laying
Rework ability (examples)	Wall paints, glueing of sheet materials			Wall paints, glueing of sheet materials			Glueing of sheet materials
Price / m² (20-25 m²)	EUR 12.00	EUR 13.99	EUR 18.99	EUR 12.00	EUR 13.99	EUR 18.99	EUR 11.00

Product features

Intended use

Electrically conductive coated sheet materials for the **protection against high-frequency electromagnetic fields** and/or low-frequency electric fields.

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

Area of application

The application depends on the basic materials:

YCF: Basis wallpaper-fleece. Indoor use as intermediate layer under paint finish on walls and ceilings. In dry wall constructions under or on gypsum plasterboards. For house manufacturers and houses in timber-frame construction used for in-wall-mounting.

YCP: Basis wallpaper-paper. Indoor use as intermediate layer under paint finish on walls and ceilings. In dry wall constructions under or on gypsum plasterboards. For house manufacturers and houses timber-frame construction used for in-wall-mounting.

YMP: Basis building membrane. 4-layered, universally applicable membrane. For roofs as roof sheathing, for house walls as facade membrane, for drywall constructions or for loose laying. Protects against wind, rain and wall moisture in residential buildings and industry buildings, combined with very high water vapour permeability.

There are many **more possibilities for typical applications** related to the basic materials. Please ask us how we appreciate the situation.

Corrosion resistance

All products are one-way coated with pure zinc. Corrosion resistance is corresponding to the typical characteristic of zinc, which is stable to water vapor and air moisture. Zinc is not suitable for inshore areas, close to salt-water.

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, IEEEE 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 products of the Yxx-series are one-way metallized. The more metal is on the sheets (types with 80 dB and 100 dB) the sharper the edges are. Please pay carefull attention to the razor sharp edges during the processing of the materials!

Grounding

Grounding regulation

Large area shieldings executed with shielding materials are no electrical equipment but „new conductive parts" according to IEV 826-03-03 or IEV 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 „grounding informations" sheet on our website.

Grounding accessories

To obtain an accordingly grounding, we exclusively recommend our special grounding accessories. For interior use: Grounding plate GW or GB in combination with grounding straps EB1, EB2 or EB3. For exterior use: Grounding set GE, stainless steel tape ELB or grounding set MCL.

Processing - Wallpapers

Underground

The underground needs to be solid, clean, degreased and dry. Old coats of paint or old wallpapers which can be etched by water, should be removed. Absorbent or porous surfaces must be prepared with a primer.

In general

The wallpaper strips YCF/YCP with a width of 100 cm are quite wide. As the sheets tend to easily bend, because of the high weight, the processing should be carried out by 2 persons.

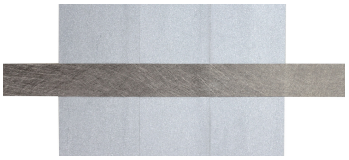
Metallized side in direction wall

Challenge: For a proper grounding, the sheets must be electrically connected with each other. When pasting the sheets with the metallized surface in direction wall, it wont be possible to stick on the grounding strap later on. If you still decide to it that way, you will have to apply the grounding strap EB1 to the wall first. After pasting on the wallpaper strips with standard wallpaper paste, there is a remaining chance that the metallized side will be contacted with EB1. Because this depends on the wallpaper paste, we recommend to carry out experiments first.

Special case wall paper primer: If the YCF/YCP wallpaper strips are pasted on to the primer with water-soluble wallpaper paste, metal particles will partial remain on the wall, after pulling off the wallpaper.

Metallized side in direction room

Best solution that cause the least problems, even if the result is visually not that attractive. But for this, all wallpaper strips easily can be connected and grounded with grounding strap EB1.



Special case wall paper primer: Metallized side in direction room ist he best solution for YCF/YCP wallpaperstrips when using water soluble wallpaper paste, the strips will be completely removed after detaching.

Edge to edge or overlapping

Ideally the wallpaper strips should be pasted with an overlapping. Therby you will achieve the best attenuation. The overlapping should be smoothed with a fine filler, but you still won`t gain a perfectly smooth surface then. You also could paste the wallpaper edge to edge as usual, but you then will cause a slight decrease of attenuation.

Paste selection

A variety of wallpaper pastes is commercially available:

„Standard" wallpaper paste mostly consist of methyl cellulose and is water soluble. When painting the wallpaper strips with wall color, it could happen that the strips will come off.

„Special" wallpaper paste for heavy wallpapers consist of methyl cellulose and in addition plastic binder to provide water resistance. Due to the relatively high weight of our strip material we strongly recommend wallpaper paste for heavy wallpapers.

Pure dispersion glues are expensive and restrict the vapour diffusibility and are rearely necessary.

Special case wall paper primer: If you would like to take of the wallpaper, e.g. in a rented flat or house later on, you may use a wall paper primer before. Please be aware, that in this case you can use water soluble standard wallpaper paste only!

Final coating with paints

A recommendation is very difficult. There are various organic paints (dispersion, dispersion silicate, silicone resin, natural resin, casein, distemper) and inorganic paints (sol-silicate, pure silicate, chalk, cement, clay) available. Probably **organically bounded, solvent free, pH-neutral paints** will pose the fewest problems.

Final coating on metallized side: Many of the pure inorganic or silicate paints will probably show adhesion problems. Strong acids and bases will damage the zinc layer. Paints with a high pH-value (e.g. pure silicate paints) must not be used.

Final coating on YCF/YCP-paper side: Use best organically based paints. It is very likely that inorganic paints do adhere as well, when using a primer first. We recommend to edit a testing area first.

Loose laying

The wallpaper strips should be processed with an overlapping of 5-10 cm. Do consider that there should be no gaps / holes. Ideally the overlapps should be closely stapeled or sticked down with our grounding strap EB3.

Processing - Building membrane

As roof sheating membrane

The application is the same as with other roof membranes. The silvery zinc layer must always face to the inside of a building!

As facade membrane

The application is the same as with other facade membranes. The silvery zinc layer must always face to the inside of a building!

In drywall installations

Overlapp the single elements while stapling for 10 cm. Do consider that there should be no gaps / holes. The silvery zinc layer must always face to the inside of a building!

Loose laying

Overlapp the single elements for 10 cm. Do consider that there should be no gaps / holes.

Further information

Storage

Best stored indoors at low humidity, prevented from direct sunlight and kept out of the reach of children.

Durability

Specific for these products a durability cannot be stated.

Disposal

Material residues can be disposed as household garbage.

Identification marks

Waste code: 17 09 04 (AVV)
Hazardous ingredients: –
ADR: –
UN-number: –
Transport hazard class: –
Environmental dangers: –

Safety data sheet

The safety data sheet is available upon request under telephone number 0049-(0)8531-31713-0.

Disclaimer

Aforesaid inforamtions have been assorted to the state of processing and application technology. As we dont have any influence on processing and application, no liabilitay 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.

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