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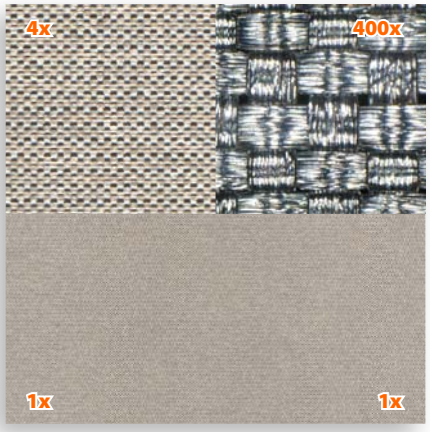
Metallized polyester netting HNG80 (HF+LF) Our recommendation!

Characteristics

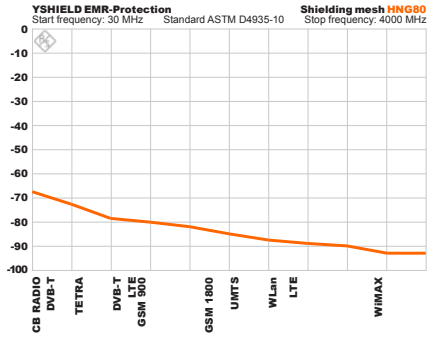
HNG80 is a compact woven, **metallized polyester netting** for shielding of high-frequency radiation (HF) and low-frequency electric fields (LF).



Our standard product for easy bonding on walls, ceilings and floors! This professional product is typically used for ministries of defence, banking houses, laboratories, etc. Now available for private use! Typical application **for bonding interior** on walls, ceilings, floors, as intermediate layer, for **drywall constructions**, loosely laid, etc.

Technical data

- **Width: 66 cm**
- **Length: By the meter / 30 m roll / 100 m roll**
- **Attenuation: 80 dB at 1 GHz**
- Weight: 80 g/m²
- Material thickness: 0.07 mm
- Color: Anthracite / Brown
- Tensile strength: Very good in both directions, 220 N/mm
- Materials: Polyester, copper, nickel, protection coating
- Surface conductivity: 0.02 ohm (square resistance R□)



Processing

In case of processing HNG80 as an intermediate layer we recommend using our dispersion glue DKL90 for adhesion. The wall and the backside of HNG80 should be coated with a paint roller. Insert the material wet on wet. Fix it manually (with disposable gloves) and press a gummed roller against the fleece to get a crease-free surface. Work quickly and strip by strip only so that the DKL90 glue does not dry. **A crease-free adhesion is only possible on perfectly level surfaces!** Structured surfaces (ingrain wallpaper, textured plastering) have to be smoothed. If that is not possible, we recommend using our shielding paint HSF54.

Grounding

Due to the highly conductive surface this material can be **contacted and grounded easy to shield low frequency (LF) electric fields**. For professional grounding we recommend our **grounding plug EST** for self laying application, or our **grounding strap EB in combination with our grouding set ES** for adhesive bonding with our dispersion glue DKL90.

Shielding attenuation

The shielding attenuation is **regularly tested in our own laboratory** or by **Professor Dipl.Ing. Pauli** at the University of the German Federal Armed Forces in Munich due to the standards ASTM D4935-10 and/or IEEE-STD-299-2006. Current expert report is available uppon request.

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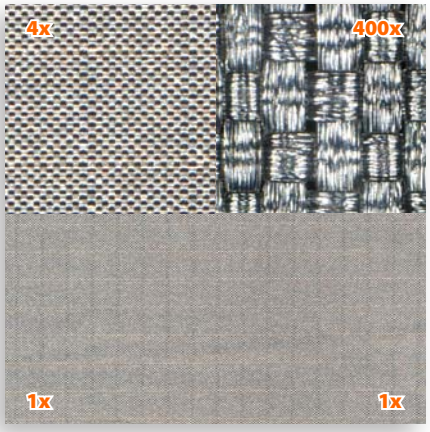
Metallized polyester netting HNG100 (HF+LF)

Characteristics

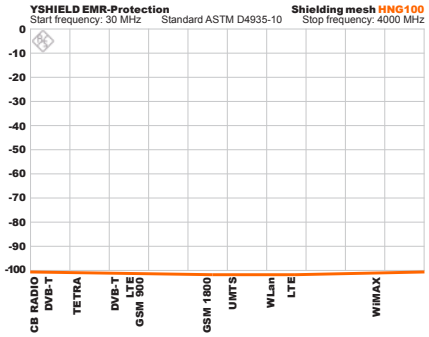


HNG100 is a compact woven, **heavy metallized polyester netting** for shielding of high-frequency radiation (HF) and low-frequency electric fields (LF).

Maximum shielding product with over 100 dB. This professional product is typically used for ministries of defence, banking houses, laboratories, etc. Typical application **for bonding interior** on walls, ceilings, floors, as intermediate layer, for **drywall constructions**, loosely laid, etc.

Technical data

- **Width: 145 cm**
- **Length: By the meter / 20 m roll**
- **Attenuation: 100 dB at 1 GHz**
- Weight: 140 g/m²
- Material thickness: 0.08 mm
- Color: Anthracite / Brown
- Tensile strength: Very good in both directions, 220 N/mm
- Materials: Polyester, copper, nickel, protection coating
- Surface conductivity: 0.003 ohm (square resistance R□)



Processing

In case of processing HNG100 as an intermediate layer we recommend using our dispersion glue DKL90 for adhesion. The wall and the backside of HNG100 should be coated with a paint roller. Insert the material wet on wet. Fix it manually (with disposable gloves) and press a gummed roller against the fleece to get a crease-free surface. Work quickly and strip by strip only so that the DKL90 glue does not dry. **A crease-free adhesion is only possible on perfectly level surfaces!** Structured surfaces (ingrain wallpaper, textured plastering) have to be smoothed.

Grounding

Due to the highly conductive surface this material can be **contacted and grounded easy to shield low frequency (LF) electric fields**. For professional grounding we recommend our **grounding plug EST** for self laying application, or our **grounding strap EB in combination with our grouding set ES** for adhesive bonding with our dispersion glue DKL90.

Shielding attenuation

The shielding attenuation is **regularly tested in our own laboratory** or by **Professor Dipl.Ing. Pauli** at the University of the German Federal Armed Forces in Munich due to the standards ASTM D4935-10 and/or IEEE-STD-299-2006. Current expert report is available uppon request.

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Metallized nylon fleece HNV80 (HF+LF)

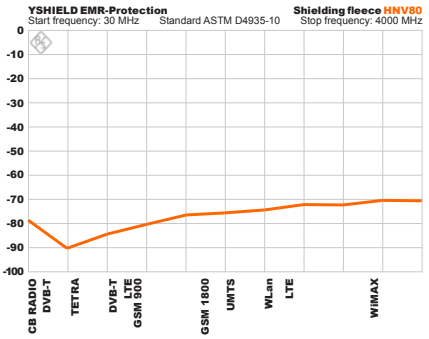
Characteristics

HNV80 is a fine, **metallized nylon fleece** for shielding of high-frequency radiation (HF) and low-frequency electric fields (LF).

This professional product is typically used for ministries of defence, banking houses, laboratories, etc. Now available for private use! Typical application **interior** preferable **loosely laid** or for stapling in **drywall constructions** , etc.

Technical data

- **Width: 100 cm**
- **Length: By the meter / 20 m roll**
- **Attenuation: 80 dB at 1 GHz**
- Weight: 85 g/m²
- Material thickness: 0.15 mm
- Color: Anthracite / Brown
- Tensile strength: Very good in both directions, 50 N/mm
- Materials: Nylon, copper, nickel, protection coating
- Surface conductivity: 0.008 ohm (square resistance R□)



Processing

Because of formation of wrinkles, bonding on walls with a glue is not recommended, use better HNG80 or HNG100 instead! Best usage for HNV80 is loosely laid under floor coverings, behind wall systems, etc. further for stapling in drywall constructions. Overlapp the single elements, whereby you connect the elements for grounding.

Grounding

Due to the highly conductive surface this material can be **contacted and grounded easy to shield low frequency (LF) electric fields**. For professional grounding we recommend our **grounding plug EST** for self laying application, or our **grounding strap EB in combination with our grouding set ES** for adhesive bonding with our dispersion glue DKL90.

Shielding attenuation

The shielding attenuation is **regularly tested in our own laboratory** or by **Professor Dipl.Ing. Pauli** at the University of the German Federal Armed Forces in Munich due to the standards ASTM D4935-10 and/or IEEE-STD-299-2006. Current expert report is available uppon request.

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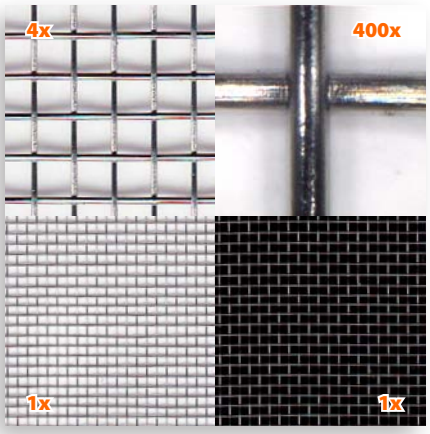
Stainless steel gauze HEG10 (HF+LF) Our recommendation!

Characteristics

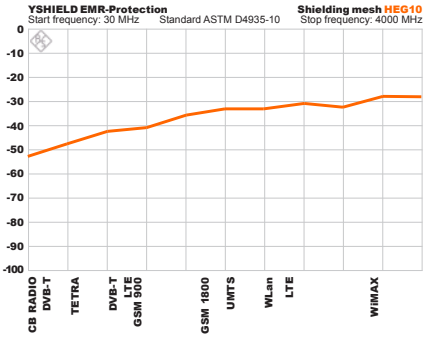
HEG10 is a **finely woven, noncorrosive stainless-steel gauze** for shielding of high-frequency radiation (HF) and low-frequency electric fields (LF).



Typical application for the interior and exterior **under-plaster in upgraded insulations**, in **roof areas**, at **drywall constructions**, as **flyscreen**, loosely laid, etc.

Technical data

- **Width: 100 cm**
- **Length: By the meter / 25 m roll**
- **Attenuation: 40 dB at 1 GHz**
- Mesh width: 1.0 mm, wire diameter: 0.16 mm, material thickness: 0.32 mm, open area 74 %
- Weight: 260 g/m²
- Color: Silver
- Fire-proof material, A1 according DIN 4102:1994
- Surface conductivity: 0.1 ohm (square resistance R□)



Processing

In case processing the HEG10 under plaster you should work with a preferably fine and organic filler. Under the floor covering (laminate, parquet, PVC coating, etc.) the HEG10 is being fixed with the adhesive used for the floor covering. For drywall construction and in roof area the mesh elements can be bolt or stapled together. **The rule is:** Always overlapp the single elements at least 5 cm. For grounding use the perforated stainless steel tape ELB by screwing it right across the elements into the surface.

Grounding

Due to the highly conductive surface this material can be **contacted and grounded easy to shield low frequency (LF) electric fields**. For professional grounding we recommend our **grounding plug EST** for self laying application, or our **perforated stainless steel tape ELB** for application under-plaster or in drywall constructions.

Shielding attenuation

The shielding attenuation is **regularly tested in our own laboratory** or by **Professor Dipl.Ing. Pauli** at the University of the German Federal Armed Forces in Munich due to the standards ASTM D4935-10 and/or IEEE-STD-299-2006. Current expert report is available uppon request.

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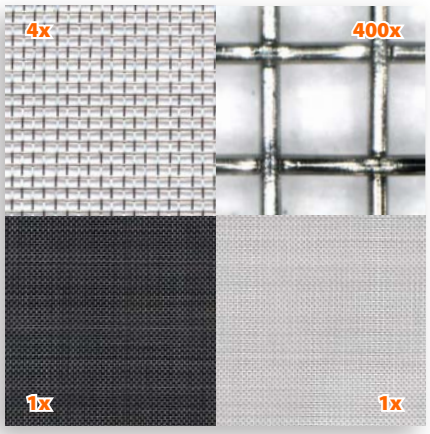
Stainless steel gauze HEG03 (HF+LF)

Characteristics

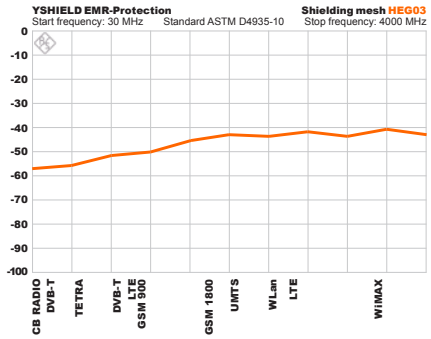


HEG03 is an **extremely fine woven, noncorrosive stainless-steel gauze** for shielding of high-frequency radiation (HF) and low-frequency electric fields (LF).

Typical application **due to the thin filaments especially as fly-screen**. In comparison to HEG10, due to the smaller mesh width, the shielding attenuation is better at high frequencies.

Technical data

- **Width: 120 cm**
- **Length: By the meter / 25 m roll**
- **Attenuation: 40 dB at 1 GHz**
- Mesh width: 0.3 mm, wire diameter: 0.08 mm, material thickness: 0.16 mm, open area 62 %
- Weight: 200 g/m²
- Color: Silver
- Fire-proof material, A1 according DIN 4102:1994
- Surface conductivity: 0.03 ohm (square resistance R□)



Processing

In case processing as **flyscreen**, the application is identical to that of a regular flyscreen in commercial tenter frames. In case processing the HEG03 **under plaster** you should work with a finest organic filler. Under the floor covering (laminate, parquet, PVC coating, etc.) the HEG03 is being fixed with the adhesive used for the floor covering. For drywall construction and in roof area the mesh elements can be bolt or stapled together. **The rule is:** Always overlapp the single elements at least 5 cm. For grounding use the perforated stainless steel tape ELB by screwing it right across the elements into the surface.

Grounding

Due to the highly conductive surface this material can be **contacted and grounded easy to shield low frequency (LF) electric fields**. For professional grounding we recommend our **grounding plug EST** for self laying application, or an own grounding solution with the window frame.

Shielding attenuation

The shielding attenuation is **regularly tested in our own laboratory** or by **Professor Dipl.Ing. Pauli** at the University of the German Federal Armed Forces in Munich due to the standards ASTM D4935-10 and/or IEEE-STD-299-2006. Current expert report is available uppon request.

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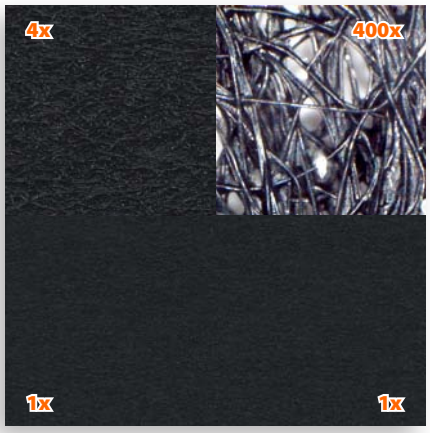
Carbonized polyester fleece NCV95 (LF)

Characteristics

NCV95 is a fine, **cabonized polyester fleece** for shielding of low-frequency electric fields (LF).

Typical application in the **interior** for walls, ceilings and floors as **intermediate layer**, in **drywall constructions** or for loose layings. Further together with our grounding plug EST as a **cheap „earthed mattress pad“**.



Technical data

- **Width: 95 cm**
- **Length: By the meter / 20 m roll**
- **Attenuation: 80 dB**
- Weight: 90 g/m²
- Material thickness: 0.55 mm
- Color: Black
- Tensile strength: 260 N/mm in longitudinal direction, 35 N/mm in transverse direction
- Materials: Polyester, carbon coating
- Surface conductivity: 1000 ohm (square resistance R□)

Processing

In case of processing NCV95 as an intermediate layer we recommend using our dispersion glue DKL90 for adhesion. The wall and the backside of NCV95 should be coated with a paint roller. Insert the material wet on wet. Fix it manually (with disposable gloves) and press a gummed roller against the fleece to get a crease-free surface. Work quickly and strip by strip only so that the DKL90 glue does not dry. **A crease-free adhesion is only possible on perfectly level surfaces!** Structured surfaces (ingrain wallpaper, textured plastering) have to be smoothed. If that is not possible, we recommend using our shielding paint NSF34. Used as „earthed mattress pad“, NCV95 has to be grounded from an electrician with our grounding plug EST.

Grounding

Due to the conductive surface this material can be **contacted and grounded easy to shield low frequency (LF) electric fields**. For professional grounding we recommend our **grounding plug EST** for self laying application, or our **grounding strap EB in combination with our grouding set ES** for adhesive bonding with our dispersion glue DKL90.

Shielding attenuation

The shielding attenuation is **regularly tested in our own laboratory** or by **Professor Dipl.Ing. Pauli** at the University of the German Federal Armed Forces in Munich. Current expert report is available upon request.

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Mu-metal foil NMF25 (magnetic field LF)

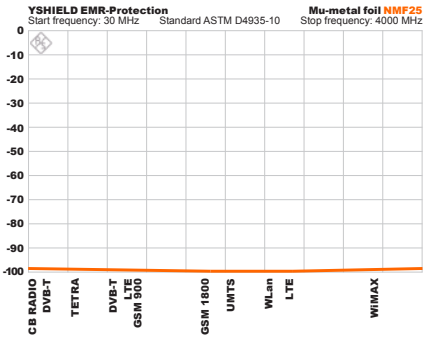
Characteristics

NMF25 is a **Mu-metal foil** for shielding of low-frequency **magnetic fields**. Due to the low electrical resistance even for shielding low-frequency electric fields (LF) and high-frequency fields (HF).

Can easily be bent, folded and be cut with scissors, without big attenuation loss. Good corrosion resistance in a normal environment.

Technical data

- **Width: 25 cm**
- **Length: By the meter / 50 m roll**
- **Attenuation LF magnetic field: 14 dB = 80 % (**for more shielding use multiple layers); Attenuation HF: 100 dB at 1 GHz
- Permeability: μ 4 = 10000; μ max. = 25000
  Saturation polarization: 0.8 T
- Weight: 900 g/m²; Material thickness: 0.1 mm; Color: Silver
- Materials: Alloy of nickel, iron, copper, molybdenum
- Surface conductivity: 0.004 ohm (square resistance R□)



Processing

In **electronic applications** best use a double-sided adhesive tape. For **walls, ceilings and floors** (for shielding cables or fuse boxes) use a viscous glue with high adhesive strength. The strips of the foil should be overlapped at least 1 cm. Fuse boxes should be shielded with at least 2 x 2m! After drying, NMF25 can be painted over with commercial diespersion paint.

Grounding

Due to the highly conductive surface this material can be **contacted and grounded easy** to shield low frequency (LF) electric fields.

Shielding attenuation

The shielding attenuation is **regularly tested in our own laboratory** or by **Professor Dipl.Ing. Pauli** at the University of the German Federal Armed Forces in Munich due to the standards ASTM D4935-10 and/or IEEE-STD-299-2006. Current expert report is available uppon request. **Important: The diagram above shows the high-frequency attenuation! The LF magnetic field attenuation is 14 dB (80 %).**

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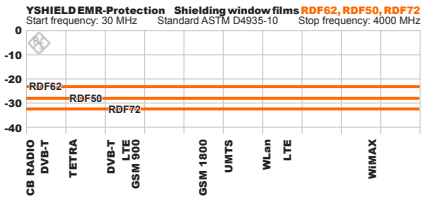
Window films: RDF50, RDF62, RDF72 (HF)

Characteristics

RDFxx are precious-metal coated and self-adhesive films for the protection against high-frequency radiation (HF). **Our recommendations:** ● **RDF62-Clear** has a perfect ratio between light transmission, color of daylight and good attentuation. ● **RDF72-Premium** is our premium film consisting of 10 metal layers for highest quality demands. Unrivaled attenuation and a very high degree of light transmission.

Technical data

- **Width: 76 cm** and **152 cm**
- **Length: By the meter / 30 m roll**
- Material thickness: RDF50, RDF62: 37.5 µm; RDF72: 75 µm
- Mounting: Water-activated, pressure-sensitive adhesive to the back
- Shielding certificate to IEEE-STD-299-2006 (see diagram)



	RDF62-Clear	RDF50-Standard	RDF72-Premium
Application	Interior	Interior	Interior
Application on heat-absorbing glass	No	No	No
Edge sealant necessary	No	No	Yes: FKV50
Attenuation / Shielding effectiveness at 1 GHz	22 dB / 99.37 %	28 dB / 99.82 %	32 dB / 99.94 %
Light transparency	62 %	50 %	72 %
Color of daylight	Bright grey	Bright grey	Bright Green
Reflections from the interior	Bright silver	Golden	None
Reflections from the exterior	Bright silver	Silver	None

Mounting accessories

The mounting requires a bit of craftsmanship skills and adequate accessories: ❶ **Mounting concentrate FMK30** for wet bonding, 30 ml for 0.5 liter of water. ❷ **Plastic scraper FVR10** for a bubble-free bonding. With the felt-edge the water and the bubbles can be pressed out, without sctratching the film-surface. ❸ **Aerosol can FSF**, 0.5 liter.

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YSHIELD Conductive dispersion glue DKL90

Characteristics

Special coordinated dispersion glue for binding our sheet materials to walls, ceilings, floors, doors, etc.. High quality class water-resistant special glue based on acrylics, breathable, low-emission and solvent-free. **Electrically conductive**, that the materials dont get isolated for grounding.

Processing

The application is identical with a wallpaper glue! Avoid bucklings and wrinkles in the materials! The wall surface and the backside of the material is primed with a painter's roller. The material is inserted wet-on-wet and fixed by hand (with disposable gloves) or with a pressure roller. Work quickly and strip by strip so that the glue won´t get dry.

Technical data

- **Specially for the following materials:** HNG80, HNG100, HNV80, NCV95
- **Delivery sizes**: 5 liter
- **Coverage**: 17.5 m^2 - 25 m^2, depending on the underground
- Ingredients: Acrylic binder, water, carbon black, additives, preservative
- Color: Black
- Surface conductivity: 400 ohm (square resistance R□)