

Rev 1.4  
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# EMC & magnetic field screening Aaronia MagnoShield®

High performance industry-grade EMC magnetic panel-shielding

## References / examples of proof:

- ◆ German military (technical intelligence), Hof, Germany
- ◆ Max-Planck Institute for quantum optics, Garching, Germany
- ◆ Max-Planck Institute for nuclear physics, Heidelberg, Germany
- ◆ Robert Bosch GmbH, Magdeburg, Germany
- ◆ Technical University Hamburg, Germany
- ◆ Landesbank Berlin, Germany
- ◆ AMD, Dresden, Germany
- ◆ LBBW Bank, Stuttgart, Germany



Made in Germany



# Specifications

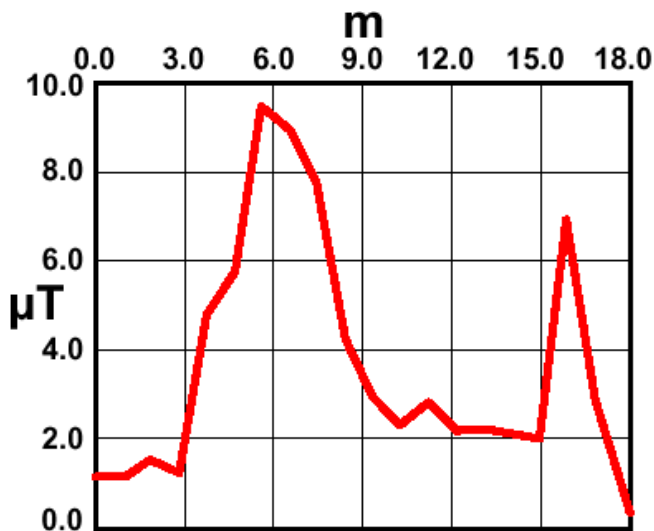
## Aaronia MagnoShield® COMPOUND panels

- ◆ Nealed for maximum shielding efficiency
- ◆ **Shielding factor: 5-7**
- ◆ Saturation flux density: approx. 0,8 Tesla
- ◆ Packaging unit: 2m<sup>2</sup>
- ◆ Width: approx. 1000mm (1m)
- ◆ Height: approx. 2000mm (2m)
- ◆ Thickness: approx. 2mm
- ◆ Electrically conductive material: Aluminum
- ◆ Magnetically conductive Material: Nickel/iron alloy, so-called. Mu-Metal, isotrope
- ◆ Noncorrosive
- ◆ Frost proof
- ◆ Paintable
- ◆ Installable in plaster or concrete
- ◆ Very easy handling even for the novice
- ◆ Easy handling due to practical packaging unit
- ◆ Colour: Silver (Aluminum)
- ◆ Weight: approx. 8kg/m<sup>2</sup>
- ◆ Quality assurance standard: ISO 9001
- ◆ Material verification certificate: B according to EN 10204

## Aaronia MagnoShield® DUR panel

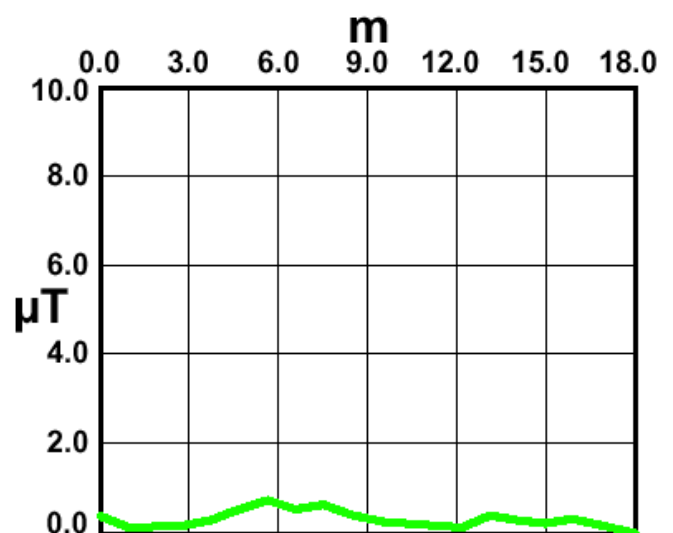
- ◆ Nealed for maximum shielding efficiency
- ◆ **Shielding factor: 10-13**
- ◆ Saturation flux density: approx. 0,8 Tesla
- ◆ Packaging unit: 1,32m<sup>2</sup>
- ◆ Width: approx. 660mm (0,66m)
- ◆ Height: approx. 2000mm (2m)
- ◆ Thickness: 0,5mm (1mm with screening factor >15 on request)
- ◆ Magnetically conductive Material: Nickel/iron alloy, so-called. Mu-Metal, isotrope
- ◆ Noncorrosive
- ◆ Frost proof
- ◆ Paintable
- ◆ Installable in plaster or concrete
- ◆ Very easy handling even for the novice
- ◆ Easy handling due to practical packaging unit
- ◆ Colour: Dark silver
- ◆ Weight: approx. 4kg/m<sup>2</sup>
- ◆ Quality assurance standard: ISO 9001
- ◆ Material verification certificate: B according to EN 10204

## Transmission damping curves:



**OHNE Aaronia MagnoShield®**

Magnetic field above a transformer station without screening



**MIT Aaronia MagnoShield®**

Magnetic field above the transformer station after screening

# Product description

## Material characteristics

Aaronia offers an extremely efficient, yet very easy to handle solution for screening static and alternating magnetic fields: Aaronia MagnoShield® magnetic field screening panels. Aaronia MagnoShield® magnetic field screening panels offer, thanks to their special Mu-metal / aluminum compound concept, protection against high-frequency (RF) AND low-frequency (LF) radiation and protection against low-frequency magnetic fields.

Aaronia MagnoShield® screening panels are easy to handle and install. They are robust, frost proof, rot proof, noncorrosive and can even be installed in plaster or concrete. Thus, they are also suitable for outdoor application.

Aaronia MagnoShield® screening panels have been especially developed for screening even strong magnetic fields caused by local radiation sources like cables, transformers, generators, traction power, power distribution boxes, high-voltage lines etc. They allow screening of entire rooms, houses and other buildings, but also highly sensitive areas like distributing centres, control centres etc. against interference from magnetic fields.

Installation is performed edge to edge to build a completely closed surface.



Aaronia Magnoshield® made from Mu-metal allows quick and easy large-area magnetic field screenings.



Large-area screening of an office building against a lower level transformer station using Aaronia Magnoshield® screening panels.

## Screening a room

To screen a room against a low-frequency magnetic field, such as caused by a transformer station, the surface facing the radiation source needs to be covered completely with Aaronia MagnoShield® screening panels. This is the only way to efficiently block the magnetic field (ATTENTION: If ADDITIONALLY a high-frequency radiation source like mobile communications needs to be screened against, the ENTIRE room must ADDITIONALLY be covered completely with Aaronia X-Dream® screening fleece. Windows need to be covered with the transparent screening fabric Aaronia-Shield®).

In floor areas, Aaronia MagnoShield® panels can be installed invisibly under the carpet, or in new constructions, inside the floor pavement or concrete. In the case of even, sustainable walls, the panels can be mounted directly to the walls using screws or firing pins. Otherwise, a sustainable support structure needs to be created first. Installation on ceilings is performed in a similar way, though special care needs to be exercised as these panels are pretty heavy.

Doors should be covered entirely with Aaronia MagnoShield®. With the door closed, a gap-free connection with the rest of the panels in the room needs to be established.

After installation, Aaronia MagnoShield® panels can be painted or covered with plaster. Hence, an invisible installation is not a problem.

# References

## User of Aeronia Antennas, Spectrum Analyzers and screening solutions (Examples)

### Government, Military, aeronautic, astronautic

- ◆ NATO, Belgien
- ◆ Boeing, USA
- ◆ Airbus, Hamburg
- ◆ Bund (Bundeswehr), Leer
- ◆ Bundeswehr (Technische Aufklärung), Hof
- ◆ Lufthansa, Hamburg
- ◆ DLR (Deutsches Zentrum für Luft- und Raumfahrt, Stuttgart)
- ◆ Eurocontrol (Flugüberwachung), Belgien
- ◆ Australian Government Department of Defence, Australien
- ◆ EADS (European Aeronautic Defence & Space Company) GmbH, Ulm
- ◆ Institut für Luft- und Raumfahrtmedizin, Köln
- ◆ Deutscher Wetterdienst, Tauche
- ◆ Polizeipräsidium, Bonn
- ◆ Landesamt für Umweltschutz Sachsen-Anhalt, Halle
- ◆ Zentrale Polizeitechnische Dienste, NRW
- ◆ Bundesamt für Verfassungsschutz, Köln
- ◆ BEV (Bundesamt für Eich- und Vermessungswesen)

### Research/Development, Science and Universitys

- ◆ Deutsches Forschungszentrum für Künstliche Intelligenz, Kaiserslautern
- ◆ Universität Freiburg
- ◆ Indonesien Institute of Sience, Indonesien
- ◆ Max-Planck-Institut für Polymerforschung, Mainz
- ◆ Los Alamos National Labratory, USA
- ◆ University of Bahrain, Bahrain
- ◆ University of Florida, USA
- ◆ Universität Erlangen, Erlangen
- ◆ Universität Hannover, Hannover
- ◆ University of Newcastle, Großbritannien
- ◆ Universität Strasbourg, Frankreich
- ◆ Universität Frankfurt, Frankfurt
- ◆ Uni München – Fakultät für Physik, Garching
- ◆ Technische Universität Hamburg, Hamburg
- ◆ Max-Planck Institut für Radioastronomie, Bad Münstereifel
- ◆ Max-Planck-Institut für Quantenoptik, Garching
- ◆ Max-Planck-Institut für Kernphysik, Heidelberg
- ◆ Max-Planck-Institut für Eisenforschung, Düsseldorf
- ◆ Forschungszentrum Karlsruhe, Karlsruhe

### Industry

- ◆ Shell Oil Company, USA
- ◆ ATI, USA
- ◆ Fedex, USA
- ◆ Walt Disney, Kalifornien, USA
- ◆ Agilent Technologies Co. Ltd., China
- ◆ Motorola, Brasilien
- ◆ IBM, Schweiz
- ◆ Audi AG, Neckarsulm
- ◆ BMW, München
- ◆ Daimler Chrysler AG, Bremen
- ◆ BASF, Ludwigshafen
- ◆ Deutsche Bahn, Berlin
- ◆ Deutsche Telekom, Weiden
- ◆ Siemens AG, Erlangen
- ◆ Rohde & Schwarz, München
- ◆ Infineon, Österreich
- ◆ Philips Technologie GmbH, Aachen
- ◆ ThyssenKrupp, Stuttgart
- ◆ EnBW, Stuttgart
- ◆ RTL Television, Köln
- ◆ Pro Sieben – SAT 1, Unterföhring
- ◆ Channel 6, Großbritannien
- ◆ WDR, Köln
- ◆ NDR, Hamburg
- ◆ SWR, Baden-Baden
- ◆ Bayerischer Rundfunk, München
- ◆ Carl-Zeiss-Jena GmbH, Jena
- ◆ Anritsu GmbH, Düsseldorf
- ◆ Hewlett Packard, Dornach
- ◆ Robert Bosch GmbH, Plochingen
- ◆ Mercedes Benz, Österreich
- ◆ EnBW Kernkraftwerk GmbH, Neckarwestheim
- ◆ AMD, Dresden
- ◆ Infineon Technologies, Regensburg
- ◆ Intel GmbH, Feldkirchen
- ◆ Philips Semiconductors, Nürnberg
- ◆ Hyundai Europe, Rüsselsheim
- ◆ Saarschmiede GmbH, Völklingen
- ◆ Wilkinson Sword, Solingen
- ◆ IBM Deutschland, Stuttgart
- ◆ Vattenfall, Berlin
- ◆ Fraport, Frankfurt

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für Elektromagnetische Verträglichkeit  
Düsseldorf, 07.-09.02.2012



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