

**Projects with our Seal of Quality**

The following projects have been granted the Seal of Quality "e-smog free" with three stars in the category Detached House:



Kiebitzdeich 185, Hamburg, Germany



Fulda, Germany



Apfelweg 1, Hameln, Germany



Niegesland 9, Hamburg, Germany



Feldstr. 20, Oberding OT Notzing, Germany



Niegesland 9, Hamburg, Germany

- Realisation Process:**
1. Measurement on site previous to design stage
  2. Consideration of measuring results during project design
  3. Consultation and supervision of the proposed shielding actions with Cuprotect® in collaboration with the appointed construction companies
  4. Re-measurement after completion
  5. Documentation and awarding of the Seal of Quality



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**Umweltanalytik Kessel**

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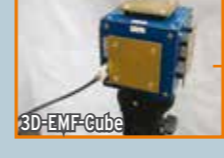
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 www.cuprotect.de



**Umweltanalytik Kessel**

Environmental Analysis  
 Professional Measurement  
 of Electronic Smog



# E-Smog Shielding

Special Fine Mesh  
 for Highly Effective Shielding  
 of Electronic Smog



## Stress through E-Smog

As a matter of fact stress through electronic smog increases continuously.

- Mobile phone networks are expanding.
- Official radio services, television and radio broadcast are being digitalised (pulsed frequencies).
- Homes and offices are increasingly supplied with wireless electronic systems.
- Radar senders with a range of many kilometres pulse around the clock.
- Shielded electrics is not the official standard yet.
- Sensible areas for recovery and recreation could be designed without distortion of the natural magnetic field.



Mobile phone senders on roofs, chimneys and television masts

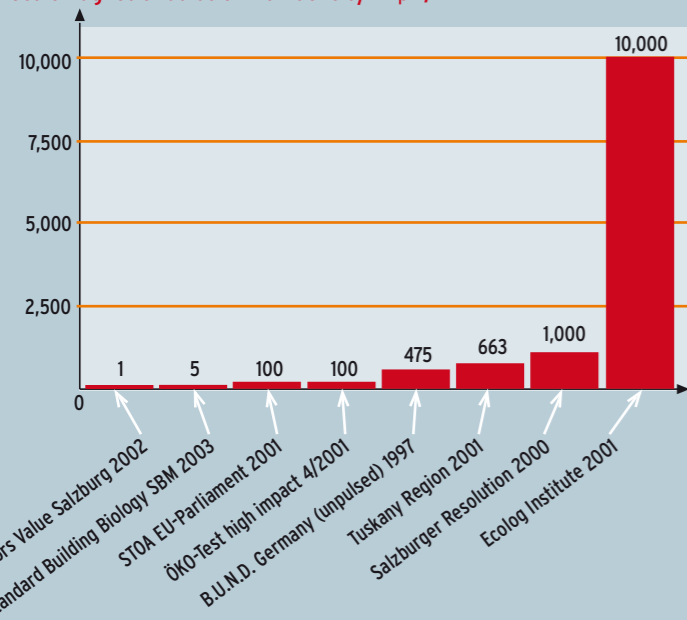


Electric supply, high-voltage power lines, wireless DECT-telephones, radar sender

## Preventive Limits of High Frequency Stress

Comparing preventive limiting values and recommendations for pulsed (phase modulated) mobile phone radiation (July 2003)

electromagnetic radiation flux density in  $\mu\text{W}/\text{m}^2$



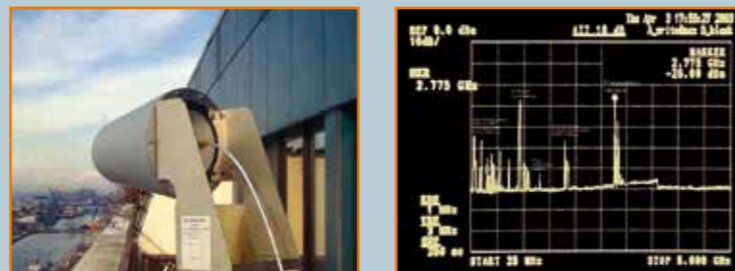
## Professional Measurement



Inspection of high frequency situations

High frequency electromagnetic radiation and low frequency electric fields should always be measured with professional, calibrated instruments previous to any shielding actions being taken.

Individual shielding advice includes both, saves costs and guarantees optimal effectiveness.



Radar measurement

Measuring result

## E-Smog Services

- Design of expert shielding measures for high frequency electromagnetic radiation and low frequency electric fields
- Building biological consultancy for architects, developers and construction companies
- High frequency measurements up to 26.5 GHz with calibrated measuring instruments
- 3D-measurements of low frequency electric and magnetic fields
- 3D-measurements of static magnetic fields
- Lectures on mobile phone radiation and electronic smog in general
- Preparation of location analyses and reports on the current situation of mobile phone radiation
- Trainings and seminars



Measurement: EMC-Test at NRW GmbH Dortmund, 23/11/2004  
Box wrapped by double layer of Cuproprotect® Spezial  
Shielding effectivity up to 105 dB

## Shielding with Cuproprotect®

Cuproprotect® and Cuproprotect®Spezial are highly effective fine meshes for the shielding of low frequency electric fields and high frequency electromagnetic radiation up to a shielding effectivity of 99.9999 %.



Cuproprotect®

Cuproprotect®Spezial

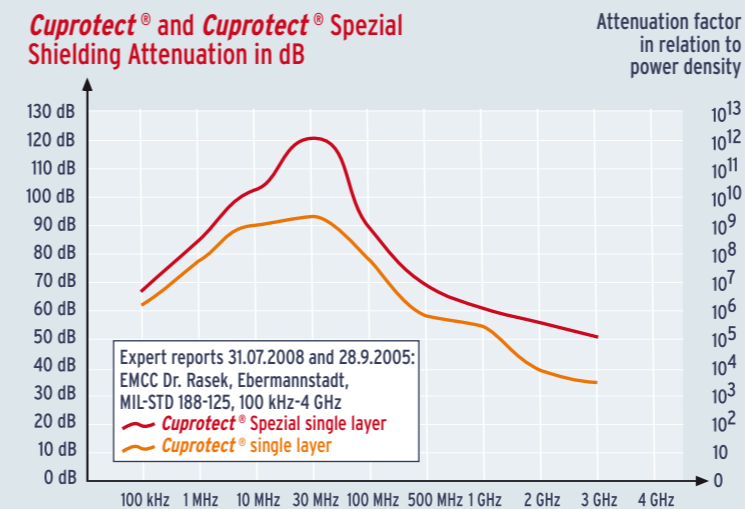
Cuproprotect®A1

## Effectivity of Cuproprotect®

Prof. Dipl.-Ing. P. Pauli from Bundeswehr University, Munich, analysed the high frequency transmission attenuation as per MIL-Standard 285 10 MHz - 3 GHz in his reports from 03/07/2002, and 09/12/2004.

EMC-Test, NRW GmbH Dortmund, 23/11/2004, DIN EN 61000-5-7, 300 kHz - 3 GHz

## Cuproprotect® and Cuproprotect® Spezial Shielding Attenuation in dB



## Areas of Use

- Private and commercial residential building
- Timber and timber frame construction, dry-lining
- Roof and external walls
- Application into plaster or mortar

## Properties

- Extremely high electrical conductivity
- Diffusivity, tensile strength, flexibility
- No alteration of the natural magnetic field
- Very high HF shielding effectivity
- Simple and inexpensive fixing



Connection of courses in overlap zone

Proper earthing of Cuproprotect® shielding

Insertion of courses into a double layer of mortar

## Certificate: "Das elektromogfreie Haus"®

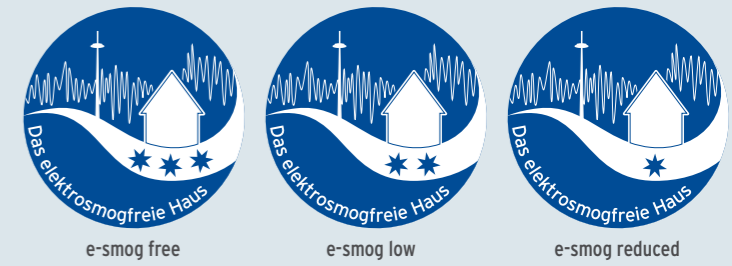


After-check within a house subsequent to shielding

The extent and effectivity of completed shielding measures can be checked and documented on request.

The certificate "Das elektromogfreie Haus" (The e-smog-free house) is a quality seal in three classes. The following categories out of the living and working environment are rated by different criteria.

- Detached Houses
- Rehabilitation and Treatment Centres, Spas, Geriatric Care Centres
- Hotels and Holiday Homes
- Office Work Places



## Rating Criteria for the Quality Seal

Category: Detached House	***	**	*
electric field strength (V/m)	< 1	< 3	< 6
magnetic flux density (nT)	< 30	< 60	< 120
electromagnetic radiation, (flux density in $\mu\text{W}/\text{m}^2$ )			
pulsed:	< 1	< 5	< 10
peaks (radar):	< 100	< 500	< 1,000
unpulsed:	< 10	< 50	< 100
static magnetic field, flux density deviation in nT	< 2,000	< 4,000	< 6,000
electrostatic field, surface voltage in Volt	< 100	< 300	< 500

For obtaining the quality seal, all bedplaces have to comply with the above figures.