

High+low frequency



- for large-scale shielding of high-frequency electromagnetic waves, low-frequency alternating electric fields and dissipation of static charges
- Non-woven for use in dry construction
- full-surface copper-plated
- high shielding efficiency > 70 dB
- open to vapour diffusion, balanced tensile strength

Saphir Extra is a highly shielding, particularly light, corrosion-resistant, breathable and tear-resistant copper fleece for shielding high-frequency electromagnetic waves and low-frequency alternating electric fields.

Saphir Extra is used in roofs, walls, ceilings floors lining under. Special applications, e.g. as underlayment wallpaper, for processing in simple cell phone cases or for RFID shielding are also possible.

Due to the high shielding effectiveness (~ 70 dB), the non-woven meets the highest requirements.

Order-No.: 200028

Short-Desc.: Saphir Extra - 110 cm



Construction non-woven (HF+LF)

Saphir Extra

Type	MHz	dB	in %
DVB-T2	470 - 690	68	> 99,9999
LTE / 5G wide	700 - 750	68	> 99,9999
GSM, LTE	920 - 960	68	> 99,9999
GSM, LTE	1.800 - 1.880	69	> 99,9999
DECT	1.880 - 1.900	69	> 99,9999
LTE, 5G wide	2.110 - 2.170	69	> 99,9999
W-LAN 2400	2.400 - 2.500	70	~ 99,99999
5G fast	3.400 - 3.700	71	> 99,99999
W-LAN 5200	5.150 - 5.350	69	> 99,9999

Technical data

length:	by the meter (roll = 100 m / 110 m ²)
width:	110 cm
thickness:	0.15 mm ± 0.02 mm
colour:	copper
grammage:	37 ± 2 g/m ²
electrical conductivity:	< 0,05 - 0,1 Ω/□
composition:	PET 30 ± 2 g/m ² , Copper 7 ± 2 g/m ²
features:	vapour diffusive, (1210 l/m ² s), corrosion-resistant
temperature resistivity:	140° C / 120° C short term / long term
test norm:	IEEE Standard 299™-2006
shield attenuation:	max. 71 dB (> 99.99999 %)

Required accessories



ground strap AEB 3.0
(for the electrically conductive connection of several sheets)



grounding plate EGP
(for extensive installation in ceiling and wall areas)

Scope of application

roof area inside

wall, ceilings and roof area inside
(behind casings)

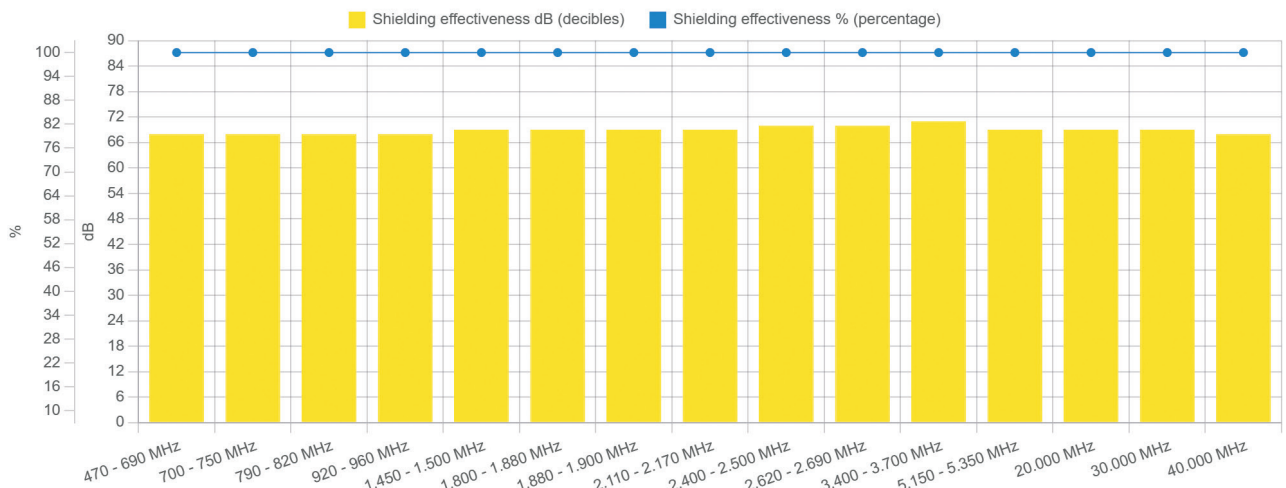
floor area (beneath floating floors, parquet, and wooden floorboards)

Also suitable for shielding low-frequency alternating electric fields, e.g. from medical equipment and facilities.

Type	MHz	Description
DVB-T2	470 - 690	digital video broadcasting – terrestrial, 2nd generation, TV via antenna
LTE / 5G wide	700 - 750	from 4G, now 5G NR without beamforming / MIMO
GSM, LTE	920 - 960	from 2G - D1, now 5G NR without beamforming / MIMO
GSM, LTE	1800 - 1880	from 2G - D2, E network, now 5G NR without beamforming / MIMO
DECT	1880 - 1900	wireless phone
LTE, 5G wide	2110 - 2170	from 3G, formerly UTMS, now 5G NR without beamforming / MIMO
W-LAN / WiFi 2400	2400 - 2500	wireless LAN
5G fast	3400 - 3700	5G NR - new frequency band with beamforming / MIMO
W-LAN / WiFi 5200	5150 - 5350	wireless LAN

Shielding values according to test report: EMF Test Lab Bavaria - Germany

Shielding effectiveness - Saphir Extra - 470 MHz to 40.000 MHz (40 GHz)



1.000 MHz = 1 GHz +/- (according to test report EMF Test Lab Bavaria)