EMI-SHIELD AL5 EMI/RFI Foil Shielding

Xalon RF Shielding Systems is the sole distributor of US Foils AL5

AL5 is a 0.005″ (5 mil) (0.127mm) thick aluminum foil for use as an EMI/RFI shield against electromagnetic interference. The foils are easy to work with and offer good shielding effectiveness across a wide range of frequencies, tested from 1 KHz to 40 GHz, shielding against unwanted signals in or out of rooms and buildings. Ideal for ICD 705 Tempest shielding.

AL5 may be used to form shielded enclosures of almost any size or shape, with primary use in construction with low-cost shielded rooms, shielded anechoic chambers and other shielded test rooms.

US Foils products are unique as they come with 2 mil Pressure Sensitive Adhesive (PSA) as the bonding mechanism. PSA offers a no-mess, but only up to 24” x 150’ Long. The most popular AL5 foil is 48” wide x 150’ long rolls, with no PSA.

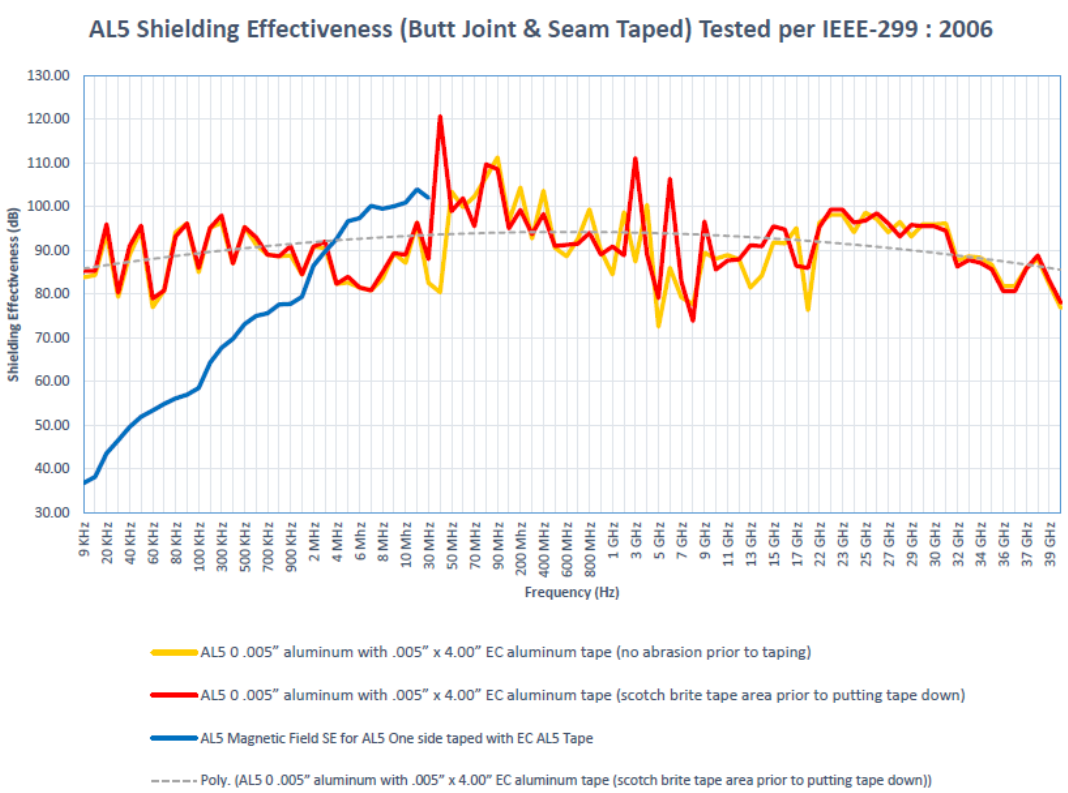
AL5 can be used as a single layer or double layer, see shielding performance below. Staggered or offset overlap of seams are recommended for double layer application.

AL5 TYPICAL SHIELDING EFFECTIVENESS

As Installed Butt Jointed
& Seam Taped with 4” wide EC Tape

(Insertion Loss per IEEE-299 : 2006)

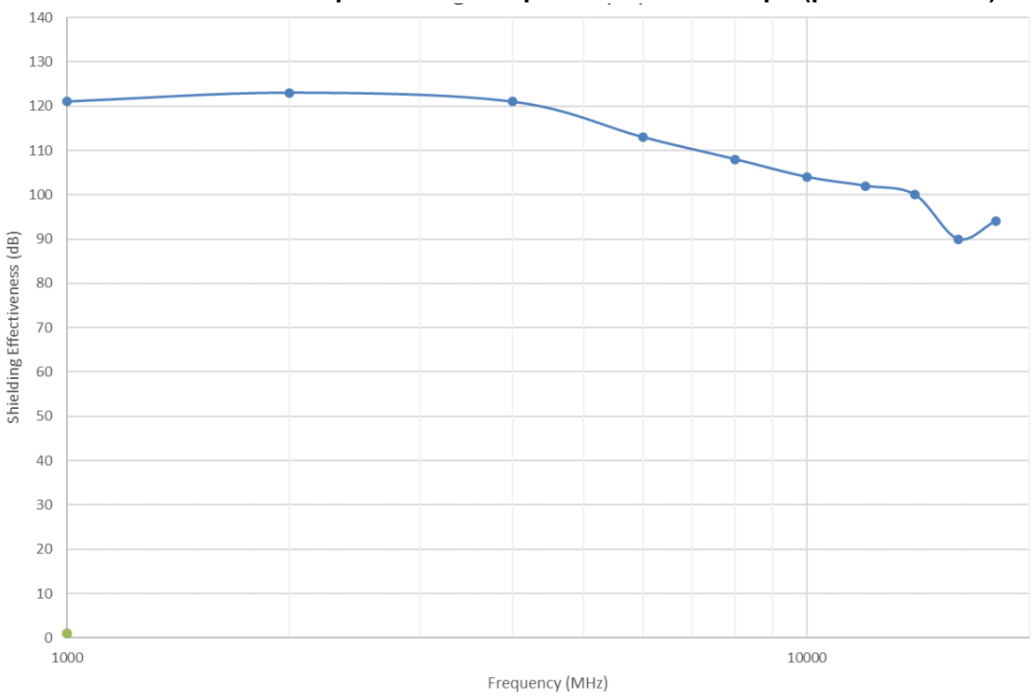
FREQUENCY	dB
1 KHz, Magnetic Field	12
10 KHz, Magnetic Field	38
100 KHz, Magnetic Field	58
1 MHz, Magnetic Field	78
10 KHz, Electric Field	≥85
100 KHz, Electrical Field	≥88
10 MHz, Electrical Field	≥90
100 MHz, Plane Wave	≥90
400 MHz, Plane Wave	≥90
1 GHz Plane Wave	≥85
10 GHz Plane Wave	≥80
18 GHz Plane Wave	≥75
40 GHz Plane Wave	≥75



AL5 Foil with 2" Overlap and Seam Taped with 4" AL5 Tape

Frequency MHz	OPEN Amplitude (dBuV)	SOLID PLATE Ampitude (dBuV)	Antenna /Amp Setup	Sample Amplitude (dBuV)	Signal Generator Setting (dBm)	Shielding Effectiveness (dB)	Dynamic Range (dB)
1000	120	-20	Horn,Pre amp	-1	-42	121	140
2000	120	-15	Horn, Preamp	-3	-42	123	135
4000	120	-12	Horn, Preamp	-1	-41	121	132
6000	120	-12	Horn, Preamp	7	-41	113	132
8000	120	-12	Horn, Preamp	12	-42	108	132
10000	120	-14	Horn, Preamp	16	-37	104	134
12000	120	-16	Horn, Preamp	18	-32	102	136
14000	120	-15	Horn, Preamp	20	-31	100	135
16000	115	-15	Horn, Preamp	25	-28	90	130
18000	115	-17	Horn, Preamp	21	-28	94	132

AL5 Foil with 2” Overlap and Seam Taped with 4” AL5 Tape (per IEEE-2909)



AL5 EMI foil shielding is applied like wallpaper, covering all surfaces: floor, walls and ceiling. Other than normal cleanliness, and dust free, no special preparation is required. Raw sheetrock will be required to be primed if you are using the AL5 with PSA. The foil should be glued in-place or ordered with a Pressure Sensitive Adhesive (PSA). Ultimate Tensile Strength (UTS) 15.5ksi maximum.

EMI-SHIELD AL5: is Class A fire rated (meets ASTM E84), is ≥ 98% pure aluminum (meets ASTM B479)

AL5 INSTALLATION OPTIONS:

Good SE Performance: AL5 is butt jointed and then seam taped with 4” wide EC AL5 Tape (see 1KHz to 40GHz graph above).
Better SE Performance: AL5 is overlapped by a minimum of 2″ and then seam taped with 4” wide EC AL5 Tape. (see 1GHz to 18GHz graph above)
Best SE Performance: AL5 joints are Z-Folded and then seam taped with 4” EC AL5 tape**.**

ORDERING INFORMATION

EMI-SHIELD AL5 (No PSA) is available in standard widths of 6”, 12”, 24″ & 48″ and lengths of 150 Ft with other dimensions available on special order.
AL5 Tape is also available in electrically conductive PSA backing in 1”, 2”, 3”, 4” & 6″ x 180 Ft rolls.

Note: Standard AL5, 2 mil PSA, does not stick to: unsealed concrete, cinder block, unprimed sheet rock, unprimed particle board and other unprimed rough or porous surfaces.

CAUTION **Wear correct gloves when installing the foil, the edge is like a razor blade**