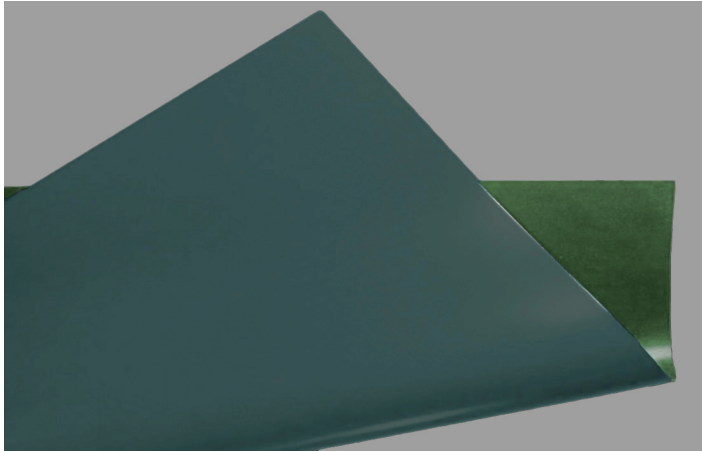




Bilayer Construction

Sb	Antimony	51 (low atomic-weight element)
Bi	Bismuth	83 (high atomic-weight element)

What's in our Bilayer?

Techno-Aide's Bilayer core material leverages the physics of individual layers of specific materials to achieve maximum attenuation, eliminating the effects of fluorescence and secondary scatter radiation. This is accomplished using low atomic weight metals in lead-free or composites.

Our Bilayer material has been tested and certified by the National Physical Laboratory (NPL) in the UK for attenuation and lead equivalence across a full range of kV (60kV to 110kV) using broad beam geometry. We meet all major test standards, including IEC 61331-1:2014, DIN 6857-1, and ASTM F2547-06.

Setting the Standard

The only lead-free or low-lead material that passes IEC 61331-1:2014, DIN 6857-1, and ASTM F2547-06 at a lower weight.



- ✓ **Passes all major global standards**
- ✓ **Only radiation protection core material using true bilayer construction**
- ✓ **Available in 0.35mm, and 0.50mm Lead Equivalence**
- ✓ **Independently certified between 60kV-110kV**
- ✓ **Soft and supple while retaining tensile strength of traditional products**

20%

Greater protection against absorbed dose compared to other Lead composite materials.

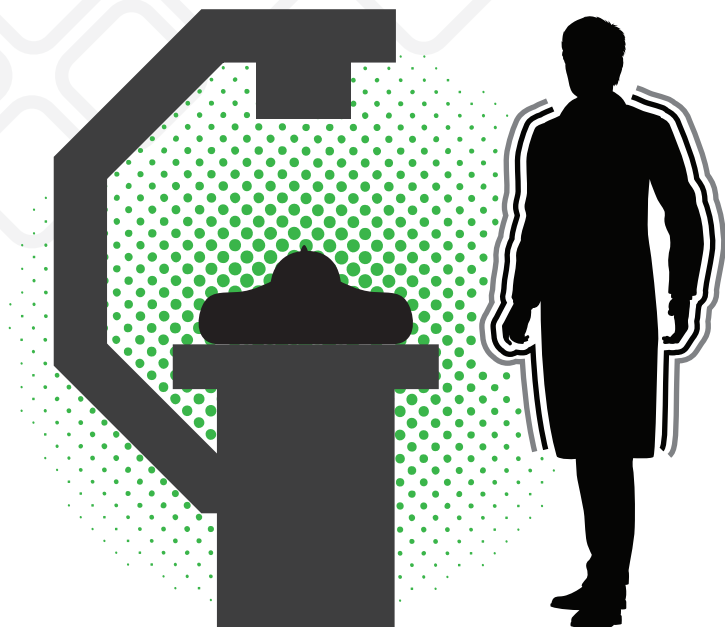
40%

Greater protection against absorbed dose compared to other lead-free or low-lead composite materials.

Bilayer Solves the K-Edge Effect

Traditional lead-free and material containing low atomic weight metals, whether used alone or in a mixed metal composite, face significant challenges. They simply cannot match the performance of bilayer materials due to the K-Edge Effect and resulting “*harmful fluorescence*” at critical kV levels. Testing has shown that these materials can only meet previous standards when evaluated between 80kV and 100kV using narrow beam geometry. The consequence?

Increased levels of absorbed dose received by the skin and organs, which can have serious, lasting, and career-limiting impacts on medical professionals. ***Techno-Aide’s Bilayer technology solves the K-Edge Effect by effectively eliminating harmful fluorescent radiation.***



MATERIAL	REGULAR LEAD	LIGHTWEIGHT LEAD	LEAD-FREE BILAYER
TRANSMISSIONS	-60 kV 0.25mm: 2.5% 0.35mm: 0.9% 0.5mm: 0.32%	-60 kV 0.25mm: 2.44% 0.35mm: 0.82% 0.5mm: 0.23%	-60 kV 0.25mm: 2.39% 0.35mm: 0.86% 0.5mm: 0.19%
	-90 kV 0.25mm: 8.75% 0.35mm: 4.95% 0.5mm: 2.48%	-90 kV 0.25mm: 8.72% 0.35mm: 4.93% 0.5mm: 2.49%	-90 kV 0.25mm: 8.74% 0.35mm: 4.91% 0.5mm: 2.45%
	-110 kV 0.25mm: 12.69% 0.35mm: 7.67% 0.5mm: 4.39%	-110 kV 0.25mm: 12.67% 0.35mm: 7.65% 0.5mm: 4.38%	-110 kV 0.25mm: 12.60% 0.35mm: 7.63% 0.5mm: 4.36%
ATTENUATION	-60 kV 0.25mm: 97.5% 0.35mm: 99.1% 0.5mm: 99.68%	-60 kV 0.25mm: 97.56% 0.35mm: 99.18% 0.5mm: 99.77%	-60 kV 0.25mm: 97.61% 0.35mm: 99.14% 0.5mm: 99.81%
	-90 kV 0.25mm: 91.25% 0.35mm: 95.05% 0.5mm: 97.52%	-90 kV 0.25mm: 91.28% 0.35mm: 95.07% 0.5mm: 97.51%	-90 kV 0.25mm: 91.26% 0.35mm: 95.09% 0.5mm: 97.55%
	-110 kV 0.25mm: 87.31% 0.35mm: 92.33% 0.5mm: 95.61%	-110 kV 0.25mm: 87.33% 0.35mm: 92.35% 0.5mm: 95.62%	-110 kV 0.25mm: 87.40% 0.35mm: 92.37% 0.5mm: 95.64%
TOLERANCES	-10%/+10%	-7%/+2%	-7%/+2%