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XENOLITE “B-3” (‘Light-Lead’) Grade Series 600 Technical Description & Specification

XENOLITE “B-3” is a lightweight, flexible and recyclable “light-lead” x-radiation protection material, using a mixture of four attenuating elements, antimony, lead, tungsten and barium, in a mixture optimized for low area-weight and maximum attenuation in the key diagnostic imaging range of 70 – 100 kV.

“K-Edge Technology”

The lighter weight (lead-vinyl is **21% heavier**) results from the use of four attenuating elements, where the antimony/barium provides more efficient attenuation of that portion of the photon spectrum below the K-edge window of lead (35 - 88 keV), complemented by the higher Z elements tungsten and lead, which are more efficient for stopping higher energy radiation (> 69/88 keV), and also cover the K-edge fluorescence window of antimony (< 35 keV)

Combined with Advanced Polymer Technology

The attenuating elements, in fine powder form, are supported, encapsulated and homogeneously distributed in a tough-but-flexible, high-tech plasticized Dow elastomer matrix. This Dow-DuPont developed elastomer was selected, after a year’s R&D, as having the best balance of toughness, flexibility, durability and cracking resistance, and is more commonly used for flexed components (running shoes, wire and cable etc).

Environmental Benefits.

The material is not “cross-linked” (or “cured”) and is therefore fully recyclable, and thermally re-processable. However, due to lead content, it cannot be municipally land-filled.

Specifications

Area-weight **5.85 kg/ sq m** (10.8 lb/ sq yd) for 0.50 mm Pb equivalence (80-100 kV*)
Protection 0.50 (4-ply), 0.35 (2-ply) and 0.25 (2-ply) mm Pb equivalence *
Transmissions 80 kV 0.50mm – 2.1% 0.35mm – 4.5% 0.25 mm - 8.2%
(direct beam) 100 kV 6.2% 11.3 % 17.9%

*Test Method IEC 1331-1/ EN 61331-1, 80 kV (0.15 mm Cu) & 100 kV (0.25 mm Cu), narrow

*Calibration data by 61331-accredited lab Univ Innsbruck AT, Aug 2012 (copies on request)

Tolerances - 7%/+2% (thickness, weight and mm Pb): others on request