

Lead Glass – Technical Specification

Product Description

PRIMAX offers high-quality, transparent and safe protective shielding against X-ray radiation for medical, technical and research applications.

Applications

- Viewing windows for X-ray, Angiography rooms, CT Scans
- Protection window in laboratories
- Airport security X-ray screens

Product Benefits

- Safe shields against X-Rays from equipment operating in the 80 to 300 kV range
- Large glass size up to 2800 x 1400 mm
- Smallest cutting size is 100 x 100 mm
- Wide range of lead equivalence thickness
- High quality and excellent visual clarity characteristics
- Optimum barium and lead content providing reliable protection
- Cut plate edges ground, finished with safety chamfers and engraved

Typical Physical Characteristics

Optical Properties

- Refractive Index nd: 1.76
- Transmission % @ 550nm through 5mm path: ≥ 85.0

Mechanical Properties

- Density (g/cm³): 4.8
- Knoop Hardness (kg/mm²): 409
- Young's Modulus (GPa): 62.6
- Poisson's Ratio: 0.26
- Coefficient of Thermal Expansion (x10⁻⁷ /°C): 78.8

Chemical Properties

- Lead (Pb): 52%
- Barium (Ba): 17%

Attenuation properties

Thickness		Minimum lead equivalence (mm) for stated X-Ray tube voltage							Max. Plate Mass	
mm	inches	80KV	100kV	110kV	150kV	200kV	250kV	300kV	kg/m ²	lbs/ft ²
4.0 - 5.5	0.157 - 0.217	1.4	1.4	1.3	1.2	1.0	1.0	1.0	26.4	5.4
5.0 - 6.5	0.197 - 0.256	1.7	1.7	1.7	1.5	1.3	1.3	1.3	31.2	6.4
5.7 - 7.0	0.224 - 0.276	1.9	1.9	1.9	1.7	1.5	1.5	1.5	33.6	6.9
7.0 - 8.5	0.276 - 0.335	2.3	2.3	2.3	2.1	1.8	1.7	1.8	40.8	8.4
8.5 - 10.0	0.335 - 0.394	2.7	2.8	2.9	2.6	2.1	2.1	2.2	48.0	9.8
10.0 - 12.0	0.394 - 0.472	3.2	3.2	3.3	2.9	2.5	2.6	2.6	57.6	11.8
11.0 - 13.0	0.433 - 0.512	3.6	3.5	3.6	3.2	2.8	2.8	2.9	62.4	12.8
14.0 - 16.0	0.551 - 0.630	4.7	4.5	4.6	4.1	3.5	3.6	3.7	76.8	15.7
16.0 - 18.0	0.630 - 0.709	5.3	5.1	5.3	4.7	4.0	4.1	4.3	86.4	17.7
18.0 - 20.0	0.709 - 0.787	6.0	5.7	5.9	5.2	4.4	4.6	4.8	96.0	19.7

Attenuation measured by use of narrow beam condition according to IEC 61331:2014.

Standards and Certification

The lead glass is in conformity with the following standard:

IEC 61331-2 : 2014 Protective devices against diagnostic medical X-radiation - part 2:
 - Translucent protective plates

PRIMAX Berlin is certified according to ISO 13485 : 2016.