RADIATION SHIELDING LEAD GLASS
Description:
MarShield's LX-57B x-ray shielding lead glass is made of high quality optical grade material. It provides excellent radiation shielding, superb visual clarity, high light transmission and does not discolor due to radiation. The hard, polished surfaces have excellent scratch resistance. LX-57B is available in thicknesses of 7mm, 9mm, 14mm, and 17mm.

Features and Benefits:
Stock sizes are available up to 48” x 96”. Available upon special request is 48” x 102”.

<table>
<thead>
<tr>
<th>Standard Sizes (in inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8x10</td>
</tr>
<tr>
<td>10x10</td>
</tr>
<tr>
<td>12x12</td>
</tr>
<tr>
<td>12x24</td>
</tr>
<tr>
<td>16x20</td>
</tr>
<tr>
<td>18x24</td>
</tr>
</tbody>
</table>

NOTE: 24-HOUR TURNAROUND TIME IS AVAILABLE ON MOST SIZES

LX-57B is available in the following thicknesses and lead equivalencies:

<table>
<thead>
<tr>
<th>Thickness</th>
<th>7mm</th>
<th>9mm</th>
<th>14mm</th>
<th>17mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead (in)</td>
<td>1/16”</td>
<td>5/64”</td>
<td>+1/8”</td>
<td></td>
</tr>
<tr>
<td>Lead (mmPb)</td>
<td>1.6</td>
<td>2.0</td>
<td>3.0</td>
<td>3.3</td>
</tr>
<tr>
<td>X-Ray Tube Peak (kV)</td>
<td>150</td>
<td>200</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>Weight (lbs/ft²)</td>
<td>6.5</td>
<td>8.1</td>
<td>12.5</td>
<td>14.8</td>
</tr>
<tr>
<td>Laminated</td>
<td>No</td>
<td>No</td>
<td>Yes (9mm + 8mm)</td>
<td></td>
</tr>
</tbody>
</table>

*Lead Equivalent is guaranteed in (mmPb). The converted fraction (in.) is less than the lead equivalent (mmPb); fraction is over-coverage.

To calculate the values of the range of "Lead Equivalent (mmPb)" using the mentioned figures and rounded off the fractions to one decimal place: 1 ft² = 30.48 cm² / 1 pound = 453.59 g / Density of lead = 11.36 g/cm³.

Resistant to discoloration due to exposure to ultraviolet rays or cleaning chemicals. The durable LX-57B glass retains its appealing visual clarity.

Offers excellent light transmission (87.3% with 7mm thick glass).

LX-57B is non-combustible and will not emit toxic fumes when being cut.

Both surfaces of LX-57B are polished. Using Mohr's hardness scale, LX-57B tests at level 6 (comparable to feldspar, a constituent of granite). LX-57B has excellent scratch resistance because of its hard surface.

LX-57B is a lead barium type glass of high quality optical grade with over 60 percent heavy metal oxide, including at least 55 percent PbO.

Properties of 7mm, 9mm, 14mm, 17mm LX-57B
- Minimum density: 4.36 (g/cm³)
- Refractive index (Nd): 1.71
- Thermal expansion coefficient: 80 x 10⁻⁷°C (30-380°C)
- Knoop hardness: 370

LX-57B Lead Glass vs. Lead Acrylic/Plastic:

For the Same Lead Equivalent
1.6 mm Pb at 150kV

Relative Thickness
For the same lead equivalent, acrylic/plastic has to be approximately five times thicker than LX-57B lead glass - significantly reducing radiation capabilities. For example, at 16mm Pb, lead glass would be 5/16" thick. Acrylic/plastic would be approximately 1-1/2" thick for the same protection. The extra thickness of acrylic/plastic may require special framing. LX-57B fits standard sized frames.

Applications

Medical
X-ray rooms, operating theatres, radiation therapy rooms, dental clinics, veterinary clinics, laboratories, medical diagnostics screens, and eye protection lenses

Industrial
Airport luggage inspection equipment and radiation testing equipment for industrial products

Nuclear
Radioactive storage stations, nuclear fuel development and reprocessing plants, and applications near nuclear reactors

www.MarShield.com
SAFETY LEAD GLASS
Saf-T-Lite Radiation Protector

Description:
MarShield’s Saf-T-Lite Radiation Protector glass comprises LX-57B lead glass, an interlayer, and float glass in a laminated sandwich to create a durable, shatter-resistant alternative to lead acrylic/plastic. This lead safety glass is commonly used in our mobile radiation shields and modular radiation barriers.

Features and Benefits:
Saf-T-Lite lead safety glass is available only in 11 mm thickness (1.6 mm lead equivalency)

Provides excellent light transmission of 87.8%

Weight: 8 lbs. per sq. ft.

Meets or exceeds the high standards of stringent safety regulations established in the medical, scientific, as well as nuclear fields around the world, including ANSI Z97.1-1984 and 16 CFR 1201 Cat. II.

LX Premium Radiation Shielding

Description:
LX Premium is the next generation of radiation shielding glass. It has a multilayer structure, manufactured by inserting LX-578 high-lead glass between panels of protective sheet glass. This results in a glass surface that will not stain or discolor, even in contact with chemicals or if it is wiped with a wet cloth.

Features and Benefits:
High transparency – glass will not stain or discolor when lead substances react to moisture or lipids

Provides excellent light transmission (at 550nm) of more than 80%

Easy to maintain – glass can be using such items as a wet cloth, glass cleaners, and detergents without any concern about fogging, staining or discoloration. You would clean LX Premium the same way you would clean ordinary windowpanes.

Multilayer laminated glass is impact-safe and shatter resistant.

Available in the following thicknesses and lead equivalencies:

<table>
<thead>
<tr>
<th>Thickness (mm)</th>
<th>12mm</th>
<th>14mm</th>
<th>20mm</th>
<th>22mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead Equivalent (in)</td>
<td>1/16”</td>
<td>5/64”</td>
<td>7/64”</td>
<td>1/8”</td>
</tr>
<tr>
<td>Lead Equivalent (mmPb)</td>
<td>1.6</td>
<td>2.0</td>
<td>3.0</td>
<td>3.3</td>
</tr>
<tr>
<td>X-Ray Tube Peak (kV)</td>
<td>150</td>
<td>150</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>Weight (lbs/ft²)</td>
<td>8.8</td>
<td>10.4</td>
<td>15.5</td>
<td>17</td>
</tr>
</tbody>
</table>

Properties - 12mm, 14mm, 20mm, 22mm LX Premium
Knoop Hardness: 520

Stock sizes are available up to 48” x 96”. Available upon special request is 48” x 102”.

*Lead equivalent is guaranteed in (mmPb). The converted fraction (in.) is less than the lead equivalent (mmPb); fraction is over-coverage.

To calculate the values of the range of “Lead Equivalent (lbs/sq.ft.)”, we converted from the values of the range of “Lead Equivalent (mmPb)” using the mentioned figures and rounded off the fractions to one decimal place: 1 foot = 30.48 cm / 1 pound = 453.59 g / Density of lead = 11.3 9g/cm3. Thickness tolerance can be up to +/- 1.3 mm.

www.MarShield.com
FOR ALL YOUR MAMMOGRAPHY NEEDS
Maximum Radiation Protection – Completely Lead-Free

Description:
MarShield's LFX-9 is a new type of radiation shielding glass that contains no lead. The lead-free glass is made of strontium, barium, and other materials as radiation shielding and provides X-ray shielding of .5mm LE. LFX-9 is suited for shielding low-energy X-rays in applications where impact safety is required. It is commonly used for the screen shielding glass set to mammography operation equipment.

Features and Benefits:

**Completely Lead-Free**

**Available in a thickness of 9mm with a lead equivalency of 0.5mm**

**Easy to clean** – glass is very scratch-resistant and can be easily cleaned as if it were normal window glass.

**Extremely transparent allowing for a clear view.**

**High Impact Resistance** – three sheets of special glass are laminated together using safety interlayers, making it impact safe. LX-9 meets the requirements of ANSI Z97.1-2004, Section 5.1.

**Lightweight** – the specific gravity of LFX-9 is 2.7, and the weight is virtually the same as regular window glass of relative thickness. Weight: 24.5 kg/m² (~5.1 lbs/ft²)

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**High Radiation Shielding in PET Scan Treatment**

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**Pro - GR Radiation Shielding**

Description:
MarShield's Pro-GR radiation shielding glass is made of glass materials having a lead oxide content rate of roughly 70% that is equivalent to ultra-high lead content block glass for nuclear power facilities. Pro-GR has a radiation shielding capability higher than that of conventional LX-57B lead glass. It is commonly used to shield gamma rays (0.511 MeV) in PET facilities.

**Pro - GR Product Data**

<table>
<thead>
<tr>
<th>Thickness (mm)</th>
<th>Pro - GR 14.7</th>
<th>Pro - GR 21.8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead Equivalent (mm)</td>
<td>5</td>
<td>7.5</td>
</tr>
<tr>
<td>Weight (lbs/ft²)</td>
<td>15.8</td>
<td>23.5</td>
</tr>
<tr>
<td>Visible Light Transmission</td>
<td>83%</td>
<td>83%</td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>Min. 5.20</td>
<td>Min. 5.20</td>
</tr>
<tr>
<td>Refractive Index</td>
<td>1.81</td>
<td>1.81</td>
</tr>
<tr>
<td>Maximum Size</td>
<td>1000 mm x 1500 mm (42' x 60&quot;)</td>
<td></td>
</tr>
</tbody>
</table>

Pro-GR is Available for Timely Delivery and Long Lead Times are Avoided.

[www.MarShield.com](http://www.MarShield.com)