

X-ray shielding features

Lead free, easy to use and highly effective

- Removes the need for complex and costly installation procedures usually associated with installing lead based lining systems.
- Can be installed as easily as normal plasterboard.
- Enhances other important performance requirements such as noise control and fire ratings
- Produces a high strength joint with even protection throughout the joint.
- Eliminates the need for backing joints with lead strips.



Warranty

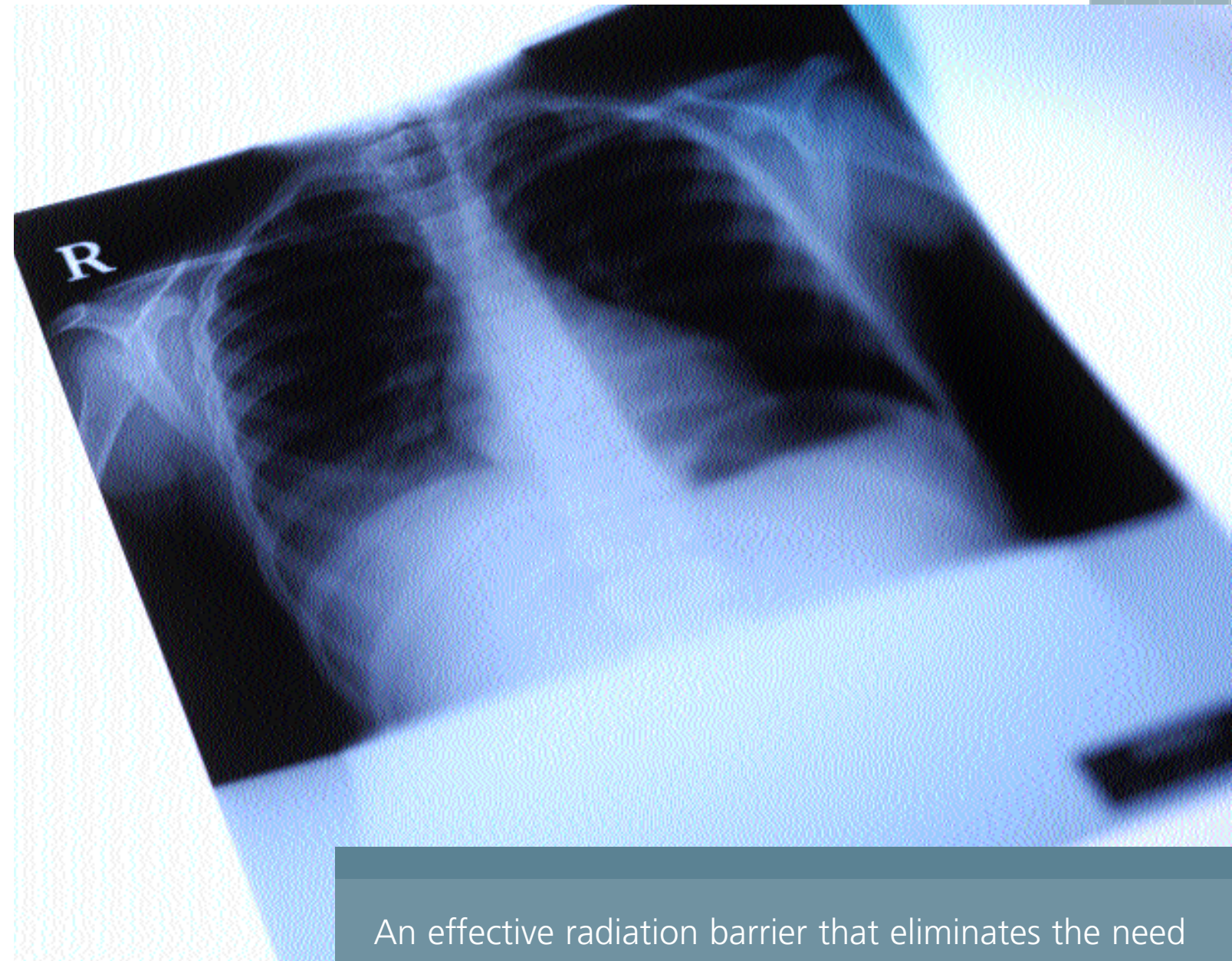
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Lafarge Plasterboard Pty Ltd will not be held responsible for any claims resulting from the installation of its products not in accordance with the manufacturer's recommendations, manuals or relevant Australian Standards. All installations must be carried out strictly in accordance with this and other relevant technical bulletins.

Product/System enquiries

For further information on this system or any other Lafarge Plasterboard product or system contact Lafarge Plasterboard's Customer Service Centre on 1300 724 505 or visit www.lafargeplasterboard.com.au

GIB X-Block[®] X-Ray Shielding Systems



An effective radiation barrier that eliminates the need for complex and costly installation procedures usually associated with installing lead based lining systems.

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Lafarge Plasterboard is part of the Gypsum Division of the Lafarge Group - the largest building materials company in the world. For more information on Lafarge visit www.lafarge.com.



GIB X-Block® is a specialist lead free plasterboard and jointing solution designed to provide X-ray radiation protection in X-ray diagnostic rooms within medical facilities and dental clinics.

Where specifiers aim to incorporate environmental sustainable development principles, GIB X-Block® achieves an effective radiation barrier that eliminates the need for complex and costly installation procedures usually associated with installing lead based lining systems.

Lafarge Plasterboard recommends the use of GIB X-Block® jointing compound, a compound specifically designed to give lead equivalent joints on walls and ceilings using GIB X-Block® plasterboard.

X-ray shielding performance

Medical X-ray diagnostic rooms may require the use of protective barriers to shield operators and occupants of adjacent areas against unacceptable levels of X-ray radiation.

X-ray radiation is measured in kilovolts peak[^] (kVp). Depending on the type of radiation equipment used in the room, diagnostic facilities will have different requirements for shielding, e.g. below are some indicative X-ray voltage ranges:

- CT room 120-140 kVp
- General radiographic room 60-90 kVp
- Dental room 60-80 kVp
- Mammography room 25-35 kVp

Lead equivalence

GIB X-Block® contains barium sulphate and provides X-ray and gamma ray radiation protection, with performance measured in "lead equivalence".

Lead equivalence of GIB X-Block® varies with the level and quality of the radiation. The lead equivalence (mm) corresponds to a specific number of layers of GIB X-Block® at different X-ray levels.

Advice must always be sought for any X-ray diagnostic applications from a Health Physicist to ensure that the requirements for radiation shielding are met according to the regulatory requirements of the State or Commonwealth.

Radiation test results

To assist in determining the required thickness of GIB X-Block®, the table below shows the lead equivalence of GIB X-Block® for different X-ray energies.

Technical specifications

GIB X-Block® and Compound

Board dimensions:	13mm x 1200mm x 3000mm
Sheet weight:	55kg
Edge type:	Recessed edge
Compound dimensions + weight:	21kg bucket
Compound coverage:	Approximately 35 lineal metres of joints



"GIB X-Block® was chosen for X-ray shielding at Auckland City Hospital as a practical, economical solution that minimised the need to use lead."

Brian Lunt, Qualified Health Physicist and Assistant Project Director, Equipment and Technology Building Program, Auckland District Health Board

GIB X-Block® lead equivalence for different X-ray energies

X-ray energy (kVp + filtration)	Lead Equivalence	
	2 layers	3 layers
80 + 4mm Al	1.6	2.4
100 + 2mm Al + 0.24mm Cu	1.5	2.2
125 + 2mm Al + 0.39mm Cu	1.0	1.5
150 + 2mm Al + 0.73mm Cu	0.8	1.1

Source: National Radiation Laboratory (NZ)
[^] kVp - kilovolts peak. Maximum voltage applied across the X-ray tube. The kVp controls the maximum energy of the emitted X-rays.