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PRISM JOHNSON LIMITED

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Elt/DURA
Industrial Tiling Solutions
DJOHNSOtf



Protect yourself from harmful radiation, with
ENDURA RADIATION SHIELDING TILES



JOHNSON ENDURA RADIATION SHIELDING TILES

Effective in shielding harmful X-rays

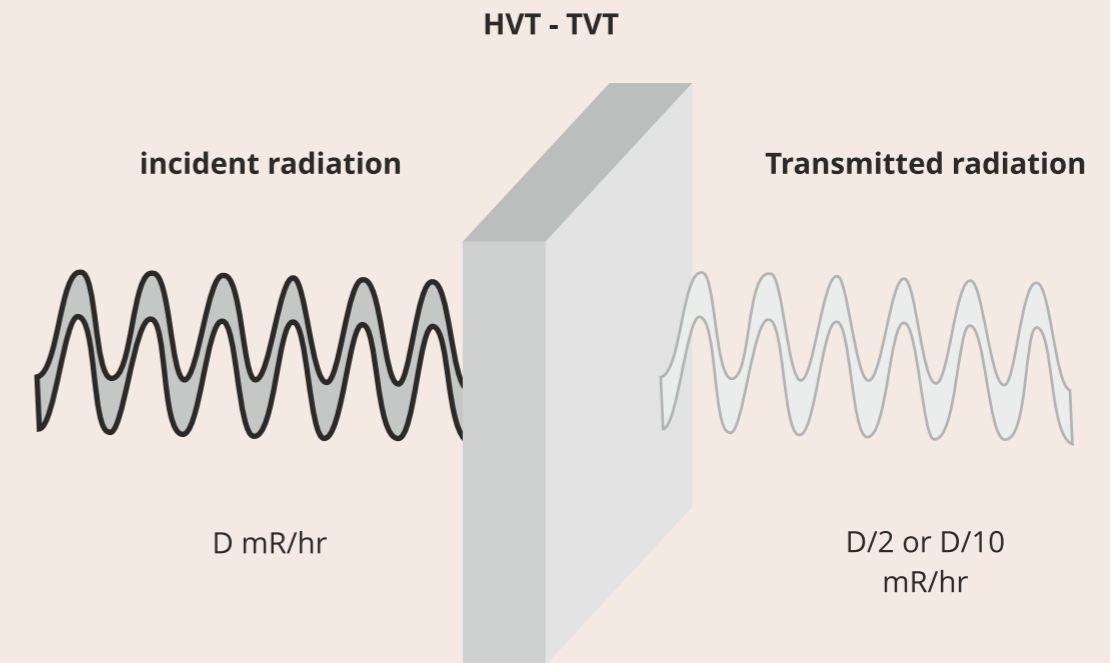
Discovered more than 100 years ago, X-rays continues to play an important role in patient care, are used to look inside the body to diagnose many ailments and are also used in cancer treatments- Radiotherapy, Interventional Radiology, Computed Tomography, Mammography, Bone Mineral Densitometer, Dental Radiography.

As all good things come with few ill effects, long and over the limit (1 mSv/yr for Public) exposures to the radiations and its leakages leads to far reaching health risks, we seriously need to look into the radiation hazards for the technicians, support staffs, people around the imaging facilities and the environment.

As per the regulatory requirement from AERB (Atomic Energy Regulatory Board), appropriate structural shielding shall be provided for walls, doors of the room housing the X-ray equipment so that radiation exposures received by workers and the members of the public are kept to the minimum and shall not exceed their respective dose limits (20mSv/year average over five years for healthcare workers).

SHIELDING...

Thickness of protective shielding is necessary to reduce the exposure rate from any x-ray machine to the desired permissible level.



Currently Lead, Brick, Concrete and Steels are used as alternate shielding materials recommended by AERB (Atomic Energy Regulatory Board), but all of these are not effective enough over a period, carcinogenic, expensive and difficult to handle.

Also long-time exposure to lead has been reported to cause anaemia, along with an increase in blood pressure, and that mainly in old and middle aged people. Severe damage to the brain and kidneys, both in adults and children, were found to be linked to exposure to heavy lead levels resulting in death. It is the second topmost hazardous material.

The Department of Health and Human Services (DHHS), Environmental Protection Agency (EPA), and the International Agency for Research on Cancer (IARC) have determined that lead is probably cancer-causing in humans.



Under Technology License Agreement with CSIR-AMPRI (Advanced Materials And Processes Research Institute), Bhopal and H&R JOHNSON (India) introduced the “**Johnson Endura Radiation Shielding Tiles**”



**Current shielding materials in use
(as recommended by Atomic Energy Regulatory Board-AERB):**

Materials	Disadvantages
LEAD	Highly toxic and carcinogenic in nature, life of shielding is less, gap generates due to its self-weight, need high skills of installations, very expensive.
BRICK	No standard control on density, varies from place to place, no guaranteed shielding, no recommendations on grouts, mortars available for grouts are highly porous in nature and not suitable for shielding.
CONCRETE	Prone to develop cracks over a period, have air pockets during casting, X-rays when propagates further develops cracks due to high instant temperature. The shielding efficiency drops within one or two years.
STEEL	Heavy structures difficult to handle and install, conducive in nature and very expensive.

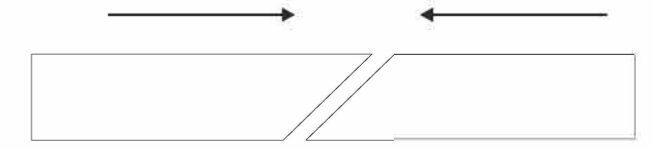
** Lead free shielding materials have been developed by Council of Scientific and Industrial Research (CSIR)- Advanced Materials And Processes Research Institute (AMPRI), Bhopal.

**Johnson Endura Radiation Shielding Tile
Benefits Over Existing Lead Sheets**

Radiation Shielding Tiles	Carcinogenic Lead Sheet
High thickness of 12 mm.	Low thickness of 1-2mm
Low price	High price
Non toxic	Toxic/Carcinogenic as per IARC
Life of shielding is very high	Life of shielding is less
Easy installation	High skill installation
Non toxic resources	Use of toxic Natural source

Johnson Endura Radiation Shielding Tile Advantage

- ☑ 100% Lead free and environment friendly.
- ☑ Atomic Energy Regulatory Board-AERB recommended for shielding adequacy (eg. 1.0mm, 2.0mm etc).
- ☑ Brings down cost of Radiation Shielding.
- ☑ Avoids need for periodic survey as compared to lead which tends to lose its structural integrity over time.
- ☑ Easy and fast installation.

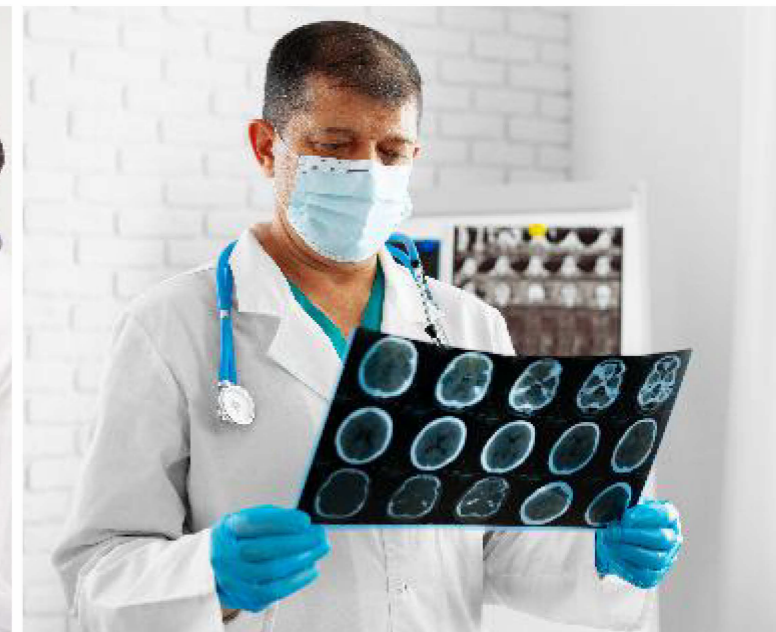


Interlocking System

The unique interlocking system prevents radiation leakage completely.

JOHNSON ENDURA RADIATION SHIELDING TILES (RST): Non Toxic, non-reactive, permanent radiation shielding, easy installation, cost effective

Size: 30 X 30 cm | **Tiles:** 12 mm thickness (=2mm Pb @ 100 kV) | **Density:** 3.9 9/cc
Color: Terracotta and White (glazed & non glazed)





Increased awareness among institutions, health professionals will improve radiation safety standards in healthcare. H & R Johnson with the technical support of CSIR-AMPRI, BHOPAL and all stakeholders is determined to collaborate and introduce such innovative products!

APPLICATION AREAS

Radiography & Fluoroscopy unit

Interventional Radiology (Cardiac Angiography)

Computed Tomography

Mammography

Bone Mineral Densitometer

Dental Radiography (Dental CBCT/OPG)

Radiology Wards of all Government & Private Hospitals, Scanning Centers etc.

