

SHIELDING^{INC}
INTERNATIONAL



Radiation Protection Overview & Product Training





- **SHIELDING INTERNATIONAL** has proudly been in business for the production of quality x-ray apparel and accessories for over 50 years.
- Our x ray protective apparel products are manufactured in a state of the art manufacturing facility located in **Madras, Oregon, USA** – just east of the Cascade mountain range – approx. 120 miles from Portland.





Outline

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PART IV: Sterile Radiation Protective Gloves

PART V: Patient Radiation Protection Products

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Gonad Shields

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WHO'S PROTECTED WITH OUR PRODUCTS?

IN THE WORKPLACE

Protective apparel protects a variety of staff, including but not limited to radiographers, radiological technologists, radiologists, interventional doctors, nurses and medical assistants, from receiving unnecessary radiation exposure.

FOR THE CONSUMER/PATIENT

Protective apparel should also be used to shield patients and members of the public from receiving unnecessary radiation exposure, for example gonadal shielding would be appropriate to shield patients, especially children and those who are potentially reproductive.

Compliance & Testing

SHIELDING INTERNATIONAL

- is **ISO 9001:2008** certified and is committed to meeting customer and regulatory requirements and enhancing customer satisfaction through continual improvement of its x ray protective products and the quality management system.



- Proudly holds **CE marking** under PPE Directive 89/686/EEC on our full line of x-ray protective aprons and collars, as well as a select line of lead gloves.
- IS FDA registered

Compliance & Testing

SHIELDING INTERNATIONAL'S inside core x-ray protective material (**RL** Regular Lead, **TL** Lite Ply & **NL** Non Lead) conforms to, and is tested in accordance with the following standards:



ASTM test method F2547-06 – Standard Test Method of Determining the Attenuation Properties in a Primary X-ray Beam of Materials Used to Protect Against Radiation Generated During the Use of X-Ray Equipment.

IEC 61331-1:1994 – Protective Devices against Diagnostic Medical X-Radiation, Part I, Method for Determination of Attenuation Properties of Sheet Materials.

(IEC – applies to the certification standards for Europe)

Personal Radiation Protection – Protection Choices

SHIELDING INTERNATIONAL offers three choices of protection: **RL** regular lead, **TL** lite ply and **NL** non lead aprons.

Standard Protection RL Regular Lead	Benefits  Most Economical 100 % Recyclable	Protection Value Provides 0.5mm Pb Equivalent Protection @ 120 kVp (96% Attenuative)
Optional Protection TL Lite Ply	Benefits  20 % Lighter than Regular Lead 100 % Recyclable	Protection Value Provides 0.5mm Pb Equivalent Protection @ 100 kVp (96% Attenuative)
Optional Protection NL Non Lead	Benefits Lighter than Regular Lead Lead Free & Environmentally Friendly	Protection Value Provides 0.5mm Pb Equivalent Protection @ 90 kVp (97% Attenuative)

Lead equivalency is no longer the standard unit for reporting the protective apparel properties of leaded garments. The radiation protective garment industry is moving toward an attenuation standard. The lead equivalency data reported on our x-ray apparel is specific to the testing program, compliant to the ASTM test Method F 2547-06 standard, provided by Health Physics Northwest, an independent radiation physics lab.

Personal Radiation Protection

Three popular types of aprons include...frontal, three quarter and full protection styles.

Frontal Model(s)	Three Quarter Model	Full Model
<p data-bbox="150 476 610 522">Standard Coat Apron</p> 	<p data-bbox="726 476 1168 522">Three Quarter Wrap</p> 	<p data-bbox="1344 476 1721 522">Vest Skirt Combo</p> 
<p data-bbox="170 909 591 955">Surgical Drop Away</p> 		

Personal Radiation Protection – Frontal Aprons

Standard Coat Apron

Model S*



Features

**Choice of (3) Closures:*

(T) Ties, (QR) Quick Release Buckle or (V) Hook & Loop

Shoulder Pads

Choice of Fabrics, Protection & Custom Options

Selling Points

Best seller! Most economical.

Features Open Back for freedom of movement, maximum flexibility and increased comfort.

Apron closures cross in the back & close at waist for a comfortable fit. *(1" polypro ties, or 2" adjustable wide belt w/hook & loop or 2" quick release buckle closure.)*

Shoulder Pads offer additional comfort.

Standard & lightweight protection options available.

Variety of Sizes, Fabrics & Custom Options



Personal Radiation Protection – Frontal Aprons

Surgical Drop Away

Model SDA



Features

Top of the Shoulder and Waist Hook & Loop Fastening Flaps.

Elastic Stretch Back Panels

Shoulder Pads

Choice of Fabrics, Protection & Custom Options

Selling Points

Multifunctional multi-fit apron.

Adjustable shoulders & waist for a versatile fit.



Features elastic back panels for added comfort & support.

For quick & easy removal from both over & under the surgical gown without disturbing the sterile field.

Standard & lightweight protection options available.

Variety of Sizes, Fabrics & Custom Options

Personal Radiation Protection – Three Quarter Wrap

Three Quarter Wrap Model TQW	Features
	<p>Side Wrap Protection.</p> <p>Top of the Shoulder and Waist Hook & Loop Fastening Flaps.</p> <p>Elastic Stretch Back Panels</p> <p>Shoulder Pads</p> <p>Choice of Fabrics, Protection & Custom Options</p>
	<p>Selling Points</p> <p>Especially designed for the fluoro field w/added coverage, without the weight of a full protection apron.</p> <p>Adjustable shoulders & waist for a versatile fit.</p> <p>Features elastic back panels for added comfort & support.</p> <p>For quick & easy removal from both over & under the surgical gown without disturbing the sterile field.</p> <p><i>Lightweight protection option recommended.</i></p> <p>Variety of Sizes, Fabrics, Protection & Custom Options</p>

Personal Radiation Protection – Vest Skirt Combo

Vest Skirt Combo Model VS	Features
	<p>All around protection with added <i>overlap</i> protection in the front. Vest has three panel hook & loop closure and shoulder pads. Extra wide hook & loop fastener & quick release buckle secures skirt.</p> <p>Choice of Fabrics, Protection & Custom Options</p>
	<p>Selling Points</p>
	<p>Best choice for longer procedures.</p> <p>Two pieces provide freedom of movement and comfort by splitting the weight between shoulders and hips and providing balanced weight distribution.</p> <p>Vest* & Skirt feature all around, plus extra protection.</p> <p><i>*Vest offers additional protection over similar mfr models.</i></p> <p><i>Lightweight protection option recommended.</i></p> <p>Variety of Sizes, Fabrics & Custom Options</p>

Personal Radiation Protection – Sizing Frontal Aprons

25 size configurations (5) different apron widths & lengths per style or/
*custom size your apron to fit!

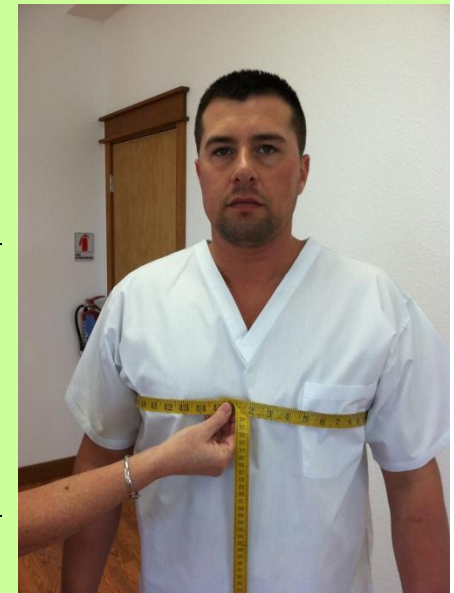


FOR APRON LENGTH:

Measure from sternal notch “center of neckline” to 1” above knee or/ for desired length.

FOR APRON WIDTH:

Measure CHEST with
*loose fit at widest part just below armhole.



*For custom sizing – take total circumference divide by 2 then add 2” for frontal apron width.

(Example: $54'' / 2 = 27'' = 2''$ for a 29” custom apron width.)

**Don’t pull tape snug, allow room for extra clothing.*

Personal Radiation Protection – Sizing Vest & Skirts

Unisex, Male & Female sizing in each style or/ custom size your apron to fit!



CHEST

Measure CHEST with loose fit at widest part just below armhole.



WAIST

Measure at naval.



HIPS

Measure widest part of HIPS.



ARMHOLE*

Measure top to bottom at shoulder & add 3".



SKIRT LENGTH

Measure from desired **waist or hip** location** from top of skirt to 1" above knee or to desired length..



VEST LENGTH

Measure from sternal notch to 2" (min.) below desired top of skirt location** for overlap..

Armhole measurements apply to custom sized aprons.. **Note if skirt is worn at **hips or waist when measuring.*

Personal Radiation Protection – Correct Sizing Matters

Proper Fit Strategies are critical to custom sizing.

IMPROPER FIT & SIZING



VEST:

Too Long

SKIRT:

Too Short



VEST/SKIRT:

Incorrectly

Sized

PROPER FIT & SIZING

- Find out how the garment will be worn.
- Take measurements based on customer fitting.
- Allow for proper overlap of Vest/Skirt.



Personal Radiation Protection – Protection Options

Protection Options (Frontal Aprons) Add Proper Initials for Optional Protection when ordering, otherwise Regular Lead Is Standard.	RL-Regular Lead* Standard - 0.5mm Pb eq	TL - TL Lite Ply* Optional - 0.5mm Pb eq	NL - Non Lead** Optional - 0.5mm Pb eq
	RLL Optional - 0.35mm Pb eq	TLL Optional - 0.35mm Pb eq	NLL Optional - 0.25mm Pb eq

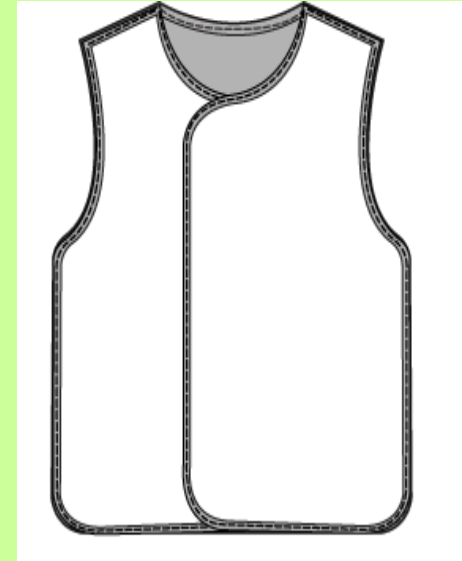
Protection Options (Vests & Skirts) Add Proper Initials for Optional Protection when ordering, otherwise Regular Lead Is Standard.	RL-Regular Lead* - Standard			Lightweight Choice TL - TL Lite Ply* or/ NL Non Lead**			
	Vest	Front 0.5mm Pb eq	Back 0.3mm Pb eq	Overlap 1.0mm Pb eq	Front 0.5mm Pb eq	Back 0.25mm Pb eq	Overlap 1.0mm Pb eq
	Skirt	0.3mm Pb eq	0.3mm Pb eq	0.6mm Pb eq	0.25mm Pb eq	0.25mm Pb eq	0.6mm Pb eq
		RLL - Regular Lead*			TLL - TL Lite Ply*		
Vest	Front 0.35mm Pb eq	Back 0.25mm Pb eq	Overlap 0.7mm Pb eq	Front 0.35mm Pb eq	Back 0.25mm Pb eq	Overlap 0.7mm Pb eq	
Skirt	0.25mm Pb eq	0.25mm Pb eq	0.5mm Pb eq	0.25mm Pb eq	0.25mm Pb eq	0.5mm Pb eq	

Personal Radiation Protection – Protection/Fit Differences



FRONT PROTECTION:
0.25mm w/0.5mm Overlap

FIT: Tailored



FRONT PROTECTION:
0.5mm w/1.0mm Overlap

FIT: Versatile Fit: 2" Min Overlap

Personal Radiation Protection – Fabrics

Shielding offers 6 different types of Materials in different colors and designs

- Nylon: Is the most popular and best all around material
- Rip Stop: Is a very soft parachute-like material, which is very comfortable. It is not recommended for veterinary environments.
- Diamond Rip Stop: Is also a soft material that comes with a sheen to it.
- Weblon: This material looks like vinyl, but has nylon threads running through it. It is recommended for veterinary use. Not all aprons and collars can be made with this material.
- Vinyl: Feels a little bit like plastic, but blood can easily be wiped off. Not all aprons and collars can be made with this material.
- Designer: This is nylon material with designs and in most cases is a little bit heavier than the solid nylon fabrics.

Personal Radiation Protection – Custom Apron Options

MOST POPULAR....



Tethered Collar – Model –T
Collar tethered to apron on right side by a ring for easy removal. Available on all Models.



Attached Collar – Model 600A
Sewn directly to Apron. Available on Model 600 Only.



Optional Sleeve – Model 812
For upper arm protection. Features inner fastener for girth adjustment. Permanently sewn onto apron or select a hook and loop or/ snap fastener for easy attachment or removal.



Shoulder Strap

Personal Radiation Protection – Custom Apron Options

POCKETS AND EMBROIDERY.....

Pocket Styles



Patch Pocket



Slit Pocket



ID Pocket

Embroidery Options

- Custom Logos
(One Time Set Up Fee)
- Stock Designs
(see dakotacollectibles.com)
- Personalization



◀Example of custom logo option

Shielding Intl.
Full Block

Shielding Intl.
Script

Shielding Intl.
Black

Shielding Intl.
Micro Block

Shielding Intl.
Impress

Other Embroidery Placement Options



Removable Name
Tag



Bottom Corner



Back Shoulder

Personal Radiation Protection – Thyroid Collars

Model 621 NS

New Style Thyroid Collar



0.5mm Pb Eq Protection

Trim Fit

Comfortable Design

Rear Hook & Loop Closure

In Stock: Royal Blue Nylon

The thyroid gland is relatively sensitive to ionizing radiation. Therefore, it is recommended to use a radiation protection device whenever possible. There are several types of shields on the market.

Model 631 QR

Quick Release Thyroid Collar



0.5mm Pb Eq Protection

Trim Fit – Soft Feel

Comfort w/out the Binding

Rear Buckle Closure

In Stock: Royal Blue Nylon

Recently Dr.Oz has brought attention to thyroid exposure during dental and mammography imaging/exams. It has increased patient awareness, the need for more protection, and increased thyroid collar sales among care clinics and end user patients.

Personal Radiation Protection – Apron Care & Guidelines

An Apron Care & Guideline Insert accompanies each apron.



It includes guidelines and tips to help inspect, as well as maintain the performance of our x-ray protective apparel.

Basic Care of Aprons include:

Storage: Don't fold, crease, drape or sit down tightly on SHIELDING garments. We strongly recommend that our aprons be hung on a SHIELDING heavy duty chrome hanger (Item # 200H) or equivalent and not on a hook.

Hook and loop closures must be secured properly to avoid snagging or tearing of fabric. Always store apron with hook and loop closed.

Cleaning: Keep SHIELDING garment clean by wiping away stains as soon as possible, using cold water and mild detergent. Do not autoclave.

Failure to properly care for an apron may result in harm to it, as well as void its warranty.

Personal Radiation Protection – Warranty

2 Year Limited Protective Apparel Warranty!

SHIELDING INTERNATIONAL™ warrants Regular Lead and TL Lite Ply x-ray protective apparel from valid material defects and workmanship for a period of (2) years from date of purchase.

Sterile Radiation Protective Gloves

Attenuator-X Radiation Protection Gloves



Features:

- 100% Sterile
- Natural Rubber
- Powder Free
- Highest attenuation efficiency for protection from secondary radiation
- Lead Free, for safe, easy and environmentally conscious disposal
- Exceptional tactile sensitivity and superior flexibility for comfort and durability
- Textured palm and finger surface for enhanced gripping and touch sensation
- Ease of donning and removal with rolled and beaded cuff
- Available in six sizes: 6 ½, 7, 7 ½, 8, 8 ½ and 9

Applications

- Thrombolytic & Fibrinolytic Procedures
- Percutaneous Transhepatic Cholangiography
- Endoscopic Retrograde Cholangiopancreatography
- Percutaneous Coronary Interventions
- Percutaneous Nephrostomy
- Stent & Filter Placement
- Urinary/Biliary Stone Removal • Biliary Drainage
- Beta Radiation Catheterization (Y-90 source)
- Percutaneous Transmyocardial Revascularization
- Radioactive Seed Implants • Chemotherapy Labs
- Treatments of Gynecologic & Reproductive Disorders
- Neuro-Radiology • Electrophysiologic Studies
- Radiofrequency Cardiac Catheter Ablation
- Embolectomy & Thrombectomy
- Transjugular Intrahepatic Portosystemic Shunt
- Transmyocardial Revascularization
- Vascular Embolization & Occlusion
- Treatments of Abdominal Aortic Aneurysms
- Rotational Atherectomy • Orthopedics

Patient Radiation Protective Products – CT SHIELDS



CT Breast Shields offer up to 57% reduction of radiation exposure during CT Scan.

AttenuRad CT shielding products reduce radiation exposure to specific radiosensitive body tissues during CT scan.

Available in Adult & Pediatric Sizes.



CT Thyroid Shields offer a 60% dose savings to the radiosensitive thyroid gland during CT procedures.



CT Eye Shields designed for in head & facial CT scans allow for about a 50% radiation dose savings to the eye lens.



Personal Radiation Protection – Gonad Shields

822BBV – Gonadal & Ovarian Belt System

(2 sml, 1, med & 1 lrg Shield w/interchangeable belt.)



Gonad shielding is usually considered for all patients, especially children and those who are potentially reproductive.

Gonad shielding should be used when the gonads lie in or near the useful beam.



806 – Individual Gonad Shields (S, M, L)

May be purchased (plain) with or without ties, hook & loop or QR buckle belt.

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Thank you for allowing us to be one of your preferred vendors for your x-ray protection needs.