



Welcome to PBSC LTD Decontamination Showers



Our worldwide client Portfolio

Abbott Murex
Actavis
Astra Zeneca
Bristol-Myers Squibb
Eli Lilly
GlaxoSmithKline
Hoffmann-La Roche
Intel
Intervet
Johnson & Johnson
Merck Sharp & Dohme
MRC
NHS Hospitals
Novartis
Patheon
Pfizer
Sanofi Aventis
Schering Plough
Wyeth

PBSC was established in 1987, as a high quality supplier of architectural components for clean room environments.

The search for innovative design, an eye for detail and advanced manufacturing techniques have seen **PBSC** gain a deserved reputation today as the premier supplier of what are arguably the best components in the world for clean controlled environments.

Cleanroom Product Range

Transfer Hatches
Trolley Hatches
Clean Room Door Sets
Viewing Panels
Emergency Escape Panels
Decontamination Showers
Change Room Equipment

PBSC are the accepted benchmark by which others are measured....



PBSC Operator Over suit Decontamination:



API powders from routine operations contaminate over suit / work ware/PPE:

Your Facility Could be at Risk:

Risk 1: Cross contamination to other products

Risk 2: Exposure of staff to API particles during change out /de-gowning

The PBSC Decontamination Shower has been proven to minimise these Risks

Effective API Encapsulation

PBSC Operator Over suit Decontamination:



Process generates API Exposure



PBSC Decontaminate API Exposure

Exposure Risk Reduction

PBSC Decontamination Systems:



**PBSC
De-Con
Shower Range**

**Air showers
(Personnel)**

**Fogging Showers
(Personnel)**

**Bio-Decon
(Personnel)**

**Bio-Decon
(Materials)**

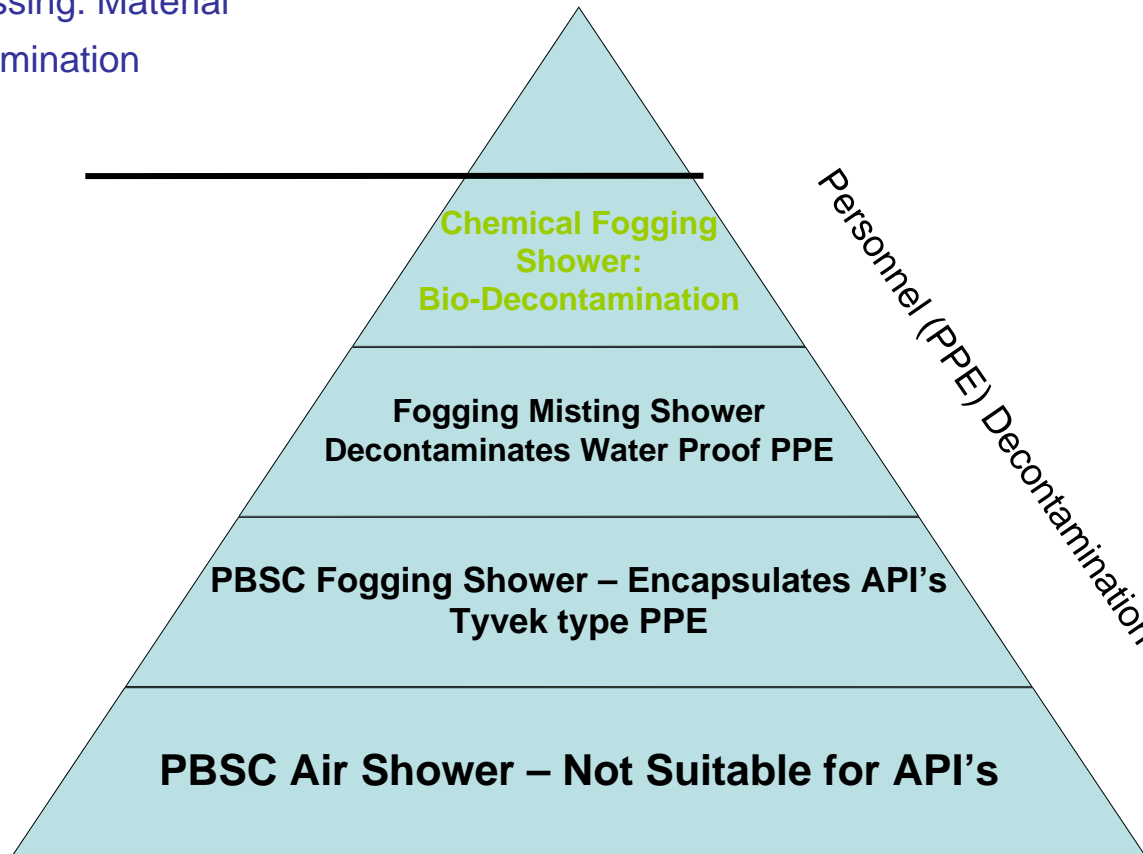


20 Year Experience

PBSC Decontamination Systems:



HPV gassing: Material
Decontamination



Hierarchy Of Decontamination

PBSC Air Shower Shower



Provides General Purpose
De-Dusting of PPE

Ideal for removal of dander
and particulate – Prior to
entry into Clean Facility

**Not recommended for
removal of
occupational exposure**

Proven Technology

PBSC Ultra-Sonic Fogging Shower



Proven Technology

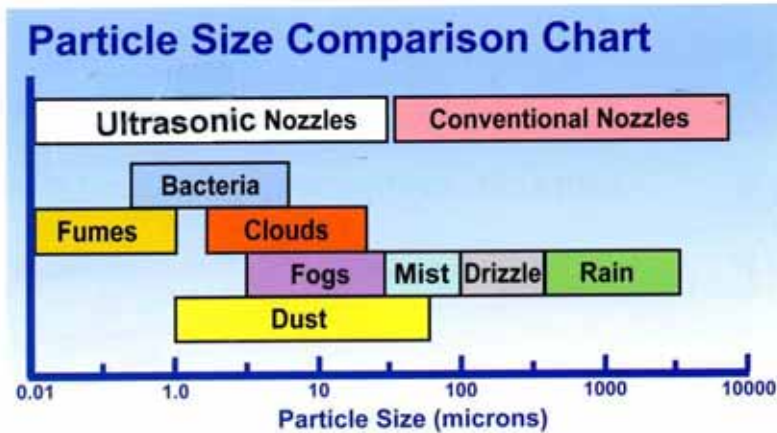
PBSC Ultra Sonic Fogging Shower



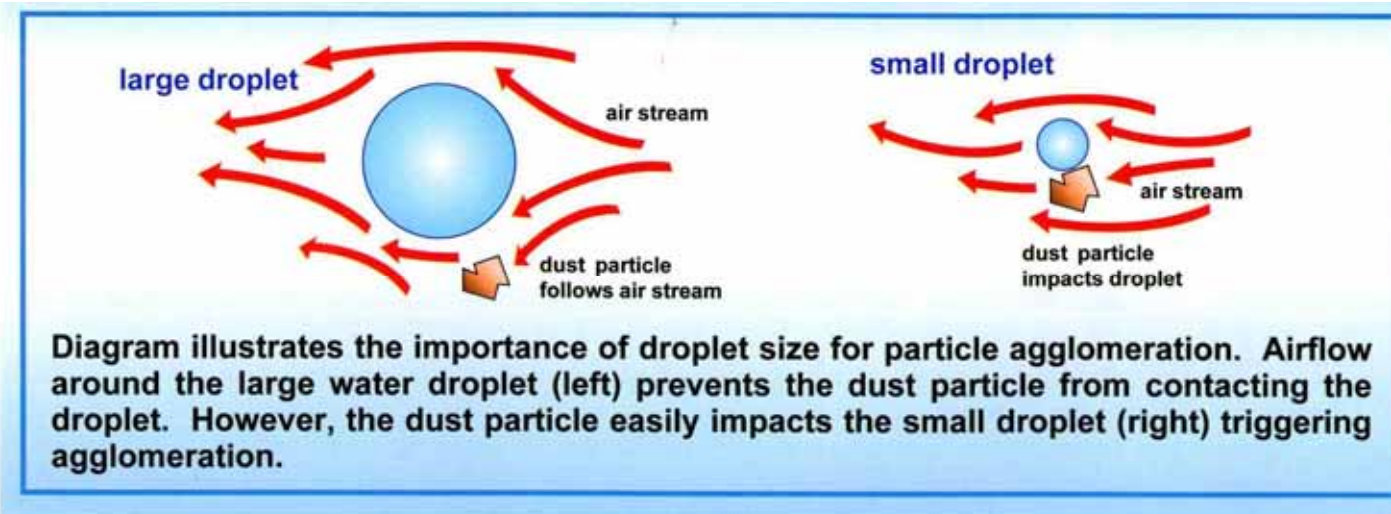
Encapsulates hazardous API – with out wetting Thru Suit

Proven Technology

PBSC Ultra-Sonic Fogging Shower



Ultrasonic fogging of contaminated surfaces results in a low turbulence wetting fog that encapsulates API particles that contaminate work suits



Why Ultrasonic Fog?

PBSC Ultra-Sonic Fogging Shower



A fogging shower is designed to wet the exterior of a Tyvek (spunbonded olefin) type suit without over wetting the person inside.

To achieve this it is best to generate a 5 – 10 micron fog that quickly saturates the atmosphere. This wets all surfaces and starts to form water beads on the suit. Depending on contact time in the shower the beads of water will continue to grow until they start to gently roll off the suit.

For a fogging shower there are 3 possible atomization techniques that can be used to generate a mist / fog, these are ultrasonic, two fluid and pressure atomization.

The **Ultrasonic** is the only nozzle able to effectively produce the 5-10 micron droplet size. In addition the ultrasonic nozzle is easy to operate and control, it does not require constant pressure tweaking as other nozzles can be temperamental and change their atomization patterns with the slightest fluctuation of pressures.

The Ultrasonic Nozzle is self cleaning, does not drip or clog. The low water and air pressure reduces maintenance.

Ultrasonic nozzles provide a consistent quality of atomization with minimal consumption of liquid and additives.

Nozzle Type	Number Nozzles	Particle Size Micron	Water Consumption L/M
Ultrasonic	3	5 -10	2
Two Fluid	3	50+	24
Pressure	60	50+	24

A 5 micron droplet is a 10th the diameter of a 50 micron droplet

BUT

This equates to a 1000th of the volume.

Ultrasonic Fogging Nozzle

PBSC Decontamination Showers



Key Features



The PBSC Door seal system:

- Silicone rubber perimeter seal
- No visible fixings
- No contamination trap
- cGMP compliant

The PBSC Hinge:

solid stainless steel hinge in 304 or 316 stainless steel.

The hinge is purpose built for clean room environments with a robust design, providing low maintenance and clean finish.



Key Features

Shower Door Interlocks for Maximum Security:



When Access Control is Critical.... Rely on PBSC:

Facility Security

PBSC BSL Chemical Fogging Shower



Bio-Decontamination

PBSC BSL Chemical Fogging Shower



Why is PPE decontamination needed?

To assure that active biological organisms do not breach the facility containment line during personnel exit.

How is bio-decontamination carried out?

The PBSC fogging system introduces a chemical disinfecting fog that encapsulates bio-contamination on the PPE suit – and over a pre-determined dwell time effects a kill* on the organisms present.

How is the bio-decontamination validated?

PBSC will support site SHE team with execution of Bio-indicator tags and similar performance monitoring agents to establish log reduction with/without Bio-decontamination

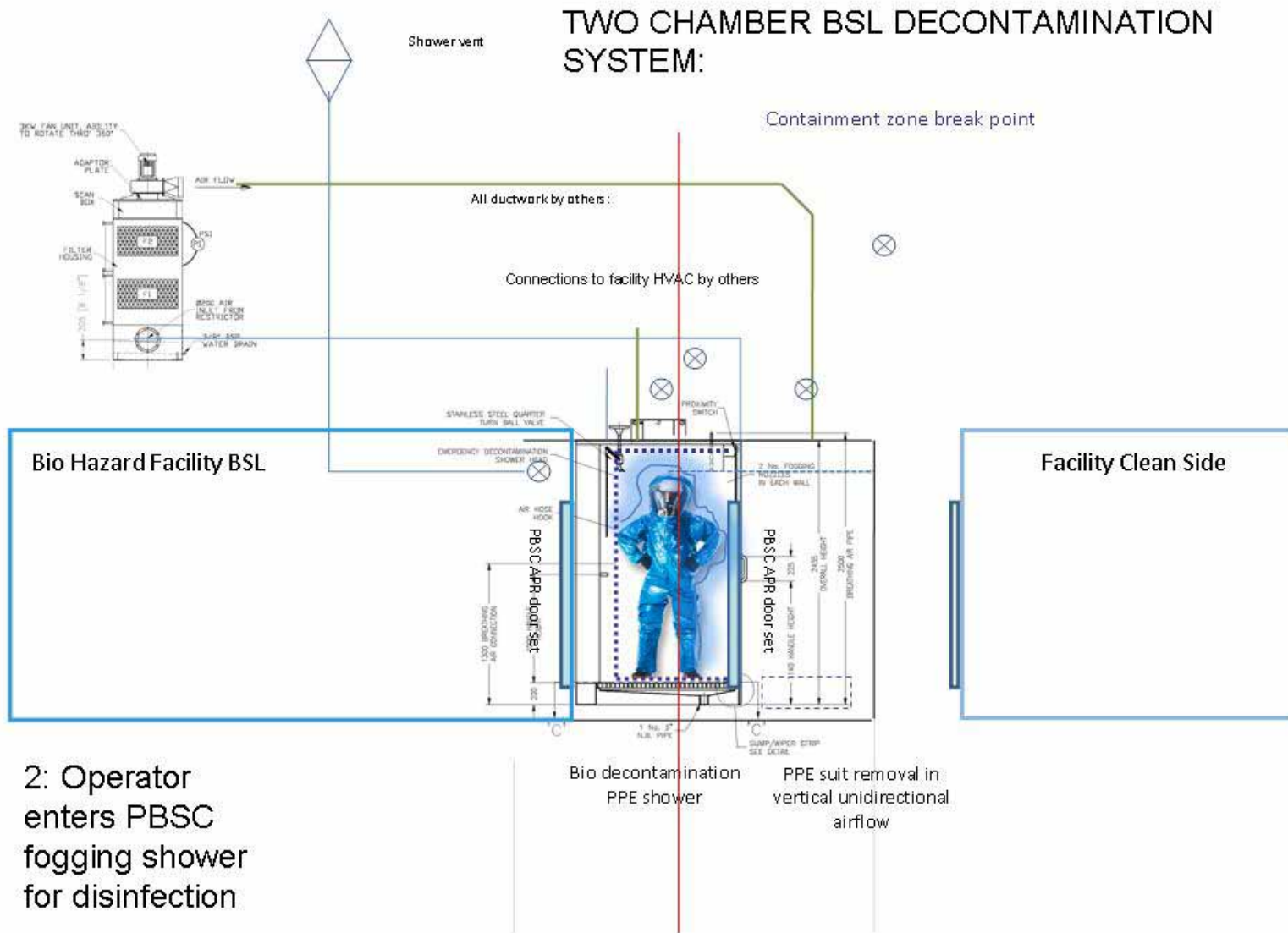


* Kill factor dependant on cycle development

Additional questions will be fielded by PBSC technical team:

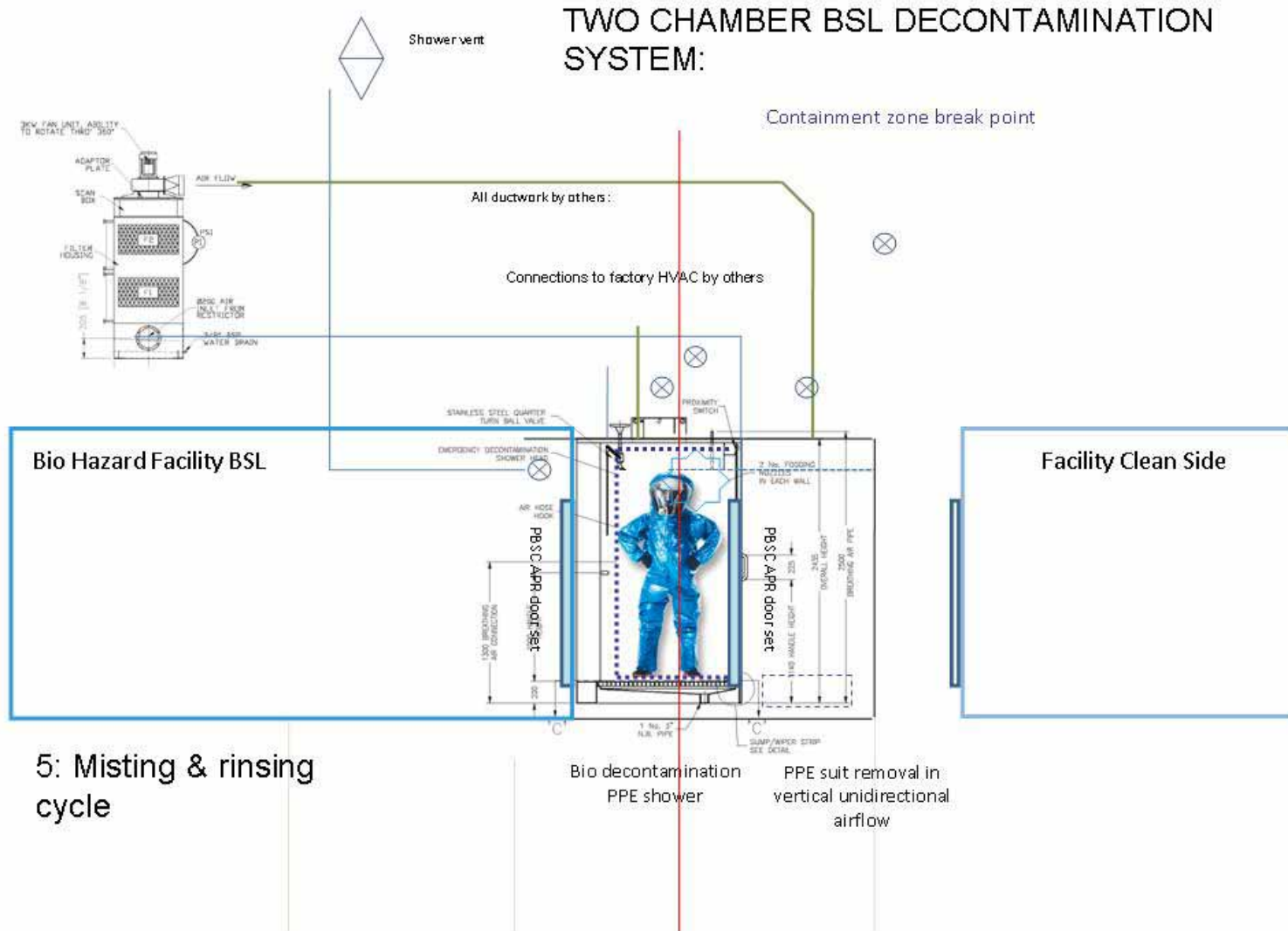
Proven Technology

PBSC BSL Chemical Fogging Shower



Proven Technology

PBSC BSL Chemical Fogging Shower

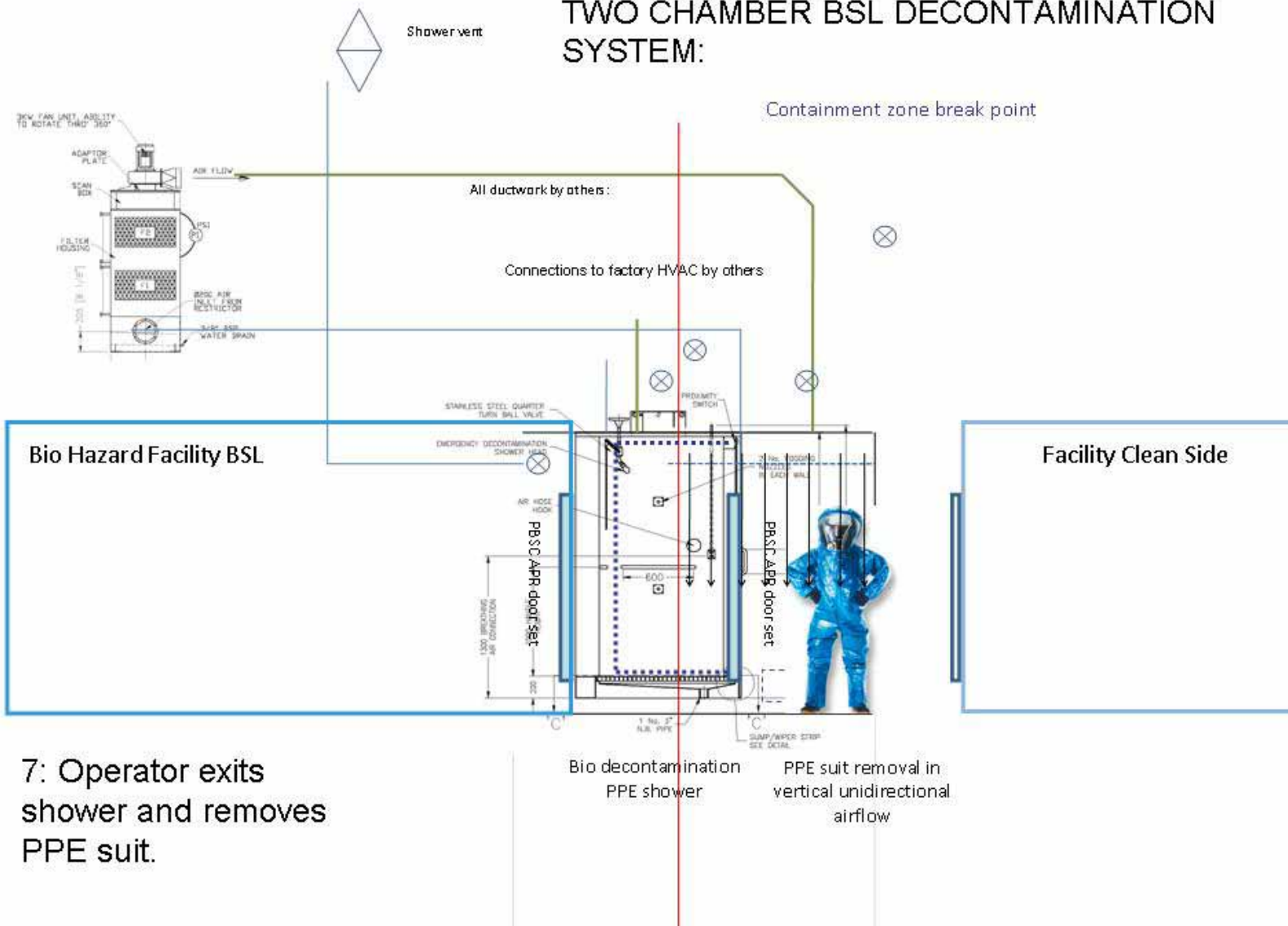


Proven Technology

PBSC BSL Chemical Fogging Shower



TWO CHAMBER BSL DECONTAMINATION SYSTEM:



Proven Technology

PBSC Decontamination Shower Construction



Decon Shower Type	Air Shower	Fogging/Fogging Misting/Chemical Fogging
Size Range	55" x 55" x 84" high (nominal)	55" x 55" x 84" high (nominal)
Maximum Clear Size	Height: 72" H Width Via single door 32" W	Height: 72" H Width Via single door 32" W
Construction type	Phenolic Resin construction Epoxy Coated Carbon Steel 304/3b finish Stainless Steel 316/3b finish Stainless Steel (Other materials available to order) Interlock type Mag lock Electrical codes to suit site standards	Phenolic Resin construction Epoxy Coated Carbon Steel 304/3b finish Stainless Steel 316/3b finish Stainless Steel (Other materials available to order) Interlock type MAG LOCK Electrical codes to suit site standards
Door type	Glass panel with fixing free PBSC hinge Phenolic panel with fixing free PBSC hinge Stainless door with fixing free PBSC hinge	Glass panel with fixing free PBSC hinge Stainless Steel door with fixing free PBSC hinge
Available Features	Shelving Waste container bag out HEPA filtration/HVAC connections Lighting Electronic access control	Bio-Decontamination Shelving Bag/container supports HEPA filtration/HVAC connections Lighting Electronic access control
Shipping Weights:	Contact Factory	Contact Factory

Construction Detail

PBSC HPV Bio-decontamination - Materials



Material Bio Decon

PBSC Decontamination Products



Personnel Decontamination

- Five Decontamination Regimes – dependant on contaminant
- Proven Effectiveness at reducing PPE Contamination levels
- Proven Reduction in Bio-Contamination
- Electronic Door Interlocks
- Epoxy Steel or Stainless steel constructions
- Shelving or container holders

Material Decontamination

- HEPA filtration HVAC connections
- HPV Decontamination / Inflatable Door Seals
- Formaldehyde Decontamination with Prep to change over to HPV

Further Technical Information:

UK & Worldwide +44 1484 354 500
USA +1 888 554 5885



Options



PBSC Supplying bespoke
cleanroom solutions worldwide



The complete cleanroom
component manufacturer

INSTALLATION, WARRANTY AND AFTER-SALESCARE

PBSC employs a specialist team of highly-skilled engineers to ensure the highest standards of product installation. Preventative maintenance contracts can be quoted on request and are recommended. PBSC aim to dispatch major spare items of minimum notice. 1-year warranty is standard on all products.

Abbott-Murex
Actavis
AstraZeneca
Baxter
Bristol-Myers Squibb
Boehringer Ingelheim
GlaxoSmithKline

Intel
Intervet
Johnson & Johnson
Lilly
Lonza
Merck
MRC

NHS Hospitals
Novartis
Patheon
Pfizer
sanofi-aventis
Schering-Plough
3M Healthcare
Wyeth