The art of powerful cleaning...

Abrasive Blast Rooms

RSI Incorporated

AIRBLAST AFC

RSI and Airblast AFC has developed a powerful reputation throughout the world for our reliable, durable and sophisticated surface preparation and coating solutions which make our customers more efficient, productive and profitable. This brochure gives a short outline of the blast booths, abrasive recovery, recycling, and ventilation products offered by RSI and Airblast AFC.

RSI and Airblast AFC equipment sets industry standards and as a result our products are being used with great success in many markets, ranging from multi-million dollar full aircraft stripping hangars, to booths for preparing rolling stock, to an array of smaller industrial enclosures.

Opposite: Three axis wall mounted unit brings the blaster to the work piece.

Below: Modular blast booths provide versatile design.

Blast Rooms


WALL-MAN

A modular design
for cost effective,
quick-delivery solutions.

Bottom: Modular booth incorporating slotted roof and overhead cranes.

Opposite top: A typical externalized modular booth.

Opposite bottom left: Cold rolled portal frame replaces the steel work of an internal modular booth.

Opposite bottom right: Blast booth panels fixed to the internal face and external cladding to the outer.

Booth Construction

Our modular style booth enclosure is based on a 10' x 3' galvanized tray interspaced with structural steel to provide rigidity. This concept has proved to be a popular industry-wide choice and by producing in volume, we are able to keep our production costs low and offer much faster lead times than our competitors.

Booths based on this design meet the majority of our customers' requirements but if a custom enclosure is required for a particular project we will design and manufacture made-to-measure panels. Connecting these panels by a diaphragm plate means that the structure will maintain its intended integrity (shown here in blue).

One of our unique features is the ease at which our booths can be installed as a waterproof option. Rather than relying on the flat roof, container-type booth offered by many of our competitors, we prefer to incorporate our modular booth into a portal framed cold rolled steel building. Booths based on mass produced shipping containers have their place in the market as a budgetary solution as they can be converted into a reasonable enclosure for blasting. However, their flat roof and single skin construction inevitably lead to a number of problems ranging from a short working life to ongoing condensation within the work area.

We utilize sophisticated design software, which when used in conjunction with the Zip/Postal Code for the area where the blast room is to be located, allows us to design a cold rolled galvanized portal steel structure that replaces the standard diaphragm system discussed earlier. The software also recognizes national and local building codes. By installing standard blast room panels to the inside of the structure and cladding to the exterior, a cost effective weatherproof blast bay is produced.


AMBLAST


CAT

Sound attenuation for limiting environmental impact.

Sound Attenuation

Sound attenuation for improved working conditions outside of the booth and limiting environmental impact.

All of our blast booth panels and doors are designed to accept sound attenuating foam. In the case of an external booth, the cavity between the blast booth and the external building also provides an ideal space for compressed rockwool.

Doors

Designed for value, quality and performance.

Our cargo doors stand testament to our belief in organic design. Many blast room doors fail as a result of their structural weakness - large doors hanging off proprietary hinges in a blast booth often leading to problems. Our design capabilities and non-reliance on outsourced components mean that we always provide a superior door hinge of such strength that enables us to hang doors up to 20' high x 20' wide.

Our design ensures that our doors will be used over many years without the need for rubber curtains which can be trapped in the door or its hinges.

Lighting

Dust and impact resistant high intensity lights.

RSI and Airblast AFC has perfected the ability to replace fluorescent blast room lights with high intensity 400W metal halide units. Ignored by our industry because of the problems associated with extreme heat and the percussive effect of abrasive on the light glass resulting in the glass shattering. These light units are a standard feature on most of our facilities. With the correctly sourced glass diffuser we are able to withstand the rigors of the blast booth environment.

By utilizing these units the lux achieved is superior to other products. Each unit is positioned outside the booth shining light through the glass which sits on a seal fitted to an aperture in the roof. This ensures that there is no build up of dust which can be found when light systems are fitted to the booth itself.

Opposite top: Sound attenuation foam applied to a modular booth.

Opposite bottom: Externalized modular booth.

Top: Metal halide lighting provides optimum visibility.

This scraper floor has many features that separate it from those offered by our competitors.

Opposite top:
A motor and reducing gear box in conjunction with the frame of scrapers turns a rotary motion into a reciprocating one.

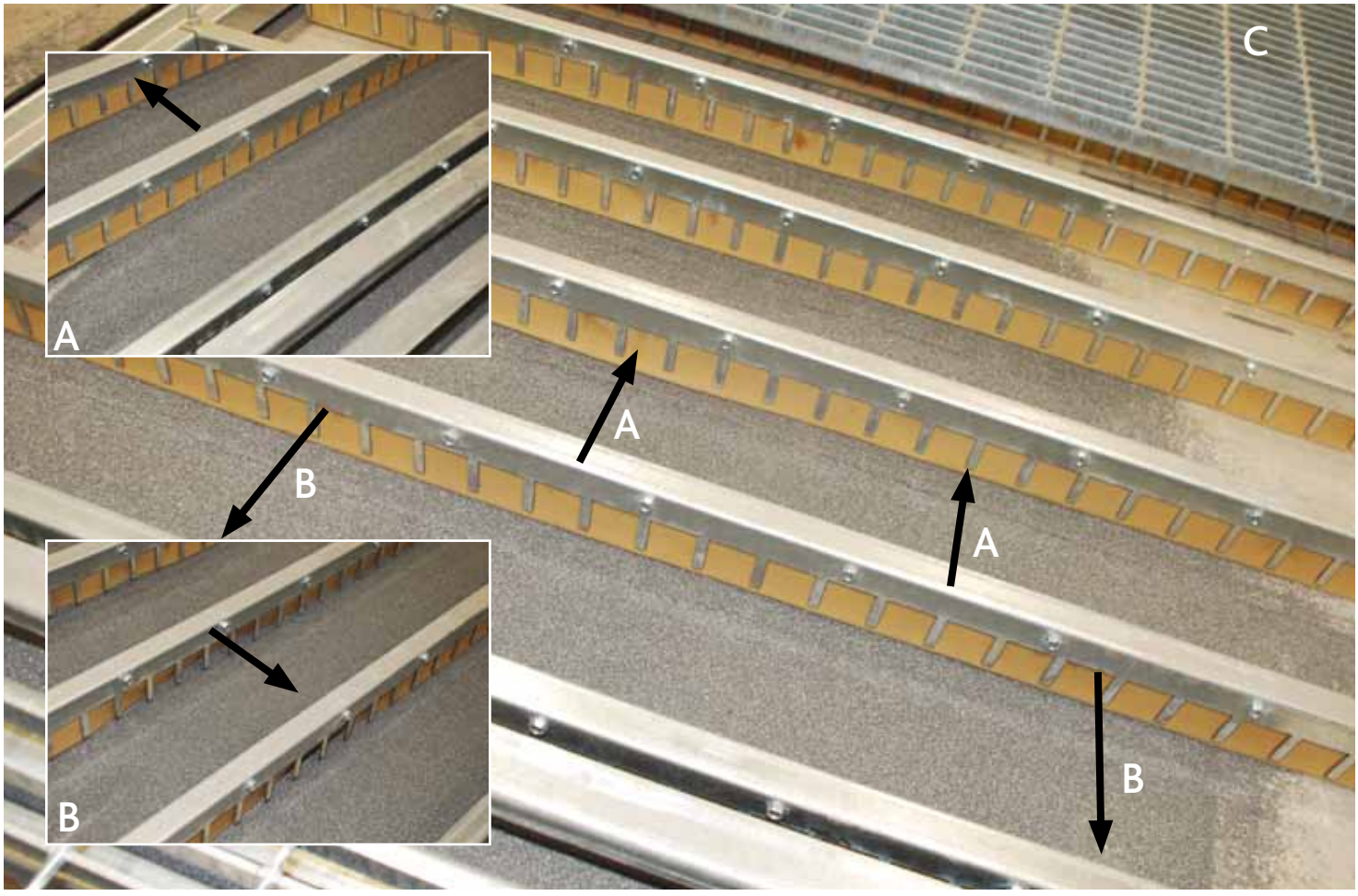
Opposite bottom:
Abrasive is moved through the blast room.

Media Recovery Floor

The most specified product in our range. This scraper floor has many features that separate it from those offered by our competitors. The scrapers comprise of a natural rubber flap set against a steel comb, multiples of which are set in 10' long frames. This assembly is then adjoined to others to form a corridor running the length of the blast booth.

Available in six standard widths, each corridor moves in a reciprocating back and forth motion. Because the distance between the scrapers is less than the distance of travel, each scraper moves abrasive forward, as the rubber flap in this direction is locked against the steel comb behind it, to the next (A) in a shunting motion. On the reverse stroke the rubber scraper blade, unhindered in this direction by the steel comb, is free to pass over the previous scrappers deposit of abrasive (B). The abrasive is pushed forward to a final corridor positioned at right angles to the booth where it conveys the abrasive to an elevator and is recycled.

The depth of the recovery channel is only 5" ensuring that in many instances, ie. those where objects being taken into the booth may be carried by hand, it can be located directly onto an existing factory floor. When a flush finish is required between the factory floor and the blast room, only minor excavation is required. The scraper system is covered by a pedestrian grating (C) on which the operator stands and through which the abrasive falls. In certain applications when heavy items are being processed, this grating can be increased in strength to provide greater loading capacities. An alternative method of supporting a heavier item is to incorporate rails into the floor, positioned conveniently between the recovery corridors on which a cart can be mounted.


C
A
A
B
A
B
B

Our method of grit reclassification is proven to extend the life of dust extraction filter cartridges.

Opposite: Abrasive reclassification for blast machines.

Below left: Steel floor recovery guide rail and hose storage.

Below right: Twin Vaculift recovery.

Abrasive Elevators

With a recovery floor the RSI Airblast AFC elevator requires no pit. Designed to allow abrasive to be picked up as it is pushed into its base from the recovery floor, the abrasive passes up through a vibrating sieve which discharges oversized contaminants to a collection bin at floor level. Smaller particles of abrasive then pass through a dynamic air wash where dust is discharged into the dust collector.

Undersized abrasive is also eliminated. Rather than being conveyed with the dust to the dust extractor, in our system undersized abrasive is also delivered to the collection bin at floor level. When undersized abrasive is taken to the dust collector, its mass causes it to travel faster than the maximum filter velocity dictated by the filter manufacturer. This results in premature wear to the filter media.

Our method of grit cleaning is proven to significantly extend the life of filter cartridges or bags. This is very important as changing the dust extraction filters is the single most costly maintenance issue associated with any blast booth.

Large capacity elevator and abrasive recycle

In those instances where an abrasive recovery floor is not required or cannot be justified, we offer two "sweep to" systems. The most advanced of these systems is an adaptation of our elevator which allows for a much larger capacity for storing abrasive. This system can provide for up to 8 hours continuous blasting.

Vaculift

A cheaper and simpler grit elevator and recycler is the RSI Airblast AFC Vaculift. Rather than physically vacuuming the abrasive the Vaculift system blows the abrasive vertically. As fast as the abrasive can be swept to the Vaculift hopper it is delivered by a micro venturi at its base, through a ceramic and steel pipe into a ventilated air plenum where dust is extracted to the dust collection unit.

Non-recovery floor-steel floor detail

Where a recovery floor is not installed in a large booth RSI Airblast AFC will incorporate a detail into the ¼" steel plate floor. This provides a guide rail against which a plow can be run pushed by a fork lift or skid loader. This durable feature allows for rapid recovery of abrasive to the elevator.

Providing market leading standards of visibility with the blast booth for optimum safety and production.

Below: Dust extractor

Below inset top: Inlet positioned to the front of the booth, high level.

Below inset bottom: Outlet positioned to the rear of the booth, low level.

Dust Extraction

Our booths provide market leading standards for operator visibility and dust extraction. Very often the environment within our booth differs very little in terms of visibility from that of the environment in which you are probably reading this brochure. To see this for yourself please view our product demos at www.airblastafc.com

Our dust extraction units are not only calculated to provide booth airflow of 50ft per minute but our carefully designed replacement air inlets and outlets ensure that there is no turbulence within the booth maintaining optimum conditions.

Top Left: Only re-classified media is returned to the blast machine.

Top Right: Dense particle separation ensures that no heavy non-magnetic particles make it through to the blast machine.

Bottom: RSI Airblast AFC has supplied several multi-million dollar turnkey projects to the U.K. Royal Air Force (RAF) and others.

Plastic Media Stripping

Plastic Media Blasting (PMB) is a dry abrasive blasting process, designed to replace chemical paint stripping operations and conventional sand blasting. This process uses soft, angular plastic particles as the blasting medium. The process blasts the plastic media at a much lower pressure (less than 40 psi) than conventional blasting. PMB is well suited for stripping paints on substrates that could be damaged, since the low pressure and relatively soft plastic medium have minimal effect on the surfaces beneath the paint.

After blasting, the media is passed through a sophisticated reclamation system that consists of cyclone centrifuges, air wash, multiple vibrating classifier screen decks, and a magnetic separator. In addition, some instances call for dense particle separators as part of the reclamation system. The denser particles, such as paint chips, are separated from the reusable blast media, and the reusable media is returned to the blast machine.

Below is one of the turnkey projects incorporating PMB that RSI Airblast AFC has built for the Royal Air force.

Containerized Booths

When an item to be blasted can be processed within the constraints of a standard shipping container a containerized booth may be considered. This versatile mass manufactured watertight box is an ideal starting point for a blast room particularly when the booth may be relocated at some point or if it is to be situated outside in the elements.

RSI Airblast AFC purchases new containers and re-design them to incorporate features described earlier in this literature. Options range from booths simply ventilated with media reclaimed by use of a Vaculift to the incorporation of full recovery floors.

Top Left:
Transportability is one of the advantages of this type of booth.

Top Right: Sweeping to a Vaculift recovery unit is a popular choice for grit recovery.

Right: This container boasts a full recovery floor and overhead conveyer

Products and services

Blast rooms
Abrasive blast cabinets
Portable blast systems
Blast accessories
Lighting systems
Dust collectors
Paint spray booths
Personal Protective Equip.
Design and build
Servicing
Training

Contact us

For further information on how our products and services could benefit your company, please contact us by any of the means below.

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