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"Keep It Simple" Designs Make Productive Blastrooms

"It Started With a Kiss." Hot Chocolate, 1982. Beautiful song, go check it on Youtube.

Unfortunately, although we follow the KISS (Keep It Short and Simple) principle, our company theme song would not be so romantic. "It Started With a Container." would be more appropriate. A second-hand shipping container actually. One container, one shovel and two plastic bins. The container floor was covered with steel plate, and a blast pot positioned in the corner. Back then, we were a blasting services provider. We would blast until the pot was empty, and then scoop up the abrasive with the shovel and bins. One person to fill the bin, one person to empty the bin into the pot. Shoveling was easy. Climbing the ladder to load the abrasive through the separator was back-breaking work. That was 10 years ago, and that was our first abrasive recovery floor. Well it was hard work, and every project took a lot longer than we anticipated, but it taught us a valuable lesson. The speed you can recover your abrasive at is just as important as how fast you can blast. Often the cleanup after blasting can take longer than the actual blasting. In addition, time spent recovering abrasive is time that would be better spent being productive and generating income.

As we started out as a blasting and painting contractor, we soon gained a lot of real world application knowledge. What works, and what does not work. All that experience has been put to good use during the development of our range of blastrooms. All our designs are simple to operate and achieve more productivity.

Now we produce several types of blastrooms for specific applications. Some are listed below.

TruGrit Blastroom

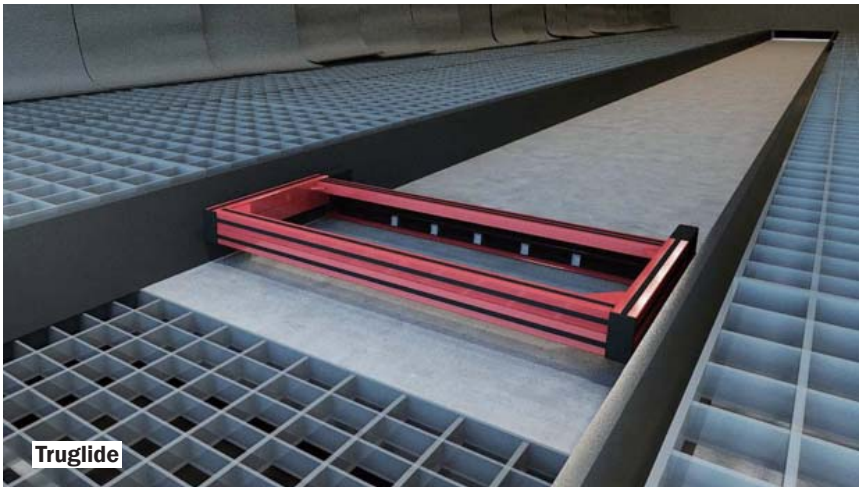
As we all know, abrasive blasting is a harsh process. This is especially true when blasting steel products with steel grit. The steel grit is very unforgiving and will quickly wear out blast room components. To counter this, the TruGrit blast room is fitted with the TruGlide abrasive recovery floor.

Reduced installation and running costs

The floor is simple in operation and contains minimal moving parts. From bitter experience, we have learned that moving parts such as bearings and air cylinders, inside the blast room, do not mix well with abrasives. The TruGlide floor is made from modular sections that bolt together inside a 380mm deep foundation. It is quick and easy to install. Even in big blastrooms, the floor can be completely installed in a few short days. During blasting, a 10mm thick protective layer of abrasive forms in the bottom of the floor channels. This layer of abrasive creates a wear-resistant barrier, to protect the recovery floor from wear. Each floor channel is fitted with a lightweight rack assembly containing a hardened steel blade. The rack assembly repeatedly travels up and down the entire length of the blast room to automatically and continuously recover the recently blasted abrasive. Within 1 or 2 minutes of the abrasive exiting the nozzle, it has been recovered, cleaned and stored ready for reuse. No shovel or plastic bins required here. The racks are exposed to flying abrasive for only a brief few seconds on every stroke. This setup, combined with the protective layer of abrasive in the floor channel, greatly reduces wear and tear.

The design of the TruGrit blastroom follows our Keep It Simple guidelines:

- Simple price - requiring minimal materials to make keeps the costs down. Lower material costs means we can sell cheaper.
- Simple installation - the TruGlide Abrasive Recovery Floor is a modular bolt-together design. All that is required is a simple concrete foundation and the floor is dropped in and bolted together. The recovery floor is quick and easy to install. Within a very short period you will be up and running and blasting in production.
- Simple operation - the simple minimal moving parts design ensures the TruGlide Abrasive Recovery Floor keeps on running. Press the start button and start blasting and the recovery floor will take care of returning and cleaning the abrasive ready for reuse.
- Simple maintenance - no moving parts inside the blast room ensures minimal maintenance is required. Half a day once a month with a few hand tools to check and adjust, is all that is required.


Truglide

Reduced dust pollution with TDF dust collectors

When blasting, the visibility in the room is important. Poorly designed and or

maintained ventilation dust collectors are not up to the job. Very quickly, the room becomes foggy. Once full of dust, it is difficult to see, and dust sticking to parts is an issue best avoided. Most painting specs call out a maximum permissible dust level on the surface, before painting is allowed. It is very difficult to get the surface clean after blasting if there is excessive dust in the room. Blowing off the dust just moves it from one place to another.

Better, is to have the dust sucked out of the room as soon as it is created. That is what TDF ventilation dust collectors are designed for. TDF ventilation dust collectors are not the same as conventional dust collectors. The filter cartridges are inverted and stand up instead of hanging inside the dust collector. Dirty air entry to the dust collector is through the roof and the air travels in a downwards direction. As the filter cartridges are pulsed clean, the dust falls downwards in the same direction as the ventilation air.

This same direction movement of air and pulsed-off dust ensures the cartridge filters pulse clean every time. Unblocked, clean filters do not restrict airflow. Unrestricted airflow through the filters results in much higher ventilation airflow in the room, and consequently less dust on the work piece.

Reduced noise pollution with Dura-Door

Blasting is a noisy business, but there is no need to also make it noisy for every one else. Dura-Doors are made from a 6mm thick rubber compound. Unlike steel doors, this rubber absorbs most of the noise and greatly reduces noise pollution to other areas of your factory. Fitted to the end of a blast room, Dura-Doors will also save a lot of space usually occupied by swing doors, making for a simple, long-lasting and space-saving operation. Surprisingly the cost of a Dura-Door is almost compatible with equivalent fabricated steel swing doors.

Dual Abrasive Blastroom

Manufacturers and refurbishers of some components may have the requirement to blast with two abrasives. The items to be blasted may be made from carbon steel and stainless steel. Carbon steel and stainless steel products cannot both be blasted with the same abrasive, as this would result in ferrous contamination on the stainless steel surface. Stainless steel must be blasted with an abrasive that will not contaminate the surface, ie glass and ceramic beads, garnet, aluminium oxide etc.

Or the items may have two finishing requirements, surface preparation for painting and surface cleaning for inspection. In both instances, two different abrasives are required. Usually these will be an angular steel grit for surface preparation/etching and a spherical glass bead for gentle surface finishing/cleaning.

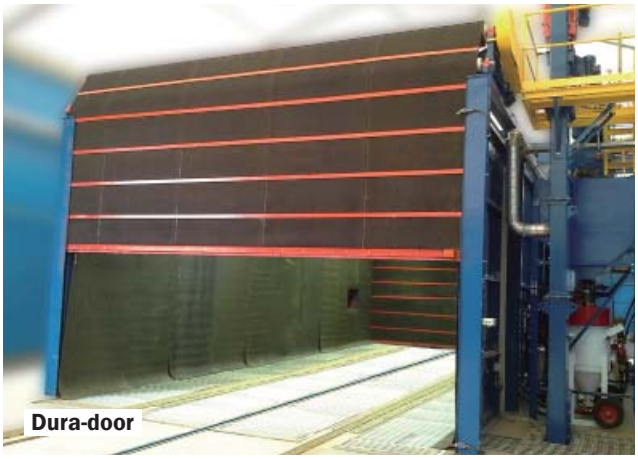
The conventional, and expensive, way to do this is to have two separate blastrooms, one for each abrasive type. We offer an alternative. The Dual Abrasive blast room is designed for use with two abrasive types and incorporates the following into the design:

1. Full floor pneumatic abrasive recovery instantly removes all blasted abrasive to reduce cleanup time between abrasive change over.
2. Magnetic separator removes all steel particles from glass beads. The recovery system is also designed to prevent the steel grit becoming magnetized and clumpy after repeated recycling.
3. High efficiency cyclones prevent wastage of good reusable glass beads, even those of very fine sizes.

The Dual Abrasive blast room saves the investment cost of two separate blastrooms. Quick and effective changeover from one abrasive type to another increases uptime for production.

Shipblock Blast & Paint

Colossal bulk carrier and tanker ships are built in multiple small block sec-


Dura-door


Dual abrasive

Ship block

tions. Each of these "blocks" are blasted and painted with a protective coating before the ship is launched for the rest of her life into the most corrosive of all environments, the sea. Preparation of the steel surface and the application of the protective coating are therefore vital to protect the ship owners asset, and to ensure the ship does not become a useless rusting hulk within a short time. Blasting and painting of ship blocks can be performed in one of our purpose-built combination blast and paint rooms. These rooms are sized to suit the required block sections. The combination blast and paint room allows the blocks to be blasted and painted in the same room without having to shift from one room to another for separate blasting and painting. In inclement weather, transferring the block from one room to another adds to the risk of flash rusting on the freshly blasted surface prior to the paint being applied. In a combination blast and paint room, the block can be blasted, cleaned, weld repaired and painted without being moved between rooms, and is in a temperature- and humidity-controlled environment all the time.

The process time from the block entering the blast room raw, to leaving with 2 or more layers of protective coating can last for several days. Due to this long timeframe, both blasting and painting equipment can end up sitting idle for long periods. Underutilized machinery is a waste of resources. To combat this, we produce a dual room system. This system incorporates two blasting/painting rooms and one machinery room. The blasting, ventilation, abrasive recovery and dehumidification equipment are shared by both rooms. When one room is blasting, the other is being used for abrasive cleanup or painting. Once the processes are complete, the roles are reversed. This setup allows the same sets of processing equipment to be used in both blasting/painting rooms. End result....huge savings in capital investments and fully utilised equipment.

Plastic Media Blastroom

Plastic media blasting (PMB) is ideal for a wide range of uses including paint removal, mold cleaning, deflashing and deburring, and is suitable for the treatment of soft or delicate substrates i.e. aluminium, fiberglass and composites. Coatings can be removed layer by layer without damaging or etching the underlying surface. Plastic media blasting is commonly used on aerospace components, which are inherently of high value. For this reason, the blasting process must be tightly controlled to avoid blasting damage to valuable parts. In a PMB Blast room, media recovery is accomplished with our P Series pneumatic conveying recovery floor to ensure no abrasive breakdown occurs during recovery. Reusable plastic media is separated from dust and paint chips in a four-stage high efficiency-reclaiming separator. This fully adjustable unit ensures that only correctly sized and fully cleaned media are returned to the blasting pot. Internal controls allow blasting operators to monitor and adjust the blasting parameters from inside the blast room without having to stop blasting.

These are some of our range of blastrooms. After 10 years, we are still designing blastrooms to be simpler and more productive, because we know that that is how you will earn more money. And, when we are not doing that, we are still listening to 1980's Hot Chocolate songs.

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