Dust Free Solutions

AIRBLAST

Surface Treatment Solutions

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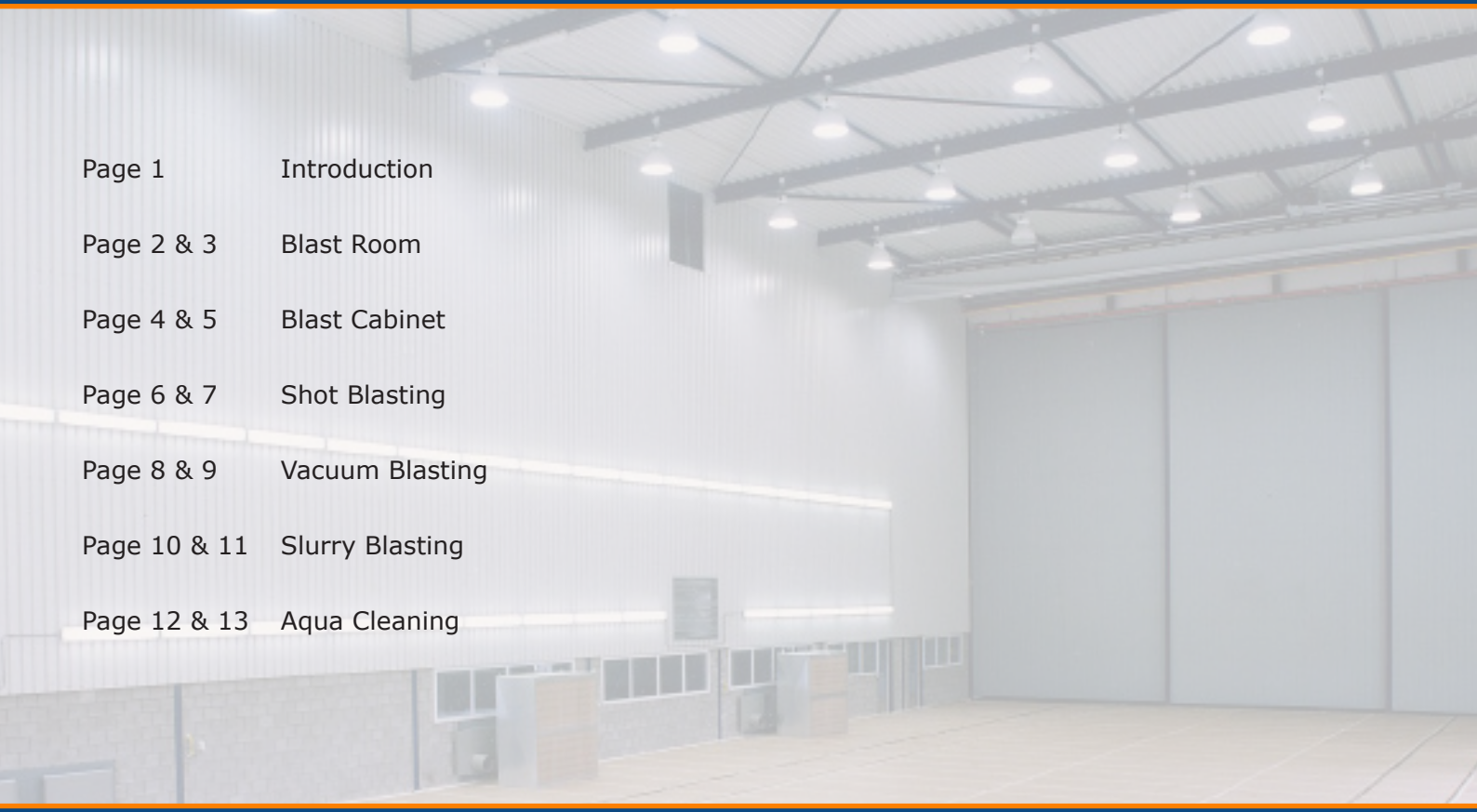

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Introduction

Welcome to "Airblast Dust Free Solutions".

This guide features the most effective and efficient Dust Free Equipment to improve the blasting and painting process.

Demanding circumstances require specialist equipment. The Airblast ranges of dust free environmentally friendly blasting equipment offer increased performance, operator safety, and reduced operational costs. Shot blasting, vacuum blasting, slurry blasting and UHP water jetting all have specific applications where environmental, operator, and access concerns are present. Increased quality and repeatability, as well as reduced operational cost, make these ranges of equipment invaluable for completing the most challenging projects.

The impetus to invest in Airblast Equipment may be driven by the desire to gain an edge over your competitors, to better control the quality achieved, or by environmental legislation – whatever the reason the move to utilizing Airblast Dust Free Equipment ensures that each process is undertaken in the most efficient and effective manner.

Each section features a different range of dust free equipment designed to be used in the Surface Finish Industry.






As this guide features only the main pieces of equipment required there may be items which you wish to purchase which are not mentioned within these pages – please consult with your local Airblast representative to receive details of the full range of products.

For more than 40 years Airblast has been the world leader in providing blasting and painting solutions to the anticorrosion industries. With an unparalleled network of offices around the world Airblast works closely with our customers and distribution partners providing tried and tested equipment as well as developing customized solutions for specific applications.

Airblast is dedicated to maintain a profitable organization on a long term basis through ethically and morally sound business practices. By investing in the long term future of our organization, and those with whom we conduct business, Airblast believes that we can share sustained mutual success.

Our manufacturing facilities in Europe and the Far East produce fit for purpose quality products with region specific certification. All Airblast equipment is manufactured according to the highest relevant safety standards and passes our rigorous quality controls before dispatch.

Mindful of the environmental responsibilities faced by our generation Airblast is committed to a programme of research and development into technologies facilitating zero emission blasting and painting along with an education programme promoting planet friendly operations.

Blast Room

Each Airblast Blast Room is tailor made for the specific requirement of each individual customer – your operational demands are unique, why should you compromise with a standard solution?

Each element of an Airblast Blast Room is engineered to be in balance with the other elements – this ensures that the flow of products, the flow of abrasive, and the flow of dust is smooth and uniform.

After a thorough investigation and analysis of the objectives and goals of the blast room our team of engineers draw upon years of experience and an extensive installed base of blast rooms in operation around the world to ensure that the Airblast Blast Room proposal satisfies all of the criteria as well as allowing opportunities for future development.

As each Airblast Blast Room is designed specifically on a project by project basis the possibilities for customization are endless: multiple blasters operating on one room; product access through one end or both ends of the blast room; abrasive recovery options including: sweeping pit, cross conveyor, U shape, H shape, and complete floor automatic recovery with conveyor system or scrappers; down draft or cross draft dust extraction; automatic grit recycling incorporating magnetic separation.

For additional flexibility Airblast can provide a combined blast and paint room: once the blasting is completed and the abrasive recovered a separate paint extraction system is activated and painting of the product can begin. The reduced product handling provides additional quality control benefits as well as cost savings.

Airblast has an extensive reference list of installed blast rooms around the world working with companies such as Keppel Fells Singapore, Gdansk Shipyard in Poland, Zamil Steel in Saudi Arabia and many others.

Products

AIRBLAST

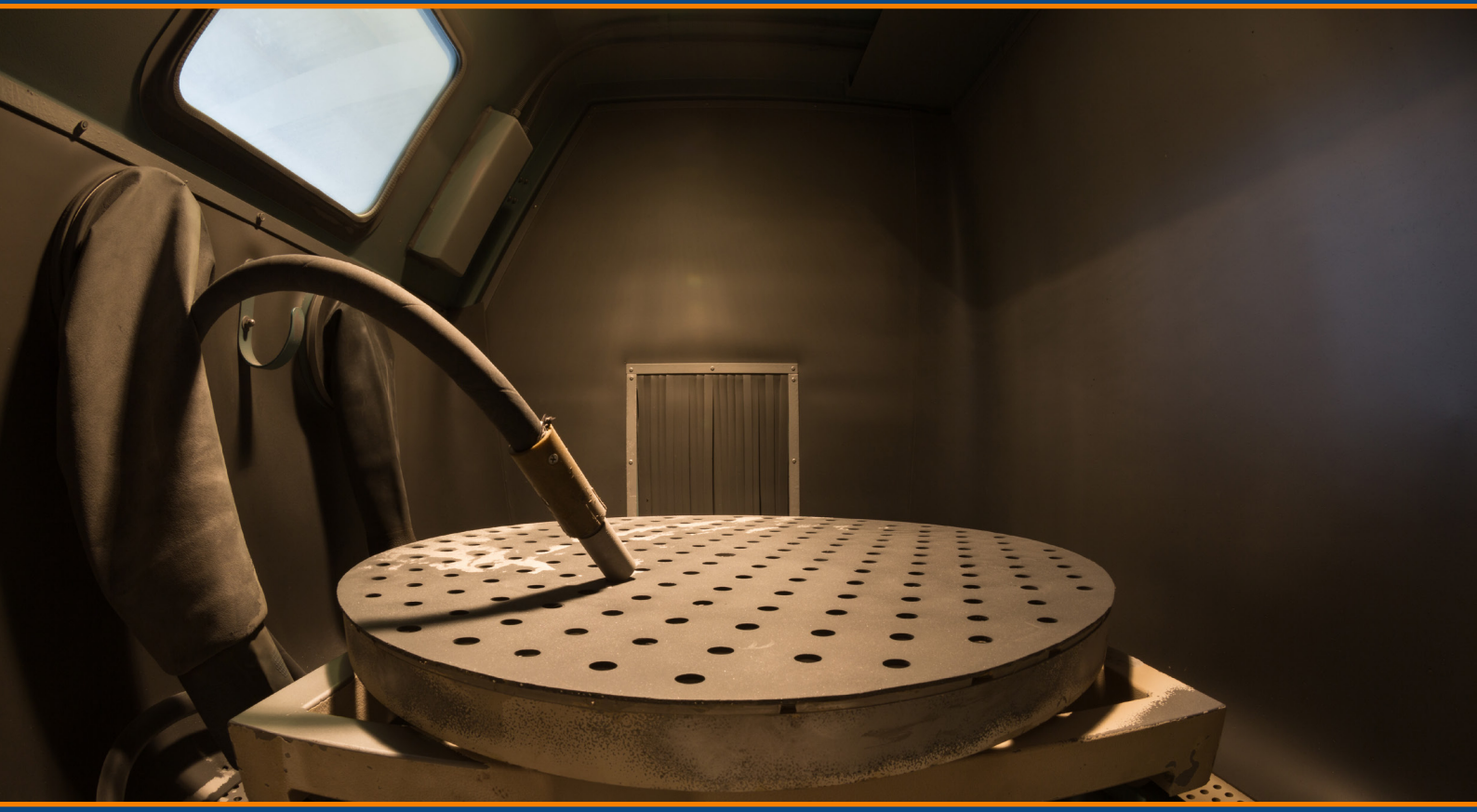
Each Airblast Blast Room is engineered to the highest quality standards and is supplied with region specific certification. The key elements and processes in a blast room are detailed below:

Abrasive Management
After impacting the substrate abrasive falls to the floor and through the grating into the recovery system, or remains of the floor to be manually moved into the recovery system in the case of sweeping pit, cross conveyor, U & H shape recovery systems. The abrasive is guided onto the recovery system by a V-hopper section designed to ensure that overload is impossible. Airblast scrapper and conveyor recovery systems both utilse totally enclosed, sealed for life, maintenance free motors. The recovery system transports the abrasive to the bucket elevator (which utilizes Columbus buckets to ensure that overload is impossible) which delivers the abrasive into the cascade cleaning system with double air wash and vibrating screen abrasive classification. From the cascade cleaner the abrasive is deposited in a silo ready for return to the blast pot and reuse.

Dust Management
Dust laden air is extracted from the room through wall mounted ducts and enters the inlet plenum of the collector where heavy particles fall immediately into the hopper. As the air flows through the filter cartridges dust is deposited on the outside of the filtering media. Solenoid valves introduce jets of high-pressure air into each pair of cartridges alternately - the resulting reverse airflow cleans the filter cartridges. Dust removed from the filter surface settles into the hopper. As each pair of filter cartridges is cleaned in succession the operation is uninterrupted. Air inlet grids return 80% - 90% of the air back into the blast room, this is critical especially in climate controlled blast rooms.

Electrical Panel
The Electrical Panel is the central point from which each of the elements of the blast room can be controlled and monitored. Pre-loaded start up and shut down sequence programs ensure ease of use and the inclusion of the Star-triangle starter guards against electric overload.

Blast Cabinet



Blast cabinets can be used to blast clean relatively small substrates of surface rust and contaminants in a dust free environmentally friendly manner. Airblast has a complete range of systems which set the standard for optimum performance in modern blast cabinets. Whether you wish to de-burr, clean, remove an existing coating, or produce a matt / polished surface on your substrate an Airblast blast cabinet is the most professional, cost effective equipment available.

Innovative construction and application of advanced components give the units a small footprint and guarantee a perfect working system for all kind of applications. The cabinets are produced according to European regulations and have CE certification, with all safety features to ensure a safe operation for the blaster.

There are two types of blast cabinet which utilize different working principles: vacuum injection and pressure blast.

The vacuum injection system uses a vacuum to draw abrasive from a hopper and propel it onto a substrate in order to provide a clean surface, this system has two filter options: cloth filter bags or cartridge filters. The vacuum injection system is designed to be used with lighter abrasives such as aluminum oxide, glass beads, garnet or walnut shells.

The pressure blast system uses a pressurized vessel to propel abrasive onto the substrate at a high velocity in order to provide a clean and profiled surface, this system utilizes cartridge filters with reverse pulse jet cleaning. The pressure blasting cabinets can be used with all types of abrasive including steel abrasive.

The standard range of Airblast cabinets are most suited for blasting one product at a time - the products are placed into the cabinet one-by-one where they are manually blasted. Automatic blasting cabinets can be used in production lines for increased productivity. We can also supply blasting machines with robot blasting technology, the handling robot positions the products in the cabinet to reduce manual labour. In addition to our standard range of vacuum and pressure blast cabinets we also have the possibility to manufacture bespoke cabinets designed to adhere to your specific requirements.

Products

AB61 Vacuum Injection Blast Cabinet

ABD1000 Pressure Blast Cabinet

The standard range includes four vacuum injection and four pressure blast systems. Each with a small footprint due the smart design of the blasting chamber, abrasives cleaning system, filters (cloth bags or cartridges) and extraction fan on top.

The Airblast Vacuum Injection Blast Cabinets:

Type	Working area - mm	filters
AB-90	1.000 x 600 x 600	cloth bags
AB-61	1.180 x 750 x 980	cloth bags
ABI-1000	1.000 x 1.000 x 1.000	cartridges
ABI-1300	1.000 x 1.280 x 1.000	cartridges

The Airblast Pressure Blast Blast Cabinets:

Type	Working area - mm	filters
ABD-1000	1.000 x 1.000 x 1.000	cartridges
ABD-1300	1.000 x 1.280 x 1.000	cartridges
ABD-1250	1.230 x 1.250 x 1.250	cartridges
ABD-1500	1.480 x 1.350 x 1.250	cartridges

All blasting cabinets can be fitted with accessories such as: rotating drum, rotating table, rail system, multiple nozzles, sluicing doors with a push through systems.

Shot Blasting

Shot Blasting Machines utilize multiple spinning blast wheels as opposed to air pressure to propel abrasive onto the substrate. As the spinning blast wheels are fixed in place each machine is designed to blast a certain substrate shape in the optimum way. The production characteristics of each wheel blast machine is determined by the quantity, power, and size of the spinning blast wheels.

Shot Blasting Machines are available in different configurations – each optimized for a specific product type and size, the most popular types of unit are:

Plate	:	Standard machines are available for the most popular sizes of steel plate
Pipes	:	From single blast wheel units which spin the pipe to achieve a full blast, up to multiple wheel units which achieve very high production rates, there is a machine in the Airblast programme to handle each size of pipe and production requirement
I-beams	:	In order to achieve a full blast in each of the corners of the I-beam multiple wheel are required with finely tuned abrasive streams

Each of the Shot Blasting Machines operates using the same basic principles: abrasive is loaded into intake hoppers from where it is fed in a measured flow to the blast wheels. After being propelled onto the substrate the abrasive drops into the collection channels below the blast chamber. From there it is transported through a recycling system to remove contaminants via a vibrating screen to separate larger particles and an air wash system to remove dust. The dust created by the blasting process which remains in the blast chamber is extracted via a separate air stream created by a fan creating a vacuum through a filter system.

Products

Each Airblast Shot Blasting Machine is engineered to the highest quality standards and is supplied with region specific certification. The key elements in a Shot Blasting Machine are detailed below:

Blast Wheel
The blast wheel propels the abrasive stream onto the substrate and is therefore a critical element in achieving a successful blasting operation. Each blast wheel comprises of the following components: the feed spout which feeds abrasive into the wheel, the impellor which controls the flow of abrasive out through the cage opening, the control cage which sets the direction of the blast pattern, the centering plate, and the blade.

Dust Collector
The dust collector creates a vacuum throughout the installation and collects the dust made of used abrasive and contaminants blasted from the substrate.

Liners
The liners protect the body of the wheel blast machine from the abrasive flowing through the system – manufactured from heavy duty materials they are designed to be sacrificial and easily replaceable.

Elevator
Each elevator is manufactured from 2mm and 3mm steel plate with an inspection hatch, and features a dust free, lubricated for life, sealed motor and gearbox, as well as heavy duty Columbus buckets which due to their design cannot be overfilled.

Vacuum Blasting

The Airblast Vacuum Blast Machines provide an environmentally friendly dust free blasting solution which is easy to use, versatile and powerful.

The use of steel abrasive provides cost effective, efficient and powerful blasting as well as close control of the surface preparation. Easily inter-changeable blast head fittings allow a variety of surfaces to be blasted including: flat, inside and outside corners, small & large diameter pipes etc. Additional accessories are available for specific applications such as to blast large horizontal surfaces or the edges of steel plates.

As the process is safe and dust free other production processes can be carried out close to the blasting operation.

Features

- "Stand alone" unit includes automatic dust extraction and abrasive recycling system
- Quickly interchangeable blast head fittings to blast different surface shapes
- Fully pneumatic
- Allows blasting from low to high pressure (1 – 8 bar)
- Maximum hose length of 35 meters
- Can be incorporated into an automatic on-line blasting process

Benefits

- Totally dust free environmentally friendly blasting
- Other job site operations can be conducted close to the blasting area
- Zero dust contamination on the job site
- Many common shapes can be blasted with ease
- Low operation cost due to the use of steel abrasive
- Flexible and versatile

Products

AB-1050

AB-1070

AB-1050
The AB-1050 Vacuum Blasting Machine uses a single chamber blast pot mounted together with a dust filter and a blast hose / vacuum hose assembly to provide dust free blasting. Designed for smaller jobs such as spot blasting the AB-1050 utilizes abrasives such as aluminum oxide or glass beads to provide up to 1.8 square meters per hour.

AB-1070
The AB-1070 Vacuum Blasting Machine is available in various configurations. The standard unit features a single chamber blast pot mounted together with a dust filter and a blast hose / vacuum hose assembly to provide dust free blasting. An optional double chamber blast pot version provides the capability for non-stop blasting capability which is required in production line type environments.

The AB-1070 can use lighter abrasives such as aluminum oxide but also has the power to blast with steel abrasive, this provides a production rate of up to 9 square meters per hour. The ability to blast at pressures as low as 1 bar allows for blasting on softer substrates such as concrete and brickwork. The maximum blasting pressure is 8 bar which provides maximum performance on steel substrates.

All Airblast Vacuum Blasting Machines are supplied complete and ready to use with a hose set and selection of brushes for flat plate, standard pipe sizes, and inside / outside corners.

Slurry Blasting

Slurry blasting is a technique for cleaning surfaces with a mixture of fresh water and abrasive where the elimination, or control of abrasive dust is required.

Two slurry blasting systems are commonly used:

- Pressurised water abrasive blasting, which uses water to propel the abrasive.
- Air abrasive water blasting, which uses compressed air to propel the abrasive.

The surfaces produced by slurry blasting are initially identical to those produced by dry abrasive blasting because the abrasive cuts and deforms the metal surface producing a bright appearance. This bright appearance quickly changes due to 'flash rusting', which occurs when the surface drys off.

Due to the nature of slurry blasting the pressure required can be finely adjusted. In the typical anti-corrosion of application blasting metal the pressure required is 6+ bar, however to blast more delicate substrates such as wood, glass fiber, or glass the pressure can be reduced down to as low as 1.4 bar. This reduced pressure provides the possibility of delicately blasting away for example the gel-coat of a glass fiber product, or the coating on a wooden structure.

See the slurry blasting visual standards for advise on the recommended standard of slurry blasting and the acceptable level of flash rusting allowed prior to the application.

Products

Aquastorm
Slurry Blasting

Wetblast
Accessories

Aquastorm
Method: Water and non-metallic abrasive are mixed together in the blast pot under pressure before flowing through a special valve and down the blast hose to the nozzle. The dust created by blasting is contained within the water and can be removed from the work site quickly and easily for disposal or re-use.

Application: This technology is best used in applications where a complex work piece (not flat and consistent) needs to be blasted quickly and in a dust free manner. Due to the spark free nature of the blasting conducted by the Aquastorm it is popular for refinery maintenance. The performance achieved is superior to traditional open blasting and maintenance costs are reduced due to the lubricating effect of the water.

Wetblast Accessories
Method: Water is introduced into the nozzle creating a mix of abrasive and water, or around the nozzle creating an envelope of water around the blast pattern which controls the dust created by the blasting.

Application: Small jobs which require dust free blasting.

Aqua Cleaning

Some applications require cleaning with water, or ultra-high pressure cleaning which can remove loosely adhered rust or previous coatings.

As each application is different Airblast has a range of high pressure and ultra-high pressure cleaning systems designed to be used in a heavy-duty environment powered by air or electricity for ultimate flexibility.

Cart, skid, site or road trailer and truck mounted units are available with or without sound reduction enclosures, driven by a choice of diesel engines, air or electric motors for use in safe or hazardous areas (ATEX compliant where required). For offshore applications fully certified crashframes or containers are available with paint finishes to customer specification.

Every unit is robust, simple to operate and maintain, and designed for longevity. Engines and motors comply with the latest international standards. Simple control panels are used throughout the product range avoiding the need for PLC systems, ensuring reliability & easy trouble shooting. High capacity water filters and stainless steel suction line fittings are used as standard and boost pumps fitted for higher pressure applications.

Worldwide Support
Backed by a comprehensive spares stockholding, we have dedicated service engineers who travel worldwide keeping our pumps running. We also ensure we can provide the vital after sales service demanded by today's fast moving industry.

Products

Hydra-Clean
Pressure Washer

(Ultra) High Pressure
Equipment

Hydra-Clean
Method: Water is sprayed under pressure from the air powered pump to clean the substrate.

Application: This technology is used to wash substrates before and after blasting, due to the relatively low pressure (up to 4500 psi) it is a washing application only.

(Ultra) High Pressure Equipment
Method: Water is pressurized by the electric or diesel powered plunger pump and is sprayed by a lance onto the surface – the pressure is sufficient to remove rust and failed coatings to the recognized water jetting standards.

Application: This technology can be used is shipyards and the oil & gas industry for surface preparation projects. The water jetting does not provide a new profile in the steel surface but does expose the previous profile created by abrasive blasting.

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