

AIRPORTS & RUNWAYS APPLICATIONS

TO PREPARE & MAINTAIN SURFACES
ON AIRPORT TERMINALS, APRONS & RUNWAYS

BLASTRAC SURFACE PREPARATION TECHNOLOGIES

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BLASTRAC GREEN TECHNOLOGIES

All Blastrac technologies are purely mechanical and therefore very clean. None of our technologies create air pollution or use chemical substances. With all our equipment you are also able to work dust-free, meaning that each machine can be connected to a Blastrac dust collector which will collect all the dust and other small hazardous particles that are released during the surface preparation process. This creates a safe working environment!

SURFACE PREPARATION TECHNOLOGIES FOR AIRPORTS & RUNWAYS

THE FUTURE OF AIRPORT SURFACES MAINTENANCE IS THE ADOPTION OF A "TOOL BOX" APPROACH TO THE VARIOUS SCOPE OF WORK NECESSARY AT TODAY'S AIRPORTS. MANAGERS AND MAINTENANCE CREWS WILL NEED A VARIETY OF EQUIPMENT TO KEEP PAVEMENT SURFACES IN THE SAFEST AND BEST CONDITIONS TO MEET THE DEMANDING STANDARDS OF THE 21ST CENTURY.

Blastrac is the leading global developer and manufacturer of surface preparation equipment. We have an extensive range with over 80 different machines for preparing & maintaining floors and other surfaces for all kinds of materials. Our innovative techniques are developed in-house and on demand by our strong R&D department.

Blastrac surface preparation equipment can be used on airfields for:

- **FRICTION IMPROVEMENTS & RUBBER REMOVAL**
- **MAINTENANCE OF LINES & MARKINGS**
- **APRON SURFACE MAINTENANCE**
- **DECORATIVE SURFACES**

The range of machines for surface preparation consists of:



TRUCK-MOUNTED SHOT BLASTER



TRUCK-MOUNTED ULTRA HIGH PRESSURE EQUIPMENT



WALK-BEHIND SHOT BLASTERS



SINGLE & TRIPLE DISC GRINDERS



SHAVERS & SCARIFIERS



DUST COLLECTORS & PRE-SEPARATORS



● FRICTION IMPROVEMENTS & RUBBER REMOVAL

THE CONDITION OF THE RUNWAY SURFACE IS IMPORTANT WHEN YOU ARE LOOKING TO IMPROVE AIRFIELD SAFETY. THERE ARE MANY ELEMENTS WHICH CAN AFFECT THIS SUCH AS: STRUCTURE, MATERIALS USED, SURFACE TYPE, SNOW, ICE, WATER AND CONTAMINATION FROM VARIOUS SOURCES (ESPECIALLY FROM RUBBER DEPOSITS).

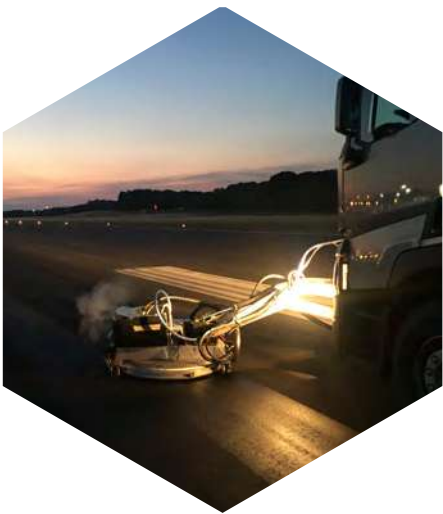
Regardless of the pavement type, runway friction characteristics will change over time depending on the type and frequency of aircraft activity and weather conditions. In addition to ordinary mechanical wear and tear from aircraft tires, contaminants can collect on runway pavement surfaces which decreases their friction properties.

Accidents and near accidents can occur from planes overshooting or veering off contaminated runways. It is therefore essential to maintain the airport runways to the highest possible standards and to ensure adequate surface drainage and grip, especially in areas of take off and landing.

Blastrac continues to develop technologies in order to reduce the braking distance of airplanes. Over the years we have developed different technologies to maintain the runways.

Retexturing the surface by applying Ultra-High-Pressure blasting or shot blasting technology has been repeatedly demonstrated to be an important key for successful friction improvements.





REMOVAL OF EXCESSIVE RUBBER FROM THE RUNWAY ULTRA HIGH PRESSURE (UHP) WATER BLASTING

As aircraft landings take place, the traffic wears down macro-texture and micro-texture as contaminants build up on the runway pavement. This build-up of rubber will decrease water drainage and friction to the point where safety may be diminished. **Removal of excessive rubber from the runway is to maintain safe operations.**

A very efficient and cost effective method for removing rubber deposits from a runway or new surfaces which have a coating of bitumen binder over the aggregate particles is Ultra-High-Pressure Water. Because pavement quality varies, equipment that enables variable pressure settings should be selected to avoid surface damage.

Machine productivity (rubber removal square meters per hour) is another important consideration. In cases where temperatures are below freezing, fresh water supply is an issue or micro-texture improvements are required, shot blasting should be used for rubber removal.

RUBBER DEPOSIT REMOVAL FREQUENCY

AIRCRAFT LANDINGS PER DAY	RUBBER REMOVAL FREQUENCY
Less than 15	2 Years
16 to 30	1 Year
31 to 90	6 Months
91 to 150	4 Months
151 to 210	3 Months
Greater than 210	2 Months



THERE ARE PRINCIPALLY 2 TYPES OF TEXTURE WHICH ARE IMPORTANT FACTORS IN THE PERFORMANCE OF RUNWAYS SURFACES: **MACROTEXTURE & MICROTTEXTURE**.

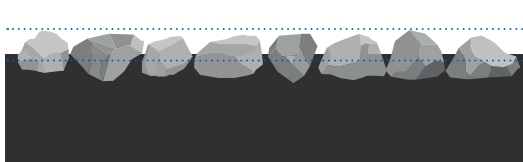
MACROTEXTURE

Macrotexture is the space or voids between the aggregate particles.

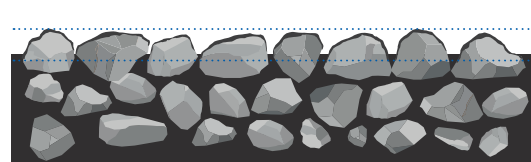
The texture depth / macro texture of an asphalt road surface will normally be between 1 mm to 1,5 mm. It is this macrotexture which **allows the water to drain away from the surface and greatly contributes to skid resistance in wet conditions.**



MACRO TEXTURING | HRA (HOT ROLLED ASPHALT)



MACRO TEXTURING | SMA (STONE MASTIC ASPHALT)

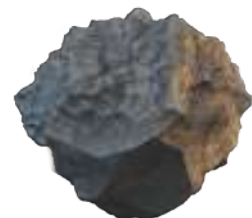


Both Shot Blasting and Ultra High Pressure Water Blasting are a very cost effective, environmentally friendly and high performance technology for improving the macro texture of a surface. It will remove dirt deposits and will bring the surface Macro texture back to that of the aggregates ability. In some cases when friction recovery maintenance has been neglected, macro texturing can only be accomplished with shot blasting. Macrotexture can be measured by laser profilometers traveling at normal speeds.

MICROTTEXTURE

Microtexture is the fine component of surface texture formed by the tiny interstices on the surface of the aggregate particles.

It is the main contributor to **providing grip or skid resistance with the tyre**, particularly at low speeds. Microtexture is measured by PSV using the British Pendulum Tester or by mobile methods such as the Griptestter or SCRIM.



MICRO TEXTURING



Shot blasting is the only technology that will restore Micro-Texture values to pavement surfaces. Improvement of Micro texture with the shot blasting process is extremely effective. It will in all cases bring back the full benefit of the PSV of the aggregate as per its original properties.



● MAINTENANCE OF LINES & MARKINGS

IN THE PAST BLASTRAC HAVE RECEIVED NUMEROUS REQUESTS TO DEVELOP A FAST AND EFFECTIVE SOLUTION FOR THE REMOVAL AND MAINTENANCE OF EXISTING LINE MARKINGS. AIRPORT MAINTENANCE CONTRACTORS WORLDWIDE ARE SEARCHING FOR ENVIRONMENTALLY FRIENDLY MACHINES WHICH ARE MORE MOBILE TO REMOVE OR CLEAN MARKINGS ON AIRFIELD PAVEMENTS (RUNWAYS, TAXIWAYS, APRONS & PAVED AIRFIELD ROADWAYS).

Nowadays the two main standard application materials for marking lines are thermoplastic and cold paint.



THERMOPLASTIC LINE REMOVAL | UHP WATER BLASTING

Because of its thickness and flexibility, thermoplastic is not an easy material to remove. **The best method to do so is the Cyclone Ultra High Pressure Water Blasting machine.** It removes markings in a very efficient way without damaging the pavement or asphalt. It doesn't create any dust and leaves a clean surface. In addition, it avoids exposing any chemicals into the environment.

Our UHP water blasting system blasts the surface with ultra-high pressure water (from 413 bars up to 2.758 bars), removing markings from the surface. The paint removal head comes with an adjustable cleaning path from 15 to 41 cm in order to be able to remove any thermoplastic markings.



COLD PAINT LINE REMOVAL | SHOT BLASTING

Cold paint is much easier to remove than thermoplastic because of its thinness and properties. **Blastrac shot blasting systems are highly effective in removing thinly painted striping and line markings on roadways and parking surfaces.** For most of our shot blasters, we've developed blast pattern reducers to reduce the working width.

Blastrac shot blasting technology leaves the surface clean and dry, which means that it is immediately ready for new painting or other surface treatments. The surface does not get damaged by the shot impact and it doesn't leave any dust on the floor. **Shot blasting is purely mechanical and there is a wide variety of sizes and models available.**



LINE CLEANING | UHP WATER BLASTING OR GRINDING

Because aircrafts' tires produce waste material and other contaminants, line markings on airfields get dirty. **Instead of removing these markings before applying new ones, the new trend is to clean the lines.**

On large areas, the most efficient way to clean marking lines is to use our Cyclone Ultra High Pressure Water Blasting machine. Depending on the thickness of the line and how dirty it is, it is possible to adjust the water pressure with accuracy down to the bar. In this way, we are able to clean the lines only, without damaging them, thus preserving their lifetime.

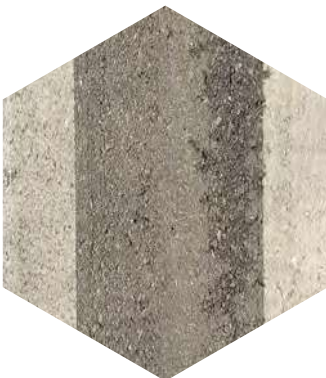
On small and confined areas, we have developed a process to clean the marking lines with a single disc grinder equipped with polishing pads. It is the perfect solution for small line cleaning operations.



SURFACE PREPARATION | CREATING A SURFACE COHESION TO APPLY PAINT & MARKINGS

It is important to remove marking lines in a good way, however it is also important to apply them right. **The key of a good cohesion between the surface and the applied paint / coatings / thermoplastic is the surface preparation.** And Blastrac, as the innovator in surface preparation, is able to help you!

Depending on the floor you have to prepare; a wide variety of profiles can be carried out. Ultra High Pressure Water Blasting and Shot Blasting are two perfect methods to prepare the surface and to ensure a surface cohesion before applying paint, markings and line materials on concrete and asphalt surfaces. For further information about alternative techniques please do not hesitate to get in touch with us!





APRON SURFACE MAINTENANCE

THE AIRPORT APRON IS THE AREA OF AN AIRPORT WHERE AIRCRAFTS ARE PARKED, UNLOADED OR LOADED, REFUELED OR BOARDED. APRON IS TYPICALLY MORE ACCESSIBLE THAN RUNWAYS OR TAXIWAYS, WHICH GIVES MORE OPPORTUNITY FOR REGULAR MAINTENANCE. MOST OF THE TIME, THE APRON SURFACE IS MADE OF CONCRETE.

Blastrac equipment enables you to carry out any operation related to apron surface maintenance, whether it is cleaning, leveling or maintaining surfaces. Depending on what you have to do, you have to select the correct equipment.



SURFACE CLEANING | LOW PRESSURE WATER BLASTING

Chemical spills and general contamination of aprons is a problem that needs to be addressed for safety and aesthetic concerns. **Low pressure water blasting machines are the most frequently used due to their compact size.** Ride-on units with recovery / reclaim systems are the most efficient because they eliminate the need to collect waste and water using vacuums and labour.

Our low pressure water blasting system has an adjustable pressure, going from 83 bars to 379 bars, and has a constant cleaning path of 86 centimeters. **With the Blastrac low pressure machine, you can adapt the pressure to the surface that needs to be cleaned, which makes operations very efficient.**



GENERAL MAINTENANCE | FULL RANGE OF BLASTRAC EQUIPMENT

Wherever there are pavement or concrete surfaces, there are general maintenance requirements. This could include the leveling of floors, repair of cracks or the removal of bumps.

Mobile shot blasters, single disc grinders, triple disc grinders, scarifiers, and milling machines are great tools to have on hand for accomplishing these maintenance projects. **Paired with approved (HEPA) dust collectors, these machines eliminate clean up and protect airport employees from airborne contaminants.** For further information about general maintenance on airports, please do not hesitate to get in touch with us!



DECORATIVE SURFACES

THE USE OF COLOURS AND NATURAL FINISHES IS NOW WITHOUT DOUBT AN EXTREMELY IMPORTANT ELEMENT IN THE MODERN CONSTRUCTION AND LANDSCAPING OF AIRPORTS. TO SATISFY THIS DEMAND FOR DECORATIVE SURFACES, BLASTRAC HAVE DEVELOPED VARIOUS METHODS TO CARRY OUT A LOT OF DIFFERENT DECORATIVE FLOORING SOLUTIONS.

Depending on the basic material of the surface (concrete, asphalt, terrazzo, marble...), it is possible to carry out a wide range of decorative surfaces with Blastrac equipment. From polishing, bush-hammering, to exposing aggregates on the surface, anything is possible!



POLISHING

Concrete | Marble | Terrazzo

Polished floors are low maintenance, as they are more durable and easier to clean than many other types of flooring.

They also have excellent durability and lifetime, which makes them very popular finishes for airport halls, gates and all other inside areas.

Blastrac offers complete solutions including machines and tools to obtain top quality polished concrete, marble, terrazzo....



BUSH HAMMERING

Concrete

Bush-hammering concrete is a process which enables you to achieve a similar effect as natural cut stone, with a concrete surface as basis. **The concrete is poured and mechanically abraded with bush hammer tools in order to give an authentic effect to outdoor areas.**

The Blastrac grinders can be equipped with different sizes of bush-hammering discs in order to satisfy every need of our customers.



EXPOSING AGGREGATES

Asphalt

Exposed aggregate asphalt provides a unique, new generation of distinctive asphalt surfaces with greatly increased aesthetic appeal and improved skid resistance while still giving all the functional qualities and durability of traditional asphalt.

By using Blastrac shot blasting technology the surface binder is removed to allow the natural properties, specificities or colours of the aggregates to appear.



BLASTRAC CHART FOR AIRPORTS & RUNWAYS APPLICATIONS

APPLICATION	TECHNOLOGY	EQUIPMENT
FRICITION IMPROVEMENTS & RUBBER REMOVAL		
Rubber removal	UHP Water Blasting	4006HT
Macro-texturing	Shot Blasting	2-45DTM Walk-Behind Shot Blasters
MAINTENANCE OF LINES & MARKINGS		
Thermoplastic line removal	UHP Water Blasting	4006HT
Cold paint line removal	Shot Blasting	2-45DTM Walk-Behind Shot Blasters
Line cleaning	UHP Water Blasting & Single Disc Grinding	4006HT & BGS-250SC MKII BG-250TWIN
Surface preparation	Shot Blasting & UHP Water Blasting	2-45DTM Walk-Behind Shot Blasters & 4006HT
APRON SURFACE MAINTENANCE		
Surface cleaning	Low Pressure Water Blasting	CY5500
General maintenance	Full Range of Blastrac Equipment	Shot Blasting Grinding Scarifying
DECORATIVE SURFACES		
Polishing	Triple Disc Grinding	Full line of triple disc grinders
Bush-hammering	Triple Disc Grinding	Full line of triple disc grinders
Exposing aggregates	Shot Blasting	Full line of shot blasters

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