Surface Preparation Equipment.

Thank you, for using this information guide which is based on approximate guidelines as produced with the help and assistance of the manufactures and end users, in it we have a selection of the equipment and accessories available through ourselves for hire and sale. Please use this guide to help estimate the costs and time for any work you may be tendering for, equipment is subject to availability and we suggest a visit by one of our technical managers to ensure the correct machines and accessories are used.

INDEX

All prices quoted exclude VAT @ 17/5% and are subject to availability, we reserve the right to change any prices without prior notice, and all information is based on approx values only for estimation purposes only.

In the majority of cases whether the floor is being laid or refurbished, the surface needs to be mechanically prepared to accept the new floor covering. This preparation can take a number of forms.

- Scabbling, planing or scarifying the surface to remove weak surfaces or providing a clean key on sound substrate.
- Removing existing coverings or coatings to refit new wearing surfaces.
- Removing contaminates such as paint, oil, rubber etc.
- Ensuring floors are flat and that coverings do not mirror substrate imperfections.
- Removal of difficult or well bonded worn surfaces, epoxy, self-leveling etc.

Inadequate or absent floor preparation, can and does result in the premature failure of a floor with inherent consequences for all concerned. Estimates vary, but it is an excepted figure, that over 90% of all floor failures are due to poor or missing preparation. Mechanical preparation is carried out by a number of specialist machines:

Floor planers – from small to large size using all power mediums available for removing up to 8mm of substrate.
Scarifies and small grinders – janitorial machines for works up to 200m2 for removing paint coatings and various contamination, oil, rubber, adhesive, latex etc.
Diamond grinders – for large area s of removal down to about 3mm leaving flat profiles.
Shot blasting equipment – for coating removal and quick preparation of larger areas.
Stripping machines – for the removal of soft floors such as vinyls, tiles etc.
Hand tools – such as angle grinders, disc cutters etc, for edgework and difficult areas.
Mixers – hand held and angle type to prepare coatings after preparation work.
Dust control and scrubbers – to suit all the above equipment for dust free and water-controlled applications.

The list that follows shows some examples of both surfaces and substrate materials on which preparation machinery could be used:

Contamination removal	**surface/substrate removal**
Adhesives	asphalt
Butyl rubber	biscuit coat (friable)
Encrusted dirt	contract carpet
Encrusted organic (food)	latex
Fibreglass	laitance
Graphite	paint
Ice	plastics
Industrial grease	road markings
Oil	rubber coatings (antistatic)
Plastics	sheet & roll vinyl
Spillage	thermoplastics
Stains	elastomeric (car parks)

All surface preparation equipment should be used in conjunction with health and safety legislation.

Fully enclosed shot blasting is without doubt the best method of surface preparation available at the present time. Recognised in the industry as a fast, and modern, environmentally acceptable dust free method of the preparing surfaces, the machines are available as electric and hydraulic and can be either walk behind or ride on engine driven.

Shot blasting is quick and very clean and fully self-contained, allowing the projects undertaken to be completed in the minimum of time on-site. They are effective on both concrete and steel surfaces leaving a profiled clean surface for materials to adhere to. The depth of the profile is infinitely variable, allowing different textures from light abrasion to fully exposing a surface, dependent on the specification required by the flooring client.

This is achieved by any of the following three variants;
1. Abrasive size
2. Speed of travel
3. Propelled volume of abrasive

Blast machines perform more efficiently on flat power floated floors with the larger machines and experienced operators being able to realise up to 2,000 square metres of work per shift. Blasting is especially unique because there is no mechanical impact with the surface, thus avoiding the fraction or loosening of aggregates, which eliminates the risks associated with coating failure.

The following is a list of typical applications for shot blasting.
Construction engineering and roads,

- Removal of old coatings,
- Exposing aggregates,
- Providing nonslip surfaces,
- Removing rubber deposits,
- Laitance removal on new concrete floors,
- Multi-storey car parks,
- Shopping precincts,
- Food processing plants,
- Refurbishment of old concrete floors,
- Cleaning and texturing granolithic and tiled floors,
- Excess bitumen removal providing non-skid surface for roads and line removal,
- Aircraft hangers,
- Cold stores,
- Pedestrian crossings,
- Bus depots,
- Engineering workshops, factories and warehouses,

Shipping and petrochemical:

- Steel preparation to sa3 standard
- Storage tank roofs and internal floors,
- Ship decks
- Steel plates,
- Offshore platforms, walkways and helidecks,
- Ro-ro bridges,
- Ferries,
- Foot bridges.

There are some surfaces that a blast machine would not be the correct machine to use such as polyurethane's, elastomeric and open adhesives, blast machines cannot be used in wet conditions.

Theory of blasting.

The basic principle of the blasting operation is performed by abrasive being thrown at high velocity against the surface to be cleaned. The throwing action is achieved through centrifugal force where a wheel with paddle type blades attached radially is revolved at a continuous shaft speed. Onto this wheel abrasive is fed in such a manner that it travels along the radial length of the blades and is then thrown off in a high velocity stream at the surface to be cleaned. The energy placed into the abrasive is sufficient to enable it to rebound from the work surface. This rebound (kinetic energy) is used to recover the abrasive for re-use. The machine is designed so that the blast wheel is throwing abrasive at an inclined angle relative to the work surface. This means after striking the work surface the abrasive rebounds at a similar angle into the reclaim duct, which directs it back into the hopper for, re-use. Assisting with this reclaim cycle the airflow created by the dust collector enters the machine through a brush screen at the rear of the Cabinet and flows across the work surface, up the reclaim duct, through the separator and into the duct collector, then through the fan and into the atmosphere. All surface contamination, which is being collected in the dust collector, must be disposed of under the COSHH and health and safety guidelines.

CONTAMINATED SURFACE
REMOVED BY VACUUM
AND KINETIC ENERGY

ABRASIVE PROPELLED
ONTO SURFACE AT
HIGH VELOCITY

SHOT SPECIFICATION DETAILS

The abrasive is harbrosteel shot manufactured and tempered steel of approximately eutectoid composition and conforms to the internationally quoted specifications SAEJ827 and SAE J444a. The product also conforms to size requirements of BSS 2451. Bags are 25kg in size and can be from S330 to S780 in size.

The following table shows the correct abrasive size for SPE machines:

Machine	S330	S390	S460	S550	S660	S780
9ES	YES	YES	YES	NO	NO	NO
12E	YES	YES	YES	YES		
16E	YES	YES	YES	YES		
20E	YES	YES	YES	YES	YES	YES

STEEL:

The following table shows the abrasive size and application on steel:

Abrasive size	Mesh size	Machine	Production m2/hr*	Application
S780	2.00-2.80 mm	20E	30 - 40	Rapid removal of a thick coating but would not produce SA 2½
S660	1.70-2.36 mm	20E	30 - 40	- as above -
S550	1.40-2.00 mm	12ES 16E 20E	20 - 30 25 - 35 30 - 40	- as above -
S460	1.18-2.00 mm	12ES 16E 20E	15 - 20 15 - 25 20 - 30	Removal of medium thickness coating & commercial blasting standard
S390	1.00-1.70 mm	9ES 3 12ES 16E 20E	10 - 15 15 - 20 15 - 25 20 - 30	Removal of thin coating to an SA2½ standard. Removal of light corrosion
S330	0.85-1.40 mm	9ES 3 12ES 16E 20E	10 - 15 15 - 20 15 - 25 20 - 30	SA2½ on lightly corroded steel

* only approximate rates

AUTOBLASTING

SPE 9ES AUTOBLAST MACHINE 230mm

Hire includes triple motor dust control unit, 2 x 14mtr 110v 32 amp ext leads, and 2 x 5kva continuous rated transformers.

DAY	ADD/DAY	WEEK
£340.00	£340.00	£680.00

A small compact machine suitable for the small contractors and the rental industry. Self propelled and infinitely variable in all operations. Electrically powered. Recognised in industry as the modern fast versatile environmental dust free means to dry abrasive cleaning and texturing of horizontal or slightly inclined surfaces. This eliminates mess normally associated with hand blasting. Leaves an ideal surface for coatings and overlays to be applied.

THIS MACHINE OPERATES AT APPROX 50 SQ MTRS PER HOUR , (these estimations are based on single passes over an unpainted floor). POWER SUPPLY MUST BE ON A SUBSTANSTIAL NATURE OR PROBLEMS MAY OCCURE, A GENERATOR OF AT LEAST 12VA 110V IS REQUIRED TO OPERATE THE BLAST UNIT AND DUST CONTROL TOGETHER.

VARIOUS GRADES OF SHOT ARE AVAILABLE IN 25 KILO BAGS @ £40.00 bag
EACH BAG WILL DO UP TO 140 SQ MTRS, THE STANDARD SIZE FOR THIS MACHINE IS S390. **(we suggest a magnetic sweeper is used with all blasting)**

MAGNETIC SWEEPER 600MM WIDE PUSH ALONG

DAY	ADD DAY	WEEK
£25.00	£15.00	£50.00

The SPE range of magnetic floor sweepers has been designed to collect up ferrous and other metallic particles remaining on floor surfaces after blasting has taken place. The simply operated release mechanism enables easy depositing of debris after collection. The permanent magnet will retain its power for 50 years and require no maintenance.
NOTES: INEXPERIANCED OPERATORS MUST OBTAIN ON SITE INSTRUCTION OF BLAST EQUIPMENT; THIS CAN BE ARRANGED DEPENDING ON LOCATION AND TIME OF JOB.

GUIDELINES TO USING THE SPE 9ES 110V FLOOR BLASTER

1. PREPARATION
   - ENSURE ADEQUATE SUPPLY OF 240V 2 X 5KVA CONTINUOUS RATED TRANSFORMERS MUST BE USED, OR 10KVA GENERATOR 110V 32AMP
   - ENSURE FLOOR IS SWEPT CLEAN. NO OIL, WATER OR DAMP PATCHES,
   - NOTHING ON THE FLOOR THAT CAN GET BLOCKED INTO MACHINE OR CAUSE WHEELS TO STOP, USE MAGNETIC SWEEPER.
   - USING APPROX. ¼ BAG OF SHOT FILL HOPPER AND CLOSE LID MAKING SURE SIDE CLAMPS ARE DOWN.
   - BE AWARE THAT SMALL AMOUNTS OF SHOT MAY COME OUT FROM MACHINE SO WARN PERSONS AROUND YOU AND PROTECT AGAINST SLIPPAGE

2. PLUG BOTH TRANSFORMERS INTO MAIN 240V WALL OUTLETS, PREFERABLY SEPARATE SOCKETS (NOT INTO 240V EXTENSION LEADS)
3. CONNECT DUST CONTROL UNIT TO 32 AMP SOCKET ON TRANSFORMERS, (MAXIMUM OF TWO 14M EXT. CABLES 4MM CAN BE USED) REMOVE HOSE FROM BIN AND CONNECT Q/R COUPLING TO FRONT INLET AND HOSE TO OUTLET ON BLAST UNIT.
4. CONNECT BLAST UNIT TO 32 AMP SOCKET ON TRANSFORMERS (MAXIMUM OF TWO 14M EXT. CABLES 4MM CAN BE USED) TURN RED ISOLATOR SWITCH AND CHECK RED LIGHT COMES ON.
5. MOVE LEVER ON BACK OF MACHINE TO THE LEFT AND HOLD TO DISENGAGE BELTS, THEN PRESS GREEN PUSH BUTTON TO START MOTOR, SLOWLY MOVE LEVER BACK TO THE RIGHT TO ENGAGE BELT DRIVE.
6. ENGAGE FRONT WHEEL DRIVE BY TURNING BAYONET FITTING ON WHEEL

YOU ARE NOW READY TO START BLASTING

- SET SPEED TO ABOUT 35 MARK AND MAKE SURE MACHINE IS MOVING FORWARD.
- PULL SHOT LEVER UP SLOWLY UNTIL AMP METER SHOWS 15 AMPS

WARNING DO NOT EXCEED 20AMPS , YOU MUST NOT BLAST WHILE IN REVERSE

- ENSURE YOU KEEP A STRAIGHT LINE AND ADJUST SPEED AND SHOT AS REQUIRED , AS YOU APPROACH END OF RUN BE PREPARED TO PUSH IN THE SHOT LEVER AND TURN THE SPEED OFF
- REPOSITION THE MACHINE ALLOWING FOR AN OVERLAP AND START FROM ITEM 7 AFTER APPROX. 1/2 HRS WORK ,SWITCH OFF MACHINE AND CHECK QUANTITY OF SHOT IN HOPPER ,ALSO SHAKE FILTERS IN DUST UNIT AND EMPTY BIN IF REQUIRED.
- EXCESS SHOT ON FLOOR CAN BE LIFTED WITH MAG SWEEPER AND REUSED AFTER CLEANING.

AT END OF HIRE YOU MUST ENSURE THAT ALL CONTAMINATION IS REMOVED FROM THE BIN AND HOPPER, WE ARE UNABLE TO HANDLE ANY WASTE YOU PRODUCE AS PER COSHH REGULATIONS...

PROTECTIVE EQUIPMENT REQUIRED, GOGGLES BS2092.

SPE 9EG MANUAL AUTOBLAST MACHINE 230mm
Hire includes triple motor dust control unit, 2 x 14mtr 110v 32amp ext leads, 2 x 5kva continuous transformers.

DAY	ADD DAY	WEEK
£290.00	£290.00	£580.00

This is a manual version of the automatic 9e and suitable for small and awkward areas such as corridors, where speed is not a necessity.
Machine operates at approx 25 sq mtrs per hour (these estimations are based on single passes over an unpainted floor) and uses only S330 or S390shot.

Shot is supplied in 25 kilo bags @ £40.00 per bag and 1 bag will cover up to 120 sq mtrs
Power supply must be of a substantial nature or problems may occur, a generator of at least 12 kva 110v is required to operate the blast and dust control unit together.

NOTES. THESE PRICES ARE USED AS A GUIDELINE ONLY AS WE SUGGEST A SITE SURVEY BY ONE OF OUR TECHNICAL MANAGERS.

MAGNETIC SWEEPER 600MM WIDE PUSH ALONG

DAY	ADD DAY	WEEK
£25.00	£15.00	£50.00

The SPE range of magnetic floor sweepers has been designed to collect up ferrous and other metallic particles remaining on floor surfaces after blasting has taken place. The simply operated release mechanism enables easy depositing of debris after collection. The permanent magnet will retain its power for 50 years and require no maintenance. The height is adjustable to cope with large waste and uneven surfaces. The standard magnets range in size from 300mm to 900mm wide

NOTES: INEXPERIANCED OPERATORS MUST OBTAIN ON SITE INSTRUCTION OF BLAST EQUIPMENT; THIS CAN BE ARRANGED

GUIDELINES TO USING THE SPE 9EG BLAST UNIT

1/ PREPARATION

ENSURE ADEQUATE SUPPLY OF 240V OR 110V 32 AMP
2 X 5KVA CONTINUOUS RATED TRANSFORMERS MUST BE USED
ENSURE FLOOR IS SWEPT CLEAN. NO OIL, WATER OR DAMP PATCHES
NOTHING ON THE FLOOR THAT CAN GET BLOCKED INTO MACHINE OR CAUSE WHEELS TO STOP,
USING APPROX. ¼ BAG OF SHOT FILL HOPPER AND REPLACE LID MAKING SURE SIDE CLAMPS ARE DOWN.

2/ PLUG BOTH TRANSFORMERS INTO MAIN 240V WALL OUTLETS, PREFERABLY SEPARATE SOCKETS (NOT INTO 240V EXTENSION LEADS)
3/ CONNECT DUST CONTROL UNIT TO 32 AMP SOCKET ON TRANSFORMERS (MAXIMUM OF TWO 14M EXT. CABLES 4MM CAN BE USED)
REMOVE HOSE FROM BIN AND CONNECT Q/R COUPLING TO FRONT INLET AND HOSE TO OUTLET ON BLAST UNIT.
4/ CONNECT BLAST UNIT TO 32 AMP SOCKET ON TRANSFORMERS (MAXIMUM OF TWO 14M EXT. CABLES 4MM CAN BE USED)

YOU ARE NOW READY TO START BLASTING

5/ POSITION MACHINE READY TO MOVE FORWARD, PULL LEVER HALF WAY UP TO ENGAGE THE MOTOR, BEGIN TO PUSH MACHINE FORWARD.
6/ PULL THE LEVER ALL THE WAY WHICH WILL OPEN THE SHOT VALVE AND ALLOW THE SHOT ONTO THE BLAST WHEEL YOU WILL THEN SEE THE CHANGE IN THE FLOOR SURFACE AS YOU PASS OVER.

WARNING YOU MUST NOT BLAST IN REVERSE

7/ ALTER THE SPEED OF PUSH, AND THE LEVER TO BALANCE THE SHOT AND GIVE THE BEST SURFACE AS REQUIRED.
8/ KEEP MOVING THE MACHINE AT A CONSTANT SPEED AND WATCH AHEAD FOR ANY OBSTRUCTION THAT CAN CAUSE THE MACHINE TO STOP.

AT NO TIME MUST YOU STOP MOVING THE MACHINE WHILE STILL BLASTING,

9/ ENSURE YOU KEEP A STRAIGHT LINE, AS YOU APPROACH END OF RUN BE PREPARED TO LET THE LEVER GO BACK HALF WAY, BUT CARRY ON FORWARD UNTIL YOU HAVE PASSED OVER THE FINAL BLAST AREA THEN LET LEVER GO.
10/ REPOSITION THE MACHINE ALLOWING FOR AN OVERLAP AND START FROM ITEM 7.
11/ AFTER APPROX. 1/2 HRS WORK, SWITCH OFF MACHINE AND CHECK QUANTITY OF SHOT IN HOPPER, ALSO SHAKE FILTERS IN DCV AND EMPTY BIN IF REQUIRED.
12/ SHOULD AT ANY TIME THE MACHINE STOP BLASTING THE FLOOR, CHECK THE HOPPER FOR A BLOCKAGE AND CHECK THE IMPELLOR IS FREE TO MOVE BY SWITCHING OFF MACHINE AND LOOKING UP FROM UNDERNEATH,

AT END OF HIRE YOU MUST ENSURE THAT ALL CONTAMINATION IS REMOVED FROM THE BIN AND HOPPER, WE ARE UNABLE TO HANDLE ANY WASTE YOU PRODUCE AS PER COSHH REGULATIONS

12e

SPE 12ES AUTOBLAST MACHINE 300mm 3PHASE
Hire includes dust control unit, 20mtrs Vacuum hose 40 mtrs 3 phase leads, 3 phase adaptors.

DAY	ADD DAY	WEEK
£395.00	£395.00	£895.00

additional extension leads are available at extra cost.
25kva towable diesel generator £200.00 per week & diesel

The SPE 12E Super is a medium size Autoblast machine suitable for all applications of floor surface preparation. Mainly used for the preparation of concrete floors but equally effective on steel surfaces. The machine is electrically driven with forward and reverse drive being infinitely variable. The dust collection unit as with larger machines has continuous reverse air jet filtration cleaning. Recognised in the industry as the modern fast versatile environmental dust free means to dry abrasive cleaning and texturing of horizontal or slightly inclined surfaces. This eliminates mess normally associated with hand blasting. Leaves an ideal surface for coatings and overlays to be applied. Abrasive and debris is contained to prevent hazardous working and environmental pollution.

The machine operates at approx 100 sq mtrs hour and requires a power supply of at least 32 amp 3 phase supply, either direct from a factory or via 25 Kva 3 phase generator£200.00 per week
(These estimations are based on single passes over an unpainted floor)
On steel it is approx 25m2 per hour to produce SA2 ½ or 20m2 per hour on painted surfaces.)
Various grades of shot are available in 25 kilo bags @ £40.00 per bag, each bag will do up to 200 sq mtrs approx (standard grade of shot is S390)

MAGNETIC SWEEPER 600MM WIDE PUSH ALONG

DAY	ADD DAY	WEEK
£25.00	£12.50	£50.00

The SPE range of magnetic floor sweepers has been designed to collect up ferrous and other metallic particles remaining on floor surfaces after blasting has taken place. The simply operated release mechanism enables easy depositing of debris after collection. The permanent magnet will retain its power for 50 years and require no maintenance.
NOTES: INEXPERIANCED OPERATORS MUST OBTAIN ON SITE INSTRUCTION OF BLAST EQUIPMENT; THIS CAN BE ARRANGED DEPENDING ON LOCATION AND TIME OF JOB.

GUIDELINES TO USING THE SPE 12E 3PHASE BLASTRACK

1/ PREPARATION

- ENSURE ADEQUATE SUPPLY OF 3 PHASE ELECTRIC IS AVAILABLE
- ENSURE FLOOR IS SWEPT AND NO OIL,WATER OR DAMP PATCHES
- NOTHING ON FLOOR THAT CAN GET BLOCKED INTO MACHINE OR CAUSE WHEELS TO STOP
- USING TWO BAGS OF SHOT FILL HOPPER UNIT AND CLOSE LID,MAKE SURE SIDE CLAMPS ARE FULLY DOWN .

2/ CONNECT DUST CONTROL UNIT TO 3PHASE SUPPLY
3/ CONNECT DUST HOSE FROM DUST CONTROL TO BLAST UNIT ,USE HOSE CLIPS
4/ CONNECT BLAST UNIT 3PHASE LEAD TO DUST CONTROL PLUG
5/ TURN RED POWER ON SWITCH AT DUST CONTROL UNIT ,CHECK RED STOPS ARE OUT, TWIST TO CHECK .
6/ PRESS BUTTON MARKED COMP CHECK ROTATION OF UNIT BY LOOKING AT ROTATION ARROWS ON COMPRESSOR UNIT TO DIRECTION OF BELT
(IF ROTATION ID BACKWARDS PRESS STOP AND CHECK PHASES FROM SUPPLY)
7/ IF OK , WAIT FOR COMPRESSOR TO BUILD UP AIR PRESSURE ABOUT 45 SECONDS
8/ PRESS BUTTONS MARKED FAN AND PULSE ON DUST CONTROL UNIT
9/ TURN RED POWER ON SWITCH AT BLAST UNIT ,ENSURE RED LIGHT IS ON
10/ PRESS BUTTON MARKED HYD TO ENABLE DRIVE MOTORS
11/ USING BOTH CONTROL LEVERS AND SPEED CONTROL POSITION BLAST UNIT INTO START POSITION (SPEED CONTROL IS CLOCKWISE TO RUN FASTER)
12/ PRESS BUTTON MARKED BLAST MOTOR AND WAIT FOR STAR DELTA TO ENGAGE

LOOK AT METER WAIT FOR NEEDLE TO SETTLE AT ABOUT 5 AMPS

YOU ARE NOW READY TO START BLASTING

13/ SET SPEED CONTROL AND PUSH BOTH LEVERS FORWARD TO START DRIVE

14/ PULL LEVER MARKED OPEN /CLOSE TO DELIVER SHOT

YOU MUST NOT EXCEED 15 AMPS MAX ON METER ,ABOUT 10 TO 12 IS OK

15/ ENSURE YOU KEEP A STRAIGHT LINE AND ADJUST SPEED AND SHOT AS REQUIRED

16/ AS YOU APPROACH THE END OF YOU LINE BE PREPARED TO SWITCH OFF LEVER MARKED OPEN/CLOSE AND USE CONTROL LEVERS TO REPOSITION THE BLAST UNIT TO YOUR NEXT RUN AND START FROM ITEM 13,

17/ AFTER ABOUT ONE HOUR THE DUST CONTROL BIN MUST BE EMPTIED THIS MUST BE DONE WHILE ALL EQUIPMENT IS SWITCHED OFF AND ISOLATED YOU CAN ALSO CHECK THE QUANTITY OF SHOT LEFT IN YOUR HOPPER .

NOTE : AT THE END OF THE HIRE YOU MUST ENSURE THAT ALL CONTAMINATION IS REMOVED FROM BIN AND HOPPER UNIT ,WE ARE UNABLE TO HANDLE ANY WASTE THAT YOU PRODUCE .

DUST CONTROL UNITS

110V 32amp TRIPLE MOTOR DUST CONTROL

50mm inlet hose allows 8640 l/m of airflow into 60ltr drop bin.
Filters can be shook regularly to maintain maximum suction. When used with dust cowls on scabblers and grinders and dust ports on planers and grinders, can be used with 700mm floor tool to remove waste from floor.

DAY	EX DAY	WEEK
£52.50	£26.00	£105.00

inc 5mtr hose and floor tool

hepa filters supplied of sale only approx £200.00

requires 5kva transformer or 5kva generator

1

2

MEDIUM DUST CONTROL 110V

35mm inlet hose allows 4500 lm airflow into Bottom waste bin.

Filters can be shook frequently to help maintain maximum suction.

DAY	EX DAY	WEEK
£37.50	£18.75	£75.00

Inc 4mtr hose and floor tool

Requires 3kva transformer or 3kva generator

Approx 90% efficiency