

Technical Guideline



ENVIRONMENT
PROTECTION
AUTHORITY

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ABRASIVE BLAST CLEANING

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Premises used for abrasive blast cleaning are scheduled and subject to EPA works approval and licensing.

Definitions

The term "abrasive blast cleaning" means abrasive blasting with any solid particulate material such as siliceous sand, garnet, copper slag, ilmenite, glass beads, sodium bicarbonate, steel grit or shot. For the purposes of this guideline it also includes shot peening.

Conditions Likely To Apply

Abrasive blast cleaning must be carried out in an enclosed booth unless the object is too large or too heavy to fit in the booth or a fixed structure. These difficult objects may be cleaned outdoors subject to special dust control measures.

Dust control equipment must be properly maintained.

Immediate action must be taken to rectify any problem causing any adverse off-site effects from abrasive blast cleaning or associated operations.

Enclosed Blasting Booth

A totally enclosed booth vented to atmosphere via a dust collector, preferably a fabric filter dust collector. Emission limit for particulates - 50 mg/m³.

Commercial units for abrasive blast cleaning of metal plate or other solid sections are available with a plate or section cleaning machine which discharges to atmosphere via a fabric filter dust collector. Emission limit for particulates - 25 mg/m³.

Outdoors Blast Cleaning

Outdoors blast cleaning should preferably be carried out using a blasting gun or an airless applicator which sucks away the blasting agent together with any dust generated to a dust collector.

Wet Abrasive Cleaning

When it is impracticable to use a suction system, wet abrasive cleaning may be permitted provided that:

- (a) A buffer distance of 30 m exists around the blast cleaning operation. Less than 30 m may be permitted if effective screens are used to prevent adverse particulate emissions.

- (b) The blasting agent is thoroughly wetted to prevent visible dust travelling beyond the buffer distance.
- (c) The spent abrasive is removed before it is able to dry out and become airborne or be washed away causing sedimentation in drains and water courses.
- (d) EPA approved waste treatment facilities must be provided. Treatment of wastes such as sodium chromate, sodium dichromate, potassium dichromate, sodium nitrate, chromic acid, sodium bicarbonate or solids.

Dry Abrasive Cleaning

When it is impracticable to use suction systems or wet cleaning dry abrasive, blasting outdoors may be permitted provided no visible dust from blasting travels beyond the buffer distance.

All outdoor dry abrasive blasting must have:

- (a) A 100 m buffer distance when using:
 - (i) garnet, ilmenite, copper slag and metallic grit. Shorter buffer distances may be permitted if suitable temporary barriers or screens are provided and maintained during blast cleaning.
 - (ii) Dry siliceous sand plus the use of fixed and/or moveable water sprays, the provision of a solid fence of at least 2.7 m high surrounding the entire blasting area, the use of other barriers or screens where necessary to reduce possible offsite dust effects to sensitive areas.

Consideration must be given to increasing the 100 m buffer distance during periods of dry weather, increased wind speeds and certain wind directions aligning potentially sensitive off-site premises. This may be achieved by moving the cleaning operation upwind.

The use of more than one blasting gun may require an increase in the buffer distance or increased temporary screening, eg. when the guns are aligned with each other and the wind direction.

- (b) All outdoors dry blast cleaning must cease if emissions travel beyond the buffer distance.

Uncontrolled dry siliceous sand blast cleaning may be permitted in exceptional circumstances such as:

- (a) Where it can be demonstrated that the items to be cleaned cannot reasonably be cleaned by means listed in preferential order as follows:
- (i) in any premises cleaning booth;
 - (ii) by other cleaning processes previously described in this guideline.
- (b) The blast cleaning is conducted in an isolated location with a buffer distance of at least 500 m around the cleaning site.
- (c) Blasting is only conducted when persons or property beyond the boundaries of the buffer distance are not affected by dust emissions generated from the site.
- (d) Spent sand is removed from the site, buried, covered or treated with a binding agent.

Waste Disposal

All particulate wastes generated by the blast cleaning must be re-used or transported from the site without causing any visible emissions.

If the material being removed during blast cleaning contains toxic concentrations of substances such as lead, arsenic, chromium, etc. then those wastes must be disposed of at an EPA licensed disposal site.

Noise

Noise at most affected residential premises must not exceed the noise limits determined in accordance with the SEPP No. N-1. The following typical noise limits for various types of land uses may be used as a guide: (typical levels in decibels)

	DAY	EVENING	NIGHT
TIME	0700-	1800-	2200-
(hours)	1800	2200	0700
Quiet rural areas	45	37	32
Mainly residential	50-54	44-48	39-43
Residential, commercial & industrial	54-59	48-52	39-43
Commercial & industrial	56-59	52-57	47-52
Industrial	63-68	57-61	52-56

Fabric Collector Pulse Jet Type

TUBE TYPE

Symbols	Parts
A	Clean air outlet
B	Fabric element
C	Reverse jet piping
D	Solenoid valves & controls
E	Dirty air inlet
F	Dust hopper

Painting

Spray painting preferably should be conducted in a paint spray booth. Further advice on the design of booths is contained in the EPA guideline PAINT SPRAY BOOTHS. Painting in paint spray booths provides higher quality finishes and minimises paint wastage. Spray painting in the open may be permitted if spray drift does not travel beyond the buffer distance.

References

- EPA Draft Code of Practice "Minimum Control Requirements Abrasive Blast Cleaning" May 1989*

These guidelines have been documented in order to provide a summary of issues and assistance in understanding EPA requirements. They are for guidance only and are not intended to be either prescriptive or exhaustive. Each situation will be assessed by the EPA according to its own merits.