

# Environmental Guideline – Grit & Abrasive Blasting

---

## 1. PURPOSE

The purpose of this Environmental guideline is to define the expected environmental controls for minimising and managing environmental risks associated with grit and abrasive blasting on TasPorts' owned, operated or managed land and/or berths both landside and waterside ("TasPorts Facilities").

This Guideline applies to TasPorts staff, contractors, vessel owners, customers, licensees, tenants and port users planning to undertake grit or abrasive blasting. The requirements of this guideline are expected to be incorporated into Environmental Management Plans (EMP or CEMP) prepared prior to works commencing.

## 2. OBJECTIVES

The objectives of this Guideline are to ensure that all grit and abrasive blasting activities are done in a planned and controlled manner to prevent environmental harm or environment nuisance. This may involve material analysis prior to blasting activities, to determine the presence of controlled wastes. This Guideline will ensure that:

- grit blast residues are captured, contained and stored to prevent dust, leakage and spills;
- waste is minimised;
- controlled wastes are identified, labelled and removed from site in accordance with legal requirements;
- pollution of water, soil, marine sediment and air is prevented and minimised; and
- noise emissions are not excessive or unreasonable, or a source of disruption or annoyance to surrounding areas.

## 3. POTENTIAL ENVIRONMENTAL IMPACTS FROM GRIT AND ABRASIVE BLASTING

Grit and abrasive blast cleaning uses compressed air (dry blasting) or water (wet blasting) to propel hard granular particulate matter through a nozzle against the surfaces. Typical blast materials include siliceous sand, garnet, copper or zinc slag and steel grit or shot.

Paint debris, sludge, dust and other particles generated by grit and abrasive blast cleaning may contribute to water, soil, marine sediment and air pollution and may be harmful to marine life or cause nuisance dust to the community.

Noise generated by grit and abrasive blasting can also adversely impact other port users or neighbouring premises.

Residues generated by grit and abrasive blast may also be classified as controlled waste (because of metals and other contaminants that may be present in paints).

Biofouling removed from surfaces being blast cleaned may also include invasive marine pests.

#### 4. LEGAL AND OTHER REQUIREMENTS

The laws and other requirements that may be applicable to infrastructure repair and maintenance activities undertaken at TasPorts Facilities, include but are not limited to:

*Environmental Management and Pollution Control Act 1994 (“EMPCA”)*

- Everyone has a general environmental duty to take such steps as are practicable or reasonable to prevent or minimise environmental harm or environmental nuisance caused, or likely to be caused by an activity conducted by that person (“General Environmental Duty”).

*Environmental Management and Pollution Control (Waste Management) Regulations 2020*

- Describes the types of controlled waste and prohibits the handling, storing, transport reuse, recycling, pre-processing, treatment or disposal of controlled waste without approval.

*Environmental Management and Pollution Control (Noise) Regulations 2016*

- Specifies requirements relating to noise levels and hours of operation.

[\*Work Health and Safety \(Abrasive Blasting\) Code of Practice 2015\*](#)

- Provides practical guidance on how to manage health and safety risks associated with abrasive blasting.

[\*TasPorts Environmental Standard – Noise\*](#)

- Defines the minimum standard accepted by TasPorts to prevent noise and vibration related environmental harm or environmental nuisance arising from noise generating activities undertaken at TasPorts Facilities.

#### 5. ENVIRONMENTAL CONTROLS

Environmental controls should be sufficient to ensure that the Objectives in Section 2 of this guideline can be achieved.

##### 5.1 Procurement and planning

To understand the cost and practicality of achieving the Objectives in Section 2, work requests for grit and abrasive blasting should include quotes for:

- 1) Methods to contain all residue and debris, to prevent movement off site or entering water (stormwater, river or marine); and
- 2) Alternative methods for containing residues and debris where applicable.

Contractors undertaking the work must have demonstrated that they have the experience and capability to implement fit-for-purpose and effective environmental controls (i.e. the proposed methodology, suitability of equipment, and experience and capability to achieve the desired outcomes).

Items are removed off-site for grit or abrasive blasting where practicable, to eliminate environmental impacts on land owned and/or water managed by TasPorts.

Where 100% capture of blast residues and waste is not considered practicable or feasible, decisions to proceed with activities must involve consultation with the contractor, project manager and TasPorts Environment and Sustainability team. The methodologies to be used will require:

- agreement that the potential environmental impact is acceptable;
- measures to be implemented to capture as much blast residue and waste as practicable; and
- consideration of regulatory approval requirements for disposal of uncontained wastes

Prior to commencement of any work, an Environmental Management Plan (EMP) acceptable to TasPorts is to be submitted. The EMP is to describe the proposed works, potential environmental impacts and the specific environmental controls to be implemented to mitigate potential impacts.

## **5.2 Field based abrasive blasting environmental controls**

Grit and abrasive blasting activities must attempt to achieve 100% capture and containment of residues and wastes, unless prior agreement is obtained from TasPorts.

When required to remove excessive thickness of existing coatings, alternative methods of paint removal, such as physical scraping are encouraged to reduce exposure to blast hazards and reduce waste.

For in-situ blasting, controls to minimise potential impacts should include:

- encapsulation/shrouding
- catch bags
- screens, shade cloth, tarpaulins or similar
- vacuum blasting

Blast activities should cease if weather conditions (such as wind or rain) will or are anticipated to prevent the containment of blast residues and debris.

Blast residues and debris are to be continuously cleaned up during the day and not left to the completion of the job. Materials are to be collected and removed on a regular basis throughout the day using appropriate equipment for the size of the works being undertaken (i.e. industrial vacuums, sweepers, and suitable storage containers). Cleaning should occur at a frequency to prevent windblown dust or surface water run-off (including tidal movements).

Blast residue and debris may be a controlled waste if containing paint, paint scrapings, biofouling residue or antifouling paint (containing copper, lead, zinc, tin, metalloids, tributyltin, diuron and diuron or other substances used in antifouling paint). (Refer to: [EPA Bulletin 105 - Contaminated Soils](#)).

Blast residue and debris may be disposed of as general waste if:

- Chemical analysis against EPA Bulletin 105 confirms that the waste is not a controlled waste; or
- Evidence can be provided that paints and antifouling coatings do not contain: metals such as copper, lead, zinc, tin and metalloids; or other substances such as tributyltin, diuron and diuron derivatives used in antifouling paints.

Encapsulation/shrouding should be made of puncture and tear resistant materials such as woven polypropylene fabric or rubber for high abrasion areas inside the enclosure. Selection should also consider fire retardancy, burst strength and UV resistance.

Bunds, or similar, should be placed across drains to prevent residues and debris entering waterways.

Initial and continuous visual monitoring **MUST** occur to ensure controls are in place and effective. Abrasive blasting is to cease when emissions are observed leaving or detected outside the work area.

### 5.3 Abrasive blasting over water

In addition to the requirements in Sections 5.1 and 5.2, abrasive blasting work areas over water should be completely encapsulated where practicable.

## 6. AUSTRALIAN PORT EXAMPLES OF CAPTURING WASTE

Figures 1a-c show photos from an Australian Port and how they were successful at capturing waste from mechanical scraping a pile. In summary they tend to:

- work from top to bottom of a pile
- keep about 1.5m below where scraping to catch waste materials
- vacuum captured materials out of the funnel before moving down the pile and
- Extra padding attached to the pile below the funnel to help stop the funnel from sliding down the pile.



**Figure 1a: Pile to be scraped**



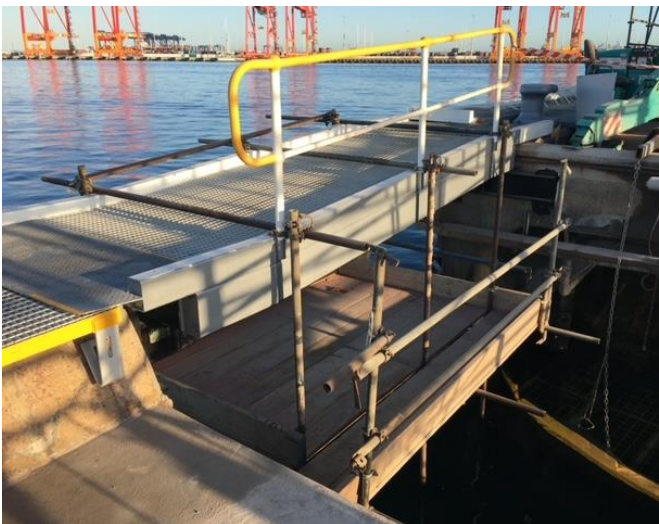
**Figure 1b: Padding to help hold funnel from slipping down the pile**





**Figure 1c: Funnel on pile capturing waste from blasting activities**

Figures 2 and 3 show photos from an Australian Port and how they were successful at capturing waste via installing temporary access above water to work on.



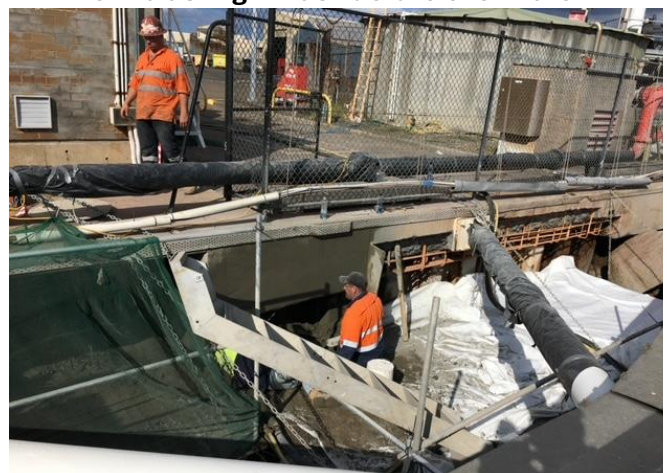
**Figure 2: Temporary installation of scaffolding with a geofabric cloth used to capture waste from blasting infrastructure over water**



**Figure 3: Temporary installation of scaffolding with a geofabric cloth used to capture waste from blasting infrastructure over water**



**Figure 4: Temporary installation of scaffolding with a geofabric cloth used to capture waste from blasting infrastructure over water**



**Figure 5: Temporary installation of scaffolding with a geofabric cloth used to capture waste from blasting infrastructure over water**

The temporary scaffold is built underneath the structure to provide safe access. The environmental controls are then installed on the scaffolding before the activities start. Generally, a geofabric material or monoflex, is laid down to capture the waste. The waste is removed as it is collected, as well as daily to ensure the waste is captured prior tide movements.



***Figure 3a: Working underneath the structure and on top of scaffolding and capture sheet.***



***Figure 3b: Working underneath the structure and on top of scaffolding and capture sheet.***