1.0 INTRODUCTION

This standard describes the requirements for managing, working with or around abrasive blasting and to protect the health and safety of workers while abrasive blasting. All abrasive blasting will be evaluated, and controls put in place to mitigate potential health effects from exposure to the abrasives.

2.0 SCOPE

This standard applies to all employees and contractors conducting the work of abrasive blasting.

3.0 REFERENCES

NB OHS General	Section 9, 10 & 12: Duties of the Employer, Supervisor, Employee and Contractor Employee
NB OHS General	Regulations 91-191
HSEE-03-18	Respiratory Protection
Regulation 2016-6	WHMIS
HSEE-03-01	Hazard Identification Assessment and Mitigation
CSA Standard Z180.1-00 (R2005)	Compressed Breathing Air and Systems

4.0 TERMS AND DEFINITIONS

Abrasive Blasting	means forcible application of an abrasive material to a surface by pneumatic pressure, hydraulic pressure, or centrifugal force. It is used to remove rust, scale, paint, etc., from surfaces in preparation for finishing. Significant amount of dust is generated during abrasive blasting, which could be harmful. Noise level is also high due to the discharge of compressed air at the blast nozzle.
Abrasive Blasting Respirator	A continuous flow air line respirator designed to cover the wearer's head, neck, shoulders, and upper torso.
Deadman Switch	A control, such as a valve or switch that automatically interrupts air flow or hydraulic pressure to the blast nozzle when the operator's actuating force is removed.
Occupational Exposure Limit (OEL)	Is the maximum concentration of substances to which employees may be exposed for specific lengths of time as defined by relevant legislation.
Respiratory Hazard	Any atmosphere that is oxygen deficient or that contains a contaminant that may adversely affect the health and/or safety of the worker
Respiratory Protective Equipment (RPE)	Respirators or disposable dust masks used to protect a worker from

	respiratory hazards.
Self-Contained Breathing Apparatus (SCBA)	A self-contained positive pressure or pressure demand respirator supplied with clean respirable air from a compressed air cylinder.
Supplied Air Breathing Apparatus (SABA)	positive pressure or pressure demand respirator supplied with clean respirable air from a remote source (compressor or compressed air cylinders) via an air supply hose.

5.0 ROLES AND RESPONSIBILITIES

5.1 Employer

- Ensure each job has been properly evaluated for work hazards.
- Ensure the evaluated hazards have either been eliminated or will be controlled.
- Evaluate the need for a decontamination area prior to commencing the job.
- Monitor the work to ensure compliance with this standard.

5.2 Supervisors

- Ensure implementation of this standard within their areas of accountability

5.3 Employees / Contractors

- Review this standard prior to commencing work and comply with its requirements.
- Inspect the abrasive blasting equipment prior to use to ensure it is in good working condition.
- Ensure no other activity is taking place adjacent to or on the item being abrasive blasted.
- Rope off, barricade or post “No Entry” signs to restrict access to the work area.
- Wear required PPE and RPE when performing abrasive blasting.

6.0 STANDARD

6.1 Precautions

- All PPE must be inspected prior to use, immediately repaired or replaced if it is defective, and cleaned or decontaminated as necessary to ensure it is fit for use and does not pose hazards.
- Abrasive material must be removed from items that have been blasted prior to releasing the items back into the work area.
- Due to the pressure and the nature of the abrasive material, the blasting nozzle must be always secured.
- All abrasive media must be contained in an enclosure, except in the case of CO2 blasting. When CO2 blasting, gas testing must be conducted to ensure the Occupational Exposure Limit (“OEL”) for CO2 is not exceeded, or that an oxygen deficient atmosphere is not created.
- In case of a hose failure, a safety device, such as an excess-flow check valve, should be installed at the source of air supply or the branch line.

6.2 Hierarchy of Control Options

- **Elimination** – Crystalline silica shall not be used for abrasive blasting.
- **Engineering Controls** to minimize dust emission could include:
  - substituting a less hazardous surface preparation method, such as wet abrasive blasting or high pressure water jetting
  - isolating the abrasive blasting work inside a blasting cabinet
  - installing a temporary enclosure
  - using HEPA vacuum to collect accumulated dust
  - using local exhaust fans (must be filtered)
- **Administrative Controls** to reduce worker exposure could include**:**
  - scheduling abrasive blasting work outside normal work hours
  - relocating abrasive blasting work away from other workers
  - job rotation
  - adequate housekeeping to limit accumulation of dust
  - adequate personal hygiene before eating, drinking, or smoking

6.3 Abrasive Blasting Media

- All abrasive blasting media (ABM) must be an approved product. Silica must not be used as an ABM if it is completely avoidable.
- This shall include a written hazard assessment, consideration of the composition and toxicity of both the ABM and the surface being abraded, and potential health effects.
- The blasting media selected should be the least hazardous material that will do the job, minimize dust generation and minimize environmental impacts.

6.4 Personal Protective Equipment (PPE)

Abrasive blasters and others assisting in the work area shall wear the following PPE:

- Hearing Protection
- Gauntlet type leather glove
- Coveralls (disposable when required e.g. lead and other contaminates)
- Respiratory Protective Equipment (see next section for details).

6.5 Respiratory Protective Equipment (RPE)

- Must adhere to requirements outlined in standard HSEE-03-18 Respiratory Protection.
- RPE must be fitted for each person individually and if it is to be used by another operator, it must be disinfected and refitted before use.
- RPE must be NIOSH (National Institute for Occupational Safety and Health) approved supplied-air type CE respirator with demonstrated performance at a level of protection of 1000 or greater to receive an APF of 1000.
- The hood must be specifically designed for abrasive blasting, and supplied with air that is at a positive pressure of not more than 140 kPa.

- NIOSH-approved air lines and subassemblies must be used to deliver breathing air to the user. Breathing air must meet the requirements of Table 1 of CSA Standard Z180.1-00 (R2005), Compressed Breathing Air and Systems, and must not contain a substance in a concentration that exceeds 10% of its OEL. A valid certification of conformance, within at least the last 6 months, must be presented prior to starting work. Air purification systems must be used on compressed air that may not meet the criteria of CSA Z180.1-00.
- All components (from purifier forward) must fall under the same NIOSH approval. This means the helmet, hose, controller and airline are typically of the same manufacturer.
- The tightness of all connections and the condition of the face piece, headbands and valves should be checked before each use.
- Users must only remove their RPE when they are outside the hazard zone. Never drop a helmet or leave it in areas where it might be exposed to dust and dirt.

6.6 Abrasive Blasting Equipment

- Abrasive blasting equipment must be fitted with a Deadman control under the direct control of the operator which can quickly stop flow of the abrasive material.
- Abrasive blasting equipment must be inspected on a routine basis and be in good working condition prior to use.
- Abrasive blaster’s shields shall be changed regularly to eliminate problems with visibility.
- Hoses should be constructed with anti-static linings or fitted with a ground wire to prevent electrical shock. Air-moving equipment utilized in any area of abrasive blasting should be grounded to prevent build up of static electricity and risk of explosion. When dry blasting, a means of discharging static electrical charge must be provided for the nozzle and the object being blasted.

6.7 Personal Hygiene

- Personnel exiting the abrasive blasting enclosure will clean their clothing and PPE, and contaminated clothing shall be double-bagged for cleaning.
- Temporary enclosures inside buildings or blast rooms shall have a decontamination room (clean and dirty) attached to prevent the spread of any contaminants.
- Anyone working within the hazardous area must wash their hands and face prior to eating, drinking or smoking

6.8 Temporary Enclosures

- Temporary enclosures are required for all abrasive blasting, with the exception of CO2 blasting, both indoors and outdoors in order to minimize dust exposures.
- Temporary enclosures will be made of puncture and tear resistant materials. Fire retardant materials to be considered where necessary.
- An exhaust ventilation system capable of maintaining the enclosure under negative pressure and fitted with a dust extraction/collection system must be installed. Contaminated air must not be recirculated into the workplace or discharged to the environment.

- Deviations from this requirement may be requested on a case-by-case basis. Where full enclosure is not possible, screening must extend at least 2 metres above the structure and blasting should be conducted downwards.

6.9 Dust Control and Monitoring

- Dust shall not be permitted to accumulate on the floor or on ledges outside of an abrasive blasting enclosure, and dust spills shall be cleaned up promptly. Aisles and walkways will be kept clear of abrasive blasting material which may create a slipping hazard.
- Cleanup of dust outside enclosures will be done by means of HEPA-vacuums. Compressed air must not be used to blow down surfaces, tools or equipment.
- Where monitoring results indicate that persons in surrounding areas may be exposed to dust levels for which RPE is required, a hazard area will be defined by means of warning signs and barricades or danger tape. Signs reading “Danger Abrasive Hazards Work Area” or similar language will be used.
- All personnel within a hazard zone must wear goggles and proper respiratory protection (minimum half mask air purifying respirator with P100 cartridges). Additional controls may also be required depending on the nature of the dust generated by the blasting process.

7.0 TRAINING

- Abrasive Blasters must be deemed competent in the trade by their employer.

8.0 APPENDIX

N/A

R. Condon

Director of Total
Health & Safety

DIVISIONAL SPONSORS

Name	Title	Signature	Date
Lori Clark	Senior VP Operations		

DOCUMENT APPROVAL/REVISION RECORD

Revision #	Date yyyy/mm/dd	Revision Summary	Author	Reviewed By	Approved By
New	2022/04/04	New Standard	Zach Fitch and Matt MacFarlane	Phil Hepditch Charles McGrath Ben Arsenault Todd Moore	Robin Condon