

# Dry-ice blasting

During dry-ice blasting, the carbon dioxide levels can be three to four times higher than reasonable limits. Normal air contains about 21.8% oxygen, but during dry-ice blasting, the oxygen level can drop to 20.3%. Noise levels can also be very high at 800 times greater than the allowable limit of 85 decibels (dBA). At this level, workers can be overexposed to noise in as little as 30 seconds.

## Explain dangers

Dry ice is used to remove mould contamination from surfaces. When the rice-sized pellets are blasted against a surface, they disintegrate and change to carbon dioxide gas. The mould, along with other debris, becomes airborne and later falls to the ground.

During this process, workers must be aware of certain hazards:

- Mould exposure can cause health effects such as eye, nose, and throat irritation similar to asthma-like reactions or infections.
- High levels of carbon dioxide can cause a sense of heaviness in your chest. At high levels, it can also displace oxygen from the work area and cause you to lose consciousness.
- High noise levels can cause hearing loss.
- Wood dust can irritate the eyes, nose, and throat.
- Dry ice pellets can cause frostbite.

## Identify controls

- Always wear the correct type of respiratory protection. A supplied-air respirator is the only device suitable to protect you against mould, high levels of carbon dioxide, and oxygen deficiency.
- Ventilate the work space using mechanical ventilation.
- The temperature of dry ice is about  $-70^{\circ}\text{C}$ . Always wear gloves that are in good condition to prevent contact with skin.

- Noise levels from blasting are extremely high. You must use earplugs and earmuffs together at the same time.
- Carbon dioxide and oxygen levels in the air should be monitored continuously. If carbon dioxide levels become too high or oxygen levels become too low, follow the procedures outlined by your supervisor.
- If the work area is enclosed, keep flaps to the enclosed workspace closed as much as possible. Report any defects or holes on the flaps immediately.
- Post warning signs around entrances to the enclosure to prevent unauthorized entry.
- Full-body disposable coveralls and boot covers are recommended to reduce exposure to dust.
- If a decontamination facility is used, follow the entry/exit procedures.
- Use a HEPA vacuum or damp cloth to remove visible contaminants from your person before leaving the work area.
- Dispose of contaminated materials in 6-ml bags and seal them. The disposal bag should then be wiped down and placed into a second bag.

## Demonstrate

Have every member of the crew inspect their respiratory protection devices for damaged facepieces, straps, valves, etc. Hoses and regulators should also be checked.

Consult the manufacturer's recommendations for appropriate inspection and maintenance procedures.

Demonstrate the proper selection and use of hearing protection according to the manufacturer's instructions.