



Reply to the attention of:

AUG 13 2015

Thomas E. Enger  
CLEMCO Industries Corp.  
One Cable Car Drive  
Washington, MO 63090

Dear Mr. Enger:

Thank you for your April 7, 2015, letter to the Occupational Safety and Health Administration (OSHA). Your letter was forwarded to the Directorate of Enforcement Programs for a response. You requested an explanation of the appropriate respiratory protection required by the OSHA Ventilation standard, 29 CFR 1910.94, when using vapor- or wet-abrasive blast machines. This letter constitutes OSHA's interpretation only of the requirements discussed and may not be applicable to any question not delineated within your original correspondence. After a background summary, your paraphrased question and our response are below.

**Background:** Clemco and other manufacturers have designed or redesigned wet abrasive blast systems and are marketing them as “vapor- or wet-abrasive blast machines.” You’d like to know if OSHA requires operators who use these redesigned abrasive blast systems to wear Type CE respirators, as approved by the National Institute for Occupational Safety and Health (NIOSH). The redesigned systems offer a reduction of dust from blast operations. You referenced several anecdotal studies performed using these machines, some of which provided definitive instructions on the use of Type CE continuous flow supplied-air respirators, while others were vague on the requirement.

**Question:** Is a Type CE continuous-flow supplied-air respirator required when performing wet abrasive blasting where concentrations of toxic dust do not exceed the permissible exposure limits (PELs) in 29 CFR 1910.1000?

**Response:** OSHA’s Ventilation standards, 29 CFR 1910.94 for general industry<sup>1</sup>, and 29 CFR 1926.57 for construction, specify the workplace conditions where NIOSH-approved abrasive blasting respirators are required. Particular to the situation you describe, NIOSH-approved abrasive blasting respirators would be required only “(w)here the concentration of toxic dust dispersed may exceed the limits set in § 1910.1000 and the nozzle and blast are not physically separated from the operator in an exhaust-ventilated enclosure.” 29 CFR 1910.94(a)(5)(ii)(c). See also, similar requirement at 29 CFR 1926.57(f)(5)(ii)(C).

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<sup>1</sup> 29 CFR 1910.94 for ventilation also applies on maritime vessels and on shore in shipyards. However, paragraphs 1910.94(a)(2) and (a)(5) are generally preempted on vessels and on shore by 29 CFR 1915.34(c) and 29 CFR Part 1915, Subpart I, Personal Protective Equipment. See OSHA Instruction, CPL 02-00-157, Shipyard Employment “Tool Bag” Directive.

In order to be excluded from the standard described above [1910.94(a)(5)(ii)(c)], where NIOSH-approved respiratory protection is required, the employer must demonstrate compliance with each of the following criteria:

- 1) The exposure will not exceed the PELs. The exposure data must be:
  - a. Personal sample(s) analyzed utilizing accepted methodologies;
  - b. Collected outside of the abrasive-blasting unit's shroud in operator's breathing zone (Note: The sampling cassette should be positioned as close as possible to the employee's nose and mouth, i.e., in a hemisphere forward of the shoulders within a radius of 6 to 9 inches);
  - c. Representative of the work environment without taking credit for respiratory protection;
  - d. Representative of the abrasive blasting procedure with sufficient exposure data; and,
  - e. Documented.
- 2) The abrasive blasting operator is working in an exhaust-ventilated enclosure where the operator is separated from the nozzle and blast.
- 3) The employer will comply with the requirements of the OSHA Respiratory Protection standard, 1910.134.

You should also know that the definition of Type CE or "abrasive blasting respirators" was changed by OSHA in the Ventilation standards to remove the phrase "continuous flow air-line." [63 Fed. Reg. 1268, January 8, 1998] This changed definition affected both 29 CFR 1910.94(a)(5)(i) and 29 CFR 1926.57(f)(5)(i), which require that only respirators approved by NIOSH be used for abrasive blasting operations. NIOSH had since approved respirators other than "continuous flow air-line" respirators for use in abrasive blasting operations, and so OSHA's change of this definition made a wider range of respiratory protection available to employers. Type CE respirators are defined by NIOSH as supplied-air systems equipped with additional devices to protect the wearer's head and neck against impact and abrasion from rebounding abrasive material. [*NIOSH Pocket Guide to Chemical Hazards (NPG), Definitions for Type C and Type CE Respirators*, DHHS (NIOSH) Publication No. 2005-149]

See also, OSHA's Letter of Interpretation to Larry Janssen, 4/15/1999, enclosed.

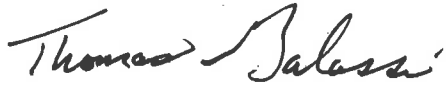
For additional information, we are also enclosing a copy of the OSHA Fact Sheet, *Protecting Workers from the Hazards of Abrasive Blasting Materials*.

We commend the development and use of improved vapor- and wet-abrasive blasting techniques and technologies as a means to reduce worker exposure, and we thank you for your interest in occupational safety and health. We hope you find this information helpful. OSHA requirements are set by statute, standards, and regulations. Our letter of interpretation explains these requirements and how they apply to particular circumstances, but they cannot create additional employer obligations. This letter constitutes OSHA's interpretation of the requirements discussed. Note that our enforcement guidance may be affected by changes to OSHA rules. Also, from time to time we update our guidance in response to new information. To keep apprised of such

developments, you can consult OSHA's website at <http://www.osha.gov>.

If you have any further questions, please feel free to contact the Office of Health Enforcement at (202) 692-2190.

Sincerely,

A handwritten signature in cursive script that reads "Thomas Galassi".

Thomas Galassi, Director  
Directorate of Enforcement Programs

Enclosures