



1101 Wilson Blvd., Suite 1425
Arlington, VA 22033

April 20, 2023

Sarah Money
Occupational Safety and Health Standards Board
2520 Venture Oaks Way
Suite 350
Sacramento, CA 95833

Re: Proposed Amendment on Occupational Exposure to Lead

Dear Ms. Money,

The International Safety Equipment Association (ISEA) is pleased to submit these comments in response to the California Occupational Safety and Health Standards Board's proposed amendments to the lead standards.

About the International Safety Equipment Association

ISEA is the U.S. trade association for companies that design, test, manufacture and supply personal protective equipment (PPE), including respiratory protection, and a wide array of other products that help keep the nation's workforce safe.

ISEA's respiratory protection members are world leaders in designing, testing, manufacturing, and supplying a wide range of respiratory protective devices (respirators), from filtering facepiece respirators to self-contained breathing apparatus.

Nationwide, the safety equipment industry supports 345,000 total jobs and generates economic activity of more than \$71.6 billion. In addition, more than 111 million workers across the U.S. are protected by the safety equipment our members produce and ISEA represents.

In California, the safety equipment industry supports 36,000 jobs and generates economic activity of nearly \$8 billion.

In addition, 13 million California workers are protected by a range of personal protective and safety equipment. More than 5 million workers in California use respiratory protection, of which more than 1 million work in construction.

ISEA is submitting two statements on the proposed amendments. One focuses just on respiratory protective equipment. The other addresses the use and handling of contaminated clothing and minimizing contamination during hand/arm washing.

Please contact me at cmackey@safetyequipment.org if you or others at Cal/OSHA have any questions about these comments or if you would like additional information about them.

Sincerely,

A handwritten signature in black ink, appearing to read "Cam Mackey". The signature is fluid and cursive, with the first name "Cam" and last name "Mackey" clearly distinguishable.

Cam Mackey
President & CEO
International Safety Equipment Association

Proposed Amendments Respecting Lead - Respiratory Protection

Cal/OSHA's proposed amendments respecting lead are, in general, a positive step to ensure workers in California are increasingly protected from workplace exposures to lead. The Proposed Amendments note the importance of the use of the hierarchy of controls to help reduce worker inhalation exposure to airborne lead-containing particles, as well as ingestion exposure due to surface contamination. Controls such as local exhaust ventilation to reduce the emission of lead-containing particles at the source and the use of increased general ventilation and filtration to reduce the concentration of airborne lead, followed by the use of appropriate NIOSH-approved respiratory protection, would be even more important if the proposed lower PELs come into force. When used properly, these controls are known to help reduce exposures to airborne concentrations of particles. The use of NIOSH-approved respirators within complete respiratory protection programs - including fit testing and training, according to the federal OSHA Respiratory Protection Standard, 29 CFR 1910.134 - is a key component of many employers' effective employee health and safety programs.

However - ISEA would like to express concern over the proposal in the Proposed Amendments that the use of filtering facepiece respirators be prohibited in applications involving potential lead exposure. ISEA recommends abandoning this proposed amendment, since it is not supported by evidence or data and would limit access by the workers and employers impacted by this standard to a key instrument in exposure reduction - the filtering facepiece respirator.

In the Proposed Amendments to the California Code of Regulations, Subsection (f)(3)(A), it states *"In this subsection, a requirement would be added that would prohibit employers from selecting or using filtering facepiece respirators to protect their employees when respirator use is required."* The reasoning for this change is stated in the Proposed Amendments as, *"filtering facepiece respirators are unlikely to provide adequate protection to employees, due to the difficulty in achieving and maintaining a satisfactory seal on the employee's face."* This statement is in direct conflict with OSHA's Final Rule on APFs for Filtering Facepieces, which was based on extensive research over many years. **The statement that filtering facepiece respirators are unlikely to provide adequate protection to employees is not supported**

by scientific evidence and contradicts a long-standing, well-researched Federal OSHA rule on respirator assigned protection factors.

As noted in 29 CFR 1910.34, Table 1 - Assigned Protection Factors (APFs)¹, half facepiece respirators have an assigned protection factor of 10. There is also a note (3) that states, *"This APF category includes filtering facepieces and half masks with elastomeric facepieces."*

A robust and scientific review of workplace protection data was conducted when the APF was set at 10 for filtering facepiece respirators in the Final Rule. The evidence and review process were described in detail in the Final Rule; Assigned Protection Factors, Federal Register # 71:50121-50192 August 24, 2006. <https://www.osha.gov/laws-regs/federalregister/2006-08-24>. The data and logic supporting an APF of 10 for filtering facepieces put forth in this document have not changed in the 17 years since this ruling.

The final rule includes this explanation of OSHA's deliberation process leading to the adoption of the APF of 10 for filtering facepiece respirators: *"The Agency developed the final APFs after thoroughly reviewing the available literature, including chamber-simulation studies and workplace protection factor studies, comments submitted to the record, and hearing testimony. The final APFs provide employers with critical information to use when selecting respirators for employees exposed to atmospheric contaminants found in general industry, construction, shipyards, longshoring, and marine terminal workplaces. Proper respirator selection using APFs is an important component of an effective respiratory protection program. Accordingly, OSHA concludes that the final APFs are necessary to protect employees who must use respirators to protect them from airborne contaminants."*

The scientific evidence considered by OSHA during the development of the APF of 10 for half facepiece respirators - including both elastomeric half facepiece respirators and also filtering facepiece respirators - includes vast amounts of workplace protection factor (WPF) data. A WPF measurement is the ratio of the concentration of a particular contaminant outside the respirator

¹ In fact, Cal/OSHA recognizes the same level of protection and includes the same APF table at Sec. 5144, [California Code of Regulations, Title 8, Section 5144. Respiratory Protective Equipment](#). (accessed April 20, 2023)

to the concentration inside the respirator - in other words, the actual level of protection provided to a worker while wearing a respirator during their workday. WPF studies are a key piece of evidence illustrating the level of protection a category of respirator can be expected to provide when used within a complete respiratory protection program, including fit testing and training. The database OSHA compiled during the development of their Final APF Rule includes 1,339 WPF measurements - 760 collected from filtering facepiece respirators and 579 collected from elastomeric respirators.

Filtering facepiece respirators have been successfully donned and worn by millions of workers for over a half-century, in diverse workplace environments, to help reduce workers' exposures to airborne particulate hazards to below exposure limits in situations where exposures could not be sufficiently reduced via engineering or administrative controls. Restricting respirator availability to only elastomeric facepieces for those who have elevated airborne lead exposures is unwarranted and would cause undue burden on both employers and employees.

Workers' ability to achieve and maintain a satisfactory seal with any tight-fitting respirator - elastomeric or filtering facepiece - is supported by training and fit testing of the respirator, as part of a complete Respiratory Protection Program. Cal/OSHA, like Federal OSHA, does have those requirements in place - Title 8 CCR, Section 5144, requires employers to have Respiratory Protection Programs in place which include fit testing protocols (Appendix A) and User Seal Checks (Appendix B-1) and training in the proper use of respirators, including putting on and removing them, use limitations, and maintenance.

By implementing a blanket ban on filtering facepiece respirators for lead applications, Cal/OSHA would be restricting health and safety professionals from selecting a scientifically proven effective respirator option which may be deemed optimally protective of workers' health, per site-specific hazard evaluations, because of their disposable design.

Therefore, ISEA requests Cal/OSHA remove the exclusion of the use of filtering facepieces.

ISEA believes keeping respirator requirements science-based and consistent for all workers may result in greater compliance, proper use of respiratory protection, and help ensure effective respiratory protection for all workers.

Proposed Amendments Respecting Lead - Additional Topics

Minimizing Take-Home Contamination

In addition, workers must be provided with disposable or reusable coverall to minimize “take home” contamination, which happens when lead dust on workers clothing travels with the worker back home.

OSHA’s beryllium standard at 29 CFR 1910.1024 includes prescriptive language regarding safe removal of contaminated protective clothing and steps to minimize contamination of street clothing. These specifications are found at [1910.1024\(h\)\(2\)\(i\)](#). The proposed CA lead amendments should include language for protective clothing similar to OSHA’s beryllium standard. This would be more protective for workers and their families, as it would minimize lead dust exposure to Californians, including those who collect and launder contaminated garments.

Disposable Paper Towels for Hand/Arm washing

ISEA would also like to point Cal/OSHA’s attention to a specific aspect of hand-washing requirements.

Multiple studies show disposable paper towels are the most hygienic option in workplace handwashing requirements. They are preferred over airdryers², which have been shown to disperse dusts and aerosols into the ambient air³. Also, reusable towels have been shown to

² <https://europeantissue.com/about-tissue/away-from-home/properties-of-tissue/user-preference-observational-study-issainter-clean-amsterdam-2016/> “An extensive observational study at ISSA/Interclean 2016 confirms that the vast majority of Users prefer Paper Towels to Jet Air Dryers”

³ <https://www.sciencedirect.com/science/article/abs/pii/S0195670114002461>
Air [bacterial counts](#) in close proximity to hand drying were 4.5-fold higher for the jet air dryer (70.7 cfu) compared with the warm air dryer (15.7 cfu) ($P = 0.001$), and **27-fold higher** compared with use of paper towels (2.6 cfu) ($P < 0.001$). (emphasis added)

retain toxic chemicals even after commercial laundering, passing potential exposures to the next, unsuspecting worker⁴.

Studies published in various peer-reviewed journals (See below) demonstrate that disposable paper towels control the risk of putting pathogenic bioaerosols back into the ambient air. Clearly, using disposable paper towels also negates the risk of dermal exposure from previous users, which has been found in reusable towels.

⁴ <https://www.manufacturing.net/home/article/13149592/ga-heavy-metal-safety> "towels routinely used by food manufacturers are often contaminated with heavy metal residues from other industries that survived the cleaning process."

Reference Resources for Published Articles on the Hygienic Value of Disposable Paper Towel Use

The Hygienic Efficacy of Different Hand-Drying Methods: A Review of the Evidence, *Mayo Clinic Proceedings*

A review of 12 studies on the hygienic efficacy of different methods of hand drying published between 1970 and March 2011. Effectiveness was based on the speed, the degree of dryness, the overall effective removal of bacteria, and the prevention of cross-contamination. The conclusions were that, overall, most studies suggest that paper towels can dry hands more efficiently remove bacteria effectively and cause less contamination within the washroom than jet air dryers.

» Access the study at <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3538484/>

E.L. Best, K. Redway, “Comparison of Different Hand-Drying Methods: The Potential for Airborne Microbe Dispersal and Contamination,” *Journal of Hospital Infection*, 89 (2015)

This study assessed the potential for airborne microbe dispersal of four hand-drying methods (paper towels, cloth roller towels, warm air, and jet air dryer) by using three different experimental models. The study demonstrated the higher levels of airborne microbe dissemination by jet air dryers, particularly if hand washing is suboptimal.

» Access the study at [https://www.journalofhospitalinfection.com/article/S0195-6701\(14\)00372-7/fulltext](https://www.journalofhospitalinfection.com/article/S0195-6701(14)00372-7/fulltext)

P.T. Kimmitt & K.F. Redway, “Evaluation of the Potential for Virus Dispersal During Hand Drying: A Comparison of Three Methods,” *Journal of Applied Microbiology*, 120 (2016)

A comparison of three hand-drying methods – paper towels, a warm air dryer and a jet air dryer – to disperse viruses and contaminate the immediate environment during use, by using a MS2 bacteriophage model. The results of the study show that the use of jet air dryers leads to significantly greater and further dispersal of viral particles from artificially contaminated hands than warm air dryers and paper towels.

» Access the study at <https://sfamjournals.onlinelibrary.wiley.com/doi/full/10.1111/jam.13014>

E.L. Best, P. Parnell and M.H. Wilcox, “Microbiological Comparison of Hand-Drying Methods: The Potential for Contamination of the Environment, User and Bystander,” *Journal of Hospital Infection*, 88.4 (2014)

This study tested how microbes are spread when using three methods of hand drying – jet air dryers, warm air dryers and paper towels – in a public restroom. Researchers first measured amounts of bacteria in the immediate vicinity, as well as one meter away from all three hand drying devices.

This part of the study found that bacteria counts were higher in the air immediately next to the jet air dryers than that of warm air dryers and paper towel dispensers. Bacteria counts were also higher in the air surrounding the jet air dryers, versus the warm air dryers and paper towel dispensers, when researchers tested air samples taken one meter from the devices.

» Access the study at <https://www.sciencedirect.com/science/article/abs/pii/S0195670114002461>

Observational Study at ISSA/Interclean Amsterdam 2016, Published by the European Tissue Symposium

This observational study, conducted during ISSA/Interclean Amsterdam in May 2016, found that 90% of people showed a preference for paper towels over jet air dryers when given a choice between the two in public washrooms. Researchers observed 3,879 visitors in a total of four restrooms – two men’s and two women’s – which were all equipped with both paper towels and jet air dryers, situated directly above one another.

» Access the study at <https://europeantissue.com/about-tissue/away-from-home/properties-of>