NIOSH Engineering Controls Program

May 2016

What are our priorities?

The National Institute for Occupational Safety and Health (NIOSH) Engineering Controls Program seeks to protect workers by removing hazardous conditions or by placing a barrier between the worker and the hazard. The program works with partners in industry, labor, trade associations, professional organizations, and academia on these areas:

- Reducing silica exposure at U.S. highway construction sites using engineering controls.
- Reducing global asphalt fume exposure using engineering controls.
- Protecting flavorings workers from exposure to Diacetyl and 2,3-Pentanedione.

What do we do?

- Increase awareness and use of silica dust controls and practices for work tasks linked to silica exposure.
- Promote the use of engineering controls for silica and asphalt fume to industry, regulatory agencies and consensus standard bodies.
- Promote the use of engineering controls for Diacetyl and food flavorings that contain Diacetyl to industry, regulatory agencies and consensus standard bodies.

What have we accomplished?

- NIOSH and the national Silica/Asphalt Milling Machine Partnership published an engineering controls best practices document to control silica dust exposure from asphalt milling machines.
- Members of the national Silica/Asphalt Milling Machine Partnership have formally agreed to install NIOSH-recommended silica dust controls on all new half-lane and larger cold-milling machines by January 2017. Two milling machine manufacturers with 80% of the U.S. market began putting controls on new milling machines in 2014, nearly three years ahead of the agreed-upon deadline.
- All U.S. and foreign manufacturers of heavy construction equipment that sell pavement-milling machines to the U.S. market have the NIOSH-evaluated retrofit kits commercially available.
- NIOSH-recommended engineering controls are being installed on paving equipment by several major European manufacturers in anticipation of a new international standard on mobile road construction machinery. NIOSH is also participating in developing the new standard.
- Published a best practices engineering control document for Diacetyl and 2,3-Pentandione. Document recommendations are already being implemented in several facilities in California.

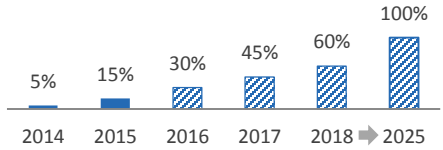
What's next?

- Evaluate prototype engineering controls for the remaining milling machine manufacturers as they continue to implement NIOSH recommendations and complete testing by the agreed upon 2017 deadline.
- Work with partners to finalize changes to the international standard on mobile road construction machinery. The new version of the standard will incorporate NIOSH-recommended engineering controls for asphalt paving machines.
- Publish criteria document for Diacetyl and industry to begin adopting engineering controls in the NIOSH best practice document.

At-A-Glance

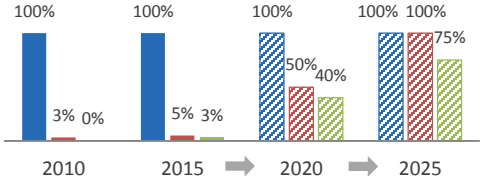
The NIOSH Engineering Control Program seeks to protect workers by engineering interventions that can be used to eliminate or more safely work around hazards. This snapshot shows recent accomplishments and upcoming work.

Percentage of asphalt milling machines in the U.S. fitted with engineering controls for silica



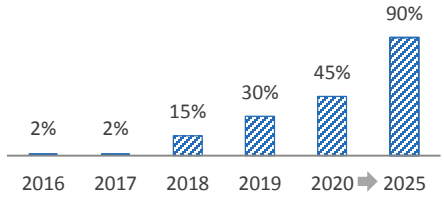
Source: National Asphalt Pavement Association

Percentage of global highway class asphalt pavers fitted with engineering controls for asphalt fumes: U.S., Europe, and Asia



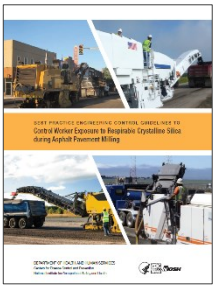
Source: National Asphalt Pavement Association, NIOSH program records, and the Institut National de Recherche et de Securite (INRS) program records

Anticipated percentage of food flavorings facilities using NIOSH engineering control recommendations to reduce worker exposure to Diacetyl



Source: NIOSH program records

Publication Spotlight:



"Best Practice Engineering Control Guidelines to Control Worker Exposure to Respirable Crystalline Silica during Asphalt Pavement Milling"

DHHS (NIOSH) Publication No. 2016-120