

Summary Sheets on Regulated Hazards

SAMPLE

Silica



Asbestos



Mold



PCBs



Lead

Introduction

On March 25, 2016, OSHA released its final rule for crystalline silica measurement and control. This revision to their earlier silica standard cut in half the previous permissible exposure limit (PEL) for respirable crystalline silica; down to 50 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) of air averaged over an 8-hour shift.

The full rule, as published in the Federal Register, is more than 600 pages long. The scheduled implementation date for the OSHA standard is June 23, 2016; although a number of lawsuits were filed in an effort to halt or delay the implementation of the new rule. Since any sort of cutting, coring, grinding, or crushing activities (and even some excavation) that impact concrete, cinderblock, tile, or other masonry products can generate significant amounts of airborne silica the new rules will have a wide-ranging impact on restoration contractors.

Despite being directly impacted by the silica rule, few restoration contractors have time to wade through hundreds of pages of material. That realization prompted the RIA's Environmental Council to consider developing a summary piece to explain how the new silica rule will affect the restoration industry.

As the project began, it became clear that the new silica standard imposes testing and compliance requirements on restoration contractors that are similar to other recognized, and federally regulated, hazards. Therefore, the initial project was expanded to cover a number of potential contaminants that restoration contractors encounter on a frequent basis. The project was further expanded beyond materials which are subject to federal or state regulations to also encompass mold. Doing so allowed for the development of a memorable acronym, SAMPLE, that allows restoration contractors to easily remember what suspect materials on the project site they should potentially document, sample, and control.

It is the hope of the RIA's Environmental Health and Safety Council that all restoration contractors will take their responsibilities to deal safely with indoor contaminants seriously. Although compliance with regulatory guidelines does not, in and of itself, guarantee the safety of a restoration crew; such compliance is an excellent starting point to prevent injuries/illnesses and minimize liability to the organization.

Although every effort was made to include the most important applicable information for each of the SAMPLE sheets, these are only summaries. As such, they should not be used as a sole source of information for regulatory compliance. For additional information regarding the application of the information in this document to a specific project please contact the Restoration Industry Association (contact information can be found at the end of the document).

Michael A. Pinto

Chairperson, Environmental Health and Safety Council

WHAT IT IS

- A hard, unreactive, colorless compound that occurs as the mineral quartz, and as a principal constituent of sandstone and other rocks

POTENTIALLY DISTURBED ON

- Asphalt, concrete, mortar, gunite/shotcrete
- Stones, marbles, granites, rock, terrazzo
- Stucco/EIFS, plaster, porcelain, gesso
- Drywall, greenboard, joint mix
- Brick, tile, cement roof tile

HEALTH EFFECTS

- Silicosis
 - Scarring of lungs around particles

EXPOSURE LIMITS

- OSHA/PEL — 100 $\mu\text{g}/\text{m}^3$
- Cal-OSHA — 100 $\mu\text{g}/\text{m}^3$
- ACGIH — 25 $\mu\text{g}/\text{m}^3$
- NIOSH REL — 50 $\mu\text{g}/\text{m}^3$

RISKY ACTIVITIES

- Demolition
- Floor prep
 - Chipping
 - Shot blasting
 - Concrete grinding
- Soda/ice blasting
- Hole sawing
- Drilling/ram set
- Painting/sanding
- Leaf blowing

SAMPLING

- Construction materials
- Personal exposure
 - When disturbing products with silica
- Lab analysis

Asbestos

WHAT IT IS

- Asbestos is a generic term for a group of six mineral silicates
- Asbestos fibers are
 - Very strong
 - Highly flexible
 - Resistant to breakdown by acid, alkali, water, heat, and flame
 - Non-biodegradable; environmentally persistent

POTENTIALLY DISTURBED ON

- Plaster (especially textured)
- Floor tiles
- Linoleum
- Pipe/duct insulation
- Roof tar/flashing/shingles
- Cement board (transite)
- Fireproofing
- Joint compound
- Knob & tube wiring
- Light reflectors
- Ceiling tiles

HEALTH EFFECTS

- Asbestosis
- Mesothelioma
- Lung cancer
- Gastro-intestinal cancer
- Asbestos warts

EXPOSURE LIMITS

- OSHA/PEL — 0.1 f/cc
- OSHA/STEL — 1.0 f/cc
- EPA Clean Air — 0.01 f/cc

RISKY ACTIVITIES

- Fire overhaul/demolition
- Flood cuts
- Plumbing repairs
- HVAC cleaning/repair
- Carpet removal (tile or linoleum underneath)
- Remodeling
- Vortex drying
- Sanding/painting
- Siding replacement

SAMPLING

- Bulk sample of suspect materials prior to disturbance with analysis by independent/certified laboratory.
 - Regardless of the age of the building
 - Asbestos has not been banned
 - New construction can have asbestos
 - ♦ Floor tiles/mastic
 - ♦ Drywall mud
 - ♦ Roof flashing mastic
- OSHA compliance
 - Negative exposure assessment
 - ♦ Personal samples to evaluate work activities
- Post-remediation clearance samples when necessary

Mold

WHAT IT IS

- Mold spores are a microscopic contaminant
 - Visually clean is only a surrogate check
- Some level of mold is always around us
 - Establishing comparison level is critical
 - Natural level will vary over course of the project
- Significant concerns about contractor causing contamination
 - Of workers
 - Of previously non-impacted areas of structure

POTENTIALLY DISTURBED ON

- Wallpaper
- Drywall, joint mix
- Rafters/sheathing
- Joists/subfloors
- Cabinet backs/bases
- Baseboard/moldings

HEALTH EFFECTS

- Eye irritation/watering
- Runny nose
- Coughing
- Sinus pressure
- Headache
- Throat irritation
- Hoarseness of voice
- Tightness/burning of chest
- Increased frequency or severity of asthma
- Loss of concentration/focus
- Malaise
- Recurrent fever
- Dizziness
- Nausea
- Chronic Inflammatory Response Syndrome (CIRS)

EXPOSURE LIMITS

- OSHA/PEL — None
- OSHA/STEL — None
- EPA Clean Air — None

RISKY ACTIVITIES

- Flood cuts
- Vortex drying
- Cabinet removal
- Heat pasteurization
- Wallpaper removal
- Stain blasting
- Fire overhaul/demo
- Painting over mold
- Ozone flooding

SAMPLING

- Assist with initial assessment
- If no inspection report
- If inspection report is lame
- Address deficiencies or new conditions
- Are the contents impacted?
- Conduct effective post-remediation *evaluation*
- Cross check legitimacy of post-remediation *verification*

PCBs

WHAT THEY ARE

- Stable chemical
- 1.5 million tons 1930-1977
 - Low flammability
 - Electrical insulator
 - Coolant
- Cutting fluid
- Plasticizer
 - Paints
 - Finishes
 - PVC cable wrap
 - Sealants
- Caulking
- Waterproofing (coal tar)
- Hydraulic fluid

POTENTIALLY DISTURBED ON

- Transformer oil (rarely)
- Capacitors, voltage regulators, switches
- Fluorescent light ballasts
- Cable/thermal insulation (fabric, fiberglass, felt, foam, cork)
- Adhesives and tapes
- Caulking (window, joint)
- Plastics
- Oil-based paint
- Floor finish

HEALTH EFFECTS

- Mostly animal studies
 - Cancer
 - Immune system damage
- Increased infections
- Reproductive problems
 - Decreased birthweight
- Neurological complications
- Learning deficits

EXPOSURE LIMITS

- OSHA/PEL — 1,000/500 $\mu\text{g}/\text{m}^3$
- Cal-OSHA — 1,000/500 $\mu\text{g}/\text{m}^3$
- ACGIH — 1,000/500 $\mu\text{g}/\text{m}^3$
- NIOSH REL — 1 $\mu\text{g}/\text{m}^3$

RISKY ACTIVITIES

- Re-lamping fluorescent fixtures
- Pulling old wiring
- Window replacement (putty)
- Removal of waterproofing materials
- Floor finishing
- Demolition impacting caulks

SAMPLING

- Physical sampling of suspect materials prior to disturbance
- OSHA compliance
 - Negative exposure assessment
 - Personal samples to evaluate work activities

Lead

WHAT IT IS

- Corrosion-resistant dense metal
- Powdered lead additive
 - Paint
 - Plastic
 - Ceramics
 - Candles

POTENTIALLY DISTURBED ON

- Paint (pre-1978)
- Industrial safety paint
 - Old and new
- Water pipes
- Stack vent flashings
- Radiation shielding

HEALTH EFFECTS

- Can damage heart, blood, kidneys, muscles, bones, nerves/brain
- Can damage reproductive organs, male & female
- Learning disabilities, behavior problems and hyperactivity in children

EXPOSURE LIMITS

- OSHA/PEL — 50 $\mu\text{g}/\text{m}^3$ (Action level — 30 $\mu\text{g}/\text{m}^3$)
- Cal-OSHA — 50 $\mu\text{g}/\text{m}^3$
- ACGIH — 50 $\mu\text{g}/\text{m}^3$
- NIOSH REL — 50 $\mu\text{g}/\text{m}^3$

RISKY ACTIVITIES

- Demolition
- Plumbing
- HVAC repair
- Carpentry
- Remodeling
- Welding
- Painting/sanding

SAMPLING

- Construction materials
 - Lab analysis
 - Field tests are acceptable in most cases (3M LeadCheck swabs and others)
 - ♦ If it is red, it is lead
- Personal exposure
 - When the restoration project scope includes disturbing products with lead
 - NEA possible

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