Personal Protective Equipment in General Industry

- *29 CFR 1910.132*
- *29 CFR 1910.133*
- *29 CFR 1910.135*
- *29 CFR 1910.136*
- *29 CFR 1910.138*

Presented by: PRON SAFETY SERVICES LLC

Objectives

- Review general requirements
- Review personal protective equipment (PPE) essentials
- Discuss how to conduct a hazard assessment
- Discuss basic hazard categories

What is PPE?

- Equipment that creates a barrier against workplace hazards
- Examples include hard hats, goggles, gloves, hearing protection, etc.
- A temporary measure

Personal Protective Equipment 1910.132(a)

- General requirements
  - Application
    - » Protective equipment, including personal protective equipment shall be provided, used, and maintained in a sanitary and reliable condition

Employee-Owned Equipment 1910.132(b)

- Where employees provide their own protective equipment, employer shall be responsible to assure its adequacy, including proper maintenance, and sanitation

PPE Design 1910.132(c)

- All personal protective equipment shall be of safe design and construction for the work to be performed

PPE Essentials

1910.132(d)

- Hazard assessment and equipment selection
- Training and documentation
- Payment for PPE

Hazard Assessment

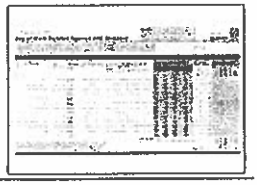
1910.132(d)

- Requirement
  - Employer must select PPE based on the assessment and require employees to use them, *and*
  - Communicate selection decisions to employees
- Involve managers and workers

Hazard Assessment Process

1910.132(d)

- Review injury/illness logs
- Use recommendations on Material Safety Data Sheets/Safety Data Sheets
- Review other records



Hazard Assessment Process

1910.132(d)

- Must be job and area based
- Requires written certification identifying the document as such including:
  - Person certifying that the evaluation was performed
  - Date of evaluation

Hazard Assessment Process

1910.132(d)

- Walk around
- Hazard control
- PPE selection

Basic Hazard Categories

1910.132(d)

- Impact
- Penetration
- Compression
- Chemical
- Heat/cold/wet
- Air contaminants (dusts, mists, fumes)
- Light radiation

Training

1910.132(f)

- Training subjects:
  - What PPE is required
  - When PPE is required
  - How to don, doff, adjust and wear PPE
  - The limitations of use
  - How to maintain and clean PPE
  - When to replace PPE
- Employee must demonstrate knowledge
- Retraining

PPE Payment

1910.132(h)

- Employer must pay for all PPE used in the workplace, *except*:
  - Non-specialty safety-toe footwear and non-specialty prescription safety eyewear provided the employer allows it to be worn off the jobsite
  - Built-in metatarsals (as long as the employer provides another type of metatarsal protection when required)
  - Logging boots
  - Everyday work clothing and ordinary clothing, skin creams, etc., used solely for protection from weather

PPE Payment

1910.132(h)

- Employer must pay for replacement PPE unless it is lost or intentionally damaged
- If the employer provides adequate and appropriate PPE, but the employee prefers a different type, the employer does not have to pay for it

NCDOL Photo

Eye and Face Protection

1910.133

Eye and Face Protection

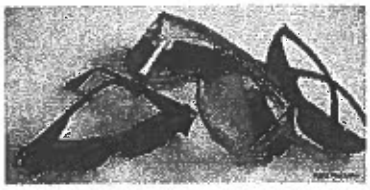
1910.133(a)(1)

- General requirements
  - Employer shall ensure that each affected employee used appropriate eye or face protection when exposed to eye or face hazards

Eye and Face Protection

1910.133(a)(2)

- Employer shall ensure that each affected employee uses eye protection that provides side protection when there is a hazard of flying objects



Eye and Face Protection 1910.133(a)(3)

- Employer shall ensure:
  - Each affected employee who wears prescription lenses while engaged in operations that involve eye hazards, wears eye protection that incorporates the prescription in its design, *or*
  - Wears eye protection that can be worn over the prescription lenses

Eye and Face Protection 1910.133(b)

- Criteria for protective eye and face devices
  - ANSI Z87.1-2010
  - ANSI Z87.1-2003
  - ANSI Z87.1-1989 (R-1998)

Head Protection 1910.135

Head Protection 1910.135(a)(1)

- General requirements
  - Employer shall ensure that each affected employee wears a protective helmet when working in areas where there is a potential for injuries to the head from falling objects

Head Protection 1910.135(a)(2)

- Employer shall ensure that a protective helmet designed to reduce electrical shock hazard is worn by each such affected employee when near exposed electrical conductors which could contact the head

Head Protection 1910.135(b)(1)-(2)

- Criteria for protective helmets
  - ANSI Z89.1-2009
  - ANSI Z89.1-2003
  - ANSI Z89.1-1997

Foot Protection

1910.136(a)

- General requirements
  - Employer shall ensure that each affected employee uses protective footwear when working in areas where there is a danger of foot injuries

Foot Protection

1910.136(b)(1)-(2)

- Criteria for protective footwear
  - ANSI Z41-1999
  - ANSI Z41-1991
- ASTM F2412-05 and F2413-05

Hand Protection

1910.138(a)

- General requirements
  - Employers shall select and require employees to use appropriate hand protection when employees' hands are exposed to hazards
    - Skin absorption
    - Cuts and lacerations
    - Abrasions
    - Burns
    - Temperature extremes

Hand Protection

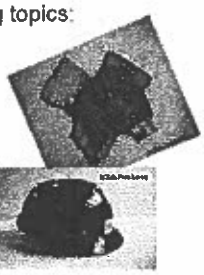
1910.138(b)

- Selection
  - Employers shall base the selection of the appropriate hand protection on an evaluation of the performance characteristics of the hand protection relative to the task(s) to be performed, conditions present, duration of use, and hazards identified

Summary

We have covered the following topics:

- General requirements
- PPE essentials
- Hazard assessments
- Basic hazard categories



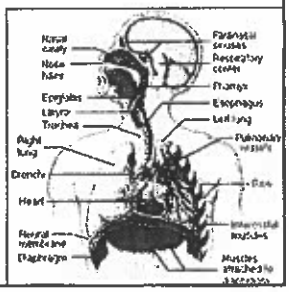
Thank You For Attending!

Final Questions?

Respiratory Protection Training

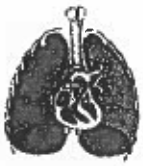
Natural Respiratory Protection

- Hair in the Nose
- Mucociliary Action
- Sneeze, Cough etc.



Why to Wear Respirators?

- Very fine dust particles and chemical vapor escape from natural respiratory protection
- Respirator protects lungs and other body systems from contaminants in the workplace



What if Respirators are not Used or not Used Properly?

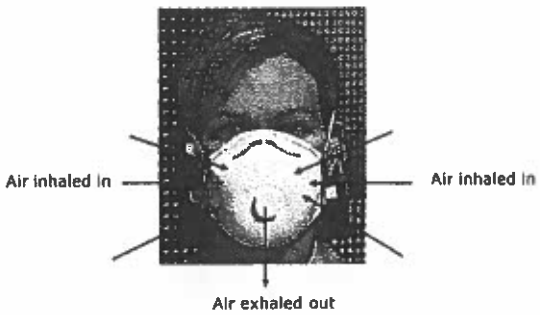
- Inhalation is the major route of entry for contaminants in the human body
- Excessive amount chemical vapors, dust, fume, smoke inhalation may put you at risk of Lung Disease
- Many chemicals can enter the human body through inhalation and also effect on body systems other than lungs
- Effects may be not appear immediately

Types of Respirators Used at Boro Kitchen Cabinets

- Particulate Filter Respirator

- Half Face Respirators with Organic Vapor Cartridge

How Do Particulate Filter Respirator Work?



Particulate Filter Respirator: Wear It Right

1. Place the respirator covering nose and mouth
2. Ensure metal nose clip on the top

3. Pull the top strap over head until it sits on the crown of the head above ear

4. Pull the bottom strap until it rests just below ears

5. Using both hands mold the metal nose clip around nose to achieve secure seal

For best fit, push the clip on lower fleshy part of the nose

Particulate Filter Respirator: Fit Checking

Check the seal of your respirator every time you wear one

Do not enter the contaminated area unless proper seal is achieved

Positive Pressure/Exhalation Check

- Place both hands completely on the respirator and ***exhale***
- The respirator should ***bulge*** slightly

Negative Pressure/Inhalation Check

- Place both hands completely on the respirator and ***inhale***
- The respirator should ***collapse*** slightly

If air leaks between face and face-seal of the respirator, re-position the respirator and adjust the nose clip

Limitations of Particulate Filter Respirator

- Dust masks will leak if they don't fit your face properly
- Dust masks don't filter out chemical vapors
- Dust masks are not adequate for heavy amounts of dust
- Dust masks may not be suitable for highly toxic dusts

How Do Half Face Respirators with Cartridge Work?

Air Purifying Respirators (Cartridge): Wear It Right

1. Place the dust mask covering nose and mouth
2. Bottom straps unfastened

3. Pull the top strap over head placing the head cradle on the crown of the head

4. Hook the bottom strap behind the neck

5. Adjust strap tension to achieve a secure fit

For best fit, ensure the bottom strap of the respirator is hooked and secured

Respirator Fit Checking

Check the seal of your respirator every time you wear one

Positive Pressure/Exhalation Check

- Place palm over the exhalation valve cover and ***exhale*** gently
- The respirator should ***bulge*** slightly

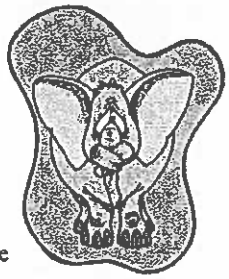
Negative Pressure/Inhalation Check

- Place palm over the inhalation valve/ cartridge and ***inhale*** gently
- The respirator should ***collapse*** slightly

Do not enter the contaminated area unless proper seal is achieved

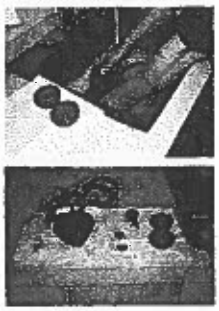
When to Change Respirator/Cartridge?

- If breathing becomes difficult
- If you notice an odor/smell of chemical while using respirators
- If the respirator is soiled from inside
- If the face piece or cartridge is damaged



Respirator Cleaning

- Respirators must be cleaned, inspected (e.g., face piece, straps and cartridges) and maintained regularly
- Cleaning is especially important in dusty areas
- Clean in warm soapy water
- Allow to dry thoroughly before storing or using



Respirator Storage

- **Don't store them unprotected in your work area**
- Store carefully so that face-piece is not deformed or bent out of shape
- Store respirators in a clean dry place
- Store respirators in a plastic bag with a zip lock

Beards and Respirators

- Beards are not allowed when using respirators
- Even just ***one*** day of beard growth diminishes the sealing of respirator

Correct Use of Respirators

- Properly position over nose and mouth at all times
- The top strap or head harness assembly should be positioned high on the back of the head
- The lower strap worn at the back of the neck should be below the ears
- The straps should be snug enough to keep the respirator from moving, but not overly tight
- Be sure nothing (beards, head coverings, etc) is between the skin of the face and respirator's sealing edge

✓ Respirators Dos

- Always wear respirator before entering contaminated work area
- Remove the respirator only after coming out of contaminated work area
- Ensure your respirator fits properly.
- Perform fit check every time you use respirator.
- Keep your respirators in the clean zip lock bag
- Replace damaged or contaminated respirator immediately
- Inform your supervisor if you feel resistance in breathing due to use of respirator

✘ Don'ts of Respirators

- Do not share your respirator with your colleagues
- Do not clean respirators with solvents
- Do not reuse disposable respirators
- Do not store respirator in the work area

Vapor, Mist or Dust…. Respirators are Must!

Questions? Queries? Concerns?

Quiz: Respiratory Protective Equipment

1. We have to use respirators because the human bodies do not have any natural respiratory protection.
a) True
b) False

2. Particulate filter respirators protect from dust and chemical vapors.
a) True
b) False

3 Respirator Fit Check is required each time before use.
a) True
b) False

Quiz: Respiratory Protective Equipment

4. Respirators should be stored in the work area for ease and availability.
a) True
b) False

5. Respirators should be cleaned with
a) Warm soapy water
b) Solvent

6. Why can't you wear a dust mask over a beard?
a) The beard will interfere with your breathing
b) It will cause the respirator to leak
c) It will cause skin irritation
d) It will look stupid

GLOBAL HARMONIZED SYSTEM

HAZARD COMMUNICATION 29 CFR 1910.1200

COMPLIANCE DATES

- Final Rule was Filed: March 20th 2012
- Final Rule Published: March 26th 2012
- Effective Date is: May 25th 2012
- Training to Employees by: December 1st 2013
- Complete Compliance: June 1st 2015

WHY A REVISION

- Unify the Globally Harmonized System of Classification and the Hazard Communication Hazard.
- Provide a coherent approach to classify chemicals.
- Make it safer for workers by making the information on the MSDS (Now SDS) more understandable.
- Reduce trade barrier resulting in productivity improvements for American Businesses.

MAJOR CHANGES

Provides specific criteria for classification of health and physical hazards, as well as classifications of mixtures.

Labels – "Right to Understand"

Chemical Manufacturers and importers will be required to provide a label that includes a harmonized signal word, pictogram, and hazard statement for each hazard class and category. Precautionary statements MUST also be provided.

REALITY

- SDS written by PHD's or Master Level personnel
- More than 1/3 workers read at 8th Grade Level
- Many SDS are 17-20 pages and are never read
- Newer formats are not shorter
- GHS/HAZCOM is a performance based standard

EE's need to understand the hazards & precautions needed to work safely with chemicals in their workplace – whether or not they speak english

CHANGES CONT…

Safety Data Sheets (SDS)

Will now have a specific 16 section format

- **Handling and storage precautions**
- **Exposure controls such as PELs and TLVs**
- **Toxicology information - body exposure and effects of exposure**
- **First Aid measures & emergency procedures for accidental releases.**

TRAINING

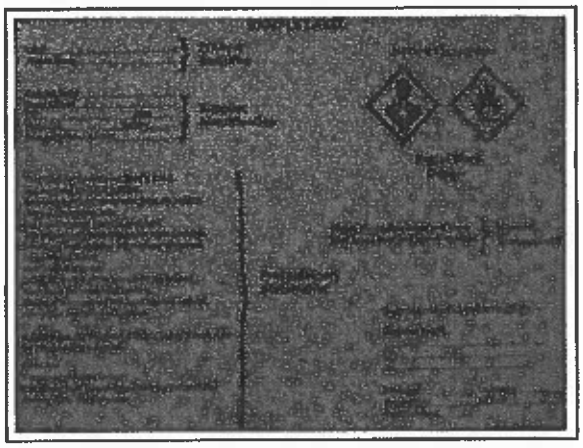
- Employers are required to train workers by December 1st 2013 on the new label elements and safety data sheets format to facilitate recognition and understanding.
- Proper training results in EE **comprehension** and **understanding**
- New definitions are different in metric than commonly used in U.S.

OSHA QUICK CARD

- The next four slides are reference provided by OSHA through their QUICK Card

LABELS

- New information required
- Pictograms required
- See Appendix C for guidance



HEALTH PICTOGRAMS

- Reproductive toxicity
- Carcinogen
- Mutagenicity
- Respiratory sensitizer
- Target organ toxicity
- Aspiration toxicity

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FLAME

- Flammables
- Pyrophorics
- Self-heating
- Emits flammable gas
- Self-heating
- Organic peroxide

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EXCLAMATION MARK

- Irritant(skin and eye)
- Skin sensitizer
- Acute toxicity(harmful)
- Narcotic effects
- Respiratory tract irritant
- Hazardous to ozone layer(non-mandatory)

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GAS CYLINDER

Gas Under Pressure

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CORROSION

- Skin corrosion/burns
- Eye damage
- Corrosive to metals

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EXPLODING BOMB

- Explosives
- Self-reactions
- Organic Peroxides

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FLAME OVER CIRCLE

Oxidizers

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ENVIRONMENT (NON-MANDATORY)

Aquatic Toxicity

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SKULL AND CROSSBONES

Acute Toxicity (fatal or toxic)

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SAFETY DATA SHEETS

- HCS allows any order of information
- GHS specifies order of information to be used
- Consistent with industry approaches in ANSI and ISO
- Improve comprehensibility and help with issues regarding accuracy of information
- New 16 section Safety Data Sheet(SDS) to replace MSDS

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SECTION 1 – IDENTIFICATION

- Product identifier
- Manufacturer or distributor name, address, telephone number
- Emergency telephone number
- Recommended use
- Restriction on use

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SECTION 2 – HAZARD IDENTIFICATION

- All chemical hazards
- Required label elements
- See appendix A for chemical hazards
- See appendix B for physical hazards

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

- Chemical ingredients
- Trade secrets

SECTION 4 – FIRST-AID MEASURES

- Important symptoms/effect
- Acute treatment
- Delayed treatment
- Required treatment

SECTION 5 – FIRE-FIGHTING MEASURES

- Lists suitable extinguishing techniques
- Equipment
- Chemical hazards from fire

SECTION 6 – ACCIDENTAL RELEASE MEASURES

- Lists emergency procedures
- Protective equipment
- Proper methods of containment and cleanup

SECTION 7 – HANDLING AND STORAGE

- Lists precautions for safe handling and storage
- List incompatibilities

SECTION 8 – EXPOSURE CONTROLS AND PERSONAL PROTECTION

- Lists OSHA's permissible exposure limits(PELS)
- Threshold limit values(TLVs)
- Appropriate engineering controls
- Personal protective equipment(PPE)

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SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

- Lists properties such as: UFL, LFL, BP, VP, flash point, density, specific gravity, explosive characteristics, etc.

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SECTION 10 – STABILITY AND REACTIVITY

- Lists chemical stability and possibility of hazardous reactions

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SECTION 11 – TOXICOLOGICAL INFORMATION

- Routes of exposure
- Related symptoms
- Acute and chronic effects
- Numerical measures of toxicity

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SECTION 12 – ECOLOGICAL INFORMATION(NON-MANDATORY)

- EPA input
- Local and State input

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SECTION 13 – DISPOSAL CONSIDERATIONS (NON-MANDATORY)

- EPA input
- Local and State input

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SECTION 14 – TRANSPORTATION INFORMATION (NON-MANDATORY)

- DOT input
- Local and State input

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SECTION 15 – REGULATORY INFORMATION (NON-MANDATORY)

- NRC, DEA, FAA, etc.

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SECTION 16 – OTHER INFORMATION

- Date of SDS preparation or last revision
- Any other useful information

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SDS EXPLANATION

- See Appendix D to 29 CFR 1910.1200 for a detailed description of SDS contents
- SDS's must be readily accessible to employees

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WHAT HAS NOT CHANGED?

- This is a revision of the existing hazard communication in that the framework, scope, and exemptions mainly remain the same.
- Some of the terminology has changed:
  - Hazard Determination will become "Hazard Classification"
  - Material Safety Data Sheet will become " Safety Data Sheet"
  - Nine Pictograms

IARC & NTP

- The existing Cancer classifications will remain in the Safety Data Sheet formats.

WHAT ARE THE BENEFITS?

- INCREASED SAFETY AND THE REDUCTION OF ACCIDENTS AND ILLNESSES.
- PREVENTION OF 43 FATALITIES AND 585 INJURY-ILLNESSES A YEAR.
- GLOBAL HAROMNY OF DIFFERENT COUNTRIES AND NATIONS.
- THE BIGGEST BENEFIT IS A MORE CLEAR CONCISE WAY TO HAVE ALL WORKERS EASILY IDENTIFY THE SAFETY DATA SHEETS AND HAZARDS.

Asbestos Awareness Training

Asbestos

- Naturally occurring silicate mineral
- Mined in Canada, South Africa, USA, Italy, Russia, Zimbabwe, and China
- Serpentine (white)
  - Chrysotile
- Amphibole (brown)
  - Amosite, crocidolite, tremolite, actinolite, anthophyllite

Asbestos - Unique Properties

- Does not burn
- Unaffected by acids and other chemicals
- Flexible
- Basically indestructible!

Asbestos Uses

- >3,000 different products
  - paper, floor tiles, ceiling tiles, roof shingles, stoves, filters, brake linings, gaskets, wallboards, stove mittens, insulation, fire doors
- Used in various ways for 4500 years!

Asbestos Weird Uses

- Clothing
- Cigarette filters
- Beer filters
- Snow scenes
- Hair dryers

Friable Fibers

- Friable - can be crumbled, pulverized, or crushed to powder with hand pressure alone
  - fluffy spray-applied materials
  - cementitious spray-on
  - packed powder asbestos pipe insulation
  - corrugated paper asbestos pipe insulation

Asbestos Fibers

- Asbestos breaks into fibers
- Aspect ratio (length/diameter): 3/1
- Length of fiber: >5u (microns)
- Fibers float for a long time

Non - Friable Fibers

- Non -Friable - Contains a bonding agent that locks in asbestos
  - transite ceiling tile
  - floor tiles
  - brake linings
  - transite pipe
  - transite wallboard

ASBESTOS CONTAINING MATERIAL (ACM)

- A material containing 1% or greater asbestos by volume.
- Building materials which fall into this category may include:
  - Vinyl Floor Tile/Mastic
  - Ceiling Tile
  - Insulation
  - Fire Proofing
  - Plasterboard
  - Pegboard
  - »Spackling Compound
  - »Decorative Plaster/Coatings
  - »Mortar/Cement
  - »Gaskets/Valve Packing
  - »Roofing Materials/Mastic
  - »Siding/Transite

Health History of Asbestos

- 1st Century A.D. - Rome - historian notes untimely deaths of slaves weaving asbestos fibers into cloth
- 1870 - Asbestos mining begins in Canada and Russia
- 1906 - UK - death of textile worker due to lung fibrosis
- 1918 - USA - life insurance companies stop selling insurance to asbestos workers
- 1924 - UK - Death of 33 year old asbestos worker due to fibrosis of the lung
- 1927 - scarring of lungs due to inhalation of asbestos fibers is named *Asbestosis*
- 1930 - UK - government study suggests that 50% of workers are developing asbestosis after $\geq$ 10 years of exposure

Health History of Asbestos

- 1931 - USA - study commissioned by Johns Mansville finds similar results, but findings are not released!
- 1935 - USA & UK -Link between asbestos and lung cancer is reported in medical journals.
- 1938 - Public Health Service recommends an exposure limit; never became law
- 1941 - WWII - Huge increase in asbestos usage
- 1946 - Post-war building boom. Asbestos used in 3000 ways - building materials, water systems, protective clothing, insulation, hair dryers, locomotives, airlines
- 1947 - 24 worldwide authorities link asbestos to cancer
- 1964 - Selikoff study finds high rates of lung cancer, asbestosis, and mesothelioma in asbestos workers

Health History of Asbestos

- 1964 - First warning labels appear on insulation cartons
- 1967 - South Africa - 33 cases of mesothelioma in asbestos miners
- 1968 - Johns Mansville puts warning labels on asbestos bags
- 1970 - OSHA PEL 5 f/cc
- 1973 - EPA bans asbestos fireproofing
- 1976 - OSHA PEL reduced to 2 f/cc
- 1980 - Johns Manville is defendant in 5000 claims brought by 9300 plaintiffs
- 1982 - Johns Manville files bankruptcy; 11,453 lawsuits filed

Health History of Asbestos

- 1984 - EPA Asbestos School Hazard Abatement Act is enacted
- 1985 - Local law 76 in NYC establishes asbestos abatement requirements
- 1986 - OSHA standards revised; new Asbestos abatement standard; PEL reduced to 0.2 f/cc
- 1987 - Asbestos Hazard emergency Response Act (AHERA) enacted for schools (K-12)
- 1987 - Code Rule 56 in NYS
- 1991 - NYC Local Law 76 becomes Title 15
- 1994 - OSHA standards revised; PEL reduced to 0.1 f/cc
- 1994 - Code Rule 56 revised

Route of Entry into Body

- Defense Mechanisms
  - nose hairs: 50-100 u (microns)
  - mucoso-ciliary escalator: 5-50u
  - macrophages (antibodies) in the lungs

Asbestos Diseases

- Asbestosis
- Lung Cancer
- Mesothelioma
- Gastrointestinal Cancers
- Pleural Plaques, Effusion, and Thickening

Asbestosis

- Asbestos fibers deposit deep in the lungs
- Scarring of the lungs; progressive
- Interferes with oxygen carbon dioxide exchange between blood and lungs
- Reduction in breathing ability
- Finger clubbing, wheezing, dry cough
- Latency period: 10-20 years

Lung Cancer

- Malignant, invasive growth or tumor in the lungs
- The most common cancer found in asbestos workers
- Latency period: 25-30 years
- Synergistic effect with smoking!

Mesothelioma

- Mostly in crocidolite workers
- Tumor s occurring in the pleural(chest) cavity or the peritoneal (abdominal) cavity linings
- Spreads into bones, lymph glands,etc.
- Organs are blocked or crushed from rest of body
- Latency period: 35-40 years
- FATAL!!!!!

Gastrointestinal Cancers

- Digestive system cancers due to ingestion
  - esophagus
  - stomach
  - colon
  - pancreas

Pleural Plaques, Effusion and Thickening

- Pleural Plaque
  - build-up of scar tissue on lining surrounding ribcage
- Pleural Effusion and Thickening
  - hardening of the lining surrounding the ribcage
  - causes pressure against the lungs
  - restricts breathing

Risk of Developing Diseases

- Concentration of asbestos
- Years of exposure
- Smoking status
- Fiber type and size
- Body's reaction to fiber
- Age of first exposure to asbestos

Asbestos Regulations

- EPA - Asbestos Hazard Emergency Response Act (AHERA), 40 CFR Part 763, Subpart E
- EPA - National Emissions Standards for Hazardous Air Pollutants (NESHAP), 40 CFR Part 61
- OSHA Asbestos in Construction, 1926.1101
- EPA - Worker Protection Rule
- New York State Industrial Code Rule 56
- Local Municipalities (e.g. NYC Title 15)

EPA Asbestos Regulations

- Four Major Areas
  - application and removal of ACM in buildings and structures
  - ACBM in schools
  - visible emissions of asbestos fibers during renovation, demolition, and disposal of asbestos materials
  - public sector workers not covered by OSHA

EPA - AHERA

- Effective December 1987
- Inspect all schools (K-12) for ACBM
  - inspect, sample and document ACBM
  - reinspect every three years
  - notify all occupants and parents of inspections
  - develop a management plan
  - recordkeeping

EPA - NESHAP

- Part of Clean Air Act amended November 1990
  - Defines ACM (>1% asbestos)
  - EPA 10 day notification prior to removal
  - ACM divided into friable and non-friable
  - ACM to be wet during disturbance activities
  - No visible emissions allowed during renovation, demolition, packaging, transportation or deposition
  - Labeling of asbestos waste
  - EPA approved landfills for ACM waste

EPA Worker Protection Rule

- For workers not covered by OSHA (public employees) or OSHA state programs

New York State Code Rule 56

- 9 licenses for Asbestos personnel
  - Workers (32 hours)
  - Site Supervisors (40 hours)
  - Project Monitor (40 hours)
  - Site Inspector (24 hours)
  - Management Planner (16 hours)
  - Project Designer (24 hours)
  - Operations & Maintenance for Trades Personnel (16hours)
  - Restricted Handler I for Allied Trades (16 hours)
  - Air Sampling Technician (16 hours)

New York State Code Rule 56

- Building surveys
  - review of building plans and records
  - sampling and analysis of suspect material
  - identification and assessment the condition of all ACM
  - estimate the amount of material
  - building location, owner's name and address of the owner's agent and the party performing the survey,and laboratory used

New York State Code Rule 56

- Notifications
  - Small Asbestos Projects
    - >25 linear ft.or 10 square feet
  - Large Asbestos Projects
    - ≥260 linear ft.or ≥160 square feet
- Emergency asbestos project notification
- Air and Bulk Sampling, Monitoring and Analysis

New York State Code Rule 56

- Equipment specifications
- Large asbestos project procedures
  - preparation, work procedures, abatement, clean up
- Abatement procedures
  - disturbance, handling, and removal
  - encapsulation
  - glove bags
  - tents

OSHA Asbestos in Construction

- Protection of Workers - 1926.1101
  - Demolition or salvage of structures
  - removal or encapsulation of ACM
  - construction, alteration , repair, maintenance, renovation of structures, substrates, or portions with ACM
  - installation of products with asbestos
  - asbestos spills or emergency clean-ups
  - transportation , disposal, storage, or containment of asbestos

Asbestos in Construction Requirements

- Exposure monitoring
- Establish Regulated Areas
- Notification of Occupants
- Medical surveillance
- Employee training
- Communication of hazards
- Housekeeping
- Engineering controls
- Personal protective equipment
- Work practices
- Recordkeeping

Important Numbers

- OSHA Limits
  - 0.1 fibers per cubic centimeter of air (f/cc) averaged over 8 hours
  - Excursion Limit
    - 1 f/cc averaged over 30 minutes
- Presumed Asbestos Containing Materials (PACM)
  - any building constructed ***before 1980***

FOUR WORK CLASSIFICATIONS

CLASS I: Removal of Thermal System Insulation or TSI (pipe insulation) and ACM surfacing material such as sprayed on fire proofing.

CLASS II: Removal of wall board (transite), floor tile, sheeting, roofing and siding singles, and mastic.

CLASS III: Operations and Maintenance (O&M) activities where TSI or ACM surfacing materials may be disturbed.

CLASS IV: Clean up or custodial activities during which employees may contact ACM such as the clean up of waste containing ACM.

REGULATED AREA

- An area to demarcate areas where airborne concentrations of asbestos exceed or there is reasonable possibility it may exceed the PEL (all Class I, II, and III work)
- Warning signs required
- Restricted access
- Respiratory protection
- Prohibited activities
- Competent person

Engineering Controls

- Specific Controls for Class I, II, & III jobs
  - Critical barriers
  - Negative pressure enclosures; HEPA filters
  - Work practices
  - HEPA vacuums, wet methods
  - 6 mil plastic, duct tape
  - glove bags
  - Prohibited activities

TABLE 1.—RESPIRATORY PROTECTION FOR ASBESTOS FIBERS

Airborne concentrations of asbestos or conditions of use	Required respirator
Not in excess of 5 f/cc (10 X PEL), or otherwise as required independent of exposure pursuant to paragraph (f)(1)(ii) of this section	Half-mask air-purifying respirator other than a disposable respirator, equipped with high efficiency filters
Not in excess of 10 f/cc (100 X PEL)	Full facepiece air-purifying respirator equipped with high efficiency filters.
	Any powered air-purifying respirator equipped with high efficiency filter or any supplied air respirator operated in continuous flow mode.
Not in excess of 100 f/cc (1,000 X PEL) or unknown concentration.	Full facepiece supplied air respirator operated in pressure demand mode.
Greater than 100 f/cc (1,000 X PEL) or unknown concentration.	Full facepiece supplied air respirator operated in pressure demand mode, equipped with an auxiliary positive pressure self-contained breathing apparatus

NOTE: a. Respirators assigned for high environmental concentrations may be used at lower concentrations, or when required respirator use is independent of concentration.
b. A high efficiency filter means a filter that is at least 99.97 percent efficient against mono-dispersed particles of 0.3 micrometers in diameter or larger.

Protective Clothing

- Coveralls, whole body clothing
- Head covers
- Gloves
- Foot coverings
- Laundering
- Disposal of contaminated clothing
- Inspection of clothing

Hygiene Facilities

- Decontamination areas
  - equipment room
  - shower area
  - clean change room
  - entry and exit procedures
- Lunch areas

NOTIFICATION

- Employers and building owners occupying structures ***constructed prior to 1980 must***:
  - Collect and analyze bulk samples or notify employees (tenants) of the location, amount and condition of PACM.
  - Have pre-bid documents and final contracts with asbestos notification clauses.
  - Start collecting objective data regarding building material composition and previous bulk sampling results.
  - Maintain records in a centralized file.

Building Owner Responsibilities

- Identify the quantity and condition of ACM
- Notify employees and contractors of the presence and location of ACM or PACM.
- Notify:
  - employers and workers bidding on the work
  - workers who will be performing activities adjacent to PACM
  - workers who will be performing activities in or adjacent to ACM.
  - tenants who will occupy the area
  - employees of the building owners

Building Owner Responsibilities

- Perform an AHERA building inspection
- If building is not inspected, building materials are to be considered as PACM, ***if installed prior to 1980***.
- **Post warning signs** at mechanical rooms where TSI and surface PACM is located.
- Signs not required when:
  - PACM or ACM is coated with an encapsulant and the manufacturer can demonstrate airborne fiber release below the PEL.
  - The concentration of ACM is less than one percent.
  - Material possesses labels already affixed to it.

Housekeeping

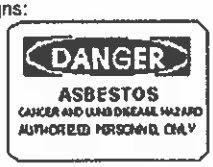
- Prohibited from sanding vinyl asbestos tile
- Must strip finishes from vinyl asbestos tile floors (PACM) using wet methods and low abrasion pads operating at speeds less than 300 RPM
- Cannot burnish or dry buff vinyl asbestos tile floors (PACM) unless there is sufficient finish applied to the tile's surface.
- Routinely maintain wax finishes in high traffic areas.

Housekeeping

- Use HEPA vacuums or wet methods when cleaning the outer surfaces of PACM pipe insulation.
- Housekeeping personnel may require the use of respiratory protection during this activity.
- Periodic personal air monitoring should be performed to determine airborne concentrations of asbestos fibers.

Communication of Hazards - Signs

- Warning signs must be used to demarcate regulated areas
- Wording for signs:



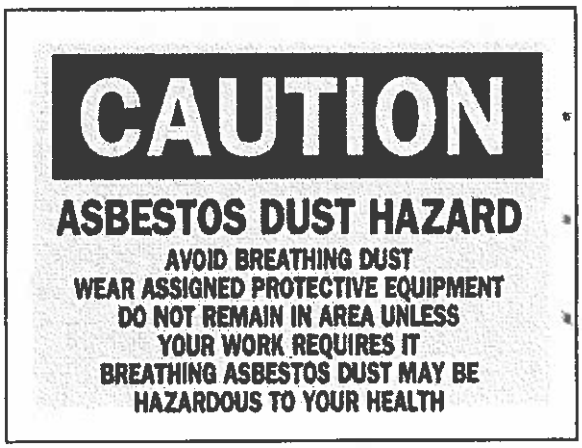
- Additional wording where applicable:

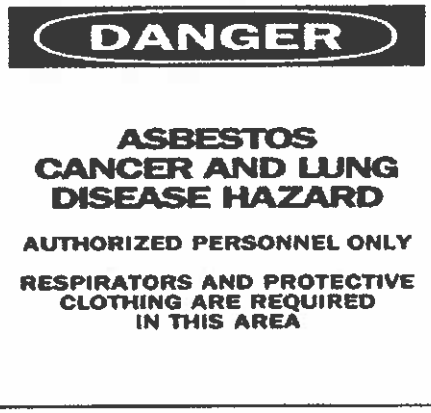
RESPIRATORS AND PROTECTIVE CLOTHING ARE REQUIRED IN THIS AREA

Communication of Hazards - Labels

Wording on labels:

Additionally, labels must contain a warning statement against breathing asbestos fibers

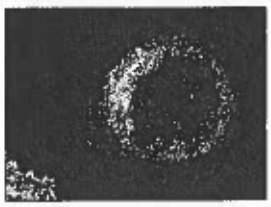




Safety Training Presentation

Bloodborne Pathogens 29 CFR 1910.1030

Revised OSHA Bloodborne Pathogens Compliance Directive (CPL2-2.44D)



Could You Contract a Disease at Work?

- Administering first aid?
- Cleaning the restrooms?
- Using a tool covered with dried blood?
- A co-worker sneezes on you?

Bloodborne Pathogens Goals

- Basics of Bloodborne Diseases
- Exposure Prevention
- Quiz

Bloodborne Pathogens

- Pathogenic microorganisms present in human blood that can lead to diseases
- Human Immunodeficiency Virus (HIV)
- Hepatitis B (HBV)
- Hepatitis C (HCV)

Human Immunodeficiency Virus (HIV)

- HIV is the virus that leads to AIDS
- HIV depletes the immune system
- HIV does not survive well outside the body
- Saliva, tears, sweat

Hepatitis B (HBV)

- 1—1.25 million Americans are chronically infected
- Symptoms include: jaundice, fatigue, abdominal pain, loss of appetite, intermittent nausea, vomiting
- May lead to chronic liver disease, liver cancer, and death
- Vaccination available since 1982
- HBV can survive for at least one week in dried blood

Hepatitis C (HCV)

- Hepatitis C is the most common chronic bloodborne infection in the United States
- Symptoms include: jaundice, fatigue, abdominal pain, loss of appetite, intermittent nausea, vomiting
- May lead to chronic liver disease and death

Potentially Infectious Bodily Fluids

- Blood
- Saliva, vomit, urine
- Semen or vaginal secretions
- Skin, tissue, cell cultures
- Other body fluids

Potential Transmission

- Contact with another person's blood or bodily fluid that may contain blood
- Mucous membranes: eyes, mouth, nose
- Non-intact skin
- Contaminated sharps/needles

Potential Exposure

- Industrial accident
- Administering first aid
- Postaccident cleanup
- Janitorial or maintenance work

Bloodborne Pathogens Goals

- Basics of Bloodborne Diseases
- Exposure Prevention
- Quiz

Exposure Control Plan (ECP)

- Potential exposure determination
- Safe work practices
- Decontaminating equipment
- Selecting and using PPE
- Handling biowaste
- Labels and signs
- Training requirements
- Recordkeeping requirements

Who Must be Trained

- All employees with occupational exposure to blood or other potentially infectious material (OPIM)
- Employees who are trained in first aid and CPR

Universal Precautions

- Treat all blood and bodily fluids as if they are contaminated
- Proper cleanup and decontamination

Protective Equipment

- Bleeding control—latex gloves
- Spurting blood—latex gloves, protective clothing (smocks or aprons), respiratory mask, eye/face protection (goggles, glasses, or face shield)
- Postaccident cleanup—latex gloves
- Janitorial work—latex gloves

Decontamination

- Wear protective gloves
- Disinfectant/cleaner provided in bodily fluid disposal kit
- Solution of 1/4 cup bleach per gallon of water
- Properly dispose of contaminated PPE, towels, rags

Safe Work Practices

- Remove contaminated PPE or clothing as soon as possible
- Clean and disinfect contaminated equipment and work surfaces
- Thoroughly wash up immediately after exposure
- Properly dispose of contaminated items

Regulated Medical Waste

- Liquid or semiliquid blood or OPIM (other potentially infectious materials)
- Contaminated items that would release blood or OPIM when compressed
- Contaminated sharps
- Pathological and microbiological waste containing blood or OPIM

Labels and Signs

- Labels must include the universal biohazard symbol, and the term "Biohazard" must be attached to:
  - containers of regulated biohazard waste
  - refrigerators or freezers containing blood or OPIM
  - containers used to store, transport, or ship blood or OPIM

Hepatitis B Vaccination

- Strongly endorsed by medical communities
- Shown to be safe for infants, children, and adults
- Offered to all potentially exposed employees
- Provided at no cost to employees
- Declination form

Exposure Incident

- A specific incident of contact with potentially infectious bodily fluid
- If there are no infiltrations of mucous membranes or open skin surfaces, it is not considered an occupational exposure
- Report all accidents involving blood or bodily fluids
- Postexposure medical evaluations are offered

Postexposure Evaluation

- Confidential medical evaluation
- Document route of exposure
- Identify source individual
- Test source individuals blood (with individuals consent)
- Provide results to exposed employee

Recordkeeping

Medical records include:

- Hepatitis B vaccination status
- Postexposure evaluation and follow-up results

Training records include:

- Training dates
- Contents of the training
- Name and qualifications of trainer

Bloodborne Pathogens Goals

- Basics of Bloodborne Diseases
- Exposure Prevention
- Quiz

Summary

- Universal precautions
- PPE and safe work practices
- Decontamination
- Exposure incident

Quiz

1. Name two of the most common bloodborne pathogens:

   _____

2. After exposure to potentially infected bodily fluids, you should immediately:

   _____

3. HIV and HBV can be transmitted when infected bodily fluids directly contact the eyes or nonintact skin.

   True or False

4. The risk of exposure to bloodborne pathogens is only possible when blood is present in the bodily fluids.

   True or False

Quiz (cont.)

6. HIV stays alive in dried blood. True or False
7. Name one way you might be exposed to human blood at your workplace: _____
8. What minimum PPE should be worn when controlling normal bleeding? _____
9. Besides the disinfectant/cleaner provided in first aid kits, what other solutions can be used to decontaminate equipment or surfaces?
10. How do you dispose of absorbed bodily fluids?

Quiz Answers

1. HIV and Hepatitis B (HBV).
2. You should immediately wash any exposed areas.
3. True. Infected bodily fluids need to directly contact mucous membranes or nonintact skin.
4. True. Although many bodily fluids may be infectious, they must contain blood to carry bloodborne pathogens.
5. Treating all bodily fluids as infected is known as Universal Precautions.

Quiz Answers (cont.)

6. False. HIV dies almost immediately. HBV can live as long as one week.
7. Administering first aid, decontaminating equipment, doing janitorial work, etc.
8. Gloves must be worn, at a minimum, when controlling normal bleeding. When controlling spurting blood, additional PPE must be worn including: a face shield, an apron, shoe covers, etc.
9. A solution of bleach and water.
10. Absorbed bodily fluids from a general industry facility can usually be double bagged and discarded with the normal garbage.

PPE / Respirator / HAZCOM / Asbestos & BPP

Training Attendance Roster

Client: Westchester County	Date: 4/24/23
Course Title:	Duration of Session/Time:
Training Location: Westchester County Center	Instructor: Jay Maditati

	Name of Attendee (Print)	Signature	Email	OK (Initial)
1	Louis DiCago	[signature]		
2	George Antalosky Jr	[signature]		
3	George Antalosky	[signature]		
4	Frank Lamarie	[signature]		
5	Vincent Mazzotti	[signature]		
6	Xavier Warren	[signature]		
7	Glenn M. Pecone	[signature]		
8	Vincenzo Ricchiuti	[signature]		
9	Alvaro Ramirez	[signature]		
10	LUDWIG MALEHAR	[signature]		
11	JEFF GROSSMAN	[signature]		
12	JOHN PONCE	[signature]		
13	Jim Godispoti	[signature]		
14	Nick Spano	[signature]		
15	Russell Argila	[signature]		
16	LARRY McMAHON	[signature]		
17	Andriy Synecky	[signature]