Toxics In Construction
Instructor’s Guide

PROTECT
PROACTIVE RESPONSE TO OCCUPATIONAL TOXIC EXPOSURES IN THE CONSTRUCTION TRADES

State Building and Construction Trades Council of California
and the
Labor Occupational Health Program,
University of California, Berkeley
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Overview and Course Outline

The goal of this course is to give workers the information they need to address toxics in construction. The information in this course focuses on toxics substances and ways to prevent or reduce exposure in construction. The course also introduces the OSHA’s Globally Harmonized System of Classification and Labeling of Chemicals (GHS). The course is designed as a model worker training program based on best practices that are feasible for the construction industry. The course is intended to be presented to rank-and-file construction workers at the job site or union and/or students in apprenticeship instruction.

This Instructor’s Guide, the curriculum, and the accompanying PowerPoint slide and course materials provide an overview of toxics in the construction industry and ways to prevent or reduce exposure.

The course emphasizes participatory training methods. It includes class discussion, interactive group activities, games and short videos. These activities encourage participants to relate the material they are learning to their own jobs and experiences.

Specialized technical knowledge is not necessary to teach this course. With some preparation, foremen, union staff, apprenticeship instructors and others can present the material. The “training of trainers” (TOT) classes we offer will allow trainers from a variety of backgrounds to become familiar with the course and later present it to workers.

The course is flexible and can be presented in different ways. Feel free to adapt it to your own situation. Most commonly, trainers who have completed the TOT class will give one 20-40 minute session at the job site or apprentice classroom on a section of the course they think is most relevant at the time. Another option is to present the entire course in one 2-3 hour class.

Following is a list of the six sessions in the curriculum:

1. What Makes a Toxic Substance Likely to Cause Harm?
2. Health Hazards.
3. OSHA Exposure Limits.
4. How Toxic Substances Can Be Controlled.
5. Globally Harmonized System of Classification and Labeling of Chemicals (GHS).
6. The Hazards of Silica, Asbestos and Lead Dust.
Preparation and Materials Needed

This course has a curriculum that provides all the information the instructor needs to teach the course. Questions posed by the instructor to the class appear in italic, the answer follows each question. Each slide in the PPT is also identified in the curriculum. Additional background information is provided for the instructor in a box throughout the curriculum. Review the entire curriculum, PowerPoint, and handouts for the session you want to teach, before you do your training and decide what information is important for you to share with your audience.

Prior to the course, make sure you have any handouts, equipment, and materials necessary to teach the course.

For the course, you will need:

- Curriculum on Toxics in Construction (provided in the course binder and DVD)
- PowerPoint presentation (DVD, located in the pocket of your course binder)
- Computer and LCD projector for the PowerPoint presentation
- Extension cord for equipment
- Flipchart, paper and flipchart markers
- Outline of the upper torso (head to top of legs) of a human body on a large sheet of flipchart paper. An illustration of this appears in the curriculum
- Different colored dot stickers
- Factsheets for the topic(s) you are teaching (enough for all participants)
- Safety Data Sheets (enough for all participants), sample SDSs provided in course binder
- Safety Data Sheet Worksheet (enough for all participants)
- Worksafe BC video: How Silica Harms Your Lungs (course DVD)
- SBCTC video: Eliminate the Hazard (course DVD)
- Candy or other items for game prizes
- Workshop evaluation form (enough for all participants)

Specific instructions for conducting the class activities and game are described in the curriculum.

Factsheets

Factsheets are located in the course binder by topic. They are produced by LOHP, Cal/OSHA, federal OSHA, The Center for Construction Research and Training (CPWR), and other organizations. You can duplicate them as needed.
SESSION ONE SUMMARY

What Makes a Toxic Substance Likely to Cause Harm?

Specific instructions for conducting the activities in this session appear in the curriculum.

Objective

After this session, participants will be able to explain what makes a toxic substance likely to cause harm.

The class learns six factors that determine if a substance is hazardous, including:

• Toxicity
• Route of exposure
• Physical forms
• Dose and duration
• Reaction and interaction
• Individual characteristics

You Need:

• Toxics In Construction curriculum
• Toxics In Construction PowerPoint presentation
• Computer and projector for the presentation
• Handout: Chemical Hazards (see course binder, tab 4)
• Additional factsheets are located in the course binder, tab 4.

Teaching Methods

Interactive lecture/discussion and small group activity.
SESSION TWO SUMMARY

Health Hazards

Specific instructions for conducting the activities in this session appear in the curriculum.

Objective

After this session, participants will be able to discuss how toxic substances can affect your health.

The class learns about:

- acute and chronic health effect
- latency period
- sensitizers
- simple asphyxiants
- corrosives
- cancer, mutagens, and teratogens

You Need:

- PowerPoint presentation
- Computer and projector for the presentation
- Extension cord
- Additional factsheets are located in the course binder, tab 4.

Teaching Methods

Interactive lecture/discussion.
SESSION THREE SUMMARY

OSHA Exposure Limits

Specific instructions for conducting the activities in this session appear in the curriculum.

Objective

After this session, participants will be able to discuss OSHA exposure limits.

The class learns about terms used to define OSHA and Cal/OSHA standards on toxic substances in the workplace.

You Need:

- PowerPoint presentation
- Computer and projector for the presentation
- Handout: Health Hazards in Construction, Units of Concentration, (see the course binder, tab 4).

Teaching Methods

Interactive lecture/discussion.
SESSION FOUR SUMMARY

How Toxic Substances Can Be Controlled

Specific instructions for conducting the activities in this session appear in the curriculum.

Objective

After this session, participants will be able to review the hierarchy of controls and identify ways to eliminate toxic substances in construction.

The class learns about the hierarchy of controls and identifies specific ways to control toxic substances at the construction site. Students play the Pyramid Game.

You Need:

- PowerPoint presentation
- Computer and projector for the presentation
- Pyramid Game prizes
- Handout, *Controlling Chemical Hazards*, (see course binder, tab 5)
- Additional factsheets are located in the course binder, tab 5.

Teaching Methods

Interactive lecture/discussion and the Pyramid Game.
SESSION FIVE SUMMARY

Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Specific instructions for conducting the activities in this session appear in the curriculum.

Objective

After this session, participants will be able to list the key components of the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

The class learns the key components of the GHS. Small groups review a sample SDS, answer questions on a worksheet, identify target organs on a flipchart, and report back to the class.

You Need:

- PowerPoint presentation
- Computer and projector for the presentation
- Upper torso drawn on a flipchart
- Different colored dot stickers
- Safety Data Sheets (see course binder, tab 7)
- Safety Data Worksheet (see course binder, tab 7)
- Handouts: OSHA Factsheet: Hazard Communication Standard Final Rule,
- 3 OSHA Quick Cards for HCS: Labels, Pictograms, and SDSs, (see course binder, tab 6)

Teaching Methods

Interactive lecture/discussion and SDS small group activity.
SESSION SIX SUMMARY

The Hazards of Silica, Asbestos and Lead Dust

Specific instructions for conducting the activities in this session appear in the curriculum.

Objective

*After this session, participants will be able to explain the hazards of working with silica, asbestos and lead dust.*

The class learns about three toxic dusts, the health effects, OSHA standard, and ways to eliminate or control the hazards.

You Need:

- PowerPoint presentation
- Computer and projector for the presentation
- Handouts: Look in your course binder and select the factsheets you would like to use in your presentation. Factsheets are located by title in your binder under the following tabs:
  - Silica (see course binder, tab 8)
  - Asbestos (see course binder, tab 9)
  - Lead (see course binder, tab 10)
- Worksafe BC video: *How Silica Harms Your Lungs* (see course DVD)
- SBCTC video: *Eliminate the Hazard* (see course DVD)

Teaching Methods

Interactive lecture/discussion and videos.