

ASBESTOS

ST0408448

**DONNA HICKS
INDUSTRIAL HYGIENE CONTACT TRAINING
OCTOBER, 1989**

PLAINTIFF'S EXHIBIT

DOW-2472

ST0408448

OBJECTIVES:

- * Describe the primary route of exposure to asbestos
- * List three of the most common types of asbestos found in Texas Operations
- * Describe how suspect materials can be identified as asbestos
- * Indicate what type approval is required when using asbestos materials when a suitable alternate is known
- * Identify the protective equipment required for work with asbestos materials
- * Name the most important resource document when dealing with asbestos and list five important sections for plant contacts
- * List the two government agencies that regulate asbestos
- * Describe how personnel are monitored for asbestos exposure
- * Indicate which employees must be trained
- * Explain the importance of a pre-job meeting before an asbestos removal job

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*Asbestos
and
Asbestos
Removal
Job*

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Plant Contact Training - Asbestos

WHAT IS ASBESTOS?

A group of mineral silicates that occurs in fibrous form

THREE MOST COMMON TYPES

- Chrysotile - "White" asbestos (90 - 95% of asbestos in use)
Crocidolite - "Blue" asbestos
Amosite - "Brown" asbestos

see overleaf for pronunciation

APPLICABLE REGULATIONS

- OSHA - Personnel
EPA - Air Emissions
DOT - Transporting of asbestos materials

All Dow is required EXPOSURE GUIDELINES

work OSHA 29 CFR 1910.1001 & OSHA 29 CFR 1926.58
except

make sure you

- Permissible Exposure Limit - .2 fibers/cc 8-hr TWA
Action Level - .1 fibers/cc 8-hr TWA
Short-Term Exposure Limit - 1 fiber/cc 30 min.

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Plant Contact Training - Asbestos

HEALTH EFFECTS

Primary Route of Exposure - Inhalation

Common Asbestos Diseases (Chronic):

- * Asbestosis - Lung Scarring, Shortness of Breath, High Risk of Lung Cancer, Death by Heart Failure
- * Lung Cancer - Smoking and Asbestos Exposure Increase Risk:
 - 1 pack/day - 50 times
 - 2-3 packs/day - 90 times
- * Mesothelioma - Cancer of the lining of the lung or abdominal cavity

but a few people call "plague" patches.

MEDICAL SURVEILLANCE REQUIRED:

1. When exposure is at or above .1 fibers/cc as an 8-hr TWA for more than 30 days/year
2. Prior to assignment when employee is required to wear negative pressure respirator
- B
3. Annually

COMPONENTS:

1. Medical and work history
2. Respiratory history
3. Physical examination
4. Spirogram
5. Chest X-Ray (As specified by age)

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~~Asbestos~~
~~Get a Handbook~~ OK

Plant Contact Training - Asbestos

WHAT TYPES OF ASBESTOS ARE FOUND IN TEXAS OPERATIONS?

- * Insulation
- * Transite (buildings & cooling towers)
- * Fireproofing materials
- * Packing Materials
- * Roofing Shingles
- * Floor tiles

85 Honda
men - asbestos

and GASKETS

IMPORTANT MESSAGE!!!

MAJOR MANAGER APPROVAL IS REQUIRED WHEN USING ASBESTOS MATERIALS IF A SUITABLE ALTERNATE IS KNOWN.

TEXAS OPERATIONS ASBESTOS HANDBOOK

Five most important topics for contact:

1. Asbestos Handling Requirement Flowsheet
2. Asbestos Maintenance Program
3. Minimum Requirements for various jobs
4. Asbestos Safety Checklist
5. Asbestos Audit Checklist

REMEMBER: The Asbestos Handbook is the most important resource document available!!!!!!

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*Hands-On people
+
Paper people*

Plant Contact Training - Asbestos

TRAINING REQUIREMENTS

Who Must Be Trained?

- * All employees who handle asbestos must be trained before initial assignment and annually thereafter. (OSHA standard requirements) *2 hr*
- * "Competent Person" training is required for the contractor doing large-scale removal projects. *8 hr + 3 day*

ATM

*Competent
Person license
#4801078
#10408453*

What Training Resources Are Available?

- * Texas Operations Asbestos Handbook
- * Video tapes VT87-1129B and VT87-1129A
- * Asbestos Training Modules

ASBESTOS AWARENESS HANDLING REQUIREMENTS FLOWSHEET

- KEY POINT 1 - Lab Analysis is required to identify suspect materials such as asbestos. Visual determination is not accurate. Phase contrast microscopy, transmission electron microscopy or X-ray diffraction are used.
- KEY POINT 2 - If asbestos must be removed or repaired, contact Insulation Services.
- KEY POINT 3 - Environmental Services must be contacted for asbestos demolition or renovation work. The state must be notified 25 days prior to work.
- KEY POINT 4 - A pre-job meeting must be held with the Safety Director, Owner Representative, Contractor Competent Person, Industrial Hygiene and Dow or contractor personnel doing the job. (Although jobs may seem to be the same, conditions will probably be different. A pre-job meeting should be held each time.)
- KEY POINT 5 - An asbestos maintenance program must be established when asbestos materials are found in the block.

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ATMP *bag? words in Air*

Plant Contact Training - Asbestos

"AMP"

MAINTENANCE PROGRAM MINIMUM REQUIREMENTS

- * Inspection to identify asbestos-containing materials
- * Development and maintenance of an asbestos inventory
- * Maintenance of all labeling and/or signs
- * Prompt clean-up of any asbestos contamination
- * Semi-annual inspection of asbestos-containing materials
- * Written job procedures for work
- * Training
- * Documentation of compliance

(Operators in the block should know or be able to find the inventory in the event of an off-hours emergency or maintenance.)

PROTECTIVE EQUIPMENT

MINIMUM REQUIREMENTS:

- Respiratory Protection: A half-face, air-purifying respirator with high efficiency particulate air filters (HEPA)
- Protective Clothing: Whole-body clothing - suit with hood, boots or booties

EXPOSURE MONITORING

- * 8-Hour Time-weighted Average
- * Short-term

(The pump and filter must be worn by the worker at all times. The filter is placed on the collar in the breathing zone facing down.)

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*Asbestos
Inventory
Should be in Manual*

*little
stick on
tape
but finding
or 15 ft sign*

*Magenta
Cartridge*

*CPHue
microscope
collar filter
slope*

194884012 210708723

Plant Contact Training - Asbestos

11:30
6:30

ASBESTOS HANDBOOK MINIMUM REQUIREMENTS

- * Gaskets and Packing:
 - Storage
 - Removal
 - Cutting
- * Glove Bags
- * Small-scale short-duration jobs
- * Large-scale jobs *Procedures*

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ASBESTOS GASKET PROCEDURES

INSTALLATION AND REMOVAL - GASKETS NOT STUCK

- * Protective Equipment: None
- * Special Procedures: None
- * Proper Waste Disposal Required

*Immediate water & detergent
w/ it.*

TECHNIQUES

- * Gasket Removers (Solvents)
- * Asbestos Crew (Shutdowns) *stuck*

REMOVAL - GASKETS STUCK

Minimum Requirements:

- * Glove Bags or
- * Small-Scale, Short-duration job procedures

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Don't have to have
Suit

- if more than
1 - Some bag
becomes a large
fib

LARGE-SCALE JOBS.

- DDH
-
- 9/89

SECTION XII

ASBESTOS SAFETY CHECKLIST

JOB DESCRIPTION _____ DATE _____
 LOCATION _____

PRE-JOB REQUIREMENTS:

1. Environmental Services contacted (ph 409 238-2414)? Yes ___ No ___
 Name: _____ Date: _____
 Dow Project Supervisor: _____
2. Safe Work Procedure Written? Yes ___ No ___ Date: _____
3. Project Review Held?
 Industrial Hygienist: _____ Date: _____
 Safety Director: _____ Date: _____
 Competent Person: _____ Date: _____
 Craftsmen: _____ Date: _____
 Safe Work Procedure Approved: Yes ___ No ___
 Hygiene Monitoring Required: Yes ___ No ___
 Audit Required: Yes ___ No ___
 Auditor Assigned _____ Phone: _____

JOB REQUIREMENTS:

1. Safe Work Procedure Reviewed: Yes ___ No ___
2. Regulated Area Established and Signs Posted: Yes ___ No ___
 Negative pressure enclosure established: Yes ___ No ___
 Decontamination Area Established: Yes ___ No ___
3. Personnel Trained: Yes ___ No ___
4. Block Personnel Informed: Yes ___ No ___
5. Auditor Notified: Yes ___ No ___
6. Amended Water Available To Control Dust: Yes ___ No ___
7. Has packaging of asbestos debris been decided upon? Yes ___ No ___
8. Has Disposal Of Asbestos Debris Been Arranged: Yes ___ No ___
9. Arrangements For Clean-up Made: Yes ___ No ___
10. Safety Equipment Required:
 ___ Safety equipment required by the location
 ___ Approved respirator ___ current fit test ___ clean shaven
 ___ Disposable coveralls with hood and boots ___ gloves
11. Arrangements for laundering work clothes Yes ___ No ___
12. Vacuum cleaners and local exhaust ventilation systems equipped with HEPA filters Yes ___ No ___
 Note: Work may commence when Safe Work Permit issued.
13. Final cleanup complete Yes ___ No ___
14. Job complete: Dow Project Supervisor: _____ Date: _____
15. Send completed checklist to Industrial Hygiene Services 8-101.

SECTION XIII

ASBESTOS ABATEMENT
AUDIT CHECKLIST

5. Work Practices:

Material Worked Wet	YES	NO
Material Kept Wet Until Bagged & Sealed	YES	NO
Material Too Wet, Mushy	YES	NO
Insulation Broken Intentionally	YES	NO
Material Dropped to Ground	YES	NO
Removed Material Promptly Bagged	YES	NO
Bags Torn or Left Open	YES	NO
Visible Emissions	YES	NO
HEPA Filtered Vacuum Used	YES	NO
Smoking, Eating, Drinking, Chewing, Cosmetics	YES	NO
Personnel Decontaminated Each Departure	YES	NO
Shower Used by All Personnel	YES	NO
Exposed Asbestos at Terminations Sealed with Encapsulant	YES	NO
Work Area Cleaned After Completion	YES	NO

6. Personnel Monitoring

Initial Monitoring	Contractor	Dow	YES	NO
Daily Monitoring			YES	NO
Area Monitoring			YES	NO

COMMENTS:

SIGNATURE:

_____ Industrial Hygienist/Safety Director

cc: Project Supervisor
Area Owner
Safety Director
Industrial Hygienist
Manager, Industrial Hygiene Services

Revised 10/20/88
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SECTION XIII

ASBESTOS ABATEMENT
AUDIT CHECKLIST

Job Description _____ Date: _____

Location: _____ Removal by: _____
Company Name

1. Regulated Area Established and Signs Posted: YES ___ NO ___
Polyethylene or other coverings over floor &
objects: YES ___ NO ___
2. Decontamination Area Established: YES ___ NO ___
Contiguous _____ Remote: _____ Location: _____
Entry to work area only through decontamination
area YES ___ NO ___
3. Negative Pressure Enclosure Established: YES ___ NO ___
Floor Covered YES ___ NO ___
Walls Covered YES ___ NO ___
Area Ventilation OFF YES ___ NO ___
All Edges Sealed YES ___ NO ___
Penetrations Around Pipes and Conduit Sealed YES ___ NO ___
Entry Curtains YES ___ NO ___
Negative Pressure Achieved (-0.02" water) YES ___ NO ___
4. Protective Equipment:
Disposable Coveralls with Hood and Boots YES ___ NO ___
Coveralls Unzipped, Torn, or Cut YES ___ NO ___
Coveralls Used One Time YES ___ NO ___
Approved Respirator YES ___ NO ___
Type Used
Clean Shaven YES ___ NO ___
Straps Under Hood YES ___ NO ___
Safety Equipment Required by Location:
Hard Hat YES ___ NO ___
Safety Glasses YES ___ NO ___
Goggles YES ___ NO ___

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ASBESTOS ABATEMENT
AUDIT CHECKLIST

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Work Area Cleaned After Completion	YES	NO

6. Personnel Monitoring

Initial Monitoring	Contractor	Dow	YES	NO
Daily Monitoring			YES	NO
Area Monitoring			YES	NO

COMMENTS: _____

SIGNATURE: _____

Industrial Hygienist/Safety Director

cc: Project Supervisor
Area Owner
Safety Director
Industrial Hygienist
Manager, Industrial Hygiene Services

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db

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Garlok Gaskets
fits all, but ---

~~get a Handbook~~

Have
one

Science

no Gaskets
in 2 years.
Chlorinated rubbers
few years ago replaced
all - now going back to
Garlok going back to
a manufacturing ban

ASBESTOS AWARENESS HANDLING REQUIREMENTS

OWNER RESPONSIBILITY*

INSPECT ALL AREAS
↓
TAKE SAMPLES OF
SUSPECT MATERIALS
AND SEND TO
ANALYTICAL SERVICES
409-238-1199

① ↗

ASBESTOS CONTENT
>0.1%

DOCUMENT RESULTS
AND RETAIN RECORDS

TRAIN PERSONNEL ON
ASBESTOS SECTION III TOAH

FURTHER INSPECT FOR MATERIAL
CONDITION AND VISUAL FIBER RELEASE

MATERIAL IN POOR CONDITION OR
VISUAL FIBER RELEASE

MATERIAL IN GOOD CONDITION,
NO FIBER RELEASE

DOCUMENT, LABEL AND SET UP
MAINTENANCE PROGRAM TOAH SECTION VI

ASBESTOS CONTENT
<0.1%

DOCUMENT RESULTS
AND RETAIN RECORDS

NO FURTHER ACTION
REQUIRED

EVALUATE AND DECIDE FOR
REMOVAL AND/OR REPAIR

CONTACT INSULATION SERVICES
409-238-7036 OR INDUSTRIAL
HYGIENE SERVICES 409-238-1281
FOR ASSISTANCE

② ↗

MAJOR REMOVAL/DEMOLITION OR RENOVATION REQUIRED

NAME PROJECT SUPERVISOR, SCOPE, JOB, AND (IF REQUIRED)
PREPARE NOTIFICATION LETTER TOAH SECTION VII

PROJECT SUPERVISOR SHALL:
CONTACT ENVIRONMENTAL SERVICES 409-238-2414
25 DAYS BEFORE WORK TO BEGIN

③ ↗

CONTACT INSULATION SERVICES TO BID JOB OR
ARRANGE FOR DOW PERSONNEL

WHEN CONTRACT AWARDED, CONTACT ENVIRONMENTAL
SERVICES 409-238-2414 AND IDENTIFY SUCCESSFUL BIDDER

HAVE PRE-JOB REVIEW WITH SAFETY DIRECTOR,
OWNER REPRESENTATIVE, CONTRACTOR COMPETENT
PERSON, INDUSTRIAL HYGIENE, DOW OR CONTRACTOR
PERSONNEL TO DO JOB

④ ↗

DECIDE ON JOB PROCEDURES AND ARRANGE AUDIT AND
MONITORING. COMPLETE ASBESTOS SAFETY CHECKLIST.

OWNER SHALL:
DOCUMENT AND RETAIN RECORD IF ALL ASBESTOS REMOVED.

DOCUMENT AND SET UP MAINTENANCE PROGRAM IF ANY
ASBESTOS REMAINING

MINOR REMOVAL AND/OR
REPAIR REQUIRED

REVIEW SECTION X
TOAH TO SEE IF JOB
FALLS INTO GLOVE BAG
OR SMALL-SCALE, SHORT-
DURATION ACTIVITY. IF
SO USE CORRECT ASBESTOS
ABATEMENT MINIMUM
REQUIREMENTS

DOCUMENT REMAINING
ASBESTOS & SET-UP
MAINTENANCE PROGRAM

⑤ ↗

*REFERENCES

1. TEXAS OPERATIONS
SAFETY STANDARD T12
2. TEXAS OPERATIONS
ASBESTOS HANDBOOK
(TOAH)
3. EPA-560 PURPLE BOOK
4. OSHA STANDARDS 29CFR
1910.1001 & 29CFR
1926.58
5. ENVIRONMENTAL
STANDARD ES-314

ST0408462

INDUSTRIAL HYGIENE CONTACT TRAINING
ASBESTOS - FEBRUARY 27-28, 1990

When you go back to your department you should:

1. Ascertain that all asbestos containing materials (>0.1% by weight) are properly labeled or that proper area signs have been posted (see Asbestos Handbook page 21);
2. Check the department Asbestos Maintenance Program for completeness and accuracy and make sure that a copy is placed in the department Industrial Hygiene Manual (see Asbestos Handbook page 18);
3. Make sure that all employees who handle asbestos are properly trained (see Asbestos Handbook page 3);
4. Make sure that proper disposal methods are being used for all asbestos containing materials (see Asbestos Handbook page 23);
5. Become very familiar with "Asbestos Awareness Handling Requirements" (Asbestos Handbook page 7) which lists phone numbers for all personnel resources required for identification, handling and disposal of asbestos;
6. Learn the minimum requirements for handling asbestos and assure that projects in your department meet these requirements (see Asbestos Handbook pages 24-40).

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