Dealing with Lead Paint during Remodeling Activities

- Presented by:
- Minnesota Department of Health
- Asbestos/Lead Compliance Unit

Overview

- Program information
- History of Lead
- Applications
- Standards
- Health Effects
- MDH Regulations
- EPA RRP/PRE Regulations
- DOLI Statute
- MDH Rulemaking - RRP

MDH Asbestos & Lead Compliance Unit

- Asbestos regulations
- Lead regulations
- Individuals/firms
- Training Courses/Providers
- Inspections/Compliance Monitoring
- Enforcement
- Educational outreach

What is Lead?

- Lead is a dense, ductile, very soft, highly malleable, bluish-white metal
- Poor electrical conductivity
- It is highly resistant to corrosion
- Lead's symbol Pb is an abbreviation of its Latin name *plumbum*. The English word "plumbing" also derives from this Latin root

Ancient Awareness

- 6500 BC. - Lead discovered in Turkey
- 500 BC - 300 AD.- Roman lead smelting produces dangerous emissions
- 100 BC. - Greek physicians give clinical description of lead poisoning

Ancient Awareness

"Lead makes the mind give way"

Dioscerides - 2nd BC

Where does it come from?

- Lead is found in mineral deposits in the earth
- The main lead mineral is galena (PbS) - 86.6%
- Other common varieties are cerussite ($PbCO_3$) and anglesite ($PbSO_4$)
- More than half of the lead used currently comes from recycling

Applications

- Lead from mining and recycled scrap metal has a wide range of uses in industry
- It is used in manufacturing ammunition, batteries, chemical compounds, explosives, glassware, metal products, and petroleum products
- 129 lead compounds listed in the National Library of Medicine's Hazardous Substances Data Bank

Why was Lead used in Paint?

- Pigment/added color
- Durability and corrosion control
- Drying agent
- Kills mold and mildew

Lead Industry Advertisements

Sky-high *or* cottage-low

lead paint withstands all weather

LEAD PAINT PROTECTS and beautifies the city skyscraper. And out where the grass begins, lead paint brightens and preserves the smallest country cottage.

The trained industrial builder, the careful small-house owner — both use paint made with pure Dutch Boy white-lead. The reason? If you ask your painter he will tell you several.

It costs little. Even the Dutch Boy white-lead is made from the metal lead, in cost is low enough to satisfy those who closely scan appropriations, those whose household budgets are limited.

It goes far. One hundred pounds of all-lead Dutch Boy white-lead makes seven gallons of paint. These seven gallons will cover, one coat, from 3500 to 4500 sq. ft. of surface.

Any quantity can be mixed. There's no waste. Mix just the quantity needed for a job—a half-pint or seventy gallons. It can be bought, too, from small one-pound tins to 100-pound kegs.

Home the colors you like. A greenish blue, a Quakeress gray—all the tints and tones of the rainbow are possible with Dutch Boy white-lead. The tinting job is easy. You save money, and get the color you want.

For porch chairs or the house itself. Dutch Boy white-lead makes an all-purpose paint. It can be used inside or outside, odd jobs or big jobs.

Home-owners' paint guide free

It tells the whole story of this all-pure, all-lead paint. Color illustrations of special outside and interior effects, correct paint formulas, and money-saving handy hints make this book well worth a letter. Just write to our Department of Decoration in care of our nearest branch and ask for "Decorating the Home." Any special questions will also be gladly answered by this department.

NATIONAL LEAD COMPANY

New York, 111 Broadway • Boston, 131 State Street • Buffalo, 116 Oak Street • Chicago, 900 West 18th Street • Cincinnati, 659 Freeman Avenue • Cleveland, 820 West Superior Avenue • St. Louis, 722 Chestnut Street • San Francisco, 658 California Street • Pittsburgh, National Lead & Oil Co. of Penna., 316 Fourth Avenue • Philadelphia, John T. Lewis & Bros. Co., 437 Chestnut Street.

DUTCH BOY
WHITE-LEAD
Makes an All-Lead Paint

SINCE
1843

EAGLE

THE EA COMPANY

FOR INTERIORS

All-Purpose

EASY MIX SOFT PASTE

AND EXTERIORS

FORMULA: Basic White Lead Carbonate . . 89% ±
Pure Linseed Oil . . . . . 9% ±
Volatile Thinner . . . . . 2% ±
100%

Net Weight 50 Pounds

PURE WHITE LEAD

Soft Paste

CINCINNATI · BRANCHES IN ALL PRINCIPAL CITIES


DUTCH BOY
SOFT PASTE
WHITE LEAD
STRICTLY PURE
50 Lbs. NET
COMPOSED OF
PURE WHITE LEAD (BASIC CARBONATE)
PURE LINSEED OIL
MINERAL SPIRITS
TOTAL
MADE BY
NATIONAL LEAD COMPANY
MIXING DIRECTIONS
FOR PAINTING EXTERIOR WOOD
FIRST COAT
FINISH COAT
½ LINSEED OIL
½ WHITE LEAD
DUTCH BOY
SOFT PASTE
WHITE LEAD
STRICTLY PURE

Pure White-Lead Paint

for about $2.85* PER GALLON

and a few minutes of your time!

Before you buy paint see this "price card" at your dealer's.

because it gives paint in its purest, most economical form. It provides an elastic pro-

money spent for burning or scraping. Just paint right over the old.

turpentine and drier ... and, presto, it's made. Could anything be sim-

Lead in Housing

- Lead paint was banned for residential use in 1978
- Pre-1950 homes (70% have lead paint)
- Estimated 930,000 housing units in Minnesota contain lead

Definition of Lead Paint

- 0.5% or more by dry weight or 5,000 ppm as measured by atomic absorption
- 1.0 milligram per square centimeter as measured by x-ray fluorescence analyzer
- Qualitative chemical test kits are used to test for presence of lead in paint (e.g. Leadcheck)

Lead Standards

- Lead in dust
  - Floors40 $\mu g/ft^2$
  - Window Sills250 $\mu g/ft^2$
  - Window Troughs400 $\mu g/ft^2$
- Lead in bare soil 100 ppm
- Lead in water 15 ppb

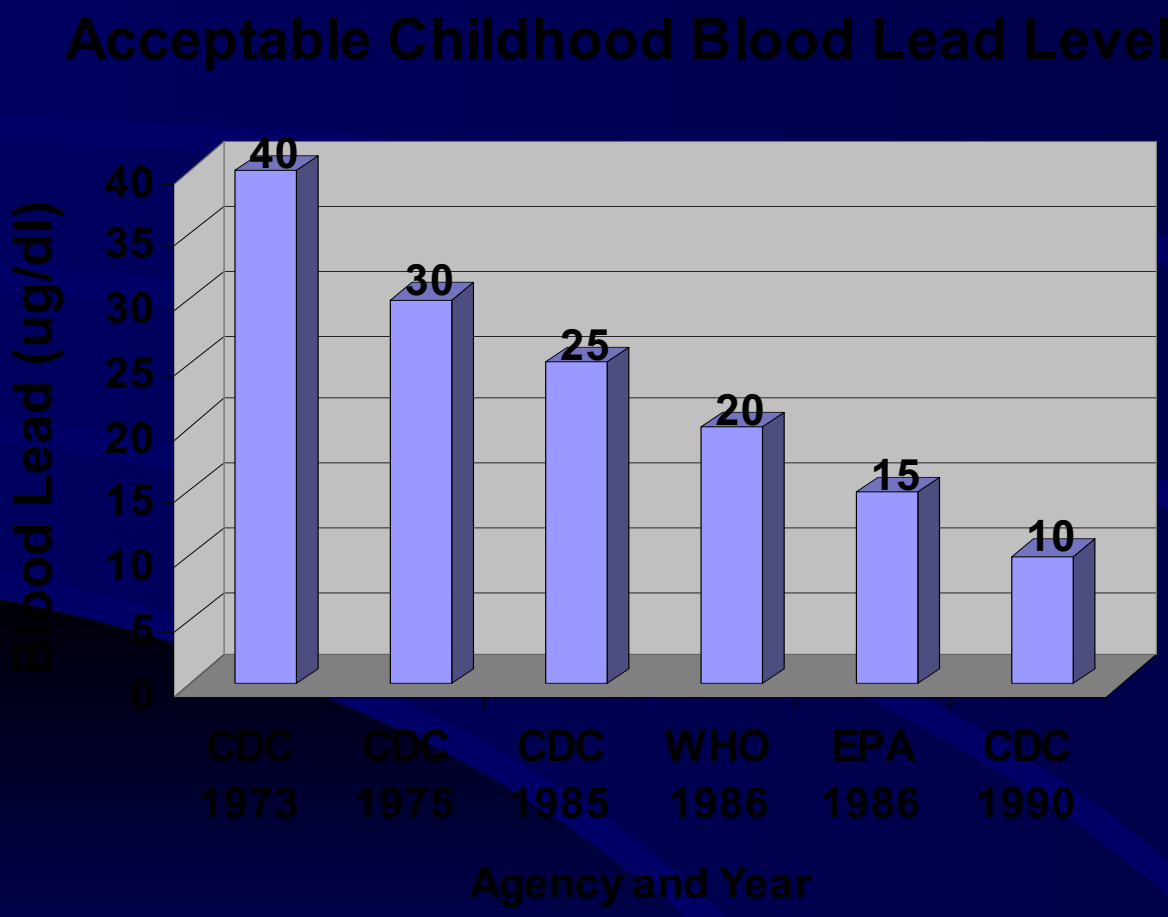
Testing for Lead in Paint


Lead Check

“Lead Poisoning remains the most common and societal devastating environmental disease of young children.”

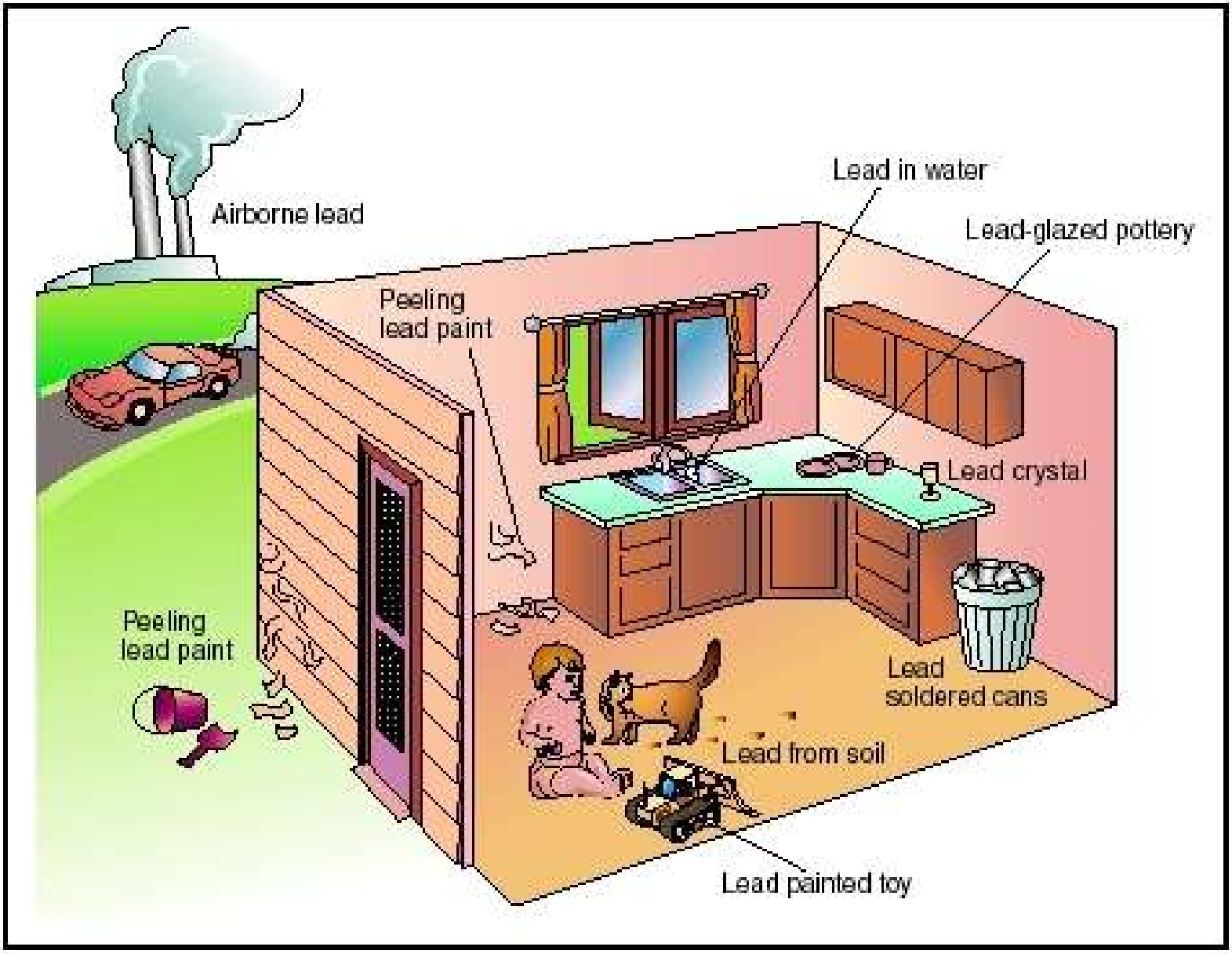
Public Health Service - L. Sullivan, 1991

CDC Blood Lead Levels



Sources Of Lead Exposure

- Lead Paint
- Dust, Soil
- Water
- Industry
- Hobbies
- Traditional Ethnic Remedies


Airborne lead
Lead in water
Lead-glazed pottery
Peeling
lead paint
Lead crystal
Peeling
lead paint
Lead
soldered cans
Lead from soil
Lead painted toy

Facts about Lead Poisoning

- Lead has no known biological function
- There is no proven safe lower limit for lead
- Lead competes with Calcium and Iron
- Ingestion of lead paint and dust is the common cause of lead poisoning in children
- In 2009, over 800 children in Minnesota had elevated blood lead levels (EBLL)

Vulnerability

CHILDREN are more vulnerable to exposure than ADULTS

Size

Consume More Food

Inhale More Air

Developing Nervous System

Increased need for Calcium

Health Risks of Lead

- Children
  - Learning disabilities and behavioral problems
  - Seizures, coma, and death
- Pregnant Women
  - Neurological damage to fetus
- Workers and other adults
  - Physical fatigue, and reproductive damage


Brain or Nerve Damage
Hearing Problems
Digestive Issues
Stunted Growth
Effects of Lead Poisoning

Health Effects

- Encephalopathy
- Colic
- Frank Anemia
- Hemoglobin Synthesis
- Peripheral Neuropathies
- Infertility (MEN)
- Systolic Blood Pressure (MEN)
- Nerve Conduction Velocity
- Erythrocyte Protoporphyrin
- DEVELOPMENTAL TOXICITY
- IQ, Memory, Learning
- Growth

Children Affected

16% of all American children

Children with blood leads above 15 UG/DL

7% of economically favored white children

55% of African American children in poverty

source: The nature and extent of lead poisoning in children in the US: a report to Congress - ATSDR

Academic & Social Costs Of Lead Exposure

- Increased risk of not graduating from H.S.
- Poorer reading scores
- Increased evidence of depression
- Higher rate of hard drug use
- Increased risk for attention deficit disorder
- Increased risk for antisocial behavior
- Prison population?

Cost of Childhood Lead

Assumptions in calculating costs

- **All lead is harmful and from environment**
- **Blood lead of children age 5 – 2.7 ug/dl (CDC)**
- **5-year old boys (1,960,200) and girls (1,869,800)**
- **1 ug/dl of lead = 0.25 IQ point reduction**
- **Cost – boys $27.8 and girls $15.6 Billion**

Total Costs $43.4 Billion

Environmental Pollutants and Disease in American Children: Estimates of Morbidity, and Costs for Lead Poisoning, Asthma, Cancer, and Developmental Disabilities, by Landrigan, P. et al. EHP, 110, July 2002, 721-728.

How long does lead stay in body? "Half Life"

- Blood (25 days)
- Soft Tissues (40 days)
- Bones/Teeth (20 - 30 years)

Why are dust and debris a problem?

- Dust and debris can contain lead
- Small amounts of lead-contaminated dust can poison children and adults
  - Children ingest it during play activities
  - Adults ingest or inhale it during work
- Workers can bring lead-contaminated dust home and poison their families

Take Home Lead Exposure

California, 1998

Lead poisoning in furniture workers and their families

Father 46 μg/dL

18-month-old child BLL 26 μg/dL

4-month-old daughter BLL 24 μg/dL

two refinishers BLLs of 29 and 54 μg/dL,

the four carpenters BLLs of 46, 46, 47, and 56 μg/dL.

MMWR - April 06, 2001 / 50(13);246-8

Current Lead Regulations

- MDH Lead Rule and Statute
- EPA Lead Abatement Regulations
- EPA Renovation Repair and Paint
- HUD Residential Lead-Based Paint Hazard Reduction Act
- EPA Pre-Renovation Education
- OSHA Worker Protection
- MPCA Disposal Requirements

MDH Lead Regulations

- Credential Firms and Individuals
- Notification Requirements
- Permit Training Course
- Work Practices
- Final Inspection and Clearance Sampling
- Report Requirements

Regulated Lead Work

- Abatement or Interim Controls
- Renovation (target housing/COF)?
- Lead Sampling Technician Services
- Clearance Inspection
- Lead Risk Assessment or Lead Inspection
- Lead Hazard Screen
- Swab Team
- Lead Project Design Services

Renovation, Repair and Paint Rule
TSCA 402 (c)(3)

Final Rule

- EPA final rule effective on April 22, 2010 under the authority of TSCA§ 402(c)(3)
- Addresses lead-based paint hazards created by renovation, repair, and painting activities that disturb lead-based paint in “Pre-1978 target housing” and “child-occupied facilities.”

Rule Scope

- Renovation is defined as modification of any existing structure that results in the disturbance of painted surfaces, unless performed as part of an abatement.
- Applies to renovations of target housing and child occupied facilities performed for compensation.
- Child-occupied facilities may be located in public or commercial buildings or in target housing. Includes kindergarten classrooms and daycare facilities.


If your home was
built before 1978
click here
EPA

What Buildings are Covered?

Target Housing:

Built before 1978, except housing for elderly, disabled, or Zero-bedroom dwellings.

Child Occupied Facility:

regularly visited by the same child under age 6

What activities are subject to the Rule?

In general, any work done for compensation that disturbs paint in pre-1978 housing or child occupied facilities, including:

- Remodeling, repair or maintenance
- Rehab and weatherization
- Painting
- Electrical, plumbing, HVAC
- Window replacement
- Floor refinishing
- Carpentry

Activities Subject to Rule

Work that disturbs more than:

- 6 ft^2 of paint in an interior room
- 20 ft^2 of paint on the exterior

Windows are always subject to the rule

Not subject to the Rule:

- Post-1978 housing or COF
- Work on components determined to be lead-paint free
- Minor repairs & maintenance
  - Less than 6 sq. ft. per interior room
  - Less than 20 sq. ft. exterior
  - Except windows are NEVER minor repair or maintenance and are ALWAYS covered under the rule

Before Work Starts:
Pre-renovation education requirements

- Before starting renovation work, distribute "**Renovate Right**" to:
  - Owners and occupants of housing
  - Owners and operators of child-occupied facilities
  - Notify parents of children in child-occupied facilities or post the pamphlet
  - Obtain signature of receipt
- Retain records for three years

Training and Certification

Beginning April 22, 2010:

- Companies must be certified
  - 5-year Renovation Firm Certification
  - $300 fee to EPA via application
  - Certification allows the firm to perform renovations in any non-authorized state or Indian tribal area
- Renovators must be trained and certified
  - At least one certified renovator on each job
  - Take renovator training course (I/R)

United States Environmental Protection Agency

This is to certify that

Lead Renovator Training, LLC

has fulfilled the requirements of the Toxic Substances Control Act (TSCA) Section 402, and has received certification to conduct lead-based paint renovation, repair, and painting activities pursuant to 40 CFR Part 745.89

In the Jurisdiction of:

All EPA Administered States, Tribes, and Territories

This certification is valid from the date of issuance and expires August 30, 2015

NAT-74767-1
Certification #

August 17, 2010
Issued On

Michelle Price, Chief
Lead, Heavy Metals, and Inorganics Branch

To become a Certified Renovator:

http://www.dli.mn.gov/CCLD/RBCcourses.asp

- Complete the one-day EPA renovator initial course
- Or if already trained as a lead-safe worker complete the 4-hour EPA approved refresher course
- Certification is your license and is good for five years
- EPA requires that renovator certified person also be a firm

THE TRAINING NETWORK, INC.

12116 WESTWOOD HILLS DRIVE | OAK HILL, VIRGINIA 20171
PHONE: 703-264-5170 | TOLL-FREE: 800-476-2299

Certificate of Attendance and Successful Completion

RENOVATOR INITIAL - ENGLISH

PER 40 CFR PART 745.225

DAVID VON METTENHEIM
5041 22ND ST. SOUTH | ARLINGTON, VA 22206

Certificate Number R-I-18343-10-02740
Course Date: 10/18/2010
Examination Date 10/18/2010
Expiration Date 10/18/2015

John Combs, Training Manager
Martanaze Hancock, Principal Instructor

Date 10/19/2010

Grandfathering of Individuals

- Individuals with previous training can take an accredited 4 hour refresher renovator course instead of the 8 hour initial course to become a certified renovator
- Acceptable training includes:
  - an accredited lead abatement worker or supervisor course, or
  - an EPA, HUD, or EPA/HUD model renovation training course

Certified Firm Responsibilities

- Ensure that pre-renovation education requirements are met.
- Assign a certified lead-safe renovator to each job.

- Create and maintain all required records for 3 years.

The Certified Renovator Must

- Provide Lead-Safe work practices training (OJT) to uncertified workers
- Be present during containment set up and clean-up
- Supervise work practices and assure ongoing containment of dust & debris
- Be available by phone to return to job site (2 hours)
- Personally conduct final cleaning verification
- Have certification readily available at the job site
- Prepare renovation records

Setting Up Work Areas

- Have proper materials and equipment for the job – plastic sheeting, HEPA vacuum, etc.
- Ensure full containment of dust or debris –
  - Contain interior work areas with heavy-duty plastic sheeting -- 6 feet out from work surfaces
  - Contain exterior areas with heavy-duty sheeting -- 10 feet for every story
  - Remove all personal belongings and furnishings from work area or seal in plastic

Use Lead-Safe Work Practices

- Don't use prohibited work practices:
  - Open flame torching or heat-guns over 1100°
  - Paint strippers with methylene chloride
  - Power tools or abrasive blasting without HEPA dust control
  - Hydro-blasting without HEPA controls and water collection system
  - Dry sweeping in work areas
  - Improperly operating HEPA vacuum


VAC-PAC

Clean Up Work Areas

- Collect all paint chips and debris in heavy-duty waste bags.
- Mist and fold plastic sheeting inward and tape seams shut.
- Clean work areas:
  - Walls from top down
  - All horizontal surfaces, furniture and fixtures
  - Carpets
  - Hard floors

Working Lead Safe

Working Lead Safe

Working Lead Safe Cont.

Working Lead Safe

Working Lead Safe


Working Lead Safe

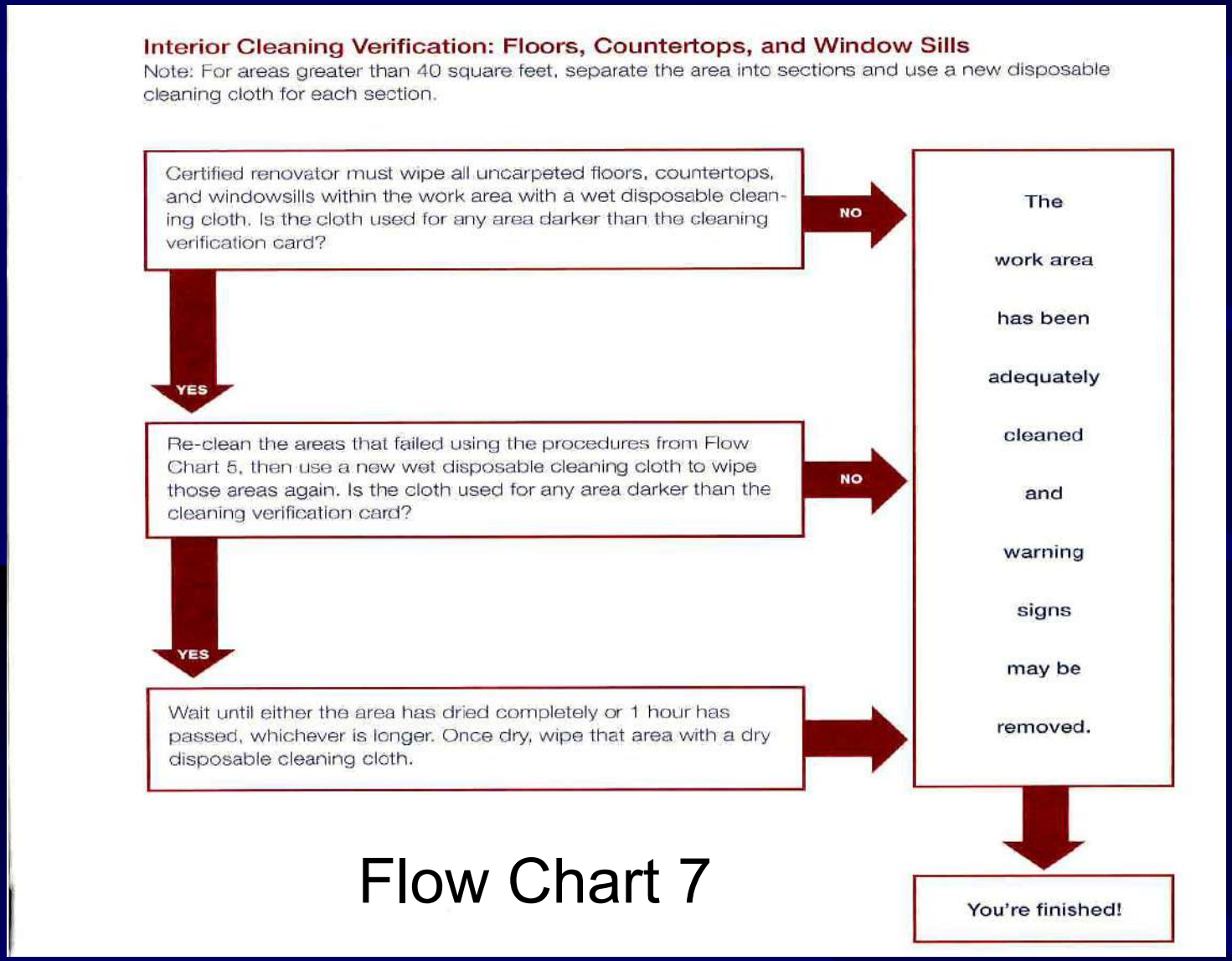
Not Working Lead Safe

Not Working Lead Safe Cont.

Cleaning Verification

- Wipe floors and windowsills with wet cleaning cloth.
  - Use one cloth for each 40ft^2 section of floor.
- If the cloth does not match the verification card, re-clean that surface and then re-wipe with a wet cleaning cloth.
- If this cloth does not match the cleaning verification card, allow the surface to dry completely and wipe with a dry cleaning cloth.
- Alternatively, laboratory dust sampling is an option where the contract or another Federal, State, or local regulation requires dust sampling by a certified professional and requires the renovation firm to clean the work area until it passes clearance.

Certified Renovator Must Perform Post-Renovation Cleaning Verification

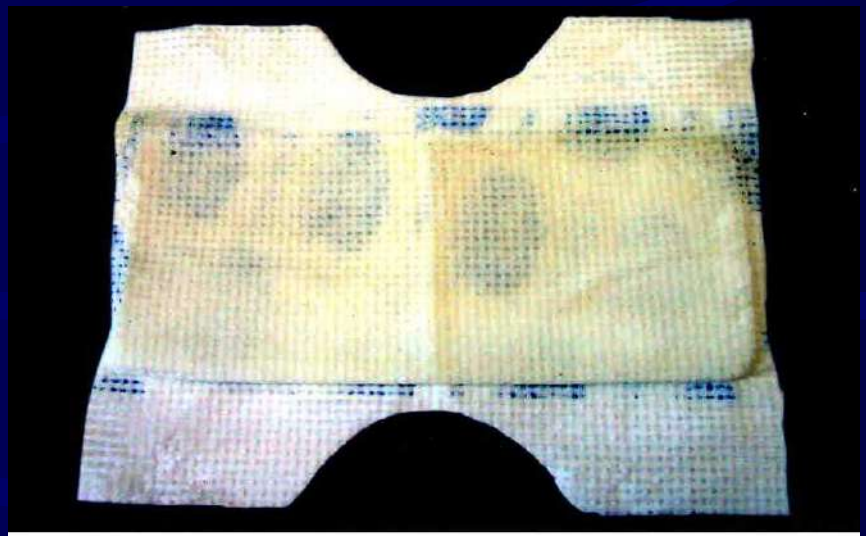


Flow Chart 7

Conduct Cleaning Verification

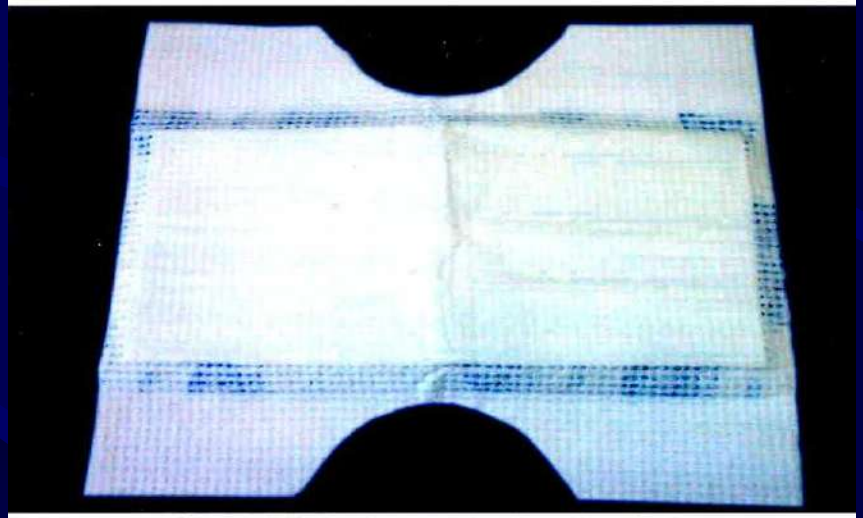
Compare actual disposable pad to templates

top shows marginally passing standard, bottom is unused pad



Marginally Passing Wet Disposable Cleaning Cloth

EPA Post-Renovation Cleaning Verification Card



Unused Wet Disposable Cleaning Cloth

Recordkeeping Requirements

- All documents must be retained for 3 years following the completion of a renovation.
- Records to be retained include:
  - Reports certifying that lead-based paint is not present
  - Records required by PRE
  - Documentation of compliance with the requirements of Renovation, Repair, and Painting Rule (EPA has prepared a sample form to assist with this documentation).

MDH RRP Rulemaking

MDH is developing a comprehensive lead regulation that takes into consideration both renovation activities and lead hazard reduction

MDH RRP Rulemaking

- Solicited comments (informal)
- Conducted a review of current regulations
- Draft a new regulation (formal)
- Intent to Adopt (Fall 2011)
- Hearing Option (requires 25 signatures)
- Order to Adopt (2012?)
- EPA Authorization to MN for RRP/PRE

EPA Enforcement of RRP

- June 18, 2010 memo outlined delay of enforcement:
  - Certified firm by 10/1/2010
  - Individuals have until 12/31/2010
- Maximum Penalty is $37,500; minimum of $10,000 per day of violation
- EPA has been active with enforcement in each of the regions

EPA Enforcement

- EPA has the authority to seek civil fines for each violation and an additional criminal fine plus jail time for knowing and willful violations of the RRP requirements.
- EPA can also revoke certification for of a Certified Firm or a Certified Renovator who violates RRP requirements.

Note: violators may be both Certified Renovation Firms and non-certified contractors who are not aware of or have ignored the requirement to become a Certified Renovation Firm.

EPA Enforcement of RRP

EPA uses a variety of methods to determine whether businesses are complying, including inspecting work sites, reviewing records and reports, and responding to citizen tips and complaints. Under TSCA, EPA (or a state, if this program has been delegated to it) may file an enforcement action against violators seeking penalties of up to $37,500 per violation, per day. The proposed penalty in a given case will depend on many factors, including the number, length, and severity of the violations, the economic benefit obtained by the violator, and its ability to pay. EPA has policies in place to ensure penalties are calculated fairly.

Minnesota Statutes 326B.106

Subd. 13. Lead certification.
When issuing permits in compliance with the State Building Code to a residential building contractor, residential remodeler, manufactured home installer, or residential roofer licensed under section 326B.805, municipalities must verify lead certification qualifications of the licensee required under subdivision 14 for renovations performed on residential property constructed prior to 1978. Municipalities may charge a surcharge for verification of this certification under section 326B.815, subdivision 2.

EFFECTIVE DATE - February 1, 2011.

Minnesota Statutes 326B.106

Subd.14. Pre-1978 structures.
A residential building contractor, residential remodeler, manufactured home installer, or residential roofer licensed under section 326B.805 performing renovation as defined by Code of Federal Regulations (CFR), title 40, section 745.83, on a residential structure constructed prior to 1978 must be certified in accordance with CFR title 40, section 745.89, unless the property has been determined to meet an exemption under CFR title 40, section 745.82.

Minnesota Statutes 326B.106

Subd. 14 cont'd

Before performing the renovations as defined by CFR title 40, section 745.83, on a residential structure constructed prior to 1978, a licensee working on the structure must be able to provide to the commissioner information so that proof of certification can be obtained as required in this subdivision. The department shall provide on its Web site a link to the United States Environmental Protection Agency Web site for verification of certification of a licensee.

MS 326B.106 Summary

- Requires municipalities to verify lead certification for the residential builders, remodelers, roofers and manufactured home installers when they are requesting a permit to work on pre-1978 residences
- Municipalities may charge up to $5 to verify the Federal lead certification
- Department of Labor and Industry will have a link to the Federal Lead Certification Web site on its contractor verification Web page
- The four licensed type contractors must have the lead certification as required by the Code of Federal Regulation, Title 40 (RRP Regulation)

Contact Information

EPA's Renovation, Repair & Paint Rules

(312) 996-6003

http://www.epa.gov/lead/pubs/renovation.htm

MDH's Asbestos/Lead Compliance Program

(651) 201-4620

http://www.health.state.mn.us