### Table 1. Assigned Protection Factors\(^5\)

<table>
<thead>
<tr>
<th>Type of Respirator (^{1,2})</th>
<th>1/4 Mask</th>
<th>Half Mask</th>
<th>Full Facepiece</th>
<th>Helmet/Hood</th>
<th>Loose-Fitting Facepiece</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Air-Purifying Respirator...</td>
<td>5</td>
<td>(^3)10</td>
<td>50</td>
<td></td>
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<tr>
<td>2. Powered Air-Purifying</td>
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<tr>
<td>Respirator</td>
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<tr>
<td>3. Supplied-Air Respirator</td>
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<tr>
<td>(SAR) or Airline Respirator:</td>
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<tr>
<td>• Demand Mode...</td>
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<tr>
<td>• Continuous-flow Mode...</td>
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<tr>
<td>• Pressure-demand or</td>
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<tr>
<td>other Positive-pressure</td>
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<tr>
<td>Mode</td>
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<tr>
<td>4. Self-Contained Breathing</td>
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<tr>
<td>Apparatus (SCBA):</td>
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<tr>
<td>• Demand Mode...</td>
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<td>• Pressure-demand or</td>
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<tr>
<td>other Positive-pressure</td>
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<tr>
<td>Mode (e.g., open/closed</td>
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<tr>
<td>circuit)</td>
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</tbody>
</table>

**Notes:**

\(^1\) Employers may select respirators assigned for use in higher workplace concentrations of a hazardous substance for use at lower concentrations of that substance or when required respirator use is independent of concentration.

\(^2\) The assigned protection factors in Table 1 only apply when the employer implements a continuing, effective respirator program as specified by OSHA’s Respiratory Protection Standard at 29 CFR 1910.134, including training, fit testing, maintenance, and use requirements.

\(^3\) This APF category includes filtering facepieces, and half-masks with elastomeric facepieces.

\(^4\) The employer must have evidence provided by the respirator manufacturer that testing of these respirators demonstrates performance at a level of protection 1,000 or greater to receive an APF of 1,000. This level of performance can best be demonstrated by performing a WPF or SWPF study or equivalent testing. Absent such testing, all other helmet/hood respirators are treated as loose-fitting facepiece respirators and receive an APF of 25.

\(^5\) These APFs do not apply to respirators used solely for escape. For escape respirators used in association with specific substances covered by 29 CFR 1910 Subpart Z, employers must refer to the appropriate substance-specific standards in that subpart. Escape respirators for other IDLH atmospheres are specified by 29 CFR 1910.134 (d)(2)(ii).
What personal protective equipment do I need other than a respirator?
If you are working in an area with lead above the PEL or if you are doing any of the tasks listed under Classes 1, 2, or 3, your employer must give you protective work clothing – (g) Protective Work Clothing and Equipment. This clothing should include –

- Coveralls with a hood
- Gloves
- Hard hat
- Boot/shoe protection & covers
- Face shield or vented goggles
- Hearing loss protection

Who has what responsibilities for my protective clothing?
If you are exposed at or below the PEL (50ug/m³), your employer is not required to provide you with protective clothing. If you are exposed above the PEL but below 200 ug/m³ – or you are doing a Class 1 task – you employer must wash and dry protective clothing or give you new clothing every week. If you are exposed at or above 200 ug/m³, your employer must provide clean or new protective clothing every day. If you are doing Class 2 or 3 tasks, and an exposure assessment for the task(s) has not been completed, then your employer must assume that you are being exposed at the higher levels associated with these tasks. The employer must provide clean or new protective clothing every day until the assessment determines that your exposure is less than 200 ug/m³.

Many employers provide disposable spun-poly suits. These suits are easily torn. You should inspect your protective clothing regularly for tears or rips. If your suit tears or rips and you cannot repair it (duct tape), then
you must get a new protective suit.

Some employers provide reusable, non-disposable protective clothing. This clothing is usually more durable than the disposable suits, but if it does tear or rip, it has to be repaired immediately to minimize your chances of being contaminated. If you are given non-disposable protective clothing, your employer is responsible for cleaning, drying, and repairing it – (g)(2) Cleaning and Replacement.

**Where should I put my used protective clothing?**

Your employer must have a closed container in the change area for used protective clothing. The container must be labeled as follows:

```
CAUTION: Clothing contaminated with lead.
DO NOT REMOVE DUST BY BLOWING OR SHAKING.
Dispose of lead-contaminated wash water in accordance with applicable local, state, or federal regulations.
```

Using labeled and closed containers helps to prevent your family and other people living in the community from being exposed to lead. The standard says your employer cannot let you leave the work area with contaminated protective clothing on.

### 3. Your Workplace

**How clean do we keep our job site?**

The standard says you must keep all surfaces as free of lead as possible. You must clean up floors and other surfaces with a vacuum. This vacuum must have a High Efficiency Particulate Air filter. Only use shoveling, dry-sweeping, wet-sweeping, or brushing if your employer shows that vacuuming does not work to pick up the dust on your job site.
Compressed air is allowed on steel structure jobs. Compressed air is not prohibited for some cleaning purposes – if you have proper ventilation and air filtration. You may use compressed air when cleaning the contaminant on a steel structure job. (Section (h)(5) Housekeeping)

**Can we eat or drink on the job?**
No. Your employer must not allow you to eat, drink, smoke, chew tobacco, or apply cosmetics (including lips balms such as Chapstick®) in the work area where your exposure to lead is above the PEL. Your employer must have a place where anyone exposed above the PEL can eat and drink safely away from lead. (Section (i) Hygiene Facilities and Practices)

**Where can we change our clothes and wash?**
Whenever you work with lead, your employer must have a place for you to wash your hands and face. Your employer must make sure that you wash your hands and face at the end of each shift.

The standard says your employer must have places where anyone exposed above the PEL or doing any of the lead related tasks (Class 1, 2, or 3) can change in and out of their work clothes. Your employer must have a place where anyone exposed above the PEL can shower, if feasible. OSHA officials have said that if your employer decides having a shower is not feasible, then he or she must be able to explain their reasoning to any OSHA inspector who comes on the site. (Section (i)(2) Change Areas)

Your employer must post warning signs in the work area where employees are exposed above the PEL. (Section (m) Signs) They must say:

```
WARNING
LEAD WORK AREA
POISON
NO SMOKING OR EATING
```
4. Training

How can workers find out about the hazards of lead?

The OSHA standard says that employers must provide training to anyone:

- Working with lead at or above the Action Level (30ug/m³);
- Doing any of the tasks listed under Class 1, 2, or 3; and
- Using any lead compounds which cause eye or skin irritation (Section (l) Employee Information and Training).

What does the training about lead have to include?

- OSHA Interim Final Lead in Construction Standard.
- Jobs that expose workers to lead above the Action Level.

- Information on respirators: their use, the different types, and the importance of a proper fit.
- Medical exams required for everyone working with lead.
- Ways your employer can reduce your exposure to lead.
- What your employer is doing to reduce your exposure to lead.

5. Recordkeeping

What records does my employer have to keep?

Your employer must keep records of:

- All exposure assessments done on your job site;
- The types of respiratory protection worn on your job site;
- Names and social security numbers of all employees;
All medical surveillance done on employees;
• All training done for employees;
• All cases of medical removal of employees; and
• All records must be kept for at least 30 years.
  (Section (n) Recordkeeping)

**Do I have the right to see any of these records?**

Yes! You have the right to see any of the air sampling results or any other types of exposure assessments done on your job site. You have the right to have a copy of your medical exam and blood test results. You can get copies of either of these types of records. Your employer is required to send a copy of your medical records to anyone you choose. Any requests to send your medical records to someone else should be in writing.

6. Medical Surveillance

Special medical exams are required when you work with lead. (Section (j) Medical Surveillance) These exams are called medical surveillance. There are two types:

• **Initial medical surveillance;** and
• **Medical surveillance program.**

**Initial Medical Surveillance**

Initial medical surveillance is a series of blood tests that check the amount of lead in your blood. It is also called biological monitoring. The two blood tests used on the biological monitoring are the 1) blood lead level test and the 2) zinc protoporphyrin (ZPP) test. You need medical surveillance if you do any of the tasks in Class 1, 2, or 3 listed in the Lead Standard or if you are exposed to lead on the job any one day at or above the Action Level.
On-going Medical Surveillance Program
You need a medical surveillance program if you are, or may be, exposed to lead on the job at or above the Action Level for more than 30 days in any continuous 12 month period. When you can expect to do lead abatement work for at least 30 days, you should take part in a medical surveillance program.

The on-going medical surveillance program has three types of exams. The doctor must follow the Lead standard and provide:

- Blood Tests for Biological Monitoring;
- Six-part Medical Exam; and
- Medical Exam and Consultation.

Blood Tests for Biological Monitoring
The blood lead level and ZPP tests are required –

1. When you begin working with lead and every 2 months for the first 6 months and then every 6 months as long as you are working with lead at or above the Action Level for 30 or more days within a year’s time period.

2. When your BLL (blood lead level) results are at or above 40 ug/dl, you must be tested at least every 2 months until two consecutive blood lead level results are below 40 ug/dl.

3. When your BLL results are at or above 50 ug/dl, you must be tested within 2 weeks. If the second test result is at or above 50 ug/dl, you must be medically removed and tested at least every month until you reach a BLL of 40 ug/dl or less on two separate testing dates. The tests must be taken at least 30 days apart.

Six-part Medical Exam
Your employer must make the required 6-part medical exam in the medical surveillance program available to you whenever you will be working with lead at or above the Action Level for 30 or more days and your BLL results are 40 ug/dl or above. (Section (j)(3)(ii) Content)
1. Interview about your work and medical history:
   a. Past lead exposures;
   b. Personal habits like smoking and hygiene; and
   c. Previous medical problems with the kidneys, heart, nerves, blood, stomach, intestines, and reproductive organs.

2. Complete physical exam to look at your –
   a. Blood
   b. Teeth & Gums
   c. Stomach & Intestines
   d. Kidneys
   e. Nerves
   f. Brain
   g. Heart
   h. Lungs

3. Blood pressure check

4. Blood tests which will show –
   a. Blood lead level
   b. ZPP
   c. Hemoglobin & hematocrit (anemia test)
   d. Serum creatinine (kidney test)

5. Routine urinalysis (kidney & protein check)

6. Any additional test that the doctor needs to do to determine how lead has or could affect you. Pregnancy testing and male fertility must be provided if you request them.

Medical Exam and Consultation
You have the right to a medical exam and consultation whenever you will be working with lead at or above the Action Level for 30 days or more and …

- You are working with lead and you feel sick with any of the signs and symptoms of lead poisoning.
- Yearly when you have a BLL at or above 40 ug/dl.
- Whenever you are concerned about having a healthy baby.
If you have difficulty breathing while wearing a respirator.

You need to notify your employer that you want the medical exam and consultation. The content of this medical exam and consultation is determined by the doctor. (Section (j)(3) Medical Exam and Consultation)

Who must provide medical surveillance?
Your employer must provide medical surveillance for you at no cost to you, the worker – and at a reasonable time and place.

All medical examinations and procedures must be supervised or performed by a medical doctor with a state license (an MD or OD). Your employer must notify you of the results of the exam within 5 working days. This is called notification. You may have another doctor review the findings and provide a second exam. The employer must pay for the second review. This is called multiple physician review.

What does multiple physician review mean?
If you are not comfortable with the available doctor or do not agree with the doctor’s findings, you can request a second medical exam with a doctor of your choice. This request must be made within 15 days after you receive your copy of the initial medical exam results. Your employer must pay for this second exam.

If the doctors do not agree, they are asked to talk with each other. If there is still no agreement, then a third doctor selected by the two previous doctors will review the findings and conduct any necessary exams. The third doctor gives a written recommendation to the employer. The third opinion is followed unless you and your employer jointly agree to follow the decision of either of the previous doctors. (Section (j)(3)(iii) Multiple Physician Review Mechanism)

7. Medical Removal

What is medical removal?

Medical removal means that you are removed from the lead exposure on your job. The Lead standard states you must be removed if you blood lead levels (BLLs) get too high. Medical removal can prevent you from getting
severe lead poisoning. Removing you from the lead exposure gives your body time to get rid of the lead. Sometimes this is enough to bring the BLL down. Medical removal is a way to protect you from becoming lead poisoned. There are two times that you may be medically removed –

**Elevated Blood Lead Level**

If your BLL reaches 50 ug/dl for both the periodic blood test and the follow-up blood test, then you must be removed from exposure to lead. It is dangerous for you to work with lead when your blood lead level is so high. You cannot wear a respirator to lower your exposure when your blood lead level is so high. If you get more lead into your body, you could become lead poisoned. Your employer must provide you with a job with no lead exposure. If your employer cannot, he must pay your normal wages until your blood lead level is at 40 ug/dl on two separate tests no less than 30 days apart. You then **return to your former job.** If your BLL remains above 40 ug/dl, your **wages must be paid** as long as the job exists or up to **18 months.**

**Final Medical Determination**

Final medical determination means that the doctor has given a written medical opinion to remove you from lead exposure. The doctor believes that you have a medical problem that will be affected by lead exposure. The doctor believes that the risk to your health is high. **The doctor must inform the employer of the medical recommendation regarding working with lead.**

The doctor does not tell the employer what the medical problem is, but states that you are at high risk of ill health with lead exposure.

You may return to work with lead when the doctor determines that you longer have a medical problem that puts you at high risk of ill health with lead exposure. The doctor must put the medical opinion in writing. You then return to your former job. While you are unable to work with lead, you employer must provide you with another job where your lead exposure is not above the Action Level. If another job is not available, your employer must pay your wages for as long as the job exists or up
A doctor may use a final medical determination if you say you want to have children and your BLL is 30 ug/dl. You will then be placed on medical removal protection. OSHA recommends that a maximum permissible blood lead level of 35 ug/dl should not be exceeded in males and females who wish to have children. (Section (k)(1) Temporary Medical Removal and Return of An Employee)

**What is medical removal protection?**
Medical removal protection means that your job will be protected if you must be medically removed from your lead abatement job. Under the OSHA Lead standard, your employer must pay your salary/wages, provide your benefits, and maintain your seniority while you are medically removed. This medical removal protection will last as long as the job exists or up to 18 months. (Section (k)(2) Medical Removal Protection Benefits)

**8. Medical Treatment**

**What is treatment for lead poisoning?**

Chelation is the medical treatment for severe lead poisoning. It is a risky treatment. Chelation can get rid of some of the lead in your body, but it also can be harmful to your health. Chelation is a serious medical treatment. When possible, you want to know that at least two doctors think it is necessary for you to have it. The second doctor should be a doctor that you know and trust. This second opinion is paid for by your employer, when you request it. This situation is when the multiple physician review is most helpful.

Prophylactic chelation means giving chelating drugs to someone to try and prevent lead poisoning. Chelating drugs will not protect anyone from lead poisoning. Chelating drugs will only help remove lead from your body after you have been poisoned. It is illegal for employer or anyone employed by your employer to give you chelating drugs.

The misuse of chelation treatment has been recorded repeatedly. Doctors have given workers chelating drugs even though the workers were still exposed to lead on the job. These drugs can hide lead poisoning that may be happening to you and they may also make your
body take in lead more easily.

Taking chelating drugs while working a lead job is prophylactic chelation. It is very dangerous. Never take any of these chelating drugs or get chelation treatment while you are still working with lead:

- Penicillamine;
- Edetate calcium disodium (EDTA);
- Succimer (DMSA or Chemet); or
- Dimercaprol.

(Section (j)(4) Chelation)

Your Medical Records

You have a right to have a copy of your medical records under OSHA standards 29 CFR 1926.33 and 1910.1020. Ask for a copy of your records each time you have a medical exam or blood test. Keep these records on file at home. Your employer must keep a copy of your medical records on file as long as you are employed there. Once you leave the job, your employer must keep your medical records for an additional 30 years if you were employed there for one year or more. You have the right to have these records sent to you or anyone you choose, such as your family or doctor.

Ask for an Exit Medical Exam

The OSHA Lead standard does not require your employer to pay for a medical exam when you leave the job. But, you do have the right to an exam paid for by your employer – if you have any of the symptoms of lead poisoning before you leave the job.

When you are no longer working around lead, your employer does not have to pay for your exams. It is always a good idea to get a medical checkup each year. When you go for your yearly checkup, make sure you tell your doctor that you have been exposed to lead on the job and ask to be examined for any long-term health effects lead poisoning might be causing.
Your Medical Records May Include ...

- Medical and employment questionnaires or histories (including job description and occupational exposures)
- Results of medical examinations (pre-employment, pre-assignment, periodic, or episodic)
- Results of laboratory tests (including X-rays and blood tests)
- Medical opinions, diagnoses, progress notes, and recommendations
- Descriptions of treatment and prescriptions
- Employee medical complaints
Title X Fact Sheet

The Residential Lead-Based Paint Hazard Reduction Act of 1992 is also known as Title X (Title 10). Title X requires different government agencies to help reduce the amount of lead poisoning in this country. This fact sheet lists some of the important parts of Title X.

Why was Title X passed?

The United States Congress received information that:

- Three million American children under the age of 6 have at least low-level lead poisoning.
- Lead poisoning in children can cause reading and learning disabilities, hyperactivity, and behavior problems.
- Ingesting lead dust from deteriorating lead-based paint is the most common cause of lead poisoning.
- Homes built before 1980 contain more than 3 million tons of lead in the form of lead-based paint.
- As many as 3,800,000 American homes have chipping or peeling lead-based paint.
- The dangers of lead-based paint hazards can be reduced by abating lead-based paint or by using interim controls to prevent paint deterioration.
- Even though laws were passed in the early 1970's, government has actually done very little to reduce lead-based paint hazards.

What is the law designed to do?

- Develop a system of trained people to evaluate and reduce lead hazards.
- Reduce childhood poisoning.
- Use government funds in the most cost-efficient way to eliminate lead-based paint hazards.
- Educate the public concerning the hazards and sources of lead poisoning.
Remove lead-based paint hazards first from federal housing.

The Federal Government is to be model landlord.

- **Project-based, federally-assisted housing built before 1960** must have had a risk assessment done by 1996.
- **Project-based, federally-assisted housing built from 1960 to 1978** must have a risk assessment done by 2002.
- **Pre-1978 federally-assisted housing** must be inspected before any rehabilitation work is done which might disturb lead-based paint.
- **Lead-based paint hazards must be abated or reduced** during rehabilitation of federally-assisted housing projects depending on funding. Anyone purchasing or renting housing built before 1978 must be given an EPA Lead Hazard Information Pamphlet. This does not apply to tenant-based assistance such as Section 8.

**Who has to be trained?**

Title X requires EPA to issue specific requirements for how contractors, workers, supervisors, inspectors, and risk assessors will be trained in lead-based paint hazards. EPA issued these regulations in April 1994. These requirements also say how contractors, workers, supervisors, inspectors, and risk assessors will be certified. EPA has in place a university-based national network of Regional Lead Training Centers. As a part of the EPA program, lead training programs will need to be accredited. Only this training will qualify as certification.

**Will each state have its own licenses (certification program)?**

Each state may have its own program which is approved by EPA. EPA will run the certification program in states that do not have their own programs. EPA has issued a model state certification program to help states set up their own programs.
Will workers doing lead abatement jobs be protected?

The OSHA 29 CFR 1926.62 Lead standard became law on June 3, 1993. This standard includes specific requirements for protecting workers doing lead abatement.

How much lead dust is dangerous?

EPA must issue standards on how much –

- Some lead dust is allowed on the floors and windows before abatement must be done (Hazard levels: floors equal/greater than 40 ug/ft²; interior window sill equal greater than 250 ug/ft²; Clearance levels: floors = 40 ug/ft²; interior window sill = 250 ug/ft²; Window troughs = 400 ug/ft²).
- Some lead is allowed in soil before interim controls or abatement are applied (Clearance levels for bare soil in play areas = > 400 ppm and bare soil in all other areas >1200 ppm).

How does the government plan to educate the public?

EPA law says that when a house or apartment is sold or rented, the seller or landlord must tell the buyer or renter anything he or she knows about lead on the property. This is called the Real Estate Disclosure Law. This law means that:

1. If an inspection has been done, the buyer or renter must get a copy of the inspection report.
2. If an inspection has not been done, the buyer or renter has 10 days to choose whether to pay for his or her own inspection (about $500).
3. If lead abatement has been done, the buyer or renter must get a copy of the abatement report.
4. Every buyer or renter must get a copy of the EPA booklet Protect Your Family From Lead in Your Home.
5. Anyone doing renovation also has to give you a copy of the booklet.

The EPA law does not say that an lead inspection has to be done; that lead abatement must be done, and that a lead cleanup must be done.
Community and occupant rights.

People who live in the community have a right to a safe and healthy community. The community and occupants need to know about the lead hazards. Some states require signs to be posted at least three days before abatement work begins. The building occupants should receive written information about the seriousness of the lead hazard. Title X requires that EPA develop a lead hazard information pamphlet to be given to prospective home buyers and renters.

Occupants need to know:

- The dangers of lead dust;
- How to clean and pack their possessions;
- That they cannot re-enter the home or apartment until it has passed a final clearance;
- What work will be done;
- How lead is abated – safely;
- What happens to the lead waste;
- How to clean and maintain their home or apartment after abatement;
- Where to get blood tests for lead, especially for the children;
- What type of training workers have; and
- What other hazards exist in their home.
How to Read an OSHA Regulation (Standard)

All OSHA standards are composed of paragraphs. These paragraphs begin with small letters (a), (b), (c), and etc. The construction industry lead standard, 29 CFR 1926.62, contains paragraphs (a) through (r). For example:

1926.62(j) Medical Surveillance

Sub-sections to the paragraphs begin with regular (Arabic) numbers (1), (2), (3) and etc. For example:

1926.62(j)(1) General
1926.62(j)(2) Biological Monitoring
1926.62(j)(3) Medical Examinations and Consultations

Sub-sections of the numbered sub-sections begin with the lower case Roman numerals (i), (ii), (iii), (iv), and etc. For example:

1926.62(j)(1)(i) The employer shall make available initial medical surveillance to employees occupationally exposed on any day to lead at or above the action level.

When the Roman numeral sub-sections have sub-sections, they begin with capital letters (A), (B), (C), and etc. For example:

1926.62(j)(2)(i)(A) For each employee covered under paragraph (j)(1)(ii) of this section, at least every 2 months for the first 6 months and every 6 months thereafter;