

TO: SUPERSEDED BY EI 93-034 EFFECTIVE 11/9/93	ENGINEERING INSTRUCTION			NEW YORK STATE DEPARTMENT OF TRANSPORTATION	
	SUBJECT: RESPIRATORY PROTECTION				
Subject Code: 7.30					
Distribution:	30 <input checked="" type="checkbox"/> Main Office	32 <input checked="" type="checkbox"/> Regions	34 <input checked="" type="checkbox"/> Special	Code: EI-92-016	Date: 4/1/92
APPROVED:	<i>Paul T. Wells</i> Paul T. Wells, Deputy Chief Engineer, Construction Division			Supersedes:	

The purpose of this EI is to focus attention on the hazards of working with lead. Lead is a toxic metal that can cause damage to the nervous system, kidneys, bones, heart, and reproductive systems. The vast majority of lead poisoning cases linked to the work place result from the inhalation of fine dust particles containing lead. Severe lead poisoning can also result from vaporization of lead during cutting, welding, or grinding operations.

Designers, inspectors, and contractors must consider the health and safety of those workers potentially exposed to lead. To reduce adverse health affects, it is essential to reduce worker exposure. The most effective method to reduce inhalation of airborne lead is through the proper use of respirators. To this end, the attached Special Note, emphasizing construction site standards listed in OSHA 29 CFR 1926.103 (Respirator Protection), will be included in all contracts with the following items; Item 18570.xxxx Treatment and Disposal, Item 589.xx Removal of Existing Steel, and core Item 570.xx Cleaning and Painting beginning with the May 7th letting.

In addition, Section 570 of the Standard Specifications has been amended to order the use of vacuum cleaners with HEPA (High Efficiency Particulate-Air) filters for the clean-up of paint waste debris. The revised specification will be incorporated into contracts beginning with the May 7th letting.

The anticipated cost to realize compliance with OSHA requirement 29 CFR 1926.103 is negligible. Continuous flow supplied air blasting hood/helmets are already required. The cost to supply a powered air purifying respirator for the vacuum operator is estimated to be less than \$1,000. The expected appropriate level of protection for other workers is a half-mask respirator with a HEPA filter. These respirators, including HEPA cartridges, cost less than \$50 each.

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Inspectors must be supplied with and use appropriate respirators if they are involved in paint removal or other operations involving lead-based paint or other materials containing lead. A written respirator program, medical clearance, and fit tests are currently required for inspectors (Department employees and consultants) and for employees of the contractor, to the extent that they are exposed to levels of airborne lead particles as defined by the Special Note.

Employers are currently required to supply their employees with appropriate respiratory protection commensurate with the level of airborne lead expected at the construction site. It is expected that half-mask respirators with HEPA filters will provide an adequate level of protection for workers outside the work zone (as defined in the Special Note).

Medical testing and respirator fit testing is available to Department employees through a Statewide contract administered by the Office of Human Resources, Employee Health and Safety Section. Regional Safety Representatives are familiar with the details of the contract.

Written respirator programs are in place in each Region. Regional Safety Representatives are knowledgeable of the requirements of respirator programs.

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SPECIAL NOTE

The paint to be removed contains lead. Lead is a toxic metal capable of causing damage to the nervous system, kidneys, bones, heart, and reproductive system.

By issuance of this Special Note, painting contractors are alerted to the fact that respirators are a required component of the Project Health and Safety Plan listed in Section 107-05, Subsection A, of the Standard Specifications. The contractor is alerted to OSHA requirements, including but not limited to, Hazard Communication (29 CFR 1926.59) and Safety Training (29 CFR 1926.21), and recommendations to provide appropriate personal protection equipment and personal hygiene facilities.

The Contractor's respirator program shall be in full compliance with all aspects of OSHA 29 CFR 1926.103. Additionally, compliance with the applicable requirements of 29 CFR 1910.134 pertaining to abrasive cleaning operations and equipment will be mandatory. As cited in these regulations, when respirators are provided, the contractor shall establish a written respirator program, assure that proper respirators satisfying fit-test criteria are issued, and are in use when airborne concentrations of lead are present.

With the issuance of this Special Note, the New York State Department of Transportation has outlined the OSHA respiratory protection requirements for lead based paint removal operations and for lead based paint clean-up operations. The requirements are as follows:

ABRASIVE BLASTING

<p>Blasters and all others in the blast zone.</p>	<p>Continuous flow supplied air blasting hood/helmet (Type CE) (MSHA/NIOSH Approved)</p>
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The blast zone is defined as the sphere encompassed by 50' in all directions from the paint removal operation. The Engineer-in-Charge may exercise discretion in cases where a visible cloud of material moves beyond the 50' radius or where a significant obstruction, such as a bridge deck or a containment system, decidedly reduces the airborne concentration of lead within the volume in question. The potential hazards to the public and the environment weigh heavily in determining the limits of the blast zone.

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CLEAN-UP OPERATIONS

Workers operating
HEPA vacuum
equipment

Powered air purifying
respirator (PARP)
(MSHA/NIOSH Approved)

ALL OTHER OPERATIONS

All other workers are required to do an appropriate level of protection commensurate with the airborne concentrations of lead in which they are working. Because exposure levels outside of the previously described areas are highly variable and dependant on actual conditions, the level of protection is to be determined by the contractor and subject to the approval of the EIC. Contractors should note that significant airborne lead concentrations may be present well after paint removal and clean-up operations have been completed. As such, each employee should be equipped with and use appropriate personnel respiratory protection whenever airborne concentrations of lead are present.

REFERENCE PUBLICATIONS

OSHA - 3079 Respiratory Protection

OSHA - 3126 Working with Lead in the Construction Industry