

# ADOSH ADVOCATE

*Improving Workplace Safety and Health*



<http://www.ica.state.az.us>

Darin Perkins, Director

Fall 2002

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## ADOSH ADVOCATE

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## Fall Protection

In an effort to help employers understand where and when to provide fall protection for their employees, ADOSH will be summarizing the various requirements in the next several issues of the Advocate. This issue summarizes the fall protection requirements in general industry. Subsequent issues will summarize the requirements for the construction industry, with specific articles devoted to steel erection, scaffolding and residential construction.

### General Industry Fall Protection Requirements:

**Stairway floor openings:** Guarded by a standard railing on all exposed sides (except at entrance to stairway). For infrequently used stairways where traffic across the opening prevents the use of fixed standard railing (as when located in aisle spaces, etc.), the guard shall consist of a hinged floor opening cover of standard strength and construction and removable standard railings on all exposed sides (except at entrance to stairway).

**Ladderway floor openings or platforms:** Guarded by a standard railing with standard toeboard on all exposed sides (except at entrance to opening), with the passage through the railing either provided with a swinging gate or so offset

that a person cannot walk directly into the opening.

**Hatchways and chute floor openings:** Guarded by a hinged floor opening cover equipped with standard railings or permanently attached so as to leave only one exposed side. When the opening is not in use, the cover shall be closed or the exposed side shall be guarded at both top and intermediate positions by removable standard railings.

**Skylight floor openings and holes:** Guarded by a standard skylight screen or a fixed standard railing on all exposed sides.

**Pits and trapdoor floor openings, manhole floor openings, temporary floor openings and floor holes:**

Guarded by a cover or railings of standard strength and construction. While the cover or railings are not in place, the opening shall be constantly attended by someone.

**Floor holes** into which persons **cannot** accidentally walk (on account of fixed machinery, equipment, or walls) shall be protected by a cover that leaves no openings more than 1 inch wide. The cover shall be securely held in place to prevent tools or materials from falling through.

**Wall openings** with a drop of more than **4 feet** shall be guarded by one of the following: Rail, roller, picket



fence, half door, or equivalent barrier. When the opening is not in use for handling materials, the guard shall be kept in position regardless of a door on the opening. In addition, a grab handle shall be provided on each side of the opening with its center approximately **4 feet** above floor level and of standard strength and mounting.

**Chute wall openings** with a drop of more than **4 feet**: Guarded by rail-

ing, covers or equivalent protection.

**Window wall openings** with a drop of more than **4 feet**, and where the bottom of the opening is less than 3 feet above the platform or landing: Guarded by standard slats, standard grill work, or standard railing.

**Open-sided floors or platforms 4 feet** or more above adjacent floor or ground level: Guarded by a standard railing on all open sides except

where there is an entrance to a ramp, stairway, or fixed ladder.

**Runways**: Guarded by a standard railing on all open sides **4 feet** or more above floor or ground level.

**Powered platforms for building maintenance**: Employees shall be protected by a personal fall arrest system.

*Patrick Ryan*

## Diisocyanates

Diisocyanates are a group of low molecular-weight aromatic and aliphatic compounds. The most common of these are toluene diisocyanate (TDI), methylene bisphenyl diisocyanate (MDI), and hexamethylene diisocyanate (HDI). The major route of occupational exposure to isocyanates is inhalation of the vapor or aerosol. Exposure may also occur through skin contact during the handling of liquid isocyanates. Occupational exposure normally occurs during the production and use of isocyanates—particularly during the mixing and foaming process in the polyurethane foam industry.



Diisocyanates are widely used in the manufacture of flexible and rigid foams, fibers, coatings such as paints and varnishes, and elastomers (ie. auto body repair, building insulation materials, shipping, etc).

Occupational exposure standards for isocyanate exposure are based on respiratory irritation and sensiti-

zation and carcinogenesis. The current OSHA PEL (permissible exposure limit) for TDI and MDI is 0.02 ppm (parts per million) as a ceiling limit, or the limit that cannot be exceeded at any time.

TDI and other isocyanates are powerful irritants to the mucous membranes of the eyes and gastrointestinal and respiratory tracts. Direct skin contact with TDI can

also cause marked inflammation. Respiratory irritation may progress to a chemical bronchitis.

Isocyanates can also sensitize workers, making them subject to severe asthma attacks if they are

exposed again—even at concentrations below the permissible exposure limit. Death from severe asthma in sensitized individuals has been reported.

The International Agency for Research and Cancer (IARC) and the World Health Organization (WHO) concluded that data were sufficient to show that TDI causes cancer in

animals and to treat it as a potential human carcinogen.

The potentially serious nature of respiratory disease after exposures to isocyanates is well documented. Because TDI and other isocyanates are regarded as potential human carcinogens, appropriate engineering controls and work practices should be used to reduce worker exposures to the lowest feasible concentration.

To provide maximum protection to employees, ADOSH recommends substituting other products in place of isocyanates, where possible. Where product substitution is not possible, employers must protect employees by providing closed systems and ventilation, worker isolation, protective clothing, respiratory protection, worker and employer education, exposure monitoring, and medical monitoring.

*Jesus Maeda*

## For more information

on any of the topics in this issue, or regarding other occupational safety and health issues, please feel free to contact the ADOSH consultation section at (602) 542-1769 in Phoenix, or (520) 628-5478 in Tucson. Additional information on a variety of safety and health topics can also be found on the OSHA web site at [www.osha.gov](http://www.osha.gov).

## Fatal Mistakes

You're all done with your work for the day. You have used a 40' extension ladder to reach the side of a building where you did some final touch-up painting on a job you were finishing. It's time to roll up and go home. Your ladder is relatively new. It is a very well made, name brand product, and it has served you well. It remained steady throughout your job and you know it will serve you well tomorrow if you take care of it. You call your partner over to help stand the ladder up so you can lower it with the rope and pulley device. This is a 40' ladder and it is heavy and cumbersome.

Now some other factors come into play. The building is 8' 7" from a 7200-volt power transmission system on wooden power poles. Your ladder is between the lines and the building, so it is closer than 8' 7" from the lines. The bottom line is a neutral. The second line up is a 7200-volt "hot" line. Your ladder tilts too far toward the power lines when you and your partner stand it up to lower it.

Now, we need to change the viewpoint of this article. We don't know what the victims were really thinking as they stood this ladder up. And we certainly do not want to offend their memory by putting words in their mouths. We do know that the very last thing that happened to them was the 7200-volt jolt that came from the "hot" line through the aluminum ladder to their hands and out their feet to the ground. Both men holding the ladder were killed.

Working within the 10' exclusion zone around an overhead power transmission line is an acceptable practice if the power is neutralized, or off, and provisions made with the power company to prevent an accidental re-energizing of the line during the work. The power may also be controlled by blanket insulation of the lines, by the power company. In either case, the people doing the non-electrical work need to work closely with the power company to insure that they are not killed or injured by an accidental contact with the lines.

We also have another issue here. The ladder was well marked by the manufacturer with warning decals that clearly stated that it should not be used near electrical power sources. The ladder was aluminum, a good conductor of electricity.

The final issue was training. It was the feeling of the ADOSH investigator that, had the two employees been adequately trained, they would not have worked within the danger zone of an active power transmission line, would not have used an aluminum ladder in the vicinity of electrical power components and would have been alive today. Training is always paramount in construction and other industries where significant danger to life is present.

**Ernie Miller**

## Injury Reporting

If you did not know, there are a number of Standard Industrial Classification codes (SIC) that have been exempted from maintaining the OSHA Log 300 for Occupational Injuries & Illnesses.

Some of the exempted SIC numbers are within the healthcare industry; medical offices, dental offices and medical/dental laboratories listed as SIC number 8011, 8021, 8071 & 8072. There are other healthcare SIC's that may or may not be exempt. Please refer to 29 CFR 1904.2 Subpart B - Appendix A for a listing of all exempt industries.

If you are not sure what your business SIC number is or if your business is exempt or not, please feel free to call me at 602-542-1655 or you can email me at [sweberman@osha.gov](mailto:sweberman@osha.gov).

I also wanted to mention that those health care SIC's that are exempt from maintaining the OSHA Log 300 are also exempt from maintaining the Sharps Injury Log as required by the Bloodborne Pathogens Standard - 29 CFR 1910.1030(h)(5).

**Steven Weberman**

## Did you know?

The letter designation for protective caps (hard Hats) under the ANSI Protective Caps classification system has changed. The new designations are: "E" (electricity) helmets, formerly class B, are intended to reduce the danger of exposure to high voltage electrical conductors. "G" (general) helmets, formerly class A, are intended to reduce the danger of exposure to low voltage electrical conductors.

For more information see ANSI Z89.1-1997



## Thanks to Consultation

ADOSH recently received the following letter from Larry Kreis of New World Homes. It underscores the usefulness of the ADOSH consultation program, as well as the importance of an effective, comprehensive safety and health program. If you are interested in utilizing the ADOSH consultation services, please speak with a consultant at 602-542-1769 in Phoenix, or 520-628-5478 in Tucson.

*I would like to thank you for allowing us to participate in the voluntary consultation program. We feel that the effort has been worth the time in achieving a higher level of safety consciousness. As you know all of us at New World Homes are extremely committed to a safe and productive work place. The consultation program has become one of the corner stones in our Total Quality Management. We truly believe a good safety program has many rewards.*

*The consultation program has helped us maintain lower than average [workers ] compensation insurance costs. It has been part of our goal in achieving top quality management of our construction sites. Our employees are very proud of what they achieve and their enthusiasm has led to several requests from subcontractors that want to be part of our team. We feel the positive morale is due in part to the success of our safe work sites. The program has helped to maintain our competitive edge in attracting good, qualified subcontractors. They understand the consultations will save them money.*

*The program has been successful for one very positive reason. We have never felt it was an adversarial situation. The consultation program has produced good results in building teamwork, improved record keeping and education on safety. The inspections have been just like any local building inspection. Even though we would like to achieve no correction items our goal is to minimize those frequently overlooked safety items and have no items that would be considered serious. This would be very similar to the inspection process with a building department. We feel we definitely are on the road to success with the program.*

*All of us at New World Homes want to express our gratitude with the ADOSH consultation program. We are extremely pleased with the results and will continue to support this very worthwhile program.*

*Thank you again for inviting us to join the program.*

*Larry Kreis*

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## Steel Erection

The District Council of Iron Arizona Subcontractors Workers, in cooperation with Association, spent two days ADOSH, recently conducted a training session on the new steel erection standard. ADOSH compliance officers and consultants, together with employer representatives from Schuff Steel, McCarthy Construction and the need assistance complying with the



receiving in-depth training on the new standard. ADOSH believes that this training will benefit employers by ensuring consistency in the application and interpretation of the standards. Employers who

new standards may contact the ADOSH consultation section at 602-542-1769 in Phoenix, or 520-628-5478 in Tucson.

For a down loadable version of this newsletter, please visit our web site at [www.ica.state.az.us](http://www.ica.state.az.us) or if you would like to be added to our hard copy mailing list, please e-mail your request to: [adoshnews@ica.state.az.us](mailto:adoshnews@ica.state.az.us)

## Organizational Changes

Changes within ADOSH have resulted in the creation of an Assistant Director position in the Tucson office. ADOSH is pleased to announce that Mark Norton has been promoted to this position. Mr. Norton has been with the Division for over 14 years and is well respected by the safety community. As a result of this change, ADOSH now has an Assistant Director in both offices. Patrick Ryan will remain the Assistant Director for the Phoenix office.

## *Voluntary Protection Program Seminars*

The Voluntary Protection Program (VPP) was established to provide an opportunity for employers with better than average injury and illness rates to partner with ADOSH to make their workplaces the safest possible for their employees. ADOSH has a goal of increasing the Arizona VPP membership by at least ten employers over the next five years. ADOSH will be holding three seminars during the coming year to provide information to employers interested in becoming a VPP member. Topics discussed will include the requirements to become a member, as well as the benefits for employers and employees. If you are interested in the VPP program, please contact either Mark Norton (520-320-4222) or Chuck Konitzer (602-542-1718) to reserve your spot at one of these free seminars:

<u>City</u>	<u>Date</u>	<u>Time</u>	<u>Location</u>
Tucson:	October 17, 2002	8:00 - 12:00	2675 E. Broadway, Tucson
Phoenix:	January 28, 2003	8:00 - 12:00	800 W. Washington St., Phoenix
Flagstaff:	June 2003	(Exact date and location to be determined).	

## ADOSH Education and Training Calendar

Registration for each course begins no earlier than 30 days prior to the date of the course. Location, address and time of course will be determined at the time of registration. All ADOSH classes are free of charge and are subject to change or cancellation without notice.

<b>Date</b>	<b>Course</b>	<b>Location</b>	<b>Trainer</b>	<b>Phone</b>
October 1	Construction Safety Management	Phoenix	Joe Gates	602-542-1641
October 1-3	LTAP Winter Maintenance Conf.	Pinetop	Joe Gates	602-542-1641
October 2	OSHA in the Medical Office	Phoenix	Fernando Mendieta	602-542-1640
October 3	Fall Protection	Yuma	Joe Gates	602-542-1641
October 8	Lockout/Tagout	Avondale	Joe Gates	602-542-1641
October 10	Forklift Train-the-Trainer	Prescott	Joe Gates	602-542-1641
October 10	Forklift Train-the-Trainer	Tucson	Glynn Condit	520-320-4260
October 16	OSHA in the Medical Office	Holbrook	Fernando Mendieta	602-542-1640
October 16	OSHA Recordkeeping	Phoenix	Joe Gates	602-542-1641
October 29	Scaffolding Safety	Phoenix	Joe Gates	602-542-1641
October 29	Safety Management	Tucson	Glynn Condit	520-320-4260
October 30	Hazard Communication	Phoenix	Fernando Mendieta	602-542-1640
November 5	Construction Safety Management	Phoenix	Joe Gates	602-542-1641
November 6	Lockout/Tagout	Yuma	Joe Gates	602-542-1641
November 7	Machine Guarding	Yuma	Joe Gates	602-542-1641
November 7	Fall Protection	Tucson	Glynn Condit	520-320-4260
November 7	OSHA in the Medical Office	Avondale	Fernando Mendieta	602-542-1640
November 12	Forklift Train-the-Trainer	Phoenix	Joe Gates	602-542-1641
November 12	Respiratory Protection	Yuma	Fernando Mendieta	602-542-1640
November 13	OSHA Recordkeeping	Phoenix	Joe Gates	602-542-1641
November 15	Respiratory Protection	Flagstaff	Fernando Mendieta	602-542-1640
November 19	Excavation Safety	Phoenix	Joe Gates	602-542-1641
November 20	Respiratory Protection	Tempe	Fernando Mendieta	602-542-1640
November 21	Respiratory Protection	Tucson	Fernando Mendieta	602-542-1640
November 21	Scaffold Safety	Tucson	Glynn Condit	520-320-4260
November 22	Confined Space Entry	Tucson	Fernando Mendieta	602-542-1640
December 3	Construction Safety Management	Phoenix	Joe Gates	602-542-1641
December 4	Hazard Communication	Yuma	Fernando Mendieta	602-542-1640
December 4	Excavation Safety Awareness	Tucson	Glynn Condit	520-320-4260
December 12	OSHA Recordkeeping	Camp Verde	Joe Gates	602-542-1641
December 18	OSHA Recordkeeping	Tucson	Glynn Condit	520-320-4260

Trainers may also be contacted by e-mail at [joe.gates@osha.gov](mailto:joe.gates@osha.gov), [fernando.mendieta@osha.gov](mailto:fernando.mendieta@osha.gov) and [glynn.condit@osha.gov](mailto:glynn.condit@osha.gov)

### Occupational fatalities investigated by ADOSH April 1, 2002 through June 30, 2002

1. A piece of structural steel broke from its rigging, falling and knocking an employee to the ground.
2. An employee fell from a roof.
3. An employee was struck by a train car.
4. A front-end loader rolled over, killing the operator.
5. Two employees were excavating at the foot of a block wall. The wall fell over crushing one employee.
6. During the dismantling process, the boom of a crane collapsed, crushing an employee.
7. An employee was struck by a dump truck during road construction.
8. An employee was electrocuted. When he leaned against an open, energized electrical cabinet.
9. While installing roof trusses, one employee was killed when the trusses collapsed.

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