Massachusetts FACE • Occupational Fatality Report

Massachusetts Department of Public Health
Occupational Health Surveillance Program
Fatality Assessment and Control Evaluation Project

Laborer Dies after Falling From an Aluminum Extension Ladder at a Residential Construction Site - Massachusetts

Investigation: # 08-MA-042-01
Release Date: June 4, 2010

SUMMARY

On June 30, 2008 a 27-year-old male laborer (victim) was fatally injured when he fell from an aluminum extension ladder on which he was working to reattach a loose section of vinyl siding to the side of a house. Another worker, who was onsite at the time of the incident, was holding the base of the ladder. The victim was using both hands to hold on to the piece of vinyl siding as he pushed it towards the house in an upwards motion. This motion caused the victim to lose his balance and fall approximately 20 feet to the ground below. The victim landed to the right of the ladder on cement steps. A call was placed for emergency medical services (EMS) by the co-worker. EMS and police personnel arrived within minutes and transported the victim to a local hospital where he was pronounced dead. The Massachusetts FACE Program concluded that to prevent similar occurrences in the future, employers should:

- **Ensure that ladders are not used as work platforms, when feasible;**
- **Ensure that ladders are equipped with stabilizers and are set up properly;**
- **Provide all employees with training about ladders and aerial work platforms when they will be used to complete a task; and**
- **Ensure that workers' compensation insurance requirements are met.**

Government agencies responsible for health and safety in workplaces should:

- **Continue and expand innovative efforts to provide employers and workers in small high risk industries, such as home renovation, with health and safety information and training.**

INTRODUCTION

On October 7, 2008, the Massachusetts FACE Program was notified by the Occupational Safety and Health Administration (OSHA) through the 24-hour Occupational Fatality Hotline that on June 30, 2008, a male laborer had died when he fell from a ladder on which he was working. An investigation was initiated. On December 11, 2008, the Massachusetts FACE Program Director traveled to the company attorney's office and met with one of the company owners, his attorney and an interpreter. At a later date the incident location was visited. The police department report, death certificate, company information, and the OSHA fatality and catastrophe report were reviewed during the course of the investigation.

The employer is a residential construction company that has been in business for two years. The company is owned by two brothers in-law and there are no other full time employees. When additional help is needed on a job, the company hires day laborers or workers who are recommended by friends and family. The victim, a laborer, was a distant family member who had worked for the company a few times in the past and had been on this particular job for approximately one week at the time of the incident. The victim was an immigrant from Brazil and had been in the country for approximately five years. While in Brazil, the victim had worked for a roofing material manufacturing facility and a grocery store. Since coming to the United States, the victim usually worked as a construction laborer. The company's typical work day was reported as usually eight to ten hours long.

The company does not have a designated person in charge of health and safety, does not have a health and safety program, and does not provide health and safety training to employees. It was reported that when the company is looking for help, they seek out workers, such as day laborers, with experience in the tasks that will be performed. When hiring day laborers, the company typically will go to the parking lot of a local coffee shop and, while there, ask the potential workers if they have had experience in the task to be completed. The hired day laborers would have their own basic tools to complete the task; for example, plasterers would have their own trowels and carpenters would have their own hammers and other tools. The company was not registered as a Massachusetts Home Improvement Contractor nor did either owner have a Massachusetts Construction Supervisor License. The Massachusetts Construction Supervisor License is required to obtain the required permits when building or renovating one and two family homes. The company also did not have workers' compensation insurance as required by law in Massachusetts (G.L. c. 152, Sec. 25A). There was no union representation at the company.

INVESTIGATION

Reportedly, most of the company's jobs, including the job involved in the incident, were acquired through a general contractor. This general contractor would either hire the company as a subcontractor or help the company get the job. The general contractor is an incorporated company registered as a Massachusetts Home Improvement Contractor and the owner has a current Massachusetts Construction Supervisor license. The general contractor also has workers' compensation insurance. Reportedly, it is the general contractor who provides the estimates for the jobs and applies for the job permits. Then, when needed, the general contractor hires subcontractors, such as the company involved in this incident, to complete the majority of the work. It was also reported that the general contractor outlines the scope of work for the subcontractors and provides them, when needed, with some of the equipment to complete tasks, such as scaffolding and other large pieces of equipment.

The job that brought the victim and co-workers to the incident location entailed a renovation of a three-story three-family house. The project included, but was not limited to, removing the existing vinyl siding and replacing it with new vinyl siding, replacing the building's roof, and removing the existing three-story rear porches and building a three-story addition. Although the general contractor had helped establish the project's scope and estimate, and had pulled all the required permits it was reported that the subcontractor was the sole entity responsible for the job. At the time of the incident, the company had been on the job for approximately 45 days and the victim had been working on the job for approximately one week.

The morning of the incident, one of the company owners, the victim, and another co-worker arrived at the worksite at approximately 8:00 a.m. The main task for the day was to finish installing the vinyl

siding on the front and two sides of the house. The back side of the house was not going to be resided until after the addition was built. Reportedly, that morning, the owner of a neighboring house had come over to the workers to inquire about having them reattach a section of vinyl siding that had become loose on his house. The neighbor, who spoke only Spanish, talked with the company owner, who spoke Portuguese and some English. The victim and the co-worker, both whose first language was Portuguese, also spoke some Spanish. The company owner reported that he told the neighbor to negotiate directly with the victim and the co-worker about performing the repair later that day when they were done with their main tasks. The company owner, the victim, and the co-worker worked the entire day residing the three-family house. At approximately 4:00 p.m. the company owner left the worksite, and the victim and the co-worker stayed and cleaned up the work site.

At approximately 5:00 p.m. the victim and the co-worker went to the neighboring house to start the repair (Figure 1). The right side yard property line of the three-family house they had been working on all day was the same property line for the backyard of the neighboring house where the piece of siding was going to be reattached. A chain link fence ran along this property line. The distance between the neighboring house and the chain link fence was approximately three feet. This entire three foot distance was a poured concrete pathway that ran along the rear of the house. The pathway led to the street and approximately five feet in from the street there were concrete stairs within the pathway.

The section of vinyl siding that was loose was approximately six feet long and six inches wide. The piece was located in the middle of the back side of the house up at the roof's edge approximately 20 feet high (Figure 2). The victim and the co-worker brought a 32 foot aluminum extension ladder to the back of the house. The company owned this ladder and although at the time of the investigation, the company owner did not know the ladder's rating, it was reported that the ladder was one year old and in good shape. When setting up the ladder, the victim and co-worker positioned the base in the right side yard of the three-family to help angle the ladder. The ladder extended up and over the chain link fence, with the top of the ladder placed against the house just under the loose section of vinyl siding. The ground where the base of the ladder was positioned was a flat and grassy; the ladder was extended approximately 20 feet (Figures 1 and 2).

The victim grabbed some nails and a hammer and then climbed the ladder. He was not wearing a tool belt and was not carrying other tools in his pockets. The co-worker was holding the base of the ladder, which was reported as a common practice. Once at the top section of the ladder, near the location of the loose piece of vinyl siding, the victim placed the hammer into the house's gutter. While standing on the ladder, the exact rung is unknown, he leaned to the right side and using both hands, grabbed on to the loose piece of vinyl siding and pushed on the piece of siding towards the house in an upward motion. The victim lost his balance and fell off the ladder towards the right, falling approximately 20 feet to the concrete below landing on the concrete steps. The ladder fell towards the left also landing on the ground below.

The co-worker used a cell phone to place a call for emergency medical services (EMS). EMS and police personnel arrived within minutes. The victim was transported to a local hospital were he was pronounced dead.

CAUSE OF DEATH

The medical examiner listed the cause of death as multiple skull, facial and neck fractures.

RECOMMENDATIONS/DISCUSSION

Recommendation #1: Employers should ensure that ladders are not used as work platforms, when feasible.

Discussion: Scaffolding and aerial work platforms provide a better work surface for employees, even with the increased set up and dismantling time compared to ladders. Working from ladders can pose a fall hazard; therefore ladders should only be used for accessing higher and lower levels.[1] If the task to be performed requires the worker to push, pull, or pry, as in this case, then the use of scaffolding or aerial work platforms rather than a ladder is strongly recommended. Prior to employees using scaffolding and aerial work platforms, employers must provide employees training on their proper use (Recommendation #3). In this case, the task of reattaching the piece of vinyl siding required the victim to do some pushing and pulling. In addition, the location where the task was to be performed would not allow for an aerial work platform to be used, therefore scaffolding might have been a better work surface than a ladder.

Ladder jack scaffolding, routinely used in residential construction, is fairly quick to setup. This type of scaffolding uses two extension ladders set up at the same angle and parallel to each other. Ladder jacks are attached to each extension ladder and a plank or platform is used to span the two ladders. Extension ladders used as part of ladder jack scaffolding should at a minimum have a type 1 rating, 250 pounds, although it is preferred that type 1A rated ladders, 300 pounds, are used. Ladder jack scaffolding should not be used if the work area is 20 feet above the base of the ladders. The ladders used as part of ladder jack scaffolding should be secured at both the top and the base of the ladder.[1]

Although routinely used in residential construction, aerial work platform was not an option in this case, due to limited accessibility to the area. The main types include boom-supported aerial work platforms, which can have a straight mast or telescopic and articulated booms (the work platforms can be positioned horizontally beyond the base), and scissor lifts, which can be raised and lowered only with no horizontal positioning.[1]

The Occupational Safety and Health Administration (OSHA) requires fall protection to be used with ladder jack scaffolding on residential construction sites when the work area is more than 10 feet above the ladder base and when using aerial work platforms, except when using scissor lifts with the guardrail system in place. Fall protection should be designed and inspected by a *competent person*. A *competent person*, as defined by OSHA, is a person who, through training or knowledge, is capable of identifying existing and predictable hazards in the surroundings or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

Recommendation #2: Employers should ensure that ladders are equipped with stabilizers and are set up properly.

Discussion: In this case, it appears that a combination of ladder set up, including lack of stability accessories, and overreaching / overexertion from the ladder on which the victim was working, contributed to this incident. To minimize the hazard of falling from an unstable extension ladder, ladder stabilizers (also known as standoffs) should be used at all times. Ladder outriggers are also available and can help stabilize a ladder during use. In addition, following the procedures outlined below will help prevent falls from extension ladders.

To ensure proper extension ladder set up:

- Select the right ladder for the job and check the duty rating label to be sure the ladder can support you and your tools.
- Check for loose, cracked or greasy rungs, split side rails and worn shoes. Make sure the rung locks are in working order. Tag and remove defective ladders from the job site.
- Clear away debris and obstructions from the areas where the bottom and the top of ladders will be located.
- Don't place ladder in front of doors without blocking the door.
- Set the base on a secure, even surface at a horizontal distance of 1 foot for every 4 feet in height. Plywood can be used to make a firm level base.
- Call the electric company for assistance if working near power lines.

To ensure an extension ladder is as stable as possible always:

- Secure the ladder's base by tying it to stakes or placing a board against the feet.
- Secure the top of the ladder when possible.

In addition, if work must be performed from a ladder, the following procedures can help minimize the risk of falling from the ladder:

- Never carry tools, equipment or supplies while climbing up or down a ladder; use tool belts or a hoist.
- Always face the ladder when using it.
- Never work from the top three rungs of a ladder.
- Keep both feet on the same rung while working.
- Keep your body centered between the side rails of the ladder, do not overreach.
- Maintain 3-point contact with the ladder at all times.

Recommendation #3: Employers should provide all employees with training about ladders and aerial work platforms when they will be used to complete tasks.

Discussion: In this case, the victim was not provided training on ladders, or equipment he was using to complete the task. OSHA requires that employers provide training to employees about proper ladder use and safety. The OSHA regulation 1926.1060, *Training requirements* states that training on ladders shall enable each employee to recognize hazards related to ladders and stairways, and shall train each employee in the procedures to be followed to minimize these hazards.[2] Ladder training should include, but not be limited to:

- How to choose the correct ladder for the job, including type of ladder, length, and maximum weight capacity.
- Proper inspection of the ladder prior to use.
- Proper placement and handling of ladders.
- Proper set up and use of a ladder (Recommendation #2).

If scaffolding had been used, the OSHA regulation 1926.454, *Training requirements* requires employers to provide employees with training when they will be using scaffolding and aerial work

platforms to complete tasks.[3] Scaffolding and aerial work platform training should include, but not be limited to:

- How to choose the correct scaffold or aerial work platform for the job.
- Maximum weight capacity of the scaffold or aerial lift.
- Proper set up and use.
- Proper selection and use of fall protection.

All trainings should be performed by a *competent person* as defined by OSHA in Recommendation #1. Retraining should be provided for each employee as necessary. In addition, all training should be documented and the documentation should include who provided the training and their qualifications, the content of the training, workers who were trained, and the assessments of workers' comprehension of the training.

Recommendation #4: Employers should ensure that workers' compensation insurance requirements are met.

Discussion: In this case, the company had two employees, not including any hired day laborers, and did not have workers' compensation as required by law in Massachusetts (G.L. c. 152, Sec. 25A). All employers in Massachusetts are required to carry workers' compensation insurance covering their employees, including themselves if they are an employee of their company. This requirement applies regardless of the number of hours worked in any given week.[4]

In Massachusetts members of a Limited Liability Company (LLC), partners of a Limited Liability Partnership (LLP), and partnerships or sole proprietors of an unincorporated business are not required to carry, but can carry, workers' compensation insurance for themselves. Day laborers who are hired by companies, LLC, LLP and sole proprietors, are considered employees. Therefore, in Massachusetts once a person is hired, even for one day, workers' compensation insurance becomes a requirement.[4] The Massachusetts Department of Industrial Accidents (DIA), the state agency that is responsible for overseeing the Workers' Compensation system in Massachusetts, has an Employer's Guide to the Massachusetts Workers' Compensation System available in multiple languages (www.mass.gov/dia).

In addition, general contractors should ensure that hired subcontractors have workers' compensation as required by law. This will ensure that their insurance will not have to cover an injury that occurs to subcontractor's employee, which can also increase their insurance premiums. In this case, the general contractor carried workers' compensation insurance and the company that hired the victim did not. Therefore, when the day laborer who was an employee of the sub contractor was fatally injured, the general contractor then became liable through their workers' compensation insurance.

Recommendation #5: Government agencies responsible for health and safety in workplaces should continue and expand innovative efforts to provide employers and workers in small high risk industries, such as home renovation, with health and safety information and training.

Discussion: In Massachusetts, as the country as a whole, foreign-born workers have high rates of fatal occupational injury.[5] This is explained in part by the fact that immigrant workers are more likely to be employed in higher risk occupations and industries. Inexperience, socioeconomic pressures, language and cultural barriers at work may also play a role. Lack of information about health and safety

procedures, rights and responsibilities and local resources is also a likely factor. In this incident, the victim was an immigrant from Brazil, did not speak English and had limited experience working in the high risk industry of residential construction/renovation.

Over the last several years, federal and state agencies with responsibility for worker safety and health have increased efforts to provide information to hard to reach populations. In Massachusetts, for example, the Occupational Health and Safety Administration (OSHA) entered into an alliance with a Brazilian community group to improve the health and safety of Brazilian workers. Alliance members provided OSHA 10- and 30-hour training to workers and employers in Portuguese, followed by a 500 level Train-the-Trainer course so that the community would have the ability to train from within.[8] In New Jersey, OSHA is working with the community organizations to provide guidance and access to health and safety information and training to the day laborer community.[9] The National Institute for Occupational Safety and Health (NIOSH) and the Massachusetts Department of Public Health (MDPH) are making health and safety information available in other languages though their websites and blogs. Innovative efforts like these to reach employers and workers in small, high risk industries should be continued and expanded.

Web site links to key resources:
Government (Portuguese language resources):

1) Center for Disease Control and Prevention (CDC)
www.cdc.gov/other/languages/morelanguages.html#12

2) NIOSH blog
www.cdc.gov/niosh/blog/

3) MDPH, FACE project (includes Portuguese and Spanish resources under Educational Materials)
www.mass.gov/dph/face

4) MDPH blog
http://publichealth.blog.state.ma.us/2010/02/salud-y-seguridad-en-el-trabajo.html

Government (Spanish language recourses):

1) Occupational Safety and Health Administration (OSHA): Compliance Assistance – Hispanic Employers and Workers
www.osha.gov/dcsp/compliance_assistance/index_hispanic.html

2) OSHA Spanish Web site in Spanish:
www.osha.gov/as/opa/spanish/index.html

3) National Institute for Occupational Safety and Health (NIOSH) Web site in Spanish:
www.cdc.gov/spanish/niosh/

Non-profit organizations:

1) Electronic Library of Construction Occupational Safety and Health (eLCOSH)
www.elcosh.org

2) Hispanics Work Safe
www.hispanicsworksafe.org

REFERENCES

1. Burkhart M., McCann M., Paine D. (2004) Elevated Work Platforms and Scaffolding: Job Site Safety Manual.

2. OSHA. Code of Federal Regulations. 29 CFR 1926.1060. Training requirements. Washington, DC: U.S. Printing Office, Office of the Federal Register.

3. OSHA. Code of Federal Regulations. 29 CFR 1926.454. Training requirements. Washington, DC: U.S. Printing Office, Office of the Federal Register.

4. Employer's Guide to the Massachusetts Workers' Compensation System

5. Loh K., Richardson S. (2004), Foreign-born workers: trends in fatal occupational injuries, 1996-2001, Monthly Labor Review, 127:42-53.

6. Frumkin H., Pransky G. (1999), Special Populations in Occupational Health. Occup Med: State of the Art Reviews, 4(3):479-84.

7. Azaroff L., Levenstein C., Wegman D. (2002), Occupational Injury and Illness Surveillance: Conceptual Filters Explain Underreporting, Am. J Pub Health, 92(9): 1421-29.

8. OSHA. Region I Area Offices Form Alliance with Brazilian Immigrant Center to Improve Safety and Health of Portuguese Speaking Workers in Massachusetts. www.osha.gov/dcsp/success_stories/alliances/regional/reg1_success_stories.html. Date accessed February 1, 2010.

9. OSHA. Agreement Establishing an Alliance between the Occupational Safety and Health Administration U.S. Department of Labor Hasbrouck Heights, Avenel, Parsippany and Marlton Area Offices the New Jersey Department if Labor & Workforce Development Division of Wage & Hour Compliance and the United Day Laborers of New Jersey. www.osha.gov/dcsp/alliances/regional/reg2/udlnj.html. Date accessed February 1, 2010.

Figure 1 – Incident location with an extension ladder set up in a similar location as it was at the time of the incident.

Figure 2 – Neighboring house where the incident took place. Note the loose piece of vinyl siding to the right and above the top of the ladder.

Michael A. Fiore, MS, Director
Massachusetts FACE Program
Occupational Health Surveillance Program
Massachusetts Department of Public Health

Letitia Davis, Sc.D., Ed.M., Director
Occupational Health Surveillance Program
Massachusetts Department of Public Health

****

FATALITY ASSESSMENT AND CONTROL EVALUATION PROGRAM

The Massachusetts Department of Public Health, in cooperation with the National Institute for Occupational Safety and Health (NIOSH), conducts investigations on the causes of work-related fatalities. The goal of this program, known as Massachusetts Fatality Assessment and Control Evaluation (Massachusetts FACE) is to prevent future fatal workplace injuries. Massachusetts FACE aims to achieve this goal by identifying and studying the risk factors that contribute to workplace fatalities, by recommending intervention strategies, and by disseminating prevention information to employers and employees.

Massachusetts FACE also collaborates with engineering and work environment faculty at the University of Massachusetts at Lowell to identify technological solutions to the hazards associated with workplace fatalities.

NIOSH funded state-based FACE Programs currently include: California, Iowa, Kentucky, Massachusetts, Michigan, New Jersey, New York, Oregon, and Washington.

****

Additional information regarding this report is available from:

Occupational Health Surveillance Program
Massachusetts Department of Public Health
250 Washington Street, 6th floor
Boston, Massachusetts 02108-4619
(617) 624-5627

Evaluate this report

We would appreciate your feedback on these reports so we may continue to improve the MA FACE project and our investigation reports. A feedback form can be found at:
http://www.mass.gov/Eeohhs2/docs/dph/occupational_health/report_evaluation.doc
The completed form may be returned by fax to (617) 624-5676, by mail to FACE, 250 Washington Street, 6th Floor, Boston, MA 02108, or by email to ma.face@state.ma.us.