MICHIGAN State FACE Program
Fatality Assessment & Control Evaluation

Michigan State University
Department of Medicine • Occupational and Environmental Medicine
909 Fee Road, 117 West Fee Hall • East Lansing, MI 48824 • 1-517-353-1846 • https://oem.msu.edu

REPORT#: 17MI075 **REPORT DATE:** 8/5/19

Sole Proprietor Falls Eight Feet from Flat Roof While Installing Siding

INCIDENT HIGHLIGHTS

DATE:
Summer, 2017

TIME:
Approximately 11:00 a.m.

VICTIM:
Business Owner in his 50s

INDUSTRY/NAICS CODE:
Construction/23

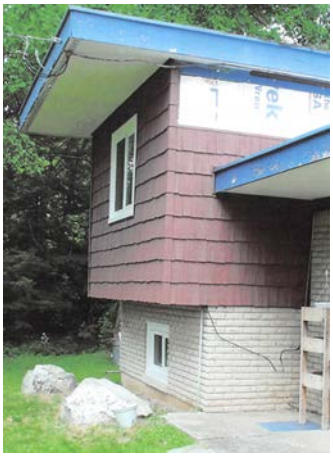
EMPLOYER:
Sole Proprietor

SAFETY & TRAINING:
Unknown

SCENE:
Residential home

LOCATION:
Michigan

EVENT TYPE:
Fall



SUMMARY

In summer 2017, a sole proprietor installing siding fell approximately eight feet from a flat roof to the concrete/packed dirt below. The decedent and his coworker were removing old aluminum siding and installing new cedar shake siding, removing and installing windows, and trimming the new windows and fascia. The decedent's coworker was working in the backyard when the decedent walked over to him telling him he had fallen off the roof… READ THE FULL REPORT> (p.3)

CONTRIBUTING FACTORS

Key contributing factors identified in this investigation include:

- No fall protection while working on a flat roof with a fall distance of more than six feet
- Immediate medical attention not sought/provided after the fall

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RECOMMENDATIONS

MIFACE investigators concluded that, to help prevent similar occurrences, employers should:

- Protect workers against falling while working six feet or more above a lower level. This includes, but is not limited to, providing appropriate fall protection utilizing conventional fall protection systems (guardrail systems, safety net systems, or personal fall arrest systems), a fall restraint system, or a written site-specific fall protection plan when conventional fall protection systems are deemed infeasible or pose a greater hazard.

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Michigan Fatality Assessment and Control Evaluation (FACE) Program

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SUMMARY

In summer 2017, a sole proprietor in his 50s died when he fell approximately 8 feet from a flat roof to the concrete/packed dirt below while installing siding on a residential home. The homeowner had contracted with Firm 1 to perform siding installation. The decedent used to be an employee of Firm 1, had left and joined Firm 2. Firm 1 subcontracted work to Firm 2. The decedent decided to leave Firm 2 and begin to work on his own. An employee of Firm 1 encountered the decedent at a local establishment and asked if he wanted the job. The decedent answered affirmatively, so the decedent was subcontracted directly by Firm 1. The decedent and his coworker (provided by Firm 2) were removing old aluminum siding and installing new cedar shake siding, removing and installing windows and window trim and fascia. The decedent's coworker was working in the backyard of the home at the time of incident. It is unclear how the decedent fell from the roof – whether he stepped off the roof or whether he was trying to access a ladder to descend from the roof. The coworker's statement to MIOSHA indicated the decedent walked back to him. The decedent told his coworker that he stepped off the roof and thought he cracked a rib. The decedent called the owner of Firm 2 on his cell phone and told him he fell from the roof. The owner of Firm 2 told him to go to the hospital. The decedent stated he was going to go home to rest. The decedent and his coworker cleaned up the jobsite, and the coworker started to drive the decedent back to his home in his pickup truck. On the way, they stopped at a convenience store, and the coworker went into the store while the decedent answered his cell phone as he was getting out of the truck. A store clerk told his coworker that his friend fell in the parking lot. The coworker and a bystander placed the decedent in the truck and his coworker transported him to a hospital. Several hours had elapsed before the decedent was seen by emergency personnel. He died eight hours later of complications of the injuries sustained in the fall.

INTRODUCTION

In summer 2017, a sole proprietor in his 50s died when he fell approximately 8 feet from a flat roof to the concrete/packed dirt below while installing siding on a residential home. MIFACE learned of this death from the MIOSHA fatality reporting system. MIFACE personnel contacted the decedent's family members, who agreed to be interviewed at a local restaurant. MIFACE reviewed the death certificate, police and medical examiner's report and the MIOSHA compliance officer file during the writing of this report. Pictures used in the report are courtesy of the responding police department and the MIFACE researcher.

EMPLOYERS

The decedent was a sole proprietor. The decedent was previously employed by Firm 1, a 50-year-old window, door and vinyl siding replacement firm. Due to economic pressures, he left Firm 1 and went to work at Firm 2, as a construction laborer for an apartment/building rental company. Firm 2 was routinely subcontracted by Firm 1 to perform work. Because the decedent did the majority of the work for Firm 2, he decided to start his own business. Firm 2 had made a business decision to no longer perform subcontract work for Firm 1. A representative of Firm 1 saw the decedent at a local establishment and asked him if he would like a siding job.

This was his first siding job as a sole proprietor. The decedent supplied the ladders and tools needed and Firm 1 supplied all of the siding materials.

WRITTEN SAFETY PROGRAMS and TRAINING

The decedent did not have a written safety program. The extent of safety training the decedent received at Firm 1 and Firm 2 was unknown as was the presence of a written health and safety program.

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WORKER INFORMATION

The decedent had worked for Firm 1 for 5-10 years, on and off. It was unknown the length of time the decedent was employed by Firm 2. The MIFACE researcher spoke with a representative of Firm 1. The representative indicated that "no one could do siding like the decedent." When he was employed by Firm 1, he was responsible to train all new employees regarding siding installation. Firm 1 "was sorry to lose him".

After leaving Firm 1, the decedent was hired by Firm 2, who was regularly subcontracted to perform siding work for Firm 1. While the decedent was employed by Firm 2, he did the majority of the subcontracted Firm 1 work as well as most of the construction repair work for Firm 2. Firm 2's owner decided he no longer wanted to be a subcontractor for Firm 1. This resulted in the decedent deciding to start his own business, while still maintaining a good working relationship with Firm 2's owner.

Firm 2 permitted one of its employees to work for the decedent on this job. The extent of the safety training provided by Firm 2 to his coworker was unknown. The owner of Firm 2 did not return any MIFACE phone calls.

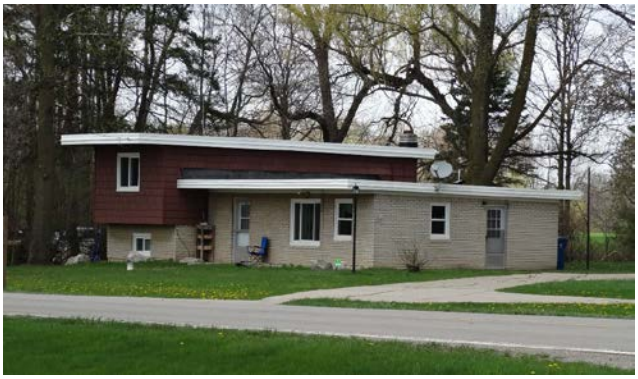

Photo 1. Picture of home where decedent was siding. Decedent working on lower level flat roof.

INCIDENT SCENE

Firm 1 had been contracted by the homeowner to: remove old aluminum siding from home and install new cedar shake siding to all walls where siding was removed, remove and install 15 Ultimate 2000 windows, and white trim around the windows and on the fascia. The home had two flat roofs, one roof was approximately eight feet high and the second roof was approximately 13-14 feet high. (Photo 1)

The decedent was working on the lower flat roof. His coworker was working in the backyard of the home cutting fascia. The siding job was almost done; it was supposed to be finished that day per Firm 1's representative.

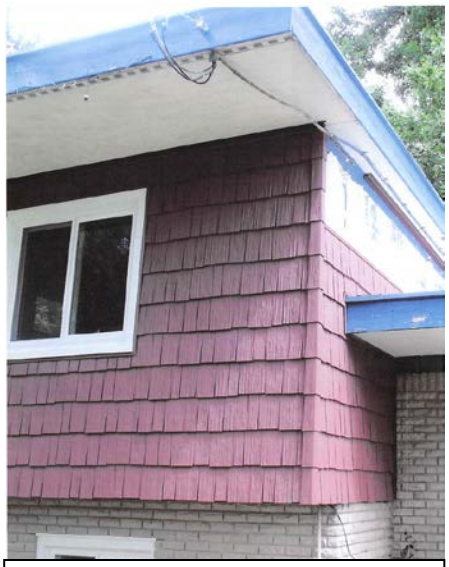

Photo 2. Lower level and upper level roof. Area of home where siding was to be installed and where decedent was working.

WEATHER

Weather Underground was utilized to check the weather conditions on the day of the incident. Temperature at the time of the incident was 78 degrees. There was 60% humidity and wind speeds of 10 mph with overcast skies. [Weather Underground]

INVESTIGATION

The decedent climbed a ladder to access the lower roof. There was also a ladder on top of the lower roof to provide the decedent access to strip siding and fascia. At the time of the incident, it is believed the decedent was installing siding on the dormer, working on the street side (front) of the roof. (Photo 2)

At approximately 11:00 a.m., the decedent fell from the roof to the packed dirt/concrete near the front of the house (Photo 3). The sequence of events leading to the fall was unknown. The decedent's coworker was in the backyard working. Per the coworker statement to MIOSHA, the decedent walked to the back yard and said he stepped off the roof. Per Firm 1's representative, the decedent was trying to go back on the ladder providing access to the roof when he stepped off. His worker asked if he was alright and the decedent said "yes", but his "side was hurting" and thought he "broke a rib." Shortly after the fall, the decedent talked with a neighbor and also called the owner of Firm 2 to tell him what happened. The owner of Firm 2 told him to go to the hospital. The decedent told the owner of Firm 2 that he was ok but would go get his side checked out.

Photo 3. Area to which to decedent fell

The coworker stated that the decedent said to the neighbor that he was going to the doctor. The decedent and his coworker cleaned up the jobsite and left the site at approximately 12:15 p.m. Per the decedent's family members, the decedent told his coworker to take him home. On the way home, they stopped at a convenience store. The MIFACE researcher was told by the family that the coworker and the decedent passed by a hospital when they drove from the jobsite to the convenience store.

At the convenience store, the coworker got out of the truck and went inside to buy a beverage and a snack. The decedent's phone began ringing when the coworker left the truck. The decedent got out of the truck when he answered his phone. After exiting the truck, he took a couple of steps, and then fell backward to the ground, hitting his head.

While his coworker was inside the store, one of the clerks said to him that his "buddy fell out in the parking lot". The coworker left the store and went outside. The decedent was lying on his back. The coworker described the decedent as "cold". The coworker and a bystander picked up the decedent and placed him in the truck. No one at the convenience store called for emergency response.

The coworker drove the decedent to a nearby hospital. The coworker went inside the hospital and summoned security; the decedent was placed in a wheelchair. The coworker went in with the decedent and told the hospital personnel, as he had been instructed to do so by the decedent, that the decedent had fallen down 15 stairs at home. The coworker waited for approximately 30 minutes, the nurse came out, and the coworker gave her the decedent's identification and insurance card. Hospital personnel would not provide any patient status to the coworker, so he gave them his phone number and then drove home.

Per the hospital report, the decedent and his coworker arrived at hospital at 13:15 p.m. (approximately 2.25 hours after the fall) and the decedent was admitted to surgery at approximately 14:30. His hospital record stated he was admitted through the emergency trauma center with a history of at least two to three falls over a short time frame. He was resuscitated in a standard ALS fashion and taken quickly to the operating room, where he was noted to have intraabdominal bleeding due to a ruptured spleen.

The decedent's family was not notified by hospital personnel. Someone at the hospital accessed the decedent's phone. The first name on the decedent's phone was a family friend. Hospital personnel apparently did not check the phone for In

Case of Emergency (ICE) contacts; the first ICE name on his phone was his brother and identified on the phone as "brother". The hospital notified the family friend that the decedent fell from a roof. The family friend called the decedent's brother. The family rushed to the hospital, arriving 10 minutes after the decedent died.

MIOSHA Citations

MIOSHA Construction Safety and Health Division did not issue a citation at the conclusion of its investigation due to the dissolution of the company at the time of the decedent's death.

The Division issued a Notice of Potential Hazard: The following information is provided to the employer to correct an identified hazard. A MIOSHA rule violation exists, but employee exposure has not been determined or evidence is not sufficient to document a violation at this time.

- Employees exposed to falls 8 feet without the use of fall protection
- Employees had not been provided fall protection training
- An Accident Prevention Program had not been developed by the employer
- First aid training had not been provided to an individual at the jobsite

CAUSE OF DEATH

The death certificate listed the cause of death as multiple blunt force trauma with complications. While in the hospital emergency room, a blood draw was performed; a hospital-administered medication and cannabinoids were detected. No level of cannabinoid was provided in the medical record and its potential role as factor could not be determined.

CONTRIBUTING FACTORS

Occupational injuries and fatalities are often the result of one or more contributing factors or key events in a larger sequence of events that ultimately result in the injury or fatality. The following hazards were identified as key contributing factors in this incident:

- *No fall protection while working on a flat roof with a fall distance of more than six feet*
- *Lack of emergency response procedures - immediate medical attention not sought/provided after the fall*
- *Convenience store clerk did not call for emergency response*

RECOMMENDATIONS/DISCUSSION

Recommendation #1: Protect workers against falling while working six feet or more above a lower level. This includes, but is not limited to, providing appropriate fall protection utilizing conventional fall protection systems (guardrail systems, safety net systems, or personal fall arrest systems), a fall restraint system, or a written site-specific fall protection plan when conventional fall protection systems are deemed infeasible or pose a greater hazard.

Discussion: The fall protection requirements for residential construction are located in Part 45 - Fall Protection, Rule 1926.501(b)(13) which requires fall protection (usually conventional fall protection; e.g., guardrail systems, safety net systems, or personal fall arrest systems) for work six feet or more above lower levels, except where employers can demonstrate that such fall protection systems are infeasible or would create a greater hazard. A personal fall arrest system (PFAS) protects the worker who is already in the process of falling by stopping the fall after it has happened. A PFAS includes an appropriate anchorage point, connector, shock absorber and full-body harness.

Although the standard does not mention personal fall restraint/work positioning systems, MIOSHA does accept a properly utilized fall restraint/work positioning system in lieu of a personal fall arrest system when the restraint system is rigged in such a way that the worker is not exposed to the fall hazard. A fall restraint/work positioning system is one where a full body harness/belt, positioning lanyard, connectors and appropriate anchorage are used. NOTE: MIFACE recommends that a full body harness rather than a belt be utilized. Additionally, fall restraint/work positioning must never be used as a personal fall arrest system.

MIFACE recommends employers and employees consult the following free resources to enhance their knowledge of fall protection requirements:

- MIOSHA Consultation, Education and Training Division: Residential Fall Protection. This document includes a PowerPoint, Construction Safety Standard Part 45-Fall Protection, and the Construction Safety and Health Division's Enforcement Policy: Residential Fall Protection Compliance Criteria (CSHD-COM-O4-1R2)
- CPWR-The Center for Construction Research and Training (the NIOSH-funded National Construction Center): Stop Construction Falls campaign website
- OSHA Fall Protection webpage

Recommendation #2: Employers should develop and implement emergency response procedures.

Discussion: It appears that the decedent did not think his fall caused a serious injury (thought he broke a rib). He delayed seeking medical attention after the fall, which based on the medical finding was likely to have been a factor contributing to his death. A worker should seek prompt medical treatment for an injury, particularly one involving a significant fall as occurred in this incident. A delay in treatment can delay or hamper recovery, and, in some cases, a delay causes complications which can result in death.

The decedent's coworker did not summon emergency responders upon learning from the decedent that he fell from the roof. Although the decedent did not have an injury that required "first aid", it did require medical attention. The decedent asked his coworker to tell hospital personnel that the decedent fell down the stairs at home; the coworker complied. Emergency response procedures should be triggered whenever there is a fall from a height. Coworkers must be made aware that a fall, even one from what may seem to be a low level requires medical evaluation regardless of the apparent good condition of the individual who fell.

When the decedent fell in the parking lot of the convenience store, he needed help getting up from the ground and placed in the truck. MIFACE recommends that commercial establishments train their employees to urge patrons to call for emergency response in any incident where the patron falls and strikes his/her head, especially if the patron experiences disorientation after the fall or a loss of consciousness.

Recommendation #3: Employers and sole proprietors should develop and implement a safety and health program to mitigate workplace hazards and risks.

Discussion: Small businesses are at a high risk for workplace injury and illness. A small business may not develop and implement a health and safety program nor perform a risk assessment because they may not have the expertise to do so or may believe that the hazards are "already known" or that the health and safety issues are minor. Applicable to this investigation, an implemented safety and health program would have included a job hazard analysis (working from a height), a fall prevention program, medical surveillance, and an emergency response plan. A sole proprietor/new business

owner, for their own safety as well as anyone affected by their work, should develop and implement a safety and health program to identify, and take action to offset, potential safety and health hazards. All business owners, even sole proprietors, are required to follow federal or state health and safety regulations to ensure that they provide a workplace free from recognized hazards that are causing, or are likely to cause, death or serious physical injury.

The National Institute of Safety and Health (NIOSH) has compiled health and safety resource material specific to small business concerns on their Small Business webpage; MIFACE recommends sole proprietorships and small business owners utilize this resource to address health and safety concerns. OSHA and MIOSHA also have sample safety and health programs to provide examples of written programs on various workplace safety and health topics. Although not intended to supersede the requirements in OSHA/MIOSHA standards, small business owners/sole proprietors can use these sample programs as guidance when performing a risk assessment.

ADDITIONAL RESOURCES

- MIOSHA Consultation, Education and Training Division:
  - Residential Fall Protection. This document includes a PowerPoint, Construction Safety Standard Part 45-Fall Protection, and the Construction Safety and Health Division's Enforcement Policy: Residential Fall Protection Compliance Criteria (CSHD-COM-O4-1R2)
  - Sample Plans and Special Programs webpage
- CPWR-The Center for Construction Research and Training (the NIOSH-funded National Construction Center): Stop Construction Falls campaign website
- OSHA Resources:
  - OSHA Fall Protection webpage
  - Sample Plans webpage
- NIOSH Safety and Health Topic: Small Business webpage
- MIFACE Investigation Report #13MI020: Roofer Falls from Roof Edge When He Stepped on Insulation Overhang
- Massachusetts Case Report: 16MA001. Laborer Fatally Injured After Falling from a Home Under Construction – Massachusetts. https://www.cdc.gov/niosh/face/stateface/ma/16MA001.html

DISCLAIMER

Mention of any company or product does not constitute endorsement by the Michigan FACE program or the National Institute for Occupational Safety and Health (NIOSH). In addition, citations to websites external to NIOSH do not constitute NIOSH endorsement of the sponsoring organizations or their programs or products. Furthermore, NIOSH is not responsible for the content of these websites. All web addresses referenced in this document were accessible as of the publication date.

REFERENCES

Weather Underground [2014]. Weather history for nearby weather station. The Weather Channel Interactive, Inc.

MIOSHA standards may be found at and downloaded from the MIOSHA, Michigan Department of Licensing and Regulatory Affairs (LARA) website at: www.michigan.gov/mioshastandards. MIOSHA standards are available for a fee by writing to: Michigan Department of Licensing and Regulatory Affairs, MIOSHA Standards Section, P.O. Box 30643, Lansing, Michigan 48909-8143 or calling (517) 322-1845.

- MIOSHA Construction Safety Standard, Part 45 – Fall Protection
- US Department of Health and Human Services. Health Information Privacy.
- National Highway Traffic Safety Administration. Drugs and Human Performance Fact Sheets: Cannabis / Marijuana (Δ 9 -Tetrahydrocannabinol, THC)
  https://one.nhtsa.gov/people/injury/research/job185drugs/cannabis.htm

ACKNOWLEDGEMEMENT

The Michigan FACE Program would like to acknowledge the decedent's family members and a representative from the decedent's former employer for providing assistance and information for this investigation.