

Immigrant Granite Installer Killed After Falling with Homemade Construction Box

Incident Number: 09KY034



Photograph of construction box involved in this incident. Photograph property of KY FACE program.

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Kentucky Fatality Assessment and Control Evaluation (FACE) Program

Incident Number: 09KY034

Release Date: November 24, 2009

**Subject: Immigrant Granite Installer Killed After Falling with
Homemade Construction Box**

Summary

On a summer day in 2009, a 50-year-old granite installer and his two sons were working alone at a construction site when the granite installer fell out of a second story window and was killed. The three granite installers worked for a subcontractor hired to install granite vanity tops and sinks in a newly constructed hotel. Work had commenced at 7:00 AM that morning. They were installing the second set of ten vanities for the day. All ten vanities, with back and side splash pieces, had been loaded onto a homemade three-sided construction box and lifted via a forklift to a second story window. The loaded construction box was not secured to the forklift. While the father unloaded the granite pieces from the construction box into the second story room, Son 1 was on the second floor working in another room, and Son 2 was on the third floor taking measurements. To reach the last vanity top, the granite installer climbed out the window and onto the construction box which then fell off the forklift onto the ground. Son 1 heard the noise, went to the room where his father was working and found his father on the ground outside of the hotel. He yelled for Son 2, and the sons went outside and found their father unresponsive. Emergency medical services were called and performed cardio-pulmonary resuscitation, and transported the father to the hospital where he was declared dead.

To prevent future occurrences of similar incidents, the following recommendations have been made:

Recommendation No. 1: Slab carts should be used to transport finished granite slabs.

Recommendation No. 2: Subcontractors should have their onsite competent person and their onsite safety person conduct a hazard assessment of the job site each day before work commences.

Recommendation No. 3: Employers/ general contractors should ensure that all subcontractors have a written worker safety program.

Recommendation No. 4: Forklift operators should be trained by a competent person to operate forklifts correctly and safely.

Recommendation No. 5: Work should only be performed when the general contractor has a competent person on the job site.

Background

The decedent worked for a subcontractor who installed bathroom granite vanity tops and sinks for a general contractor who built hotels. Having been in business for four years, the subcontractor had 16 employees and had worked for the general contractor for two years. The owner of the subcontracting company had immigrated from Europe to the United States nine years prior to the incident. The decedent had worked for the subcontractor for four years and was a construction worker for his entire working career.

The job foreman for the subcontractor discussed safety at each job site; however, the company did not have a written safety program. Subcontractors were encouraged to attend weekly toolbox talks held at each job site by the general contractor. If the subcontractors did not attend the general contractor's toolbox talk, the subcontractor was required to submit written proof of weekly safety talks conducted with their employees. Site assessments were conducted by the general contractor's job superintendent five or six times per day. Work progress, safety concerns, and other issues were documented with corrective measures. Workers for the subcontractor used safety glasses, steel-toed boots, and hard hats. Safety harnesses were not used.

The average ambient temperature in the area for the day was 72 degrees Fahrenheit, with 0.26 inches of precipitation.

Investigation

In the summer of 2009, the Fatality Assessment and Control Evaluation program was notified of an occupational fatality involving an immigrant granite installer. The case investigation was initiated, and a site visit was made by KY FACE personnel. Interviews were conducted with the subcontractor, the general contractor, local law enforcement, and a Kentucky Occupational Safety and Health compliance officer.

At approximately 7:00 AM on a summer morning, a father and his two sons (Son 1, Son 2) arrived at a construction site to commence work. They were employed by a subcontractor and their job was to install granite vanity tops and sinks in the bathrooms of a three-story hotel that was being newly constructed. Son 1 was the job foreman/ installer, a licensed forklift operator, and had a key to the general contractor's forklift. The father was the competent person/ installer on site in charge of safety and Son 2 was an installer. The trio was the only work group on site that day and had planned to work until 5:00 PM with an hour lunch break.

The contract between the general contractor and the subcontractor included use of the general contractor's forklift, and the use of a three sided 4' x 8' x 4' homemade construction box owned by the general contractor. The construction box had been made on site by the general contractor's employees to remove debris from the building and to transport materials to the second and third floors, and was not designed to be occupied by people. An equipment release form signed by both parties was included with the contract.

Each floor had 25 guest bedrooms with private baths, equipped with a sink and granite vanity countertops, granite backs and granite side splashes. The three men had worked at this job site for three days and had installed vanity units and sinks in approximately 20 – 30 guest bedrooms. They were to finish the job within two weeks.

At this phase of construction, the main interior elevator was operational and was used to transport workers and materials to the second and third floors. Electrical and water services were functional at the job site. With the bathroom sinks and granite vanity tops installed, the hotel construction would be 80% - 90% completed.

Prior to the installers arriving at the job site, carpenters built a wooden foundation where the vanity and sink were to be located. The materials supplier had delivered the sinks, pre-cut 22” x 60” granite slabs, 4” x 60” granite back splashes, and 4” x 22” granite side splashes to the job site in wooden crates. Each crate contained granite for 15 – 20 vanity top units and weighed approximately 4,000 pounds. The sinks were delivered in separate crates.

The granite installers began the installation process by measuring each vanity space. Granite slabs, backsplashes, and side splashes were removed from the crate, as were sinks. Sawhorses with a plank across the top were set up outside of the main hotel entrance and provided a place for the trim work to be performed. The measured granite pieces were each marked with the room number, placed on sawhorses, then trimmed with a professional grade circular saw using water. Ten vanity units were cut at a time. The vanity units and sinks were then loaded into the three sided construction box. Son 1 used the forklift to move the construction box loaded with the trimmed granite pieces and 10 sinks to the side of the hotel, and lift the load to a sliding window on the second floor. The total weight of the construction box loaded with the granite pieces was unknown. The eight inch window stop had been removed by the workers to allow better access to the load through the window space. There was a 39” reach from the floor of the room to the outside of the window. The father unloaded the granite pieces from the lift and the sons distributed the pieces to the respective rooms. Once the granite was delivered to the respective room, vanity tops were installed by gluing the granite slab onto the wooden braces using construction adhesive. The back and two side splashes and the sink were glued into place. After each bathroom vanity was installed, the workers would begin installing the vanity in the next bathroom.

It was mid-afternoon, and the crew was working on the second load of vanity tops and sinks. They had measured ten vanity spaces, unloaded 10 granite slabs, trimmed pieces from the crates, marked the pieces with the measurements and room numbers, trimmed the granite with the saw, and loaded the vanity units onto the construction box. Son 1 then moved the loaded construction box to the window via the forklift. On this trip, the construction box had not been secured to the forklift for stability. It is unknown if the construction box had been secured on the first load of the day.

The father and two sons entered the hotel; the father and Son 1 went to the second floor to unload and distribute the granite pieces, and Son 2 went to the third floor to take measurements. At approximately 3:45 PM, the father was alone at the second story window and had unloaded nine granite vanity tops, but not the back and side splashes. Son 1 was distributing the granite

slabs to the respective bathrooms. Apparently, the father could not reach the last granite slab in the box from the window and therefore crawled through the opening and onto the construction box to reach the granite. When he did this, the construction box and the father fell 13'6" to the ground. Son 1 heard the noise, ran to the room where his father had been, and screamed. When Son 2 heard his brother scream, they both ran to the outside of the building and found their father on the ground beside the wooden construction box. The granite back and side splashes were also on the ground broken into pieces. One of the sons immediately called emergency medical services (EMS). They arrived at the scene, and found the father lying on his back and unresponsive. Cardio-pulmonary resuscitation was administered at the scene. The father was transported via ambulance to the nearest hospital where he was pronounced dead.

Cause of Death

The death certificate states the cause of death was due to, "multiple blunt force injuries due to a fall from great height".

Recommendations and Discussions

Recommendation No. 1: Slab carts should be used to transport finished granite slabs.

There was a slab cart on site for the employees to transport the granite around the job site. It was located on the second floor when the incident occurred and should have been used to transport the granite from the trimming area to the second floor via the elevator. The weight of the 10 vanities being transported was approximately 2,000 pounds. Slab carts have a weight capacity that ranges from 1,500 pounds to 3,000 pounds and costs start at approximately \$300.

Recommendation No. 2: Subcontractors should have their onsite competent person and their onsite safety person conduct a hazard assessment of the job site each day before work commences.

According to the Code of Federal Regulation 1926.20(b)(2), employers are to designate a competent person to frequently conduct inspections of the job site that include materials and equipment. Each subcontractor's onsite competent person and onsite safety person should perform a hazard assessment of the work site before each day work commences that includes the identification of potential physical hazards such as transporting materials to the installation location. An evaluation of the homemade construction box should have been performed by the general contractor's employees. The construction box was built to be used in conjunction with a forklift to distribute building materials/ tools to upper floors, and to remove trash from the upper floors. The construction box should only be used to transport items that do not have any other mode for transport. It should not have been used to transport the granite and the sinks since a granite cart was available to use.

Safety aids such as cleats that would have added stability to the construction box, and openings or handles in appropriate locations that would make it easy to secure the construction box to the forklift as required by 29 CFR 1926.602(c)(1)(viii)(A). Instructions on how to secure loads to forklifts properly and to safely prevent load displacement should have been discussed. The

importance of not leaning out of a window to retrieve materials should be discussed with the workers.

Recommendation No. 3: Employers/ general contractors should ensure that all subcontractors have a written worker safety program.

Employers, including general contractors, should require proof that subcontractors have an applicable, written safety program before work is allowed to commence. The program should include written procedures on performing typical job hazard analyses at each job site as well as procedures on how to perform each job task. These safety procedures should outline and explain safe practices for each hazardous task. Instructions should include how to perform the task and how to safely operate any equipment required to perform each task. A section on unsafe work practices should be included in the written safety procedures. Unsafe work practices such as leaning out of windows and onto construction boxes not intended for human occupancy should be included. 29 Code of Federal Regulations 1926.20(b)(1) states that it is the responsibility of the employer to develop and institute a safety program in accordance with the safety requirements of the contract with the general contractor.

Recognition of signs of fatigue and how to reduce it should be included in the safety procedures. On the day of the fatality, the workers had moved approximately 20 granite vanity tops, sinks, and back splashes which weighed approximately 4,000 pounds. They had moved the granite three times; once from the crate to the sawhorses, once from the sawhorses to the construction box, and once from the construction box to the bathrooms.

Recommendation No. 4: Forklift operators should be trained by a competent person to operate forklifts correctly and safely.

In this incident, a homemade construction box was used to hoist building materials from the ground to a second story window to be unloaded. It was the second load of the day, and the construction box had not been secured to the mast or the forks. It is unknown if the first load had been secured to the forklift. Son 1 had a forklift operator's license, but the extent of his training and experience is unknown. Sections of the Kentucky Occupational Safety and Health Code of Federal Regulations which specifically apply to this incident are: 29 CFR 1910.178(l)(3)(i)(G) that states the operator should understand fork and attachment adaptation, operation and use limitations of the forklift. 29 CFR 1910.178(l) are general industry standards that apply to forklifts and are also incorporated into the 29 CFR 1926 construction standards. 29 CFR 1926.602(c)(1)(viii)(A) states that a safety construction box, etc., should be "firmly secured to the lifting carriage and/or forks". Forklift operators should also be trained to recognize proper weight distribution of the loads they are elevating with the forks. This would include recognition of unstable weight at the end of the forks on the forklift and the hazardous condition this creates. 29 CFR 1910.178(l)(3)(ii)(B) states that the operator should understand the "composition of the loads to be carried and load stability". Also, operators should be instructed to recognize that the forks should be opened as wide as possible to provide stability to the construction box.

Recommendation No. 5: Work should only be performed when the general contractor has a competent person on the job site.

According to 29 CFR 1926.32(f), a competent person is defined as "one who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them". The competent person should be knowledgeable of specific standards applicable to the work site, be capable of identifying hazards specific to the operation, and have the authority to correct them. On a normal workday, the general contractor had a job superintendent/ competent person on site who performed site assessments throughout the day and abated unsafe situations. This particular day when the incident occurred was not a usual workday and the subcontractor's employees were the only workers on the job site. It should be clearly stated in contract language between general contractors and subcontractors that work should only be performed while the general contractor's competent person is on the job site.

Keywords

Fall
Competent person
Construction box
Slab cart
Worksite assessment

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Acknowledgements

Company representative
General contractor
Kentucky Occupational Safety and Health Compliance Officer
Law enforcement officer

The Kentucky Fatality Assessment & Control Evaluation Program (FACE) is funded by a grant from the Centers for Disease Control and the National Institute of Safety and Health. The purpose of FACE is to aid in the research and prevention of occupational fatalities by evaluating events leading to, during, and after a work related fatality. Recommendations are made to help employers and employees to have a safer work environment. For more information about FACE and KIPRC, please visit our website at: www.kiprc.uky.edu



Photograph of onsite trim area outside main entrance. Photograph courtesy of local police.



Photograph of window accessed to unload granite from construction box, forklift used to lift construction box with granite, and a granite cart. Photograph courtesy of local police.



Photograph of forklift raised to 2nd story window as it was during the incident. Photograph courtesy of local police.



Photograph of forklift used to lift construction box. Photograph property of KY FACE program.