KENTUCKY INJURY PREVENTION AND RESEARCH CENTER

HAZARD ALERT

Construction workers killed in trench collapses

Kentucky FACE Program, January 2018

What is the hazard?

In 2016, the construction industry saw an alarming rise in trench-related fatalities, as 23 workers lost their lives in trench collapses. This number was higher than the total number of trench fatalities in 2014 and 2015 combined. Three workers died in trench collapses in Kentucky from June 2015 to Dec 2017.

Did you know that one cubic yard of soil can weigh as much as a car?

The following trench collapse deaths occurred in Kentucky:

Case 1: Two employees were working within a trench box. However, the top of the trench box was 4 feet 8 inches below the surface. A large section of ground and concrete broke off and collapsed into the trench, striking and killing one of the workers. (2015)

Case 2: A construction worker was installing an 18 inch drainage pipe. He entered the trench (benched on one side and vertical on the other) to check the depth. The vertical side collapsed onto him. (2016)

Case 3: A subcontracted employee was working in an approximately 15 foot-deep trench, when the sides of the trench caved in and engulfed him. (2017)

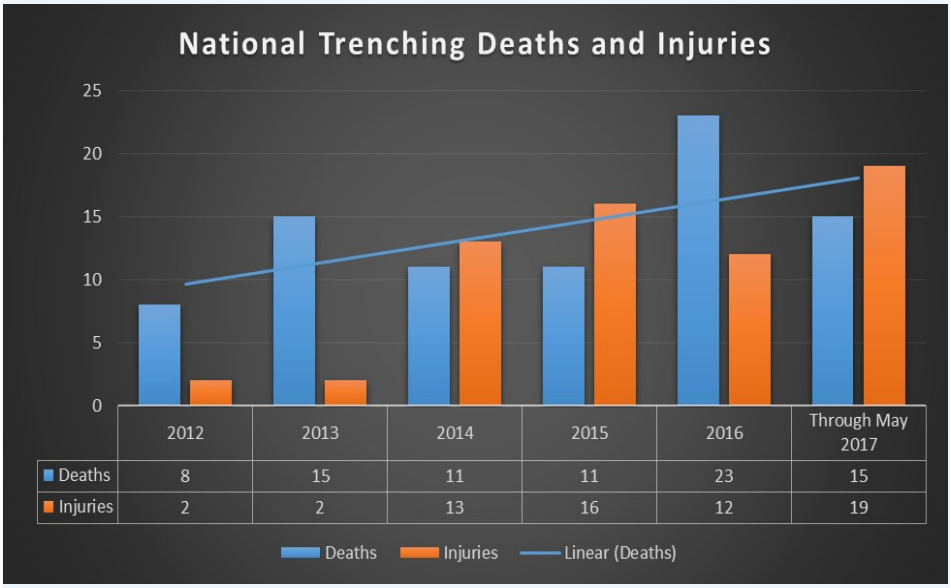

Figure 1. Note: Trendline shows increase in trench deaths since 2012.
Source: https://www.osha.gov/news/newsreleases/region5/11172016

Recommendations:

- **Have a competent person inspect trenches prior to each work shift AND after every rainstorm or other hazard increasing occurrence. (29 CFR 1926.651(k)(1)).**
- **All trenches between 5 feet and 20 feet in depth must have protective measures such as benching, shoring, sloping, and shielding to protect employees. Trenches 20 feet deep or greater require that the protective system be designed by a registered professional engineer.**
- **Keep excavated soil (spoils) and other materials at least 2 feet (0.6 meters) from trench edges.**
- **Train employees on how to spot signs of an imminent trench collapse, such as tension cracks, bulging, and toppling.**
- **Provide a safe method to exit trenches within 25 feet of workers.**

Kentucky Injury Prevention and Research Center (KIPRC) is a bona fide agent for the Kentucky Department for Public Health.

Kentucky Public Health
Prevent. Promote. Protect.

Further Resources

Name of Resource	Resource Description	Resource Link
Sloping and Benching for Trenches	Diagrams showing sloping and benching configurations and examples	https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10932
Hazard Recognition in Trenches and Shoring (Section III: Overview of Soil Mechanics)	Diagrams showing examples of deformations and stresses in trenches	https://www.osha.gov/dts/osta/otm/otm_v/otm_v_2.html
Classification of Soils for Excavation	Detailed definitions and examples of Type A, Type B, and Type C soil.	https://www.osha.gov/dts/sltc/methods/validated/id194/id194.pdf
Construction Laborer Killed in Trench Collapse While Taking Grade Measurements (KY FACE Program)	Full occupational fatality investigation report for Case 2 (2016)	http://www.mc.uky.edu/kiprc/face/reports/pdf/16KY017.pdf

For additional training materials and information regarding Kentucky FACE, please visit the program website at: http://www.mc.uky.edu/kiprc/face/index.html

Let us know what you think about this alert! Please click here to complete our brief, anonymous survey

Contact FACE:

Kentucky FACE Program
333 Waller Avenue Suite 242
Lexington, KY 40504
Toll Free: 800-204-3223 | Local: 859-257-5839

Email: kyfaceprogram@uky.edu

Acknowledgements:

Produced by the Kentucky Fatality Assessment and Control Evaluation (FACE) Program, Kentucky Injury Prevention and Research Center (KIPRC) as bona fide agent for the Kentucky Department for Public Health.

The Kentucky FACE Program is funded by grant 2U60OH008483-13 from the National Institute for Occupational Safety and Health, Centers for Disease Control and Prevention.