



NIOSH Warns of Danger of Trench Cave-ins

NIOSH UPDATE:

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The National Institute for Occupational Safety and Health (NIOSH) warns construction workers that they may be risking their lives when working in trenches or near potentially unstable ground. Already this year, at least six workers have died in construction cave-ins. Based on NIOSH statistics, an average of 60 workers die in cave-ins. each year.

According to NIOSH Director Dr. J. Donald Millar, these deaths are entirely preventable. "It is appalling that workers continue to be buried alive in cave-ins.. Almost without exception, these deaths can be prevented with existing safety precautions. These are not accidents, but incidents that can both be anticipated and avoided," said Millar.

Of the 607 cave-in fatalities identified by NIOSH researchers in the ten year period from 1980 to 1989, construction workers accounted for 77% of these deaths. However, cave-ins are not the only threat to the safety of construction workers. These workers also face hazards associated with working at heights, working with heavy machinery, manually handling materials, and working near sources of electricity, such as overhead power lines.

Construction is one of the nations's most hazardous occupations, with an annual work-related fatality rate that is over three times the rate for all industry sectors. For the approximately 7 million people currently employed as construction workers, simply going to work each day can be a risky venture.

Construction fatalities and injuries must not be accepted as an inevitable annual occurrence. Caution must be taken whenever workers are exposed to life-threatening hazards. Injuries and deaths can be prevented if employers and employees are aware of the hazards they face and ensure that proper precautions are taken.

The following page describes the recent deaths of six workers involved in construction cave-ins. Most importantly, this document presents crucial prevention methods. NIOSH urgently requests your assistance in disseminating this information to those at risk. Because construction activity typically increases in the spring and summer, we must act now to prevent future injury and death.

The following workers recently lost their lives in construction cave-ins:

On February 9, 1993, a 35-year-old man dies while building a manhole in a 10-foot deep sewer trench in Medway, Massachusetts. He was working without the safety of a steel trench box, when the trench walls collapsed and buried him.

On March 12, 1993, a 68-year-old man was killed in Germantown, Pennsylvania, when the unshored walls of a 16-foot by 4-foot ditch collapsed, burying him beneath hundreds of pounds of dirt.

On March 12, 1993, a 62-year-old construction worker dies in Tucson, Arizona. A 40-foot long section of a dirt embankment collapsed, burying the man in 3 feet of dirt.

On April 2, 1993, a 51-year-old construction site foreman dies of asphyxiation in Pine, Pennsylvania, when the unfortified walls of a ditch caved in, burying him up to his neck in mud and rocks.

On April 12, 1993, a 34-year-old man was killed when two concrete slabs and 6 feet of dirt buried him while he repaired a sewer line in Anchorage, Alaska.

On April 13, 1993, a 29-year-old man dies while working on a construction project in Kansas. The victim was standing on the edge of a trench, approximately 7 feet deep, when the earth gave way, engulfing him in the trench.

Why Are Workers Dying?

Several factors contribute to trench cave-ins. For example, soil stability is related to soil type and may be affected by changes in weather. In the spring, unshored trench walls, heavy from rain, can become unstable. Also, when damp soil is exposed to air during excavation, it can dry out and lose the ability to stand on its own, increasing the risk that it will slide into the trench. Other factors, such as proximity to highways, large machinery, backfilled areas or existing structures, can affect soil stability as well.

How can workers be protected?

To prevent trench cave-ins and additional worker fatalities, the Occupational Safety and Health Administration (OSHA) requires that one or more of the following precautions must be taken when working with trenches:

Utilize a shield or trench box system designed to protect workers in excavations.

Shore sides of excavations with timber or other materials to ensure that the earth does not collapse on workers who must enter them.

Slope the sides of excavations to reduce the "overburden" (weight and pressure exerted by large amounts of soil on the sides).

Secure sides by equivalent means, such as engineer-designed sheeting or bracing.

For more information on the OSHA standard intended to protect workers in excavations and trenches, see 29 CFR 1926.651 and .652.

The information contained in this document is a summary of the key points of a NIOSH Alert. For copies of the Alert (publication number 85-110), write or fax: NIOSH Publications Dissemination, 4676 Columbia Parkway, Cincinnati, OH 45226, FAX: (513) 533-8573.

For more technical information on how to protect workers in trenches and excavations, send requests for "Development of Draft Construction Safety Standards for Excavation" (Publication Number PB-86-121-415) to the National Technical Information Service, Springfield, VA 22161. Each copy costs \$26.

For information about this or other occupational safety and health concerns, call toll free: 1-800-35-NIOSH.

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