



ZERO FATALITY STANDARD – ZFS No.8 EXCAVATION WORK

3rd Version – December 2022

PURPOSE OF THE STANDARD

This standard establishes the requirements for carrying out work in surface excavations, as well as indicating the minimum content to be considered in the procedures of Colbun and the Collaborating Companies.

This standard applies to work involving excavations deeper than 80 centimeters.

The following are considered as excavation work: trenching, digging, guttering, among others.

GUIDELINES

1. EQUIPMENT AND FACILITIES REQUIREMENTS

Excavation work must meet the following requirements, in accordance with recognized safety standards and best practices:

- a. Refer to NCh 349 Construction - Excavation Safety Provisions when applicable, ensuring compliance with local and international safety norms.
- b. Clearly delimit and restrict access to the excavation area with appropriate barriers and signs. The signage must prominently display the warning: "DANGER, DEEP EXCAVATION."
- c. Ensure that geotechnical conditions and work execution align with the project specifications. Periodically inspect to verify stability and compliance.
- d. Utilize appropriate protective measures to prevent material from falling into the excavation throughout the entire process. This includes protective barriers, netting, or retaining systems as required.
- e. Identify and account for the presence of underground infrastructure, including sewers, gas pipelines, fuel lines, telephone and communication cables, water and power lines, ground meshes and underground groundwater systems
- f. Implement protective measures for nearby structures such as: trees, utilities, electrical poles, any other items that could pose a hazard due to proximity to the excavation
- g. Provide safe access and egress from the excavation using suitable mechanisms, such as: ladders, ramps, walkways, sliding lifelines or equivalent systems
- h. Evaluate the type of soil and depth of the excavation to determine the need for shoring or other stabilization methods when there is a risk to personnel.
- i. Ensure adequate lighting is provided in the work area when natural light is insufficient to maintain safe working conditions.
- j. Assign personnel to supervise excavation activities when required by the work plan, ensuring adherence to safety protocols and proper oversight.
- k. Store excavated materials at a safe distance from the excavation edge to avoid compromising the slope's stability. Maintain a buffer zone that minimizes the risk of material collapse in the excavation.
- l. Verify adequate ventilation within the excavation when necessary to prevent the accumulation of hazardous gases or to ensure a safe breathable environment for workers.
- m. In the event of an earthquake, storm, or prolonged work stoppage, conduct a thorough inspection before resuming work.

2. RECORDS

[Use Checklist No. 8 to verify compliance Zero Fatalities Standards-Colbun S.A.](#)

EXCEPTIONS

Previous to the start of work, Colbun's Facility Manager (Project, Power Plant, Transmission Zone) may authorize exceptions to this Standard in writing. Should there be a discrepancy where there is more than one Facility Manager, it must be escalated to a higher hierarchical level for definition.