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# PURPOSE

This standard establishes the minimum requirements for ensuring the safety of personnel during excavation and trenching work at TI sites worldwide.

# SCOPE

The provisions of this standard apply to all TI employees, suppliers, vendors, and visitors at TI sites worldwide.

# reference documents

## TI Standard Policy and Procedure (SP&P) 04-04-01: "Environmental, Health and Safety"

## TI Standard Policy and Procedure (SP&P) 04-07-01: “Record Retention”

## TI ESH Standard 07.03 “Confined Space Entry Standard”

## TI ESH Standard ENV 04.01 “Hazardous Waste Management”.

## TI ESH Standard ENV 06.01 “Water Management”.

# Definitions

[TI ESH Standards Glossary of Definitions](https://sps01.itg.ti.com/sites/wwf/esh/standards/Knowledge_Bank/00.01.xlsx)

# Requirements

## Excavation Project Oversight

### Excavations shall have a TI-assigned project manager.

### Each entry excavation shall have oversight by a Competent Person.

#### Competent Persons are responsible for the safety of the excavation, as well as the applicable requirements of this standard.

## Provisions for an authorization process

### A review process shall be implemented to provide authorization prior to initiating excavation activities. The review shall include, at a minimum, the following:

#### Specific location and date(s) of the excavation;

#### Identification of the TI-assigned project manager;

#### TI contact information;

#### Identification of responsible party (supervisor) and signature;

#### Identification or verification of Competent Person assignment;

#### Description of work to be performed, including maximum depth of the excavation and maximum surface area exposed and disturbed from construction activities;

#### Identification of known or suspected contamination including information on the specific chemical(s) of concern, location(s) and concentration(s);

#### Identification of necessary hazard assessment documentation, including description of protective measures to be employed (as required), and

#### TIer authorization (signature) to excavate.

## Provisions for pre-work assessment of hazard(s) and utility location(s)

### The potential for hazards (e.g., water accumulation, shifting soils, contaminated soil or water, hazardous atmosphere) shall be assessed and documented, and appropriate control measures shall be defined and implemented.

### Locations of utilities, such as buried electrical, chemical, water, sewage lines, etc., shall be determined prior to major excavation equipment being used to prevent damage, service interruption, or personal injury during the excavation.

### The stability of structures adjacent to the excavation, such as buildings, sidewalks, and roadways, shall be evaluated, and protective systems shall be provided, as necessary.

### Contractor Coordination

#### Sites shall ensure that contractors are qualified and are made aware of known hazards so the contractor can manage the work in the safest manner possible.

#### Prior to initiating excavation activities, designated TI personnel (example: TI’s project manager) shall perform the following tasks:

##### Advise the contractor that excavation activities require TI authorization;

##### Identify the requirements for the specific project as they relate to excavation activities (example, soil condition, soil placement, training, equipment, rescue provisions);

##### Advise the contractor of their responsibilities and duties required by this standard and any site- specific requirements, as well as require that they comply with applicable regulations;

##### Review with the contractor all known hazards or potential risks associated with the excavation. The contractor shall also be advised that they shall not rely solely on TI’s information of potential excavation hazards, but shall independently verify the conditions of the particular excavation through job hazard assessment and other evaluation methods, as necessary;

##### Review with the contractor the site’s permit-required confined space program procedures, and the criteria under which the excavation will be treated as a permit-required confined space (See TI ESH Standard 07.03 “Confined Space Entry Standard”);

##### Confirm that the contractor has verified that all contract personnel have received the required and appropriate training and are qualified to perform excavation activities, and

##### Verify that the contractor has a plan to implement storm water control measures consistent with local regulations and best management practices.

#### Prior to initiating excavation activities, the contractor shall perform all tasks necessary to comply with this standard. The contractor shall:

##### Advise TI that permit-required confined space requirements may be a part of the excavation when applicable conditions are present;

##### Obtain from TI, all available information regarding excavation (and confined space entry, as necessary) hazards;

##### Determine if a Health and Safety plan (HASP) is required for the projects as defined by TI. (HASP will be determined based on hazard, location and size of project);

##### Communicate TI’s program for excavation activities (and confined space entry, as necessary) to their personnel working at TI;

##### Provide or verify all necessary and required training for their personnel who will perform excavation activities (or enter, attend, supervise or provide rescue for a confined space);

##### Provide a competent person to verify the conditions of the particular excavation through job hazard assessment and other evaluation methods, as necessary;

##### Retain a copy of the excavation review and authorization form and inspection records (and confined space entry permit, as necessary) at the excavation site;

##### Review and implement storm water control measures prior to any soil being removed, and

##### Provide all necessary personal protective equipment.

## General Requirements for all Excavations

### Heavy equipment, such as backhoes and trucks, shall be located at a sufficient distance from the edge of the excavation to prevent cave-ins.

### Fall protection shall be provided, as necessary, where there is the potential for persons to fall into the excavation (e.g., step over, walk beside).

### Regardless of the depth of the dig, barricading of excavation sites shall be provided to alert workers, pedestrians, and motor vehicle traffic of the presence of the excavation.

### The site shall make provisions for material disposal

#### Solid materials

##### Excavated materials that are not returned to the excavation shall be characterized to determine the proper waste management processes in accordance with TI ESH Standard ENV 04.01 “Hazardous Waste Management”.

##### Whenever possible and when not in conflict with waste management regulations, excavated materials that are not returned to the excavation shall be dispositioned onsite.

##### When onsite disposition is not feasible, TI must approve the final disposition location.

#### Liquid materials

##### Liquid materials removed from the excavation shall be evaluated to determine the proper management process.

##### Discharge must be in accordance with water management regulations and TI ESH Standard ENV 06.01 “Water Management”.

### Sites shall implement storm water protection and erosion control measures and, where required by local regulations, a storm water pollution prevention plan (See TI ESH Standard ENV 06.01 “Water Management”).

### Sites shall ensure any excavation conducted within easements on TI property by someone other than the easement holder shall be coordinated with the easement holder and be consistent with the terms of the easement and this standard.

### Excavations within easements on TI property by the easement holder are not subject to the requirements of this standard.

#### Sites shall ensure holders of these easements are informed in writing of the specifics of known or suspected hazards within such easements.

#### For subsurface chemical contamination, include information on specific chemical(s) of concern, location(s) and concentration(s).

## Excavations to be Entered by Personnel

### Equipment and materials, including excavated materials ("spoil"), shall be placed at least 0.6 m (2 feet) from the edge of the excavation.

### Precautions shall be taken to prevent worker exposure to oxygen-deficient, flammable, or other hazardous atmospheres and materials. The atmosphere in an excavation, regardless of depth, shall be monitored before workers are permitted to enter or work in its proximity, and continuously thereafter, as required by the hazard assessment and/or where a hazardous atmosphere could reasonably be expected to exist.

1. Atmospheric precautions may include ventilation or respiratory protection.

### Protective systems shall be appropriate for the type(s) / classification(s) of soil to be excavated, and have the capacity to support all loads that are intended or could reasonably be expected to be applied to the systems.

### Protective systems shall be provided for excavations 1.2 m (4 feet) or greater in depth.

### Protective systems for excavations less than 1.2 m (4 feet) deep shall be provided as required by the Competent Person or the site ESH Specialist.

### Protective systems that are appropriate for the soil condition(s) of the excavation shall be selected and / or designed by the Competent Person using one or more of the following:

#### The system manufacturer’s instructions;

#### Tabulated data available from a Registered Professional Engineer (RPE), or national equivalent; or

#### National or local regulations or standards.

### Protective systems for excavations 6 m (20 feet) or greater in depth shall be certified by a RPE or national equivalent.

### Protective systems for excavations that may potentially affect the stability of adjacent structures, sidewalks, roadways, etc. shall be certified by a RPE or national equivalent.

### Protective systems shall be installed in areas where active traffic (example: public traffic) exist to prevent active traffic from entering the excavated area.

## Access and Egress

### A suitable means of access and egress shall be provided as follows:

#### Ladders, steps, or ramps shall be provided for all excavations 1.2 m (4 feet) or greater in depth;

#### Means of access and egress shall be designed and positioned to prevent exposing personnel to potentially hazardous conditions (e.g., unprotected excavation walls, inadequate ladder height), at a frequency of not less than 7.62 m (25 feet); and

#### Ladders shall extend above the excavated area 1m (3 feet), be secured, as necessary, to prevent them from falling.

## Emergency Response

### Equipment shall be available and procedures shall be established to allow for rescue of persons from the excavation in the event of an emergency by qualified emergency response / rescue resources.

### Emergency rescue equipment (e.g., breathing apparatus, safety harness and line) shall be present at the excavation site where hazardous atmospheres exist or may reasonably be expected to develop or the excavation has been determined to be a permit-required confined space.

## Confined Space Considerations

### The Competent Person shall evaluate the excavation, both prior to and during excavation activities, to determine if permit-required confined space requirements must be implemented (See TI ESH Standard 07.03 “Confined Space Entry Standard”).

### The site ESH Specialist may designate an excavation as a permit-required confined space.

## Communications

### Prior to entry into an excavation, entry personnel shall be informed of the following:

#### Potentially hazardous conditions and their control measures;

#### Personal protective equipment requirements;

#### Access and egress requirements, and

#### Emergency procedures.

## Inspections

### Excavations which will be entered shall be inspected by the designated Competent Person as follows:

#### The excavation site shall be inspected prior to entry each day for storm water pollution prevention, erosion control best management practices, trenching and shoring, and;

#### The excavation site shall be inspected after a rainstorm or other potentially hazard-increasing occurrence by the designated Competent Person.

#### Excavations 1.2 m (4 feet) or greater in depth shall be inspected daily before workers enter the excavation, and as needed throughout the work shift;

#### Excavations of less than 1.2 m (4 feet) shall be inspected daily before workers enter the excavation, and as needed throughout the work shift if employee exposure to hazardous conditions could reasonably be expected to exist;

#### The excavation site shall be inspected after a rainstorm or other potentially hazard-increasing occurrence by the designated Competent Person prior to entry.

## Training

### Initial training shall be provided to all persons involved in excavation activities as follows:

#### Competent Persons shall receive training in excavations, including hazard recognition and mitigation, soil classification, and protective systems.

#### Training in confined space entry may also be required (for all entrants, attendants, entry supervisor, and Competent Person) if the excavation may create a permit-required confined space.

## Documentation

### The following records shall be available at the excavation site until all activity is complete:

#### Review and authorization documentation, and

#### Daily inspection records.

### Sites shall maintain excavation training, inspection and atmospheric monitoring records in accordance with the SP&P 04-07-01 “Record Retention”.

# STANDARD Approval

This standard has been approved by David Thomas, TI Vice President.

# Revision history

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| --- | --- | --- | --- | --- |
| **Rev#** | **Date** | **Nature of Revision** | **Author/Editor** | **Approver** |
| A | 03/19/2008 | Major periodic review | Janie Denmon,  | Kathy Meissner |
| B | 04-18-2013 | Minor Updates to format | Rene’ Graves | ELC |
| B | 12/14/2016 | 3-Year Review – no changes | Rene’ Graves | ELC |
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