Chapter 34
Confined Space

34-1. References.

a. ANSI/ASSE A10.43, Confined Spaces in Construction and Demolition Operations (https://www.ansi.org) (34-1.a)

b. ANSI/ASSP Z117.1, Safety Requirements for Entering Confined Spaces (https://www.ansi.org) (34-1.b)

c. NFPA 306, Standard for the Control of Gas Hazards on Vessels (https://www.nfpa.org/Codes-and-Standards) (34-1.c)

d. NFPA 350, Guide for Safe Confined Space Entry and Work (https://www.nfpa.org/Codes-and-Standards) (34-1.d)

e. 29 CFR 1910.146, Permit-Required Confined Spaces (https://www.govinfo.gov/content/pkg/CFR-2020-title29-vol5/pdf/CFR-2020-title29-vol5-sec1910-146.pdf) (34-1.e)

f. 29 CFR 1915.7, Competent Person, Confined Space in Ships and Vessels (https://www.govinfo.gov/content/pkg/CFR-2020-title29-vol7/pdf/CFR-2020-title29-vol7-sec1915-7.pdf) (34-1.f)

g. 29 CFR 1915 Subpart B, Confined and Enclosed Spaces and Other Dangerous Atmospheres in Shipyard Employment (https://www.govinfo.gov/content/pkg/CFR-2020-title29-vol7/pdf/CFR-2020-title29-vol7-part1915-subpartB.pdf) (34-1.g)

h. 29 CFR 1926 Subpart AA Confined Spaces in Construction (https://www.govinfo.gov/content/pkg/CFR-2020-title29-vol8/pdf/CFR-2020-title29-vol8-part1926-subpartAA.pdf) (34-1.h)

34-2. Definitions.

a. Attendant. An individual assigned to monitor outside of a single confined space and provide support or respond as required for the safety of the Entrants. (34-2.a)

b. Competent Person, Confined Spaces in Ships and Vessels (CPCSSV). An individual, designated in writing by the employer, responsible for testing, inspecting, and evaluating spaces and meets the requirements of 29 CFR 1915.7. (34-2.b)

c. Confined Space. A space that meets all of the following: (34-2.c)

(1) Is large enough and so configured that a person can bodily enter and perform assigned work.

(2) Has limited or restricted means for entry and exit.

(3) Is not designed for continuous worker occupancy.

d. Confined Space on a Ship or Vessel. A compartment of small size and limited access such as a double bottom tank, cofferdam, or other space that is enclosed by bulkheads and overheads and can readily create or aggravate a hazardous exposure. (34-2.d)

e. Enclosed Space. Any space, other than a confined space, which is enclosed by bulkheads and overhead. It includes cargo holds, tanks, quarters, and machinery and boiler spaces. (34-2.e)

f. Enter with Restrictions. Refers to entry into a confined space on a ship or vessel when engineering controls, PPE and time limitations are imposed by the CPCSSV. (34-2.f)

g. Entrant. An individual authorized by the Entry Supervisor to enter a confined space and perform an assigned task or operation. (34-2.g)

h. Entry Permit. The document that lists the hazards, controls, and procedures required for entry into a permit-required confined space (PRCS). See non-mandatory ENG Form 6208 (Permit-Required Confined Space Entry) (see para 34-10.d). (34-2.h)

i. Entry Supervisor. The QP responsible for determining if acceptable entry conditions are present at a PRCS. They will authorize entry, oversee entry operations, and terminate entry as required by this manual. (34-2.i)

j. Evacuation. An unaided emergency exit or self-rescue from a confined space. This action may result from the Entrant's own decision or by a command from outside the space. (34-2.j)

k. Hazardous Atmosphere. An atmosphere that exists or has the potential to exist and is capable of causing death, incapacitation, impairment of ability to self-rescue, injury, or illness. Examples include oxygen deficiency or enrichment, flammability or explosivity by gas, vapor, dust, or toxicity. (See 29 CFR 1926.1202 (29 CFR 1926 Subpart AA)) (34-2.k)

l. Lower Explosive Limit/Lower Flammability Limit (LEL/LFL). The lowest concentration (that is, percentage) of a gas or a vapor in air capable of producing a flash of fire in presence of an ignition source (for example, arc flash, flame, heat). (34-2.l)

m. Non-Permit Confined Space (NPCS). A confined space that does not contain or have the potential to contain a hazard capable of causing death or serious physical harm. (34-2.m)

n. Oxygen Deficient Atmosphere. An atmosphere with an oxygen content below 19.5% by volume. (34-2.n)

o. Oxygen Enriched Atmosphere. An atmosphere containing more than 23.5% oxygen by volume. (34-2.o)

p. Oxygen Enriched Atmosphere, on a Ship or Vessel. An atmosphere containing more than 22% oxygen by volume. (34-2.p)

q. Permit-Required Confined Space (PRCS). A confined space that has one or more of the following characteristics: (34-2.q)

(1) Contains or has the potential to contain a hazardous atmosphere.

(2) Contains a material that has the potential for engulfing an Entrant.

(3) Has an internal configuration such that an Entrant could be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross-section.

(4) Contains any other recognized serious safety or health hazard.

r. Purging. The replacement of a flammable, indeterminate, or high-oxygen-bearing atmosphere with another gas that, when complete, results in a non-flammable final state. (34-2.r)

s. Rescue Service. A team of qualified responders with the training, expertise, and equipment to readily provide confined space rescue. (34-2.s)

t. Safe for Workers, on a Ship or Vessel. Denotes a confined space on floating plant that meets the following criteria: (34-2.t)

(1) The oxygen content of the atmosphere is at least 19.5% and below 22% by volume.

(2) The concentration of flammable vapors is below 10% of the LEL.

(3) Any toxic materials in the atmosphere associated with cargo, fuel, tank coatings, or inserting media are within permissible concentrations at the time of the inspection.

34-3. Personnel Required Qualification/Training.

a. All personnel working in or around a confined space must receive training: (34-3.a)

(1) Before they are first assigned confined space duties.

(2) Before there is a change in assigned confined space duties.

(3) Whenever there is a change in confined space operations that presents a hazard; about which an individual has not previously been trained.

(4) Wherever the employer has reason to believe there are deviations from the confined space entry procedures or there are inadequacies in the individual's knowledge or use of the entry procedures.

(5) If none of the conditions exist in paragraph 34-3.a, retraining must be conducted at least annually.

Note. Individuals who work around a confined space but are not directly engaged in confined space entries must be trained to an awareness level to ensure they can identify and avoid confined spaces.

b. Initial training must include the following: (34-3.b)

(1) How to understand and recognize the characteristics of a confined space.

(2) How to identify, evaluate, and control the hazards of a confined space.

(3) Mode, signs, symptoms, and consequences related to exposures.

(4) How to understand and recognize the hazards, signals, or warnings that require immediate evacuation.

(5) The roles and responsibilities in conducting an entry.

(6) How to fill out a confined space permit and other confined space entry forms.

(7) Rescue exercise(s) applicable to the space(s) on the site.

(8) Hands-on exercise on the use, calibration, and maintenance of monitoring equipment, communication equipment, and retrieval equipment.

(9) Instruction on the use and donning of appropriate PPE needed for safe entry and exit.

c. Refresher Training. All Entrants, Attendants, Entry Supervisors, and rescue personnel must complete refresher training at least annually. The training must include, as a minimum: (34-3.c)

(1) Review of entry procedures.

(2) Rescue exercise.

(3) The use of air monitoring, PPE, and retrieval equipment.

d. Train Entry Supervisors to: (34-3.d)

(1) Know the procedures of the written site-specific Confined Space Plan.

(2) Know the requirements of this manual and all other applicable safety regulations (for example, OSHA) pertaining to the confined space entry.

(3) Know the hazards the entry team may face during entry.

(4) Know the signs and symptoms of exposures.

(5) Know how to complete and cancel the entry permit.

(6) Know how to conduct atmospheric testing prior to and throughout the entry.

(7) Choose the equipment necessary and ensure it is place prior to the entry.

(8) Know the hazard levels associated with the confined space and how to summon rescue services.

(9) Know and understand the roles of all the Entrants, Attendants, and rescue personnel.

e. Train Entrants to: (34-3.e)

(1) Know how to properly use necessary equipment (for example, fall protection, atmospheric monitoring, communication methods, PPE). See chapter 5 for PPE and chapter 21 for fall protection.

(2) Know the hazards that will be present during confined space entries and any warning signs or symptoms of exposure.

(3) Know how to alert and communicate to the Attendant if a dangerous situation arises.

(4) Know to immediately exit the space whenever an Attendant or Entry Supervisor orders an evacuation.

f. Train Attendants to: (34-3.f)

(1) Know how to properly use necessary equipment (for example, atmospheric monitoring, communication methods, PPE) (see chapter 5).

(2) Know the hazards that will be present during confined space entries and any warning signs or symptoms of exposure.

(3) Know how to fill out and maintain the documentation related to the confined space entry.

(4) Know how to alert and order evacuation if unsafe conditions are present.

(5) Know how to perform non-entry rescue, if applicable, or when to summon rescue and emergency services.

(6) Know how to warn any unauthorized person of the need to stay away from the confined space work.

(7) Know how to inform the Entrants and Entry Supervisor if any unauthorized persons have entered the PRCS.

(8) Know that they are to perform no other duties that will interfere with their assigned roles.

g. Train the CPCSSV to: (34-3.g)

(1) Know how to properly use necessary equipment (for example, atmospheric monitoring, communication methods, PPE) (see chapter 5).

(2) Know how to conduct inspections and tests according to 29 CFR 1915.7.

(3) Know how to implement the written or oral information or instructions provided by a Marine Chemist, Coast Guard authorized persons, or CIH.

(4) Know how to document the records according to 29 CFR 1915 Subpart B.

h. Train in-house rescue personnel to: (34-3.h)

(1) Know how to respond to the hazard level (see para 34-8.h).

(2) Know how to prepare and set up the necessary equipment for rescue.

(3) Know how to apply the rescue requirements of NFPA 350.

(4) Complete training annually by means of simulated rescue operations in which they remove dummies, manikins, or actual persons from the actual confined space or from representative confined spaces. Representative confined spaces will, with respect to opening size, configuration, and accessibility, simulate the types of confined spaces from which rescue is to be performed.

(5) Provide basic first aid and CPR response. Ensure that at least one member of the rescue team or service holds a current certification in basic first aid and CPR and is available. (See chapter 3)

Note. If contracted rescue services are used, verify they have the training and knowledge necessary as required by this paragraph 34-3.

34-4. Roles and Responsibilities.

a. Owner/Operator. Ensure contractors are aware of the confined space hazards where work will be performed and provide any other necessary information. (34-4.a)

b. Qualified Person (QP). The QP is responsible for identifying and conducting surveys for confined spaces (see para 34-8.b). Additionally, the QP must: (34-4.b)

(1) Label PRCS.

(2) Develop confined space programs for USACE operations (see para 34- 7.e).

c. Entry Supervisor. The Entry Supervisor must develop site-specific Confined Space Plans and oversee and direct all PRCS entry operations. Additionally, the Entry Supervisor must: (34-4.c)

(1) Remain onsite at all times during PRCS entries.

(2) Verify all applicable procedures (for example, ventilation, fall protection) are in place prior to confined space entry.

(3) Ensure all energy sources, mechanical hazards, and equipment is controlled, disconnected, or isolated prior to issuing an entry permit (see para 12-8.a).

(4) When ventilation is supplied into the space, ensure it is from a clean source.

(5) Ensure that the hazardous atmosphere is properly exhausted and does not enter or accumulate in unapproved areas.

(6) Complete and sign the entry permit. See non-mandatory ENG Form 6208 (Permit-Required Confined Space Entry) (see para 34-10.d).

(7) Ensure pre-entry testing and continuous monitoring of the confined space atmosphere is conducted. See non-mandatory ENG Form 6205 (Atmospheric Testing) (see para 34-10.b).

(8) Remove unauthorized individuals who enter or attempt to enter a PRCS during operations.

(9) Ensure safe conditions are maintained throughout the entry and operations.

(10) Cancel the permit and reissue a new permit whenever there are new hazards or changed conditions. Update the AHA accordingly.

(11) Ensure Attendant(s) can execute the emergency response and rescue plan.

(12) Coordinate with rescue services to ensure they are aware of the confined space entry and are capable of supporting according to the identified hazard level (see para 34-8.h).

d. Entrant. The Entrant(s) is responsible for following the entry requirements and procedures according to the Confined Space Plan. The authorized Entrant must: (34-4.d)

Note. The Entry Supervisor can also serve as an Entrant if so trained and qualified according to paragraph 34-3.e.

(1) Understand the potential hazards of the confined space.

(2) Review and sign the entry permit when a permit is required.

(3) Properly use equipment.

(4) Establish clear communication methods with Attendant(s).

(5) Enter the confined space only when directed by the Entry Supervisor or after the completion of a pre-entry evaluation.

(6) Notify the Attendant and immediately exit the space if any symptoms of exposure, an emergency, or unacceptable conditions occur.

(7) Exit the confined space immediately if symptoms, warning signs, or unacceptable conditions occur or when directed to do so by the Attendant or Entry Supervisor.

e. Attendant. The Attendant is responsible for following the entry requirements and procedures according to the Confined Space Plan. The Attendant must: (34-4.e)

Note. The Entry Supervisor can also serve as an Attendant if so trained and qualified according to paragraph 34-3.f.

(1) Understand the hazards of the confined space.

(2) Review and sign the entry permit.

(3) Establish clear communication methods with the Entrant(s).

(4) Remain outside the assigned PRCS during entry operations until relieved by another Attendant or all Authorized Entrants have left the space and the permit is canceled.

(5) Maintain a count of Entrants. See non-mandatory ENG Form 6207 (Confined Space Entrant Log) (see para 34-10.c).

(6) Prevent unauthorized access to the confined space and notify the Entry Supervisor of unauthorized individuals.

(7) Order the evacuation of the confined space upon identification of a hazardous condition inside or outside of the confined space.

(8) Recognize signs and symptoms related to the chemical, physical, biomechanical, biological, and psychological hazards within the space and determine the appropriate action required.

(9) Summon rescue or emergency services, as required.

(10) Perform non-entry rescue, as required.

f. Rescue Personnel. The role of a confined space rescue service, whether in house or outside rescue service, is to enter a space and perform a rescue. The rescue service must: (34-4.f)

(1) Respond in a timely manner, based on the hazards and conditions of the space.

(2) Provide a team of sufficient size and technical training to perform the rescue.

(3) Have the proper equipment and retrieval devices.

(4) Provide basic first aid and CPR response.

(5) Notify the Entry Supervisor if their service availabilities and timeliness of response changes.

g. Competent Person, Confined Spaces in Ships and Vessels (CPCSSV). The CPCSSV must follow the entry requirements and procedures according to the Confined Space Program and 29 CFR 1915 Subpart B. Additionally, USACE CPCSSVs must: (34-4.g)

(1) Develop and implement a site-specific Confined Space Program meeting the requirements of 29 CFR 1915 Subpart B and those defined in this chapter.

(2) Before and during entry into spaces, test the atmosphere for oxygen content, flammability, and toxicity, and record the results according to the requirements of 29 CFR 1915.7. See non-mandatory ENG Form 6205 (Atmospheric Testing) (see para 34-10.b).

(3) Prior to starting hot work, test the confined space to confirm there is no toxic, corrosive, or irritating chemicals present in the air. Evaluate and document the results before starting the work. Continuously monitor the air to ensure acceptable atmospheric levels are maintained. See chapter 9 for additional hot work requirements and chapter 10 for welding, cutting, and brazing activities.

(4) Label all confined spaces according to 29 CFR 1915 Subpart B and maintain a copy of the inventory onsite and at the land-based office (see para 34-8.b).

34-5. Inspection Requirements.
Prior to start of work, conduct documented inspections for equipment according to the manufacturer's instructions to ensure it is in good condition and when conditions require, is intrinsically safe. Inspections will include but are not limited to the following:

a. Atmospheric testing and monitoring equipment, to include documentation of calibration. (34-5.a)

b. Ventilation equipment. (34-5.b)

c. PPE (see chapter 5). (34-5.c)

d. Fall protection equipment (see chapter 21). (34-5.d)

e. Lighting (see chapter 7). (34-5.e)

f. Ladders or other equipment necessary for Entrant access and egress. (34-5.f)

g. Barriers to prevent unauthorized entry. (34-5.g)

h. Rescue equipment. (34-5.h)

i. Communication equipment. (34-5.i)

j. Other required equipment for entry or rescue. (34-5.j)

34-6. Activity Hazard Analysis (AHA) Requirements.
Develop AHAs according to paragraphs 1-6 or 2-6, as applicable, for each confined space entry, to include the following:

a. Identify all existing or potential hazards (for example, mechanical, electrical, physical, chemical, atmospheric, biological, psychological) of the operation in the AHAs. (34-6.a)

b. If the PRCS has been updated to include alternate entry procedures or has been reclassified, the Entry Supervisor will update the AHA. See ENG Form 6204 (Alternate Entry Procedure) or ENG Form 6210 (Confined Space Reclassification) as an example (see paras 34-10.a and 34-10.e). (34-6.b)

c. List all trained personnel involved in a confined space rescue in the approved AHA(s). (34-6.c)

34-7. Minimum Plan Requirements.

a. Confined Space Program (USACE Only). A written Confined Space Program must be developed by a QP when USACE employees are exposed to confined spaces. The Confined Space Program must be reviewed at least annually and include the following: (34-7.a)

(1) Roles and Responsibilities for all personnel covered by the program.

(2) Confined Space Survey(s), Inventory, and labeling procedures.

(3) Requirement for each facility to develop a Site-Specific Confined Space Plan (see para 34-7.b).

(4) Procedures to ensure all personnel exposed to confined spaces are provided with appropriate training.

(5) Procedures to provide effective in-house rescue service when applicable.

Note. See paragraph 34-4.g, CPCSSV, for Confined Space Program requirements on ships and vessels.

b. Confined Space Plan. Prior to beginning PRCS work, the Entry Supervisor must develop and submit a written Site-Specific Confined Space Plan to USACE

supervisor for approval or to the KO or COR for acceptance. The plan will include at least the following: (34-7.b)

(1) Detailed description of the activity being performed.

(2) Confined Space Permit process that identifies hazards or concerns and the control measures that will be implemented to control to an acceptable level.

(3) Assignment of personnel and their roles and responsibilities. Include necessary information/documentation to support qualification/training of such persons.

(4) Inspection and oversight methods to ensure adherence to the plan.

(5) Equipment required for each entry.

(6) Procedures for conducting atmospheric monitoring.

(7) Communication methods used.

(8) Confined Space Inventory.

(9) Labeling procedures.

(10) Rescue Plan to include anticipated hazard levels.

c. If any of the following conditions or events occur, stop all confined space work, update the Site-Specific Confined Space Plan, and resubmit it for acceptance prior to resuming entry if: (34-7.c)

(1) Additional hazards are identified.

(2) There is a change in the configuration, conditions, contents, or operation of the space.

(3) There is a change in assigned duties.

(4) Entrants must evacuate, or if there are changes in the overall use of the space that may increase the hazards to the Entrant.

(5) A new confined space is discovered or created due to construction or demolition activity.

(6) An accident or near miss occurs.

34-8. General Requirements.

a. General. The requirements of the chapter apply to all confined space work performed in permanent fixed facilities, construction sites according to 29 CFR 1926.1201 (29 CFR 1926 Subpart AA), and USACE floating plant operations and/or floating plant repair and maintenance operations. Contractor floating plant operations will follow 29 CFR 1915 Subpart B. This chapter does not apply to underground construction work (for example, tunneling) in a confined space. (See chapter 26) (34-8.a)

(1) To prevent unauthorized entry during confined space work, place barricades and guardrails at appropriate locations.

(2) Personnel working in and around confined spaces must notify their supervisor prior to entry.

b. Confined Space Identification and Evaluation. (34-8.b)

(1) The QP must identify each confined space according to 29 CFR 1910.146 and 29 CFR 1926 Subpart AA. Once a confined space has been identified, conduct a survey to evaluate the existing and potentially hazardous conditions. Document the survey and include it in the Confined Space Plan inventory. See non-mandatory ENG Form 6212 (Confined Space Survey) (see para 34-10.g).

Note. When surveys identify a NPCS, no Confined Space Plan or permit is required.

(2) The QP must label each PRCS with a posted sign or tag at the entrance to prohibit unauthorized entry. The labeling must meet the requirements of 29 CFR 1910.146, 29 CFR 1926 Subpart AA, 29 CFR 1915 Subpart B, ANSI Z117 or ANSI A10.43.

(3) The CPCSSV must identify confined spaces, conduct a survey to evaluate the hazards, label the space according to 29 CFR 1915 Subpart B, and maintain a copy of the inventory onsite and at the land-based office.

(4) Upon entry into the confined space, the CPCSSV will post additional signage if the confined space contains the following:

(a) If the confined space has an oxygen deficient atmosphere, the space will be labeled as “Not Safe for Workers.”

(b) If the confined space has an oxygen-enriched atmosphere, the space will be labeled as “Not Safe for Workers – Not Safe for Hot Work.”

(c) If the confined space contains a flammable gas or vapor at 10% or higher than the LEL for the gas, then the space will be labeled “Not Safe for Workers – Not Safe for Hot Work.”

(d) If the confined space contains an atmosphere that is toxic, corrosive, or irritants that exceed the OEL, then the space will be labeled as “Not Safe for Workers.”

c. Entry Requirements. (34-8.c)

(1) Monitor all confined spaces prior to and continuously during entry to ensure acceptable atmospheric levels are present throughout all operations. Perform air testing prior to ventilating the space. Document the results of the testing on an atmospheric monitoring form. Include the name of the individual performing the testing, the make, model, and serial number of the air monitoring device, and last calibration date. See non-mandatory ENG Form 6205 (Atmospheric Testing) (see para 34-10.b).

(2) If atmospheric hazards are present within the confined space, purge or ventilate, or both, to ensure acceptable atmospheric levels are maintained and controlled, prior to and throughout the entry.

(3) Test the atmosphere in the order specified below. The atmosphere is considered acceptable when the following conditions exist:

(a) Oxygen concentration:

(a-1) Construction and General Industry: 19.5% to 23.5%.

(a-2) Ships and Vessels: 19.5% to below 22%. Entry is prohibited when the LEL is greater than 10% unless it is required for emergency rescue.

(b) Flammable atmosphere: <10% of LFL.

(c) Toxic dust, vapor, or gas is maintained below the OEL.

d. Entry Permits. (34-8.d)

(1) The Entry Supervisor must complete an entry permit, documenting the appropriate elimination, mitigation, and control measures to be implemented for all existing and potential hazards. See non-mandatory ENG Form 6208 (Permit-Required Confined Space Entry) (see para 34-10.d).

(2) Permits are limited to one shift. If work operations exceed one shift, the permit must be reissued.

(3) Make available the permit and any other documentation specific to the entry at the confined space location.

(4) Mark the permit as canceled after the date and time stated on the permit has expired, the work is completed, or there is a change in conditions that requires cancellation.

(5) Once the PRCS operation has concluded, hold a debrief to review the written Confined Space Plan and any hazards encountered or created.

(6) Keep cancelled permits for at least one year for Entry Supervisors to review prior to entering a confined space.

e. Reclassification. If the Entry Supervisors determines the PRCS poses no actual or potential atmospheric hazards and if all hazards within the space are eliminated or isolated prior to entry, the PRCS may be reclassified as a NPCS for as long as the non-atmospheric hazards remain eliminated or isolated according to 29 CFR 1910.146 or 29 CFR 1926.1203 (29 CFR 1926 Subpart AA). (34-8.e)

(1) Control of atmospheric hazards through forces air ventilation does not constitute elimination.

(2) The reclassification must be documented and available at the confined space location. See non-mandatory ENG Form 6210 (Confined Space Reclassification) (see para 34-10.e).

(3) If hazards arise in the reclassified space, employees must exit the space and the space must be reevaluated.

(4) Keep documentation of entries conducted under reclassification for at least one year for Entry Supervisors to review prior to entering a confined space.

f. Alternate Entry. If the Entry Supervisor determines the PRCS has no potential for any other hazard, other than atmospheric, and is controlled with continuous ventilation (see para 34-8.g) and monitoring (see para 34-8.c), alternate entry procedures can be followed according to 29 CFR 1910.143 or 29 CFR 1926.1203. (34-8.f)

(1) Entry Supervisor must be able to demonstrate that continuous force air ventilation alone is sufficient to maintain safe entry conditions.

(2) The alternate entry must be documented and available at the confined space location. See non-mandatory ENG Form 6204 (Alternate Entry Procedure) (see para 34-10.a).

(3) If hazards arise in the space, employees must exit the space and the space must be reevaluated.

(4) Keep documentation of entries conducted under alternate entry for at least one year for Entry Supervisors to review prior to entering a confined space.

g. Confined Space Hazard Control. (34-8.g)

(1) Ventilation.

(a) When a hazardous atmosphere is present, use natural or mechanical ventilation controls to provide continuous fresh air into the confined space based on the work that will be performed.

(b) Natural ventilation may be used to supply adequate breathing quality air within the confined space.

(c) Mechanical Ventilation.

(c-1) General (that is, Dilution) Ventilation. Air supply must be from a clean source that does not increase the hazards in the space. When continuous forced air is used, direct the ventilation towards the immediate areas where an Entrant will be present.

(c-2) Local Exhaust Ventilation (LEV). When hot work, painting, or the use of a combustible or flammable material is necessary in the confined space, utilize LEV to capture and remove contaminants at the source.

(c-3) If a confined space contains an atmospheric hazard controlled by mechanical ventilation, use an audible or visual warning system to alert individuals in the event of the failed system.

(2) Isolation. Install an isolation barrier to prevent any liquids or free flowing solids from entering the confined space when work is being conducted.

h. Confined Space Rescue. (34-8.h)

(1) Base the confined space rescue plan on the hazard level. Until a confined space can be proven to have no potential for hazards and no potential difficulty associated with the rescue of Entrants, the rescue service must be able to meet the requirements of the following hazard levels:

(a) Hazard Level 1. A confined space that does not contain any potential or recognized Hazards, but could require technical rescue due to its configuration that would prohibit Entrants from being easily removed should a worker become incapacitated. A fully trained rescue team must be available to respond within five minutes to the site and is capable of setup and rescue entry within 15 minutes of arrival onsite.

(b) Hazard Level 2. A confined space that does not contain life-threatening or other potentially IDLH hazards, but does contain potential or recognized hazards that could incapacitate Entrants or prevent them from exiting the space without assistance. A fully trained rescue team must be onsite, equipped, and capable of setup for safe entry for rescue within 12 to 15 minutes of incident occurrence.

(c) Hazard Level 3. A confined space that contains life-threatening hazards requiring immediate intervention (that is, IDLH atmosphere). A fully trained rescue team must be onsite and standing by in the immediate area throughout the entire entry. The rescue team must be dedicated to a single entry with no other responsibilities and will be completely set up and capable of rescue entry within two minutes of incident occurrence.

(2) Coordinate with applicable federal, state, or local municipal rescue services to ensure they are capable of supporting the entry.

(3) In-house or contract provided rescue services will be evaluated to ensure they are fully capable of performing the rescues within the required timeframe. See ENG Form 6211 (Rescue Service Evaluation) as an example (see para 34-10.f).

34-9. Figures and Tables.
Not Applicable

34-10. Checklists and Forms.

a. ENG Form 6204, Alternate Entry Procedure (non-mandatory) (https://publications.usace.afpims.mil/LinkClick.aspx?fileticket=3FTU_r7b2zQ%3d&tabid1=16438&portalid=76&mid=43543) (34-10.a)

b. ENG Form 6205, Atmospheric Testing (non-mandatory) (https://publications.usace.afpims.mil/LinkClick.aspx?fileticket=Fe-PrOnk_lg%3d&tabid=16438&portalid=76&mid=43543) (34-10.b)

c. ENG Form 6207, Confined Space Entrant Log (non-mandatory) (https://publications.usace.afpims.mil/LinkClick.aspx?fileticket=IG8N14A5H4g%3d&tabid=16438&portalid=76&mid=43543) (34-10.c)

d. ENG Form 6208, Permit-Required Confined Space Entry (PRCS) (non-mandatory) (https://publications.usace.afpims.mil/LinkClick.aspx?fileticket=P8xWGmdifEY%3d&tabid=16438&portalid=76&mid=43543) (34-10.d)

e. ENG Form 6210, Confined Space Reclassification (non-mandatory) (https://publications.usace.afpims.mil/LinkClick.aspx?fileticket=BVmOXae5IUI%3d&tabid=16438&portalid=76&mid=43543) (34-10.e)