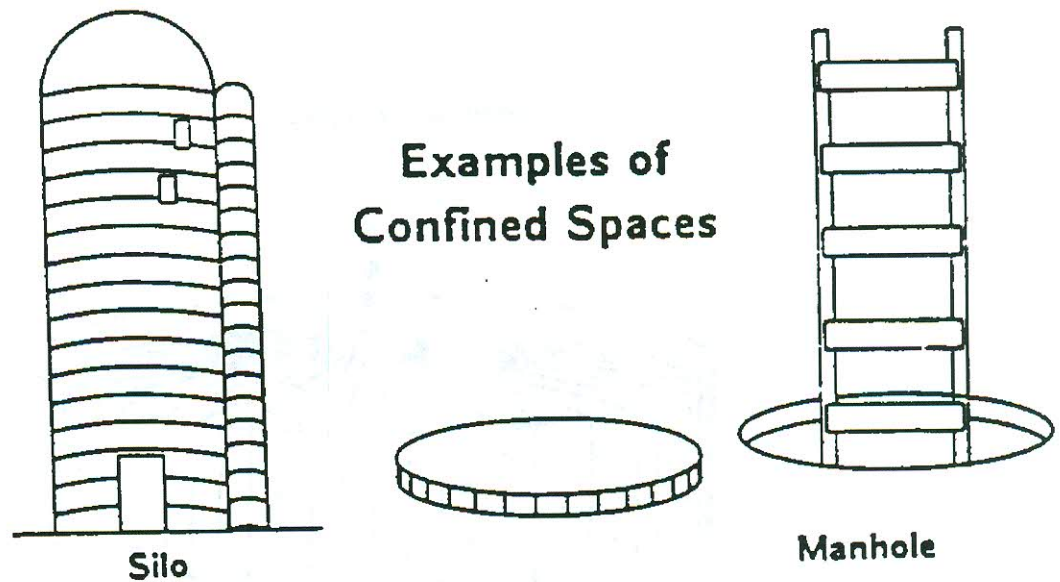
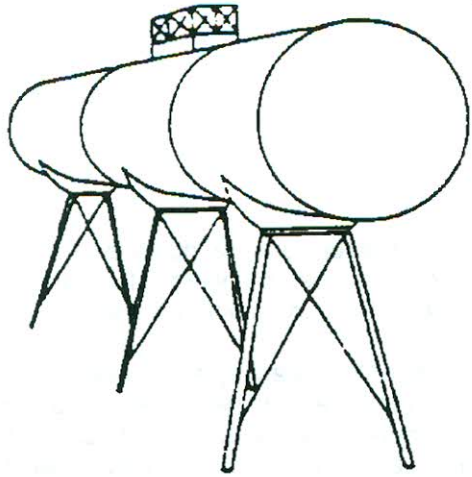

CHAPTER 6 : CONFINED SPACES

INTRODUCTION/OVERVIEW

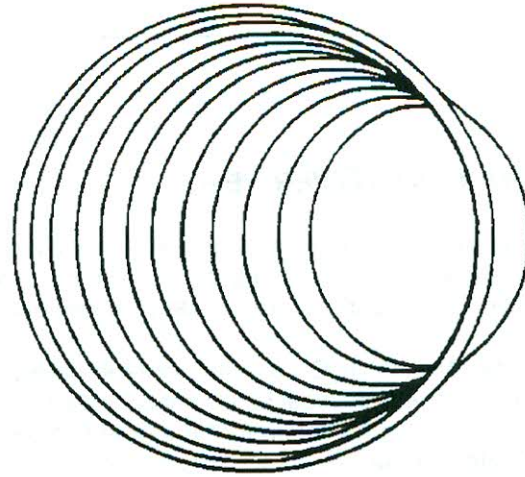
If you are required to construct or work in a boiler, cupola, degreaser, furnace, pipeline, pit, pumping station, reaction or process vessel, septic tank, sewage digester, sewer, manhole, silo, storage tank, ship's hold, utility vault, vat, or similar type enclosure, you are working in a confined space.

CUNNINGHAM PAVING conducts pre-job safety inspections before starting each new project and alerts affected employees to potential hazards. Learn to identify a confined space and become familiar with the safety steps that must be followed when working in and around confined spaces. If your jobsite contains one or more work areas defined as a confined space, read carefully the information given in this chapter. Your life and the lives of your fellow workers depend on it!



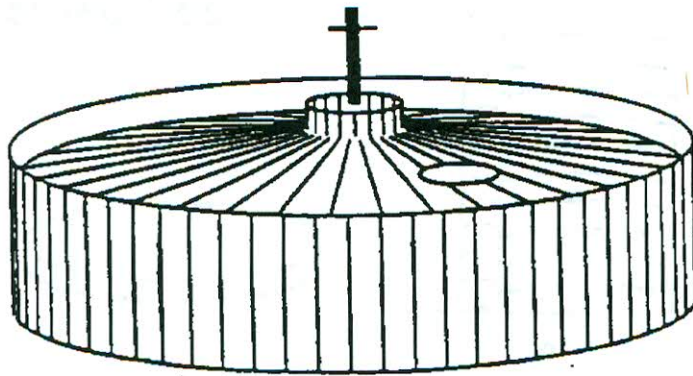


Storage Tank



Pipeline

Additional Examples



Digester

GUIDELINES FOR IDENTIFYING A CONFINED SPACE

A confined space found in the workplace may have a combination of any of the following three characteristics. These characteristics can complicate working in and around these spaces as well as any rescue operations necessitated during emergencies.

IS LARGE ENOUGH AND SO CONFIGURED THAT AN EMPLOYEE CAN ENTER

The space must be large enough for the employee to enter and do the assigned work; and

LIMITED OR RESTRICTED OPENINGS FOR ENTRY AND EXIT

Confined space openings are limited primarily by size or location. Openings are usually small in size, perhaps as small as 18 inches in diameter, and are difficult to move through easily. Small openings may make it very difficult to get needed equipment in or out of the spaces, especially protective equipment such as respirators needed for entry into spaces with hazardous atmospheres, or life-saving equipment when rescue is needed. However, in some cases openings may be very large, for example open-topped spaces such as pits, degreasers, excavations, and ships' holds. Access to open-topped spaces may require the use of ladders, hoists, or other devices, and escape from such areas may be very difficult in emergency situations; and

NOT DESIGNED FOR CONTINUOUS WORKER OCCUPANCY

Most confined spaces are not designed for workers to enter and work in them on a routine basis. They are designed to store a product, enclose materials and processes, or transport products or substances. Therefore, occasional worker entry for inspection, maintenance, repair, cleanup, or similar tasks is often difficult and dangerous due to chemical or physical hazards within the space.

HAZARDS INVOLVED IN ENTERING AND WORKING IN CONFINED

SPACES

HAZARDOUS ATMOSPHERES

As mentioned, the atmosphere in a confined space may be extremely hazardous because of the lack of natural air movement. This characteristic of confined spaces can result in **oxygen-deficient atmospheres**, **flammable atmospheres**, and/or **toxic atmospheres**.

An **oxygen-deficient atmosphere** has less than 19.5% available oxygen (O_2). Any atmosphere with less than 19.5% oxygen should **not** be entered without an approved self-contained breathing apparatus (SCBA).

The oxygen level in a confined space can decrease because of work being done, such as welding, cutting, or brazing; or, it can be decreased by certain chemical reactions (rusting) or through bacterial action (fermentation).

The oxygen level is also decreased if oxygen is displaced by another gas, such as carbon dioxide or nitrogen. Total displacement of oxygen by another gas, such as carbon dioxide, will result in unconsciousness, followed by death.

