

Confined Space → Potential Hazards

Potential Hazards Overview :

Oxygen Hazards

- Oxygen **deficient** atmosphere starts from < 19.5 %
- Oxygen **enriched** atmosphere starts from > 22.5 %

Engulfment Hazards

- Loose, granular materials stored in bins and hoppers - grain, sand, coal, etc.
- Crusting and bridging below a worker.
- Flooding of confined space.
- Water or sewage flow.
- Shifting liquid or solid substance that traps employee

Temperature Extremes

- Extremely hot or cold temperatures.
- Steam cleaning of confined spaces.
- Humidity factors.
- Extremely cold liquids.
- Work processes inside the confined space can increase temperature extremes.
- Personal protective equipment.

Toxic Hazards

- Gases, vapors or fumes (examples: hydrogen sulfide, sulfur dioxide, carbon monoxide)

Flammable or Explosive Hazards

- Vapors or dusts in concentrations large enough to ignite

Configuration

- Walls or floor which slope downward or taper in can trap an employee

Physical Hazards

- Contact with mechanical or electrical equipment, steam or other sources of heat, moving parts, energy.

Special Hazards

- **Noise**
 - Amplified due to acoustics within the space.
 - Damaged hearing, affect communication.
- **Slick / Wet Surfaces**
 - Slips and falls.
 - Increased chance of electric shock.
- **Falling Objects**
 - Topside openings expose workers inside confined space to falling objects.
- **Crushing**

Safety Checks, Hazard Identifications and Risk Assessments (HIRA) are the most important actions before entering a Confined Space

Required checklist Possible Hazards in Confined space

- ★ ☐ N ☐ NA Are insufficient rescue measures in place, as foreseen in the realised Risk assessment ?
- ★ ☐ Y ☐ N ☐ NA Is the stand by person present ?
- ★ ☐ Y ☐ N ☐ NA Is the correct filled out work permit present ?
- ★ ☐ Y ☐ N ☐ NA Do Oxygen Hazards exist?
- ★ ☐ Y ☐ N ☐ NA Do Engulfment Hazards exist?
- ★ ☐ Y ☐ N ☐ NA Do Temperature Extremes exist ?
- ★ ☐ Y ☐ N ☐ NA Do Toxic Hazards exist ?
- ★ ☐ Y ☐ N ☐ NA Do Flammable or Explosive Hazards exist ?
- ★ ☐ Y ☐ N ☐ NA Do Configuration exist ?
- ★ ☐ Y ☐ N ☐ NA Do Physical Hazards exist ?
- ★ ☐ Y ☐ N ☐ NA Do Chemical Hazards exist?
- ★ ☐ Y ☐ N ☐ NA Is the realised Isolation in accordance with the realized HIRA?
- ★ ☐ Y ☐ N ☐ NA Are possible increased physically work loads considered?
- ★ ☐ Y ☐ N ☐ NA Are possible Chemical reactions considered?
- ★ ☐ Y ☐ N ☐ NA Are possible Fire / explosions considered?
- ★ ☐ Y ☐ N ☐ NA Is possible Noise considered?
- ★ ☐ Y ☐ N ☐ NA Are possible Slick / Wet Surfaces considered?
- ★ ☐ Y ☐ N ☐ NA Are possible Falling Objects considered?
- ★ ☐ Y ☐ N ☐ NA Is possible Crushing considered?

This document has to be used as a help before starting the work or performing a SFA