

## NC DEQ Confined Spaces Toolbox Talk



1) What is a confined space? OSHA defines a confined space as “a space that has limited or restricted means of entry, is not designed for continuous occupancy, and is large enough and configured so that a person can enter the space and maneuver well enough to perform tasks.”

2) What are some features that might warn you of a confined space?

- It's not intended to be occupied except for the purpose of work
- It's fully or partially enclosed
- Entry is restricted by the location, size, or means of entry
- It has poor ventilation or a potential hazardous atmosphere
- It may become dangerous due to materials, gases, or substances inside the space, or the work being done

3) What are some examples of confined spaces in the workplace?

- Tanks
- Access shafts
- Utility Vaults
- Sewers
- Pipes
- Pits
- Ductwork
- Air Handlers
- Hoppers
- Manholes
- Excavations
- Tunnels
- Equipment Housings



- Boilers
- Silos
- Storage Bins
- Engine compartments on larger boats
- Storage compartments or cargo holds on larger boats

4) Permit-Required Confined Spaces-Any one of these characteristics turns a confined space into a **permit-required** confined space:

- Contains or has the potential to contain a hazardous atmosphere
- Contains a material that could engulf, bury, or flood the worker
- Has an internal configuration that might cause a worker to be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross section
- Contains any other recognized serious safety or health hazards

5) Statistics:

- About 2.1 million workers in the US enter permit-required confined spaces each year
- From 2011 to 2018 there were 1,030 US deaths in confined spaces
- 61 of those 1,030 deaths were in sewers, manholes, and storm drains
- About 60% of deaths in confined spaces were the would-be rescuers
- The leading cause of death in confined spaces is asphyxiation

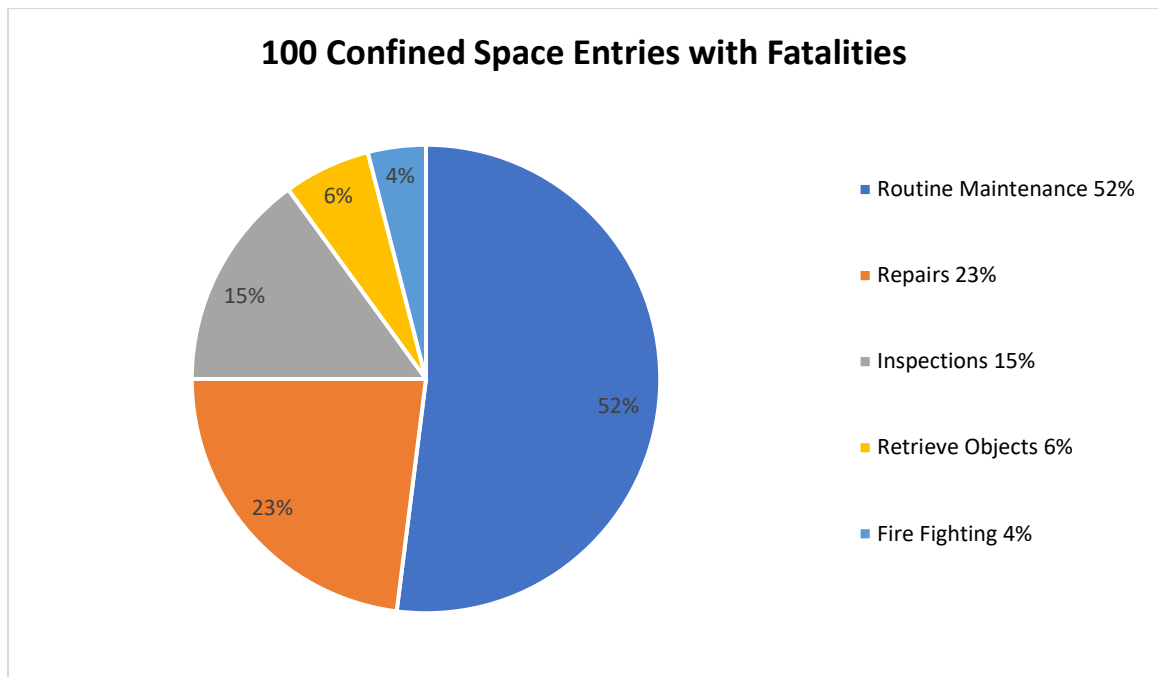
6) NIOSH Study-The National Institute for Occupational Safety & Health studied 100 confined space deaths:

- 85% of the time a supervisor was present



- 29% of the deaths were supervisors
- 31% had written confined space entry procedures
- 0% followed the written procedures
- 15% had confined space training
- 0% had a rescue plan
- 95% were authorized to enter by the supervisor
- 0% of the spaces were tested prior to entry
- 0% of the spaces were ventilated

7) Why were workers in those 100 confined spaces when someone died?



8) How to protect yourself:

- Never enter any confined space without proper training
- Never enter a permit-required confined space without a permit
- Before entry a competent person must conduct a risk assessment
- The risk assessment must determine what PPE is required for both work and rescue

- When air testing is performed it should be conducted at 4-foot intervals (gases settle and separate differently)
- Have a competent watch person in place with an emergency response plan
- The watch person should have continuous communication with the response team and worker in the confined space
- Many OSHA standards can apply to confined spaces. If you have specific questions, contact a safety consultant



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## NC DEQ Confined Spaces Toolbox Talk Quiz



- 1) What is a confined space?
- 2) What are some features that might warn you of a confined space?
- 3) Name 5 examples of confined spaces in the workplace?
- 4) Name 2 things that would make a confined space become a permit-required confined space:
- 5) True or False. You can enter a permit-required confined space without a permit if you're just going in quickly to retrieve a tool.
- 6) What's the leading cause of death in confined spaces?
- 7) When air sampling in a confined space take one reading near the top and one near the bottom.
- 8) True or false. It's safe to enter a confined space as long as a supervisor is present.

9) Name 4 ways to protect yourself in confined spaces:



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- 3) Name 5 examples of confined spaces in the workplace?
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4) Name 2 things that would make a confined space become a permit-required confined space:

- Contains or has the potential to contain a hazardous atmosphere
- Contains a material that could engulf, bury, or flood the worker
- Has an internal configuration that might cause a worker to be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross section
- Contains any other recognized serious safety or health hazards

5) True or False. You can enter a permit-required confined space without a permit if you're just going in quickly to retrieve a tool.

**FALSE.** You can **NEVER** enter a permit required confined space without a permit. 6% of the deaths in the NIOSH study happened while a worker was retrieving an object.

6) What's the leading cause of death in confined spaces? Asphyxiation

7) When air sampling in a confined space take one reading near the top and one near the bottom. **FALSE.** Different gases have different densities, so they will separate into layers. Some are lighter than air, and some are heavier than air. You should take readings every 4 feet from top to bottom. Some companies don't have the test equipment, so they pay a contractor to do this testing. Make sure they take readings at least every 4 feet!

8) True or false. It's safe to enter a confined space as long as a supervisor is present. **FALSE**. When NIOSH studied 100 confined space deaths, they discovered that.....

- 85% of the time a supervisor was present
- 29% of the deaths were supervisors
- 95% of the time a supervisor told the employee it was safe to enter

9) Name 4 ways to protect yourself in confined spaces:

- Never enter any confined space without proper training
- Never enter a permit-required confined space without a permit
- Before entry a competent person must conduct a risk assessment
- The risk assessment must determine what PPE is required for both work and rescue
- When air testing is performed it should be conducted at 4-foot intervals (gases settle and separate differently)
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