



## TWO WORKERS WERE SUSPECTED OF INHALING HAZARDOUS GAS AT A MANHOLE AND CERTIFIED DEAD AFTER SENDING TO HOSPITAL

On 23 April 2024, four workers did not feel well while carrying out drainage work at a manhole in Sha Tin, and two of them were certified dead after sending to the hospital. The Construction Industry Council (CIC) would like to deliver this safety message for your attention. It would be appreciated if you could distribute the message below to your fellow members, relevant personnel or other industry stakeholders where appropriate. Thank you very much.

### Common Accidents

1. Inhalation of hazardous gas, fume, vapour or lack of oxygen, causing workers working in confined spaces to lose consciousness or suffocate.
2. Failure to implement the permit-to-work system of confined spaces and the relevant safety measures.
3. No provision or not maintaining well ventilation for removal of gases or vapour heavier than air and for effective air circulation.
4. The worker did not use approved respiratory equipment and other required personal protective equipment.
5. Failure to conduct dynamic risk assessments and take appropriate safety measures in response to changes in the environment and procedures.



### Critical Control Measures

1. Before working in a confined space, a competent person shall be appointed to carry out risk assessment and make recommendations. After issuance of permit-to-work certificate, only certified workers shall enter or work in confined spaces.
2. Before entering the confined space, ensure that the confined space has to be sufficiently purged, cooled and ventilated.
3. All pipelines connected to the confined space shall be properly and completely blanked off as appropriate.
4. Perform continuous air monitoring to ensure that the atmospheric environment meets the required standard throughout the work. Each group of workers could individually bring at least one portable air monitoring equipment to conduct continuous air monitoring during work.
5. Ensure that any person entering or remaining in that confined space properly wears an approved breathing apparatus and a suitable safety harness. The safety harness should be connected to a lifeline and the free end of the lifeline should be held by the standby person outside the confined space.
6. Formulate and implement proper emergency procedures, including provision of sufficient and suitable rescue equipment and presence of a rescue team that commensurate with the scale of the task.
7. Implement effective monitoring and supervision to ensure that the above safety measures are fully implemented and being strictly followed.
8. Adopt appropriate Smart Site Safety System to strengthen the monitoring system at confined spaces, e.g. AI video cameras and real-time gas detectors.



## SAFETY ROLES AND RESPONSIBILITIES OF KEY STAKEHOLDERS IN THE HONG KONG CONSTRUCTION INDUSTRY

What if all stakeholders can act together and take one step further to fulfill their roles and responsibilities, can similar accident be avoided?

- In the design stage, designers should review the designs with relevant stakeholders to reduce the need to work in confined spaces.
- During the construction stage, work team should plan, manage and monitor their confined space work properly. In case of workers are required to enter any manholes which have been classified as confined spaces, shall ensure that all pipes and supply lines, which are liable to cause danger, are completely blanked off, and effective steps to prevent an ingress to the confined space of hazardous gas, vapour, dust, fume or other free flowing liquids and solids are taken.
- Work team must not begin confined space works unless reasonable steps have been taken to prevent access by unauthorised persons to the confined spaces and adopt a management system to the ingress and egress of confined spaces.
- Workers should follow the developed safe working procedures, in case identifying any changes in the construction process, report it to their supervisors and take action against it immediately.

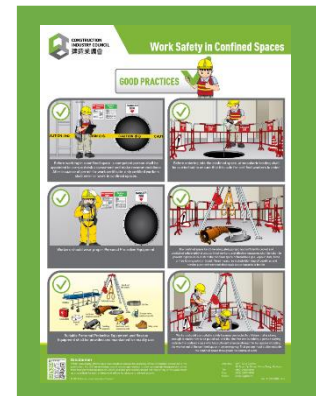
### Reference information for sharing



Reference Material on Safety Roles and Responsibilities of Key Stakeholders in the Hong Kong Construction Industry



Poster  
Safety Measures - Confined Space



Poster  
Work Safety in Confined Spaces



### Disclaimer

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