



Government of Goa
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CIRCULAR

Sub – Safety guidelines for working in confined Space – req.

Introduction:

In many factories, persons are required to enter the confined spaces like reactors, storage tanks, process vessels, boilers, vats, ducts, large pipes, pits, chambers, silos and other similar confined spaces where hazards in the form of asphyxiant / toxic gases, fumes, welding fumes, vapours, dust, energizing of a powered source such as a non-isolated agitator, etc. are likely to be present. This involves risk to persons working inside for any routine manufacturing activities, inspections, cleaning, maintenance or non-routine activities like repairs etc.

Section 36 and 36-A of the Factories Act, 1948 and the Rules made there under prescribes the requirements to be complied with while working in a confined space.

Taking cognizance of the accident occurred recently while working in a confined space thereby causing death of two workers, a need is felt by the Department to issue safety guidelines to be adopted by the factories while undertaking such activity not only to prevent similar or such accidents in future but to avoid liability and legal violations.

Below given guidelines are not exhaustive in nature. Any additional precautions as may be necessary, based on specific requirement shall be adopted by the factory management for safe execution of the work based on the nature of manufacturing activity.

General guidelines:

1. No person shall be required or allowed to enter any confined space, unless there is other effective means of egress, is provided with a manhole of rectangular, oval or circular shape as per below given dimensions -

Shape of Manhole	Minimum Dimensions of Manhole
Rectangular or Oval	40 centimetres long and 30 centimetres wide
Circular	40 centimetres in diameter

2. Risk assessment shall be carried out to evaluate risk in the work before commencement of the work.
3. Standard Operating Procedure (SOP) shall be prepared that will include all the measures for carrying out routine and non-routine work in the confined space for ensuring safety and health of persons working inside the confined space. It shall be ensured that SOP is being followed.
4. A confined space entry work permit system shall be followed while carrying out such work inside the confined space.
5. All the practicable measures shall be taken to remove any gas, fume, vapour or dust, which may be present so as to bring its level within the permissible limits, before entry and to prevent any ingress of such gas, fume, vapour or dust.
6. The confined space shall be isolated from all sources of potentially hazardous energy (chemical, mechanical, electrical, etc.).
7. Before entering the confined space, tests shall be carried out for measuring level of oxygen, fumes and toxic / flammable gases, dust, etc. A written certificate based on tests carried out shall be obtained from the competent person and it shall indicate that the confined space is free of such gases, fumes, dust, etc. and contains sufficient oxygen.

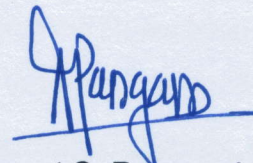
The acceptable limits are-

Oxygen	> 19.5% by Volume to < 23.5% by Volume
Flammable Gas	< 10% of LEL (Lower Explosive Limit)
Toxic Gas & Vapours	< PEL (Permissible Exposure Limit) as mentioned in Second Schedule of the said Act
Welding Fumes	< 5 mg / cubic metre.

8. Such person shall be provided with a suitable self-contained breathing apparatus and a safety belt securely attached to a rope, the free end of which is held by a



- person outside the confined space. No person shall be allowed or required to work without the use of these PPEs.
9. Provision for continuous supply of adequate fresh air or forced ventilation shall be made to the confined space while person/s is/are working inside the confined space.
 10. A ladder with hooks shall be provided for effective egress from confined space in case of emergency.
 11. No portable electric light or any other electric appliance of voltage exceeding 24 Volts shall be permitted for use inside any confined space.
 12. If any inflammable substance is likely to be present in such confined space, no lamp or light other than that of flameproof construction shall be permitted to be used therein.
 13. In case of other confined space, where chemicals are likely to be present, a chemical resistant apron, gloves, suitable safety foot wears shall be provided to person involved in the work inside the confined space.
 14. As far as possible, sludge gear / suction pump shall be used for removal of sludge from tank, pit, chamber or other confined space, where sludge is present and no person will be required to enter such confined space.
 15. A full time trained attendant shall always be present outside the confined space, whenever a person has entered in a confined space for any work and till the person comes out after completion of work.



(Anant S. Pangam)

Chief Inspector of Factories and Boilers

To:

All the factories registered under the provisions of the Factories Act, 1948.