

Government of Maharashtra
Directorate of Industrial Safety and Health

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Subject: Safety Guidelines for working in confined space.

Introduction:

In the current situation of Covid-19 lockdown, the inspection of all the factories may not be possible by this directorate. Hence all such type of factories are hereby directed to follow the following safety measures in addition to the provisions of The Factories Act, 1948 and The Maharashtra Factories Rules, 1963.

The given guide lines are not exhaustive in nature; any additional precaution as may be necessary based on specific requirement should be adopted by the factory management for safe manufacturing operation of the factory based on the nature of manufacturing activity.

It has been observed that in many factories, persons are required to enter the confined spaces like vessels, boilers, vats, tanks chambers, silos, crystallizers, ETP/STP tanks and other similar confined spaces, etc, where gases, fumes, welding fumes, vapours, dust 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. Recently, there occurred fatal accidents in one of the industries, while working in the confined space. It is revealed that, such accidents have occurred due to non compliance of the provisions of the Section 36 of the Factories Act 1948 and the Rule 68 of the Maharashtra Factories Rules 1963, in respect of working inside the confined space. It is the statutory responsibilities of an Occupier and Manager of the factories to follow the provisions and any negligent approach towards the law will not be tolerated and viewed seriously. The following preventive measures should be taken, which are mandatory.

1. No person shall be required or allowed to enter any confined space, unless it is provided with a

Manhole of rectangular, oval or circular shape or other effective means of egress and its dimensions not less than-

Shape of Manhole	Minimum Dimensions of Manhole
Rectangular or Oval	Shoulder width of the person concerned plus 8 c.m. in length and 30 centimeter wide;
Circular	Shoulder width of the person concerned plus 8 c.m. in diameter.

2. All 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.
3. Before entering the confined space, tests should 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 should 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)
 - Welding Fumes- < 5 mg/ cubic metre.
4. 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.
5. 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.
6. A ladder with hooks shall be provided for effective egress from confined space in case of emergency.
7. Standard Operating Procedure (SOP) shall be prepared that will include all these measures for carrying out routine and non-routine work in the confined space for ensuring safety & health of persons working inside the confined space. It shall be ensured that SOP is being followed.
8. No portable electric light or any other electric appliance of voltage exceeding 24 Volts shall be permitted for use inside any confined space and if any inflammable substance

- is likely to be present in such confined space, no lamp or light other than that of flame-proof construction shall be permitted to be used therein.
9. In case of non-routine work in a confined space, risk assessment shall be carried out to evaluate risk in the work and necessary steps shall be taken to prevent any hazards to a person.
 10. 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.
 11. As far as possible, sludge gear/suction pump shall be adopted for use 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.
 12. 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.
 13. A work permit system shall be followed while carrying out such work inside the confined space.

Mahendra Kalyankar 5/6/2010

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