

PART 9: CONFINED SPACES

LOCKOUT AND ISOLATION

- Isolation** **9.18** (1) Except as provided in subsections (2) ~~and (3)~~, before a worker enters a confined space, adjacent piping which contains or has contained a harmful substance must be controlled by
- (a) disconnecting, blanking or blinding, or equivalent engineered system, or
 - (b) if the adjacent piping contains a harmful substance that is not a gas or a vapour, nor a liquid of sufficient volatility to produce a hazardous concentration of an air contaminant in the discharge of the piping, a double block and bleed system.
- (2) If adjacent piping contains or has contained a substance ~~at a pressure exceeding 100 kPa gauge (15 psig)~~ that is hazardous only because of its pressure, temperature or quantity, before a worker enters the space, the pressure must be controlled
- (a) to meet the requirements of subsection (1), ~~or~~
 - (b) provided there is no other pressure source or head pressure, by de-energizing and locking out the pressure source and depressurizing the ~~line~~ **line, or**
 - (c) by other effective means.**
- ~~(3) If adjacent piping contains or has contained a substance at a pressure not exceeding 100 kPa gauge (15 psig) that is hazardous only because of its temperature or quantity, before a worker enters the space, the hazard must be controlled~~
- ~~(a) to meet the requirements of subsection (1), or~~
 - ~~(b) by other effective means.~~
- (4) Except when used in an acceptable double block and bleed system, the closing of one or more valves in a line is not an acceptable means of isolation.
- (5) Isolation of a confined space from gases found in a gravity-flow municipal or domestic sanitary or storm sewer system may be accomplished by a p-trap, provided that
- (a) the integrity of the trap is ensured immediately upon entry, and
 - (b) the atmosphere is continuously monitored and shown to contain clean respirable air.
- Isolation points** **9.19** (1) The employer must keep a record which identifies the location of every isolation point.
- (2) Every isolation point must be visually checked or otherwise verified to ensure that the confined space is effectively isolated before a worker enters the space.
- Blanks and blinds** **9.20** (1) Unless certified by a professional engineer to provide adequate safety for the particular conditions of anticipated pressure, temperature and service, a blank or blind must be manufactured in accordance with the specifications of one of the following standards:
- (a) *ANSI Standard API 590-1985, Steel Line Blanks;*
 - (b) *ANSI Standard ASME/ANSI B16.5-1988, Pipe Flanges and Flanged Fittings;*

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- (c) *ANSI Standard ASME B31.1-1992, Power Piping;*
- (d) *ANSI Standard ASME B31.3-1993, Chemical Plant and Petroleum Refinery Piping.*

- (2) If a blank or blind is certified by a professional engineer, the employer must keep a record of its certification, location and conditions of service.
- (3) If required, an allowance for corrosion must be made in the design of a blank or a blind.
- (4) A blank or blind must be stamped with or otherwise indicate its pressure rating.
- (5) If a line is to be opened for disconnection or to insert a blank or a blind, written safe work procedures must be prepared and followed to prevent hazardous exposure of workers to its contents.
- (6) Visual indication that a blank or blind has been installed must be provided at the point of installation.
- (7) If required to prevent leakage, gaskets must be installed on the pressure side of blanks or blinds and flanges must be tightened to make the blanks or blinds effective.
- (8) If threaded lines are used, threaded plugs or caps must be used to blind the lines.

**Double block
and bleed**

9.21

If a double block and bleed isolation system is used

- (a) the diameter of the bleed line must be no less than the diameter of the line being isolated, unless certified by a professional engineer,
- (b) the bleed for a liquid system must be at a lower elevation than the block valves,
- (c) all valves must be locked out in their proper open or closed position,
- (d) the downstream block valve must be checked to ensure that it is capable of safely withstanding the line pressure,
- (e) the bleed must be checked to ensure that it remains clear of obstructions while the confined space is occupied, either by continuous automatic monitoring or by manually checking within 20 minutes before worker entry, or before re-entry after the confined space has been vacated for more than 20 minutes, and
- (f) in the event of discharge from the bleed line resulting from failure of the upstream block valve, all workers must immediately exit the confined space and the space must be effectively re-isolated before a worker enters the space.

**Alternate
procedures**

9.22

(1) If isolation using the measures specified in section 9.18 is not possible **practicable**, the employer may implement alternate measures, if acceptable to the Board, ~~which ensure equivalent protection to all workers exposed to the hazard.~~

(2) All workers affected by measures implemented under subsection (1) must be informed of the measures taken and instructed in any applicable work procedures.

**Discharge
area**

9.23

The area of potential discharge from a disconnected line or from the bleed of a double block and bleed isolation system must be controlled to ensure that any accidental discharge will not present a hazard to workers.

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Explanatory Note

Section 9.18 sets out methods which can be used to isolate piping connected to a confined space prior to worker entry. Because this section is intended to cover a wide range of circumstances – from the most hazardous to the least hazardous – the level of protection specified by section 9.18 assumes the highest hazard level in order to protect workers in all situations. Section 9.22 allows an employer to implement isolation measures other than those listed in section 9.18 in certain circumstances.

Former sections 9.18 (2) and (3) provided different control measures for isolating piping when the substance in the pipe is over or under 15 psig and is hazardous because of its pressure, temperature or quantity. Since the distinction of hazard of pressure over or under 15 psig is not significant from a health and safety perspective, this amendment deletes the reference to the level of pressure in subsection (2) and deletes subsection (3).

The first amendment to section 9.22 (1) replaces the word “possible” with “practicable”. “Practicable” is a term defined in Part 1 of the *Occupational Health and Safety Regulation* and means “that which is reasonably capable of being done”. In ordinary usage, “practicable” suggests that under present circumstances or by available means something can reasonably or effectively be done, while “possible” means that with suitable conditions and methods, something may be done. Using a defined term rather than ordinary usage is more precise and should be less confusing to readers.

The second amendment to section 9.22 (1) deletes the phrase “which ensure equivalent protection to all workers exposed to the hazard”. Under the former regulation, an alternate procedure or measure had to meet a standard of providing “equivalent protection” to those specified in former section 9.18. This wording did not allow for consideration of a range of protective measures suitable to control the identified hazards. High hazards were assumed in section 9.18, and only protection which was at least equal to that specified in section 9.18 would meet this test.

The amendments in section 9.22 (1) allow the alternate measures and the corresponding level of protection to vary according to the circumstances, while ensuring that workers are protected in ways that are acceptable to the Board.