

ERRATA

Please add the following at the end of the text in the fifth edition of Publ 2207.

- c. Install pipe nipples to be used as vents and checkpoints. The height of the nipples should exceed that of the temporary earthen dike.
- d. Fill the space under the tank with water until seepage occurs at each nipple. Continue the flow of water to maintain a constant level within the dike to ensure that no voids develop under the tank.
- e. Watch for leaks inside the tank and plug them as necessary to keep the tank bottom dry.
- f. When repairs are completed, empty the water from the dike to just below the nipples, remove the nipples, plug the holes with a tapered pin or other device, and back weld.

5.4 PERIMETER REPAIRS

Repairs around the perimeter of a tank bottom may be made safely after the following preparations:

- a. Excavate under the edge of the tank for a minimum of 30 centimeters (12 inches) beyond the point of any hot-work area. The excavation should be large enough for a person to work in safety and comfort while excavating and applying a liquid or vapor barrier. The area should be continuously monitored to assure the oxygen content is between 19.5 and 22.5 percent.
- b. Seal off all openings between the floor plates and the tank foundation by packing them with mud or some other suitable, non-corrosive material. The packing should be checked periodically, and walking on the tank bottom should be restricted to assure that the seal remains intact (see Figure 1).
- c. Use a vapor indicator to check the excavations and the seals between the floor plates and the foundation.
- d. Before starting hot work and while work is in progress, monitor the surrounding area, including the excavations and the tank interior, for the presence of airborne concentrations of chemical contaminants.
- e. Ventilate the excavation, if necessary, with a portable air blower rated for the appropriate electrical classification.

Note: When the repairs are completed, excavations should be promptly and carefully refilled to prevent the possible failure of the tank foundations.

5.5 DOUBLE-BOTTOM INSTALLATION

When a tank double bottom is constructed, the following procedures may be used:

- a. Place approximately 10 centimeters (4 inches) of sand or other sealing material over the existing floor.
- b. Install a new bottom by welding.

Note: If vapors in the flammable range are not present under the original tank bottom, hot work can be performed safely on the new tank bottom, even though the original tank bottom is resting on a foundation saturated with oil. In addition, hot work may be performed if there is no possibility of oil penetrating the sand barrier and coming in contact with the new bottom being welded.

5.6 SECTIONAL REPAIRS

When sectional repairs are made on tank bottoms, the following methods may be used:

- a. When using a hand- or air-operated tool, cold cut the tank bottom to be replaced and remove it. A coolant should be applied continuously to the cutting edge of the tool to reduce the heat of friction.
- b. Remove the earth from under the section to be replaced. Fill it with tamped sand, and seal the perimeter of the patch area with mud or some other suitable, non-corrosive material.
- c. Continuously monitor the area for oxygen deficiency and combustible or toxic atmospheres.
- d. When large sections of the bottom must be replaced and it is questionable whether the seal will remain effective, maintain an inert area under the patch area while hot work is being performed. While work is being performed in and around an area with an inert atmosphere, the area should be continuously monitored with an oxygen analyzer.