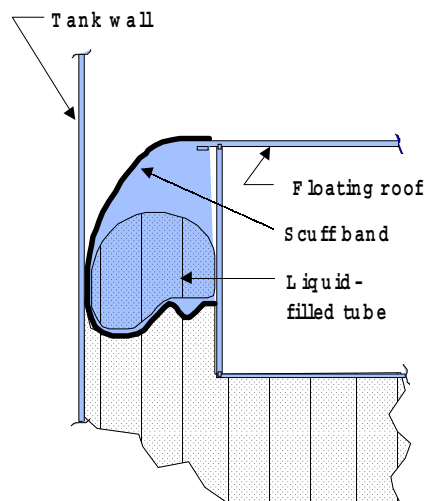
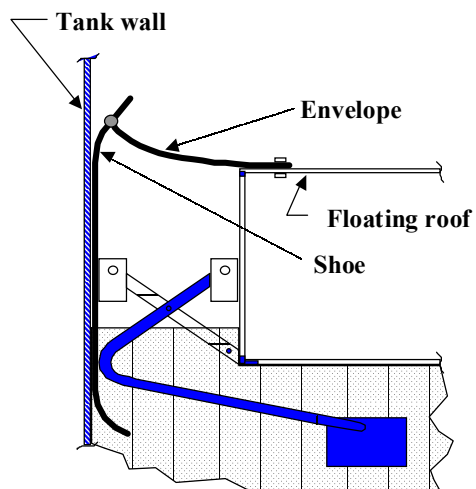


5.3.3.1 Fixed Roof Tank with Internal Floating Roof



IFR Liquid-mounted seal



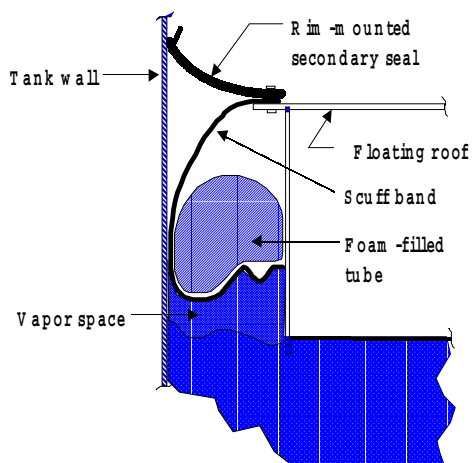
IFR Mechanical Shoe Seal

The internal floating roof in a fixed roof tank with IFR design must float on the liquid surface except when the floating roof must be supported by the leg supports. The internal floating roof must be equipped with a continuous seal between the wall of the tank and the floating roof edge. The continuous seal must be either a single continuous seal that is either liquid-mounted or a metallic shoe seal or two continuous seals mounted one above the other.

A liquid-mounted seal is a foam or liquid filled primary seal mounted in contact with hazardous waste between the tanks wall and the floating roof continuously around the circumference of the tank. A metallic shoe seal is a continuous seal constructed of metal sheets which are held vertically against the wall of the tank by spring weighted levels or other mechanisms and is connected to the floating roof by braces or other means. If a metallic shoe seal is used for the primary seal, the metallic shoe seal must be designed so that one end extends into the liquid in the tank and the other end extends a vertical distance of at least 61 centimeters above the liquid surface. If two continuous seals are used the lower seal may be a vapor-mounted seal. Each opening, with the exception of automatic bleeder vents, in a noncontact internal floating roof must provide projection below the liquid surface.

Each opening in the internal floating roof must be equipped with a gasketed cover or a gasketed lid except for leg sleeves, automatic bleeder vents, rim space vents, column wells, ladder wells, sample wells and stub drains. Each penetration of the internal floating roof for the purpose of sampling must have a slit fabric cover that covers at least 90 percent of the opening. Each automatic bleeder vent and rim space vent must be gasketed. Each penetration of the internal floating roof that allows for passage of a column supporting the fixed roof must have a flexible fabric sleeve seal or a gasketed sliding cover.

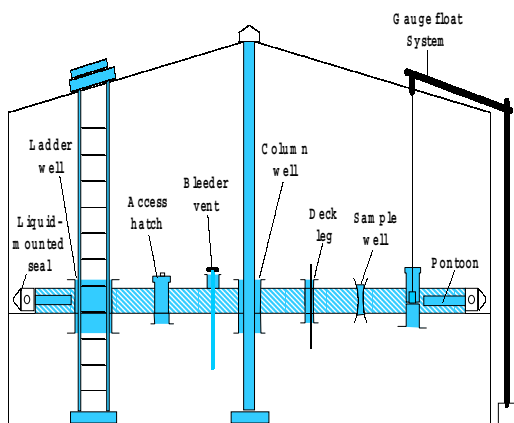
The filling, emptying or refilling process must be continuous and completed as soon as possible. Automatic bleeder vents must



IFR Vapor-Mounted Seal with Secondary Seal

be closed at all times when the roof is floating, except when the roof is being floated off or resting on the leg supports. Prior to filling the tank, each cover, access hatch, gauge float well or lid on any opening in the internal floating roof must be bolted or fastened closed. Rim space vents must be set to open only when the internal floating roof is not floating or when the pressure beneath the rim exceeds the manufacturer's recommended setting.

The floating roof and its closure devices must be visually inspected by the owner or operator to check for defects that could result in air pollutant emissions. A partial listing of defects include: the internal floating roof is not floating on surface of the liquid inside the tank; liquid has accumulated on top of the internal floating roof; any portion of the roof seals have detached from the roof rim; holes, tears or other openings are visible in the seal fabric; the gaskets no longer close off the hazardous waste surface from the atmosphere; or the slotted membrane has more than 10 percent open area.



Internal Floating Roof

The owner or operator must visually inspect the internal floating roof components prior to its initial filling and through openings on the fixed-roof at least once every 12 months thereafter. A visual inspection of the internal floating roof, primary seal, secondary seal, gaskets, slotted membranes, and sleeve seals must be completed each time the tank is emptied and degassed. The tank must be emptied, degassed for inspection at least once every 10 years. If the internal floating roof is equipped with two continuous seals mounted one above the other, the owner or operator may visually inspect the internal floating roof, primary and secondary seals, gaskets, slotted membranes and sleeve seals each time the tank is emptied and degassed. The tank must be emptied, degassed for inspection at least once every 10 years.

The owner or operator must notify the Regional Administrator of the date and location of the inspection 30 calendar days before refilling the tank. When a visual inspection is unplanned, the owner or operator must notify the Regional Administrator as soon as possible, but no later than seven calendar days before refilling of the tank. This notification may be made by telephone and immediately followed by a written explanation for why the inspection is unplanned. Alternatively, written notification, including the explanation for the unplanned inspection, may be sent so that it is received by the Regional Administrator at least seven calendar days before refilling the tank.