

LEAKPROOFNESS TEST FOR IBC TANKS

[eCFR 49 178.813 Leakproofness Test](#)

- (a) **General.** The leakproofness test must be conducted for the qualification of all IBC design types and on all production units intended to contain solids that are loaded or discharged under pressure or intended to contain liquids.
- (b) **Special preparation for the leakproofness test.** Vented closures must either be replaced by similar non-vented closures or the vent must be sealed. For metal IBC design types, the initial test must be carried out before the fitting of any thermal insulation equipment. The inner receptacle of a composite IBC may be tested without the outer packaging provided the test results are not affected.
- (c) **Test method and pressure applied.** The leakproofness test must be carried out for a suitable length of time using air at a gauge pressure of not less than 20 kPa (2.9 psig). Leakproofness of IBC design types must be determined by coating the seams and joints with a heavy oil, a soap solution and water, or other methods suitable for the purpose of detecting leaks. Other methods, if at least equally effective, may be used in accordance with appendix B of this part, or if approved by the Associate Administrator, as provided in §178.801(i)).
- (d) **Criterion for passing the test.** For all IBC design types intended to contain solids that are loaded or discharged under pressure or intended to contain liquids, there may be no leakage of air from the IBC.

LEAKPROOFNESS TEST PROCEDURE FOR POLY IBC TANKS

The following procedure information is for reference when performing a Leakproof Test on Poly IBC Tanks.

Items and Tools Needed:

- Liquid soap (*mix 1 part liquid dish soap and 4 parts water*)
- Open top container or bucket with clean water
- Spray bottle
- Large sponge
- Air Pressure Test Fixture – Test fixture should have a pressure indicator gauge with a shut off valve and air line quick connection to allow tank to be tested to minimum pressure of 20 kPa (2.9 psig)
- Air supply source and air hose

Leakproofness Test Procedure for IBC tanks:

1. Person(s) performing the leakproofness test should first perform a visual inspection of the entire IBC.
2. Ensure all closures are properly sealed before applying air pressure.
 - a. Vented closures must either be replaced by similar non-vented closures, or the vent must be sealed per **§178.813(b)**.
3. Apply air pressure to container to the required minimum pressure of 20 kPa (2.9 psig) and no more than 24 kPa (3.5 psig).
4. The poly IBC will expand while pressure is applied, condition the IBC to the pressure for 1 minute before testing.
5. Generously apply soapy solution to all mold seams/flange lines, any sharp corners, mold-in inserts, molded in lettering, top NPS adapter fittings, any additional top fittings and outlet valve connection area.
6. Check all areas for leaks by looking for bubbles to form around leaking area.

Leakproofness Test Procedure for Outlet Valve:

1. Position the IBC container so that the outlet valve is pointed up.
2. Be sure outlet valve is fully closed before container is being pressurized.
3. Remove dust cap from the valve and fill outlet opening with soapy solution.
 - a. The outlet should be filled just enough so that the ball is completely submerged.
4. Check for any leaks around the interior ball area.
5. Generously apply soapy solution to the valve body, valve handle area and the connection area between valve and IBC body.
6. Remove soapy solution from valve outlet area and wipe the area clean before testing dust cap.
 - a. *(Caution: Be sure no one is positioned directly above outlet valve when discharging excess soapy solution)*

Leakproofness Test Procedure for Dust Cap:

1. Continue with the IBC container positioned with the outlet valve is pointed up
2. Repressurize the IBC container to the required testing pressure.
3. Install dust cap and lock down into position on the valve.
4. With the dust cap secured to the valve, slowly open the valve handle to allow air pressure to the dust cap.
5. Generously apply soapy solution around dust cap and check for any leaks and bubbles forming in the area.

If any leaks are detected during the leakproofness testing, check that all closures are tightened correctly and recheck for leaks. If the leak continues, remove the pressure from the IBC and inspect the components and gaskets for defects. Replace any defected service equipment and repeat leakproofness test. Document the test results according to **CFR 49 §180.352(g)** and mark the IBC with appropriate retest date as stated in **CFR 49 §178.703(b)(1)**.

Additional Notes:

In some situations, the removal of the base or base frame may be required to complete a full inspection.

- If the base or base frame is removed, the person(s) performing the inspection must return the container to the original base or base frame. *(Note: The original orientation of the frame and container should be noted prior to removal of the base.)*
- The base/base frame should be repositioned to the original orientation on the container.
- In the situation where the base is attached to the container using plastic base bolt, ensure that base bolts are properly tightened.
 - Person(s) performing the inspection should tighten the plastic base bolts until the IBC container and base are fully engaged to each other.
 - When tightening the base bolt, the flange on the base bolt should be engaged with the bottom of the base.
 - The proper wrench should be used to remove and tighten the base bolts.