4.1 TESTING

IMPORTANT: PRIOR TO FILLING OR EMPTYING ANY TANK OR VESSEL, ENSURE THE TANK IS EFFECTIVELY VENTED TO PREVENT DAMAGE BY OVERFILLING, OVERPRESSURE OR VACUUM.

It is recommended that tanks should be water tested for a minimum of 12 hours once positioned on site. ***Refer to job-specific drawing(s) for testing recommendations.***

Before filling the tank

Prior to filling the vessel ensure that:

- ✓ The installation has been fully completed as per the instructions in Section 3.
- ✓ Any valves on liquid inlet(s) or outlet(s) are fully closed and isolated (excluding overflow).
- ✓ Any spare nozzles are securely blanked off.
- ✓ The tank is effectively vented to prevent overpressure during filling and creating a vacuum during emptying. Rapid drain down through large diameter nozzles can create a vacuum if the vent is not correctly sized.

The tank water test can be combined with a simulation of the delivery procedure using water, this will be dependent upon whether there is a suitable available water supply which can be coupled with the fill connection. Testing of any instrumentation such as level switches or transmitters should also be completed during water testing.

Following the water test, it may be necessary to re-tighten bolting on flanged connections, tighten union connections or apply more PTFE tape to threaded connections.

In the event of any leaks please contact Forbes.

Once the unit is water tested, it can be fully commissioned. Full commissioning procedure must be planned and risk assessed by the party undertaking the commissioning operations.

4.1.1 WATER TESTING TANKS WITH BUNDS

IMPORTANT: FILLING BUNDS WITH WATER WHILE A TANK IS INSIDE CAN CAUSE IRREPAIRABLE DAMAGE AND/OR HARM TO PERSONNEL IF THE TANK IS SUBJECTED TO BUOYANCY LOADS. GREAT CARE **MUST** BE TAKEN TO ENSURE THIS DOES NOT OCCUR.

- ✗ **Never fill a bund which contains an empty tank.**
- ✗ **Do not fill bunds containing tanks to a level higher than that within the tank.**
- ✗ **Do not fill bunds containing insulated (lagged) tanks or double-walled tanks with a cavity.**

If any of the above are not avoidable, the bund should be water tested **before** the tank is positioned.