PRESSURE TESTING PIPING SYSTEMS

Water

- Pressure testing pipe systems requires that the testing medium is water.
- Why do you think this is so?
- Because water is virtually incompressible and only a small quantity of energy needs to be introduced to increase it's pressure significantly.
- AIR or GAS? - Air like all gases is compressible and as a result much more energy has to be put into the gas to increase the pressure.

- For testing pipe work systems, up to 200 times more energy is stored in gas than compared with water.
- If water is totally unacceptable then employees and employers must be aware of their statutory duties regarding health and safety at work.
- However this is not advised!

TESTING OF PIPE WORK

- Test requirement- Carry out a risk assessment.
- Pressured systems are usually 1.5 times the normal maximum pressure.
- Where the system does contain plastic piping the pressure test limit must be within the tolerances of the plastic concerned.
- Is the test appropriate for the service of the building structure?
- Will water tests leave undrained pockets of water that might cause frost damage?

3 WHATS

- If a water leak occurs, what damage might be caused?
- Are there sufficient people and knowledge of the system to walk around whilst filling? i.e. Air leaving the system.

TEST PREPARATION

- Check high points have a vent facility.
- Removal of air during filling and closed for testing.
- Remove or blank off any venerable in-line fittings and components that may be damaged by the test pressure.
- Check that the gauge used has been QA'd.
- Attach test pump using suitable adaptor fittings.
- Check that a suitable hose is available for releasing the water from the system.

HYDRAULIC PRESSURE TEST

- Start to fill the piping then walk the route under test.
- Visually checking, continually, for leaks and listening for the sound of escaping air.
- Release air from all high points, systematically through the system to the highest point.
- Once the system is full and fully enclosed increase the test pressure.
- Continue pumping for the specified period.

- If the pressure falls, check that stop valves are not letting by.
- Walk the system for leaks.
- Once the system is proven to be sound, have the test witnessed.
- DANGER – Be aware when releasing the pressure .