Unit 206: Domestic hot water systems

Outcome 6

Key requirements of testing and decommissioning of domestic hot water systems

Testing and decommissioning

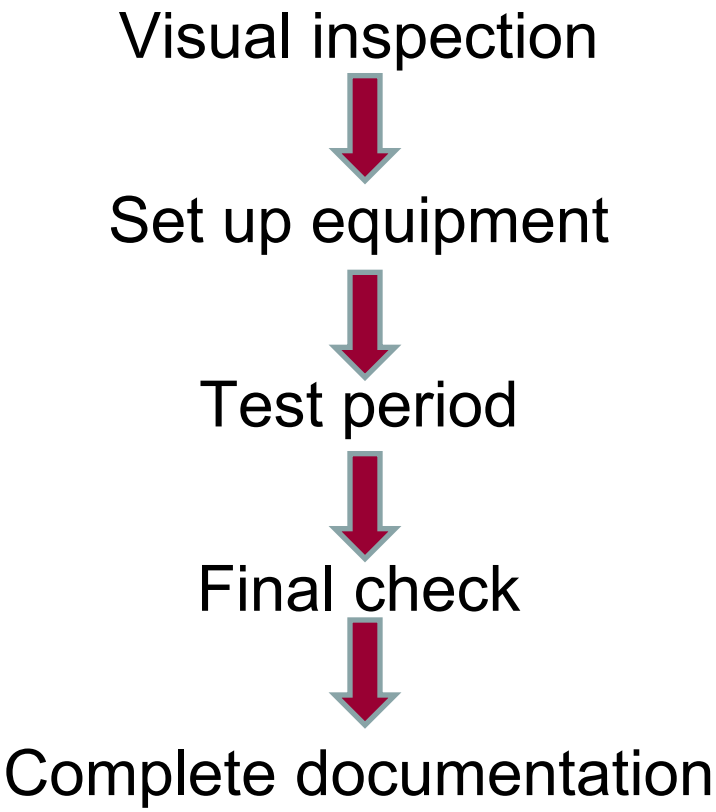
Soundness testing

Before soundness testing, always walk around the system to make sure all joints have been make – visual check:

- Open ends
- Soldered joints made
- Compression joints tight
- Clips are in place

Next, carry out the soundness test. There is a different soundness test for rigid pipe (copper and steel) and plastic pipe.

Testing and decommissioning



Testing and decommissioning

Soundness testing

Rigid pipe (copper and steel)

- Slowly fill the system with water
- Walk around system and check for leaks
- Leave to stand for 30 minutes (temperature stabilisation)
- Attach the hydraulic test bucket
- Pump system up to 1.5 times the working pressure (if system works at 3bar it should be tested at 4.5bar etc)
- Leave for one hour
- Check for any pressure drop (no drop allowed)
- Rectify and re-test if necessary

Testing and decommissioning

Soundness testing

Plastic pipe (polybutylene)

Test A:

- Slowly fill the system with water
- Walk around system and check for leaks
- Pump system to 1bar; after 45 minutes check for loss of pressure
- Increase pressure to 1.5 times working pressure for 15 minutes
- Check for pressure loss
- Reduce pressure to one-third for a further 45 minutes
- Check for pressure loss
- You do not want to damage the plastic pipe or O rings.

Testing and decommissioning

Soundness testing

Plastic pipe (polybutylene)

Test B:

- Slowly fill the system with water
- Walk around system and check for leaks
- Pump system to manufacturer's test pressure
- Inspect the pressure loss after 30 minutes
- Leave for a further 120 minutes
- Inspect for pressure loss
- If total loss is less than 0.2bar, soundness is good
- You do not want to damage the plastic pipe or O rings

Testing and decommissioning

Flushing and disinfecting

After a new system or section of pipework has been installed, all the debris inside the pipe needs to be removed and pipes made ready to carry wholesome water.

- The system is re-filled with water and then drained down from the lowest point
- Re-fill the system
- Open the kitchen tap and allow water to run until clear of debris/colour
- Do likewise with all other outlets in the property
- Add disinfectant to system (sodium hypochlorite solution or chlorine) for 1 hour – as BS6700

Testing and decommissioning

Flushing and disinfecting

- Test chlorine levels at each outlet – as BS6700
- Drain system
- Flush system through from each outlet until no chlorine is present

Testing and decommissioning

Check

Flow rate

To MIs using wier cup.

Pressure

To MIs using pressure gauge.

Dirt and debris

Flush through as per BS6700.

Draw off

Open all draw-off points, making sure they open and shut off.

Testing and decommissioning

Check

Valves

Open and close all valves to ensure operation. Label all valves

Blending valves

Ensure correct temperature is set and recorded

Thermostats

Ensure correct temperature setting and inform customer

Temperatures

Ensure correct temperature at draw-off points

Testing and decommissioning

Check

Next check the overall operation of the system. Once the system has been **proved**, complete the documentation and hand over to the customer. Walk the customer around the system, showing them all the settings and valves.

- Manufacturer's instructions
- Benchmark certificate
- Warrantee

Testing and decommissioning

Decommissioning a hot water system for maintenance and replacement of components is an important task.

- Customer informed
- Components identified
- Heat source safely isolated
- Warning notice placed on heat source
- Fuses removed
- System drained to safe location
- Open ends capped
- No dead legs left

Testing and decommissioning

Decommissioning can be temporary

A system is temporarily decommissioned when a component or appliance needs to be replaced.

- The customer will have to be informed
- The system will be safely isolated and labeled
- A hose pipe is connected to a suitable drain point and discharged to a below ground drain
- The part is replaced
- The system is refilled and tested

Testing and decommissioning

Common items that may need periodic maintenance or replacement – and therefore the system temporarily decommissioned – include:

- Hot water cylinder
- Cold water storage cistern
- Boiler
- Shower
- Valves
- Appliance replacement
- Terminal fitting

Testing and decommissioning

Decommissioning can be permanent

A system is permanently decommissioned when an old system is stripped out and replaced by an updated system, or a building is stripped out prior to demolition.

- The customer will have to be informed
- The system will be safely isolated and labeled
- A hose pipe is connected to a suitable drain point and discharged to a below ground drain