Unit 208: Central heating systems

Outcome 3 (part 2)

Heat emitters and their components

Installation

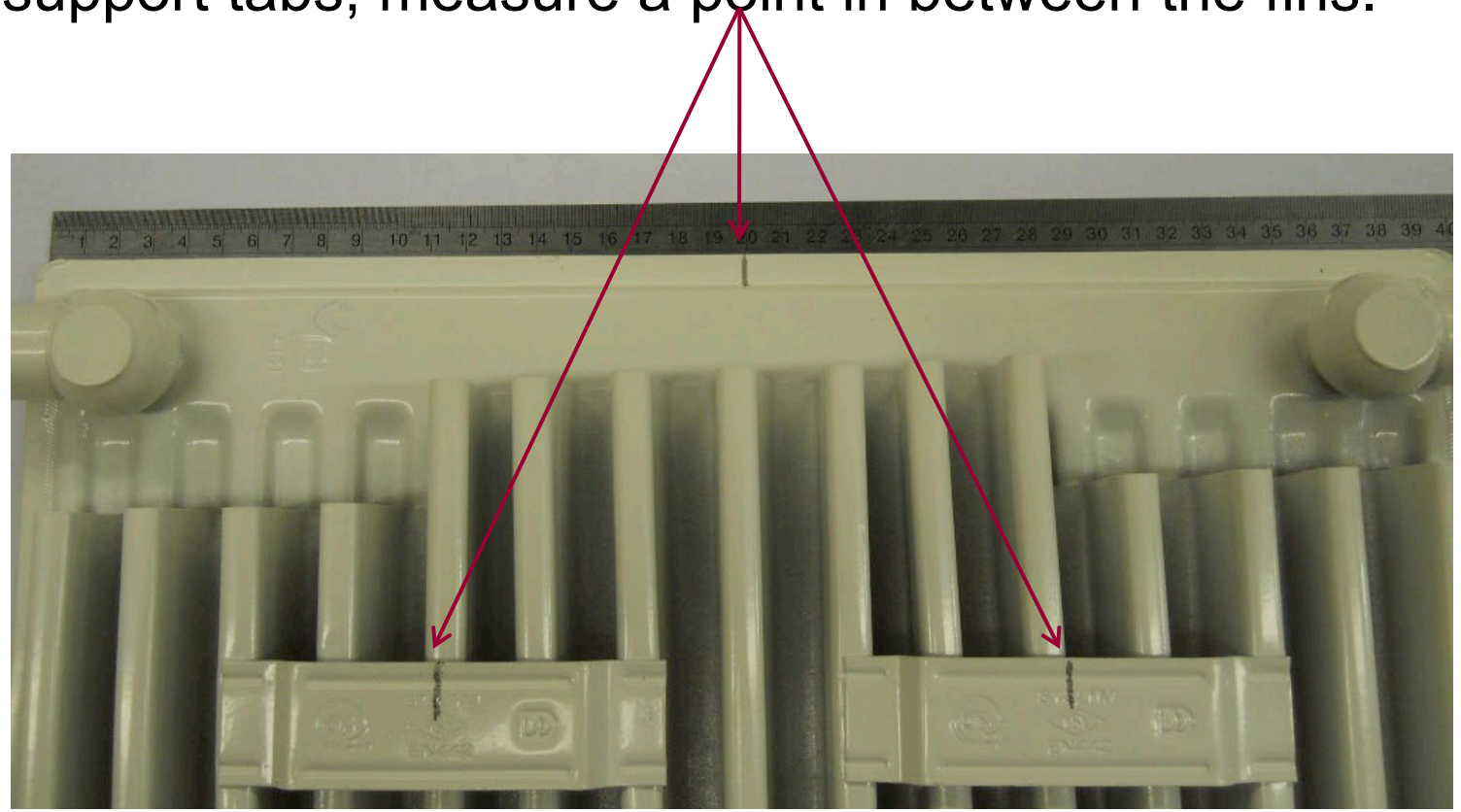
Hanging a radiator

1. Look at the radiator brackets – some brackets have a choice of how close to the wall a radiator is mounted, others just have a single location. Place the plastic inserts in the correct locations. These inserts stop metal rubbing against metal and also prevent any expansion and contraction noises.

Installation

Hanging a radiator

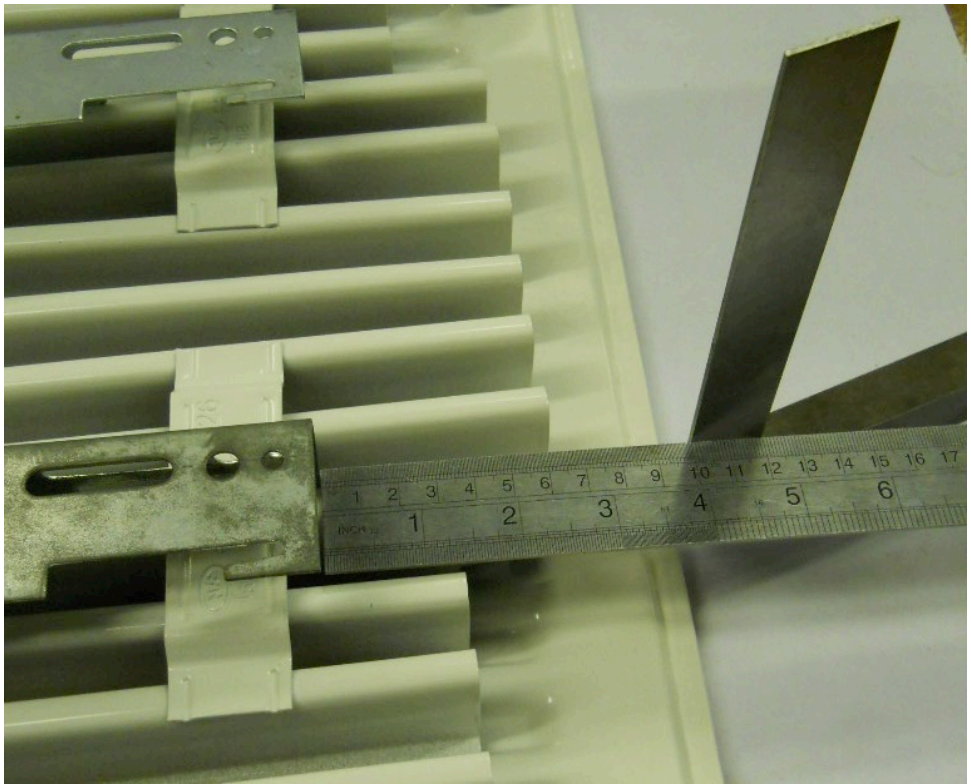
2. On the back of the radiator, using a pencil, measure and mark the centre point at the top of the radiator. On each of the support tabs, measure a point in between the fins.



Installation

Hanging a radiator

3. Place the radiator brackets in position and measure the distance from the bottom of the bracket to the bottom of the radiator. A set square will give an accurate measurement.



Installation

Hanging a radiator

4. Look at the drawing and then mark (with a pencil) using a spirit level, the vertical centre line of the radiator on the wall.

5. Using this centre line, measure up 150mm from the finished floor height. Mark a small horizontal line, in pencil.

6. From this point add the measurement taken at stage three and draw another small line. Using a spirit level, draw a horizontal line the width of the radiator. This line shows where the bottom of the brackets will be positioned.

Installation

Hanging a radiator

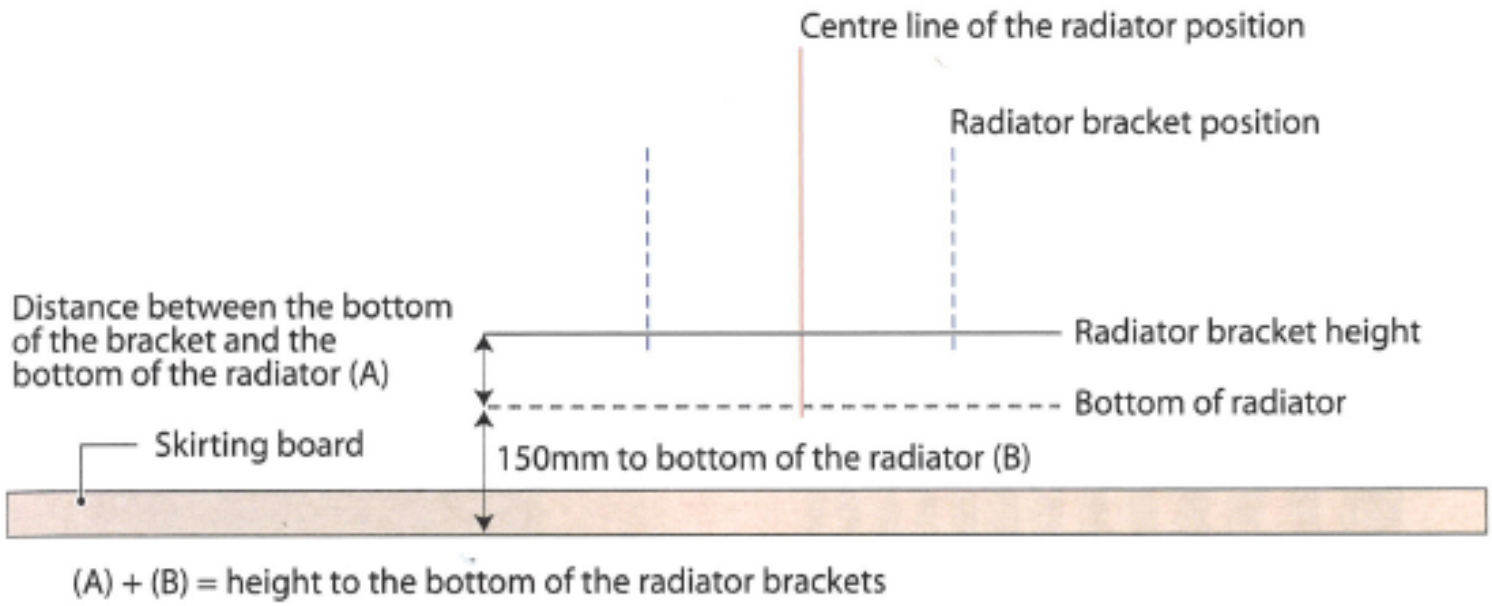
7. On the back of the radiator measure the distance between the two pencil marks on the support tabs and halve it.

8. From the centre line drawn on the wall and the line drawn at stage 6, mark a vertical line using a spirit level. This will show the position of the radiator support brackets.

Installation

Hanging a radiator

A 7mm masonry drill bit and brown wall plugs are commonly used with a 2” x 10 or 50mm x 10 screws.

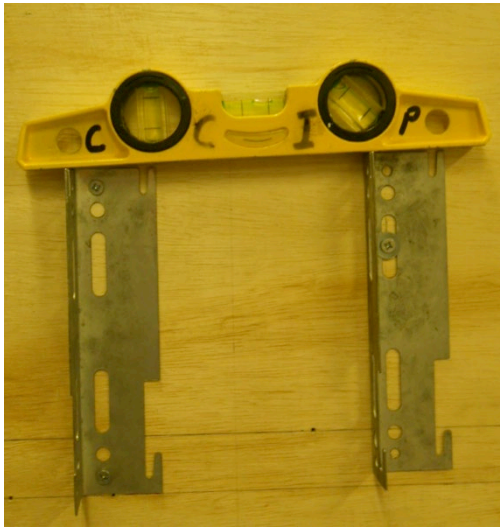


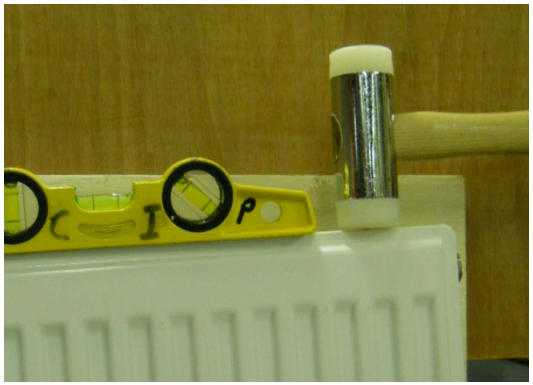
Installation

Hanging a radiator

9. Mark and fix the first bracket to the wall, using appropriate fixings. Next, mark and fix the second bracket using the top slot only – positioning it slightly high.

Put the radiator in position and place spirit level on top of the radiator. Tap radiator bracket down until level. Remove the radiator and fix the second bracket permanently.

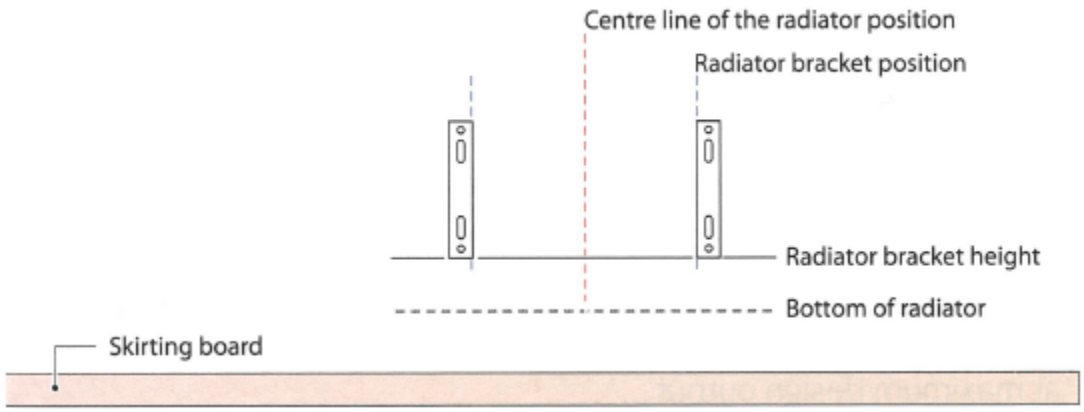




Installation

Hanging a radiator

10. Inspect to make sure the radiator is level then make sure there is 150mm from the bottom of the radiator to the finished floor height.



Installation

Once the radiator brackets are positioned correctly, the radiator can then be made up.

The valves need to be screwed into the correct ½” BSP inlets, using either PTFE tape or hemp and paste.

The PTFE tape or hemp needs to be wound anti-clockwise to the thread, so it tightens as it is wound into the inlet. Make sure no PTFE or hemp restricts the flow of water through the valve.

Tighten the valve stems in place using a valve key.

Commissioning

Soundness Test

Cold flush

Cleanse system(BS 7593)

Hot flush

Fill system (inhibitor)

System check

Commissioning

When cold flushing a system, it is important to remove the circulator so that any debris does not get caught in the impellor.

The flushing will remove any excess flux, wire wool or loose solder that can cause problems for the system if left inside.

When the circulator is removed, a short section of LCS pipe can be placed between the pump flanges.

Commissioning

Bleeding a radiator

This is a process of releasing trapped air or hydrogen from the top of a radiator.

When filling/commissioning a system all the radiators will require bleeding.

If aeration has taken place, air can become trapped in a radiator.

If corrosion has taken place, hydrogen can become trapped in a radiator.

Commissioning

Bleeding a radiator

This trapped air creates a cool/cold area at the top of the radiator, while the rest of the radiator is warm.

When magnetite is formed in a system, this creates a cool/cold area at the bottom of the radiator.

Commissioning

Bleeding a radiator

1. Turn off the central heating system.
2. Locate the bleed valve on the radiator.
3. Protect the area (dust sheet, absorbent cloth, move furniture).
4. Turn bleed valve so the opening is visible.
5. Turn bleed key opening valve and hold cloth over opening.
6. Listen for air being released and look for system water to come out of opening.
7. When system water is released, tighten bleed valve.

Commissioning

Bleeding a radiator

The water that has filled the radiator has come from the F&E cistern under gravity.

If the radiator is attached to a sealed system the water has filled the radiator under the system pressure. This could mean the boiler may need re-pressurising.

Online resources:
http://www.youtube.com/watch?v=tGinKwkrQsw

http://www.youtube.com/watch?annotation_id=annotation_53317&feature=iv&src_vid=tGinKwkrQsw&v=RZ0GRxandC0