Unit 204: Common plumbing processes

Outcome 6
Common plumbing preparation techniques

Preparation techniques

Measuring and marking out

- An important stage of any installation
- Being able to read drawings correctly
- Scales in drawings
- Getting levels
- Working to the clips
- Measure twice, cut once

Preparation techniques

Buried pipework or cables
When marking out, and before drilling, check for any buried pipes or cables.

Look around for switches and sockets; it is likely that any pipes are buried in the wall or under the floorboards.

Using a cable or pipe detector is useful:

Commercial

Domestic

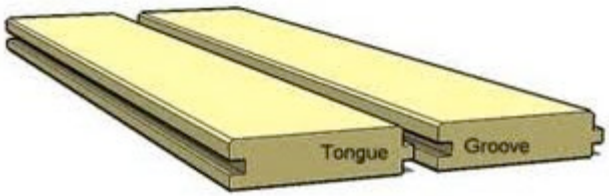
Preparation techniques

Flooring material

Floorboards: commonly known as **tongue and groove**, as this denotes the way they fit together. They are laid on joists and either nailed or screwed into position.

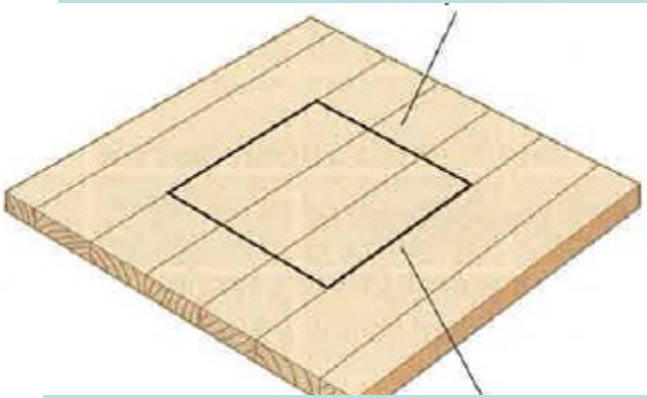
If pipework needs to be installed underneath, they will need to be lifted and replaced on the joists for support. If the cut of the floorboard is off the joist, a noggin or cleat may need to be located.

Floorboards can be covered by carpet or laminate; can also be a polished finish themselves.

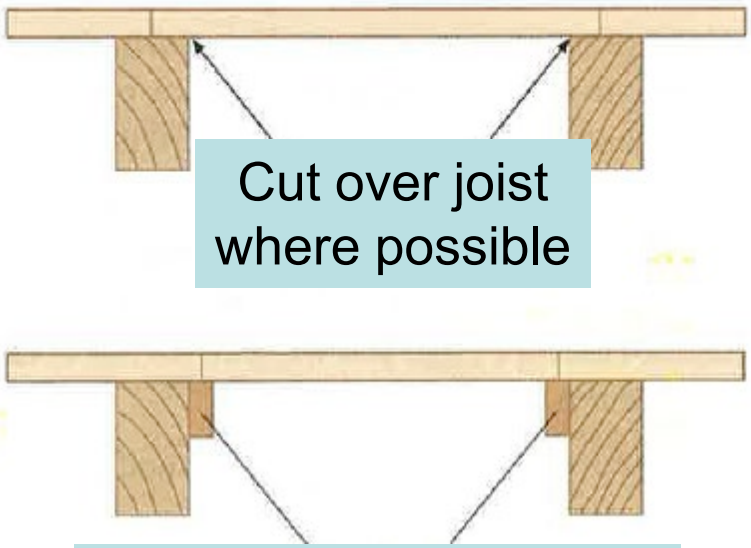


Preparation techniques

Cross-cut, making sure the cut is over the joist where possible



Cut through the tongue using a floorboard saw or circular saw



Cut over joist where possible

Replace floorboard using a cleat or noggin

When removing floorboards always take care of any nails or screws left in the joists. Do not leave any waste in ceiling cavity. Secure firmly afterwards

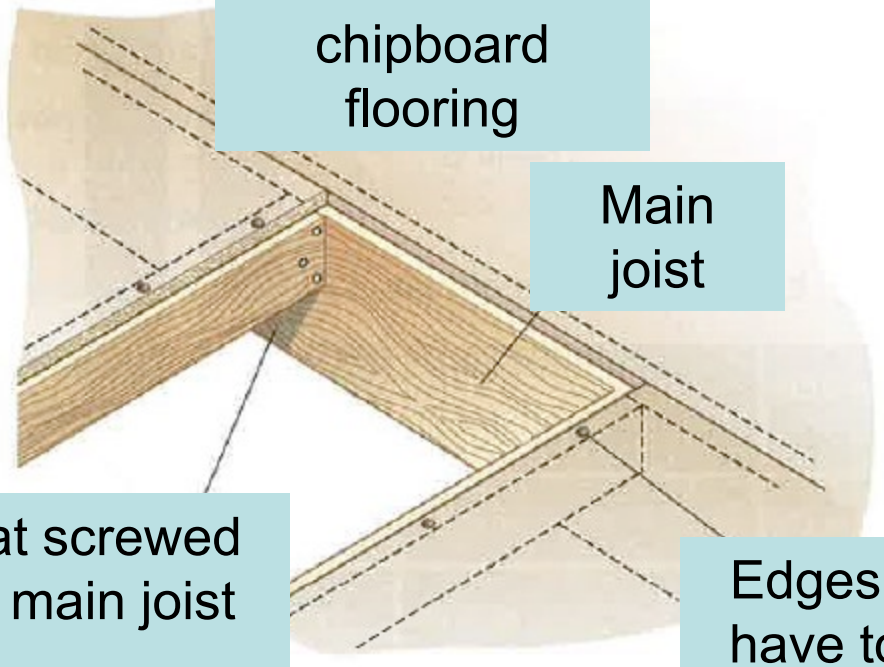
Preparation techniques

Flooring material

Chipboard: more commonly used as a flooring on new build properties, these come in 8’ x 4’ sheets, which are tongue and groove.

Removing chipboard is more difficult – the best way is to remove a section using a circular saw. Locate the joists first and mark the section out before cutting. A pad saw may have to be used to complete the corners.

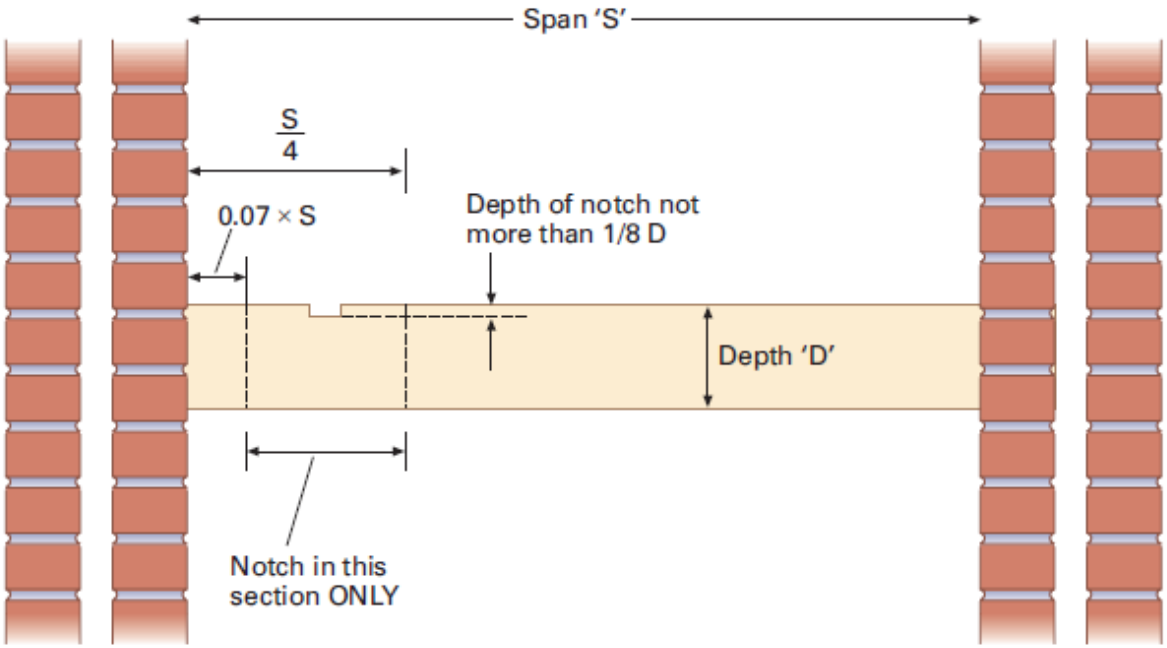
Preparation techniques



Preparation techniques

Building regulations
Approved document A sets out requirements for notching and drilling, and must be followed at all times.

Notching: maximum depth of a notch is ⅛ of the joist depth.



Preparation techniques

Example for notching

A joist is 200mm deep (D) and has a span of 2.5m (S).

Maximum depth of notch that can be made in this joist:

$$200 \times 1/8 \quad \text{or} \quad \frac{200}{8}$$

$$= 25\text{mm}$$

Minimum distance from the wall the notch can be made:

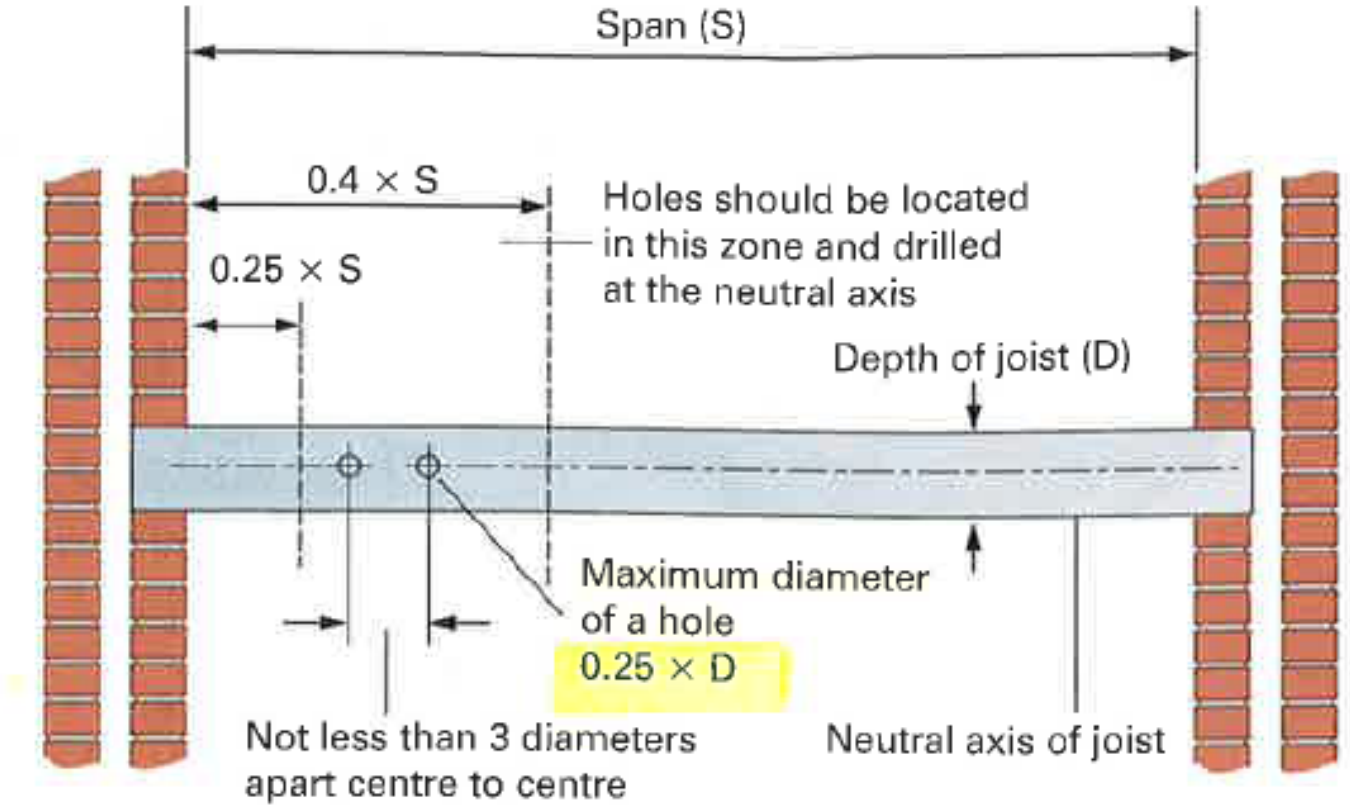
$$0.07 \times 2500 \quad \text{or} \quad 7 \times \frac{2500}{100}$$

$$= 175\text{mm}$$

Preparation techniques

Drilling

The maximum drilled hole is ¼ of the joist depth, but **must** be on the centre line.



Preparation techniques

Example of drilling

A joist is 200mm deep (D) and has a span of 2.5m (S).

What size is the largest permissible drilled hole?

$$\mathbf{200 \times \tfrac{1}{4} \text{ or } \frac{200}{4}}$$

$$\mathbf{= 50mm}$$

Where in the joist can the hole the drilled?

On the centre line of the joist only.

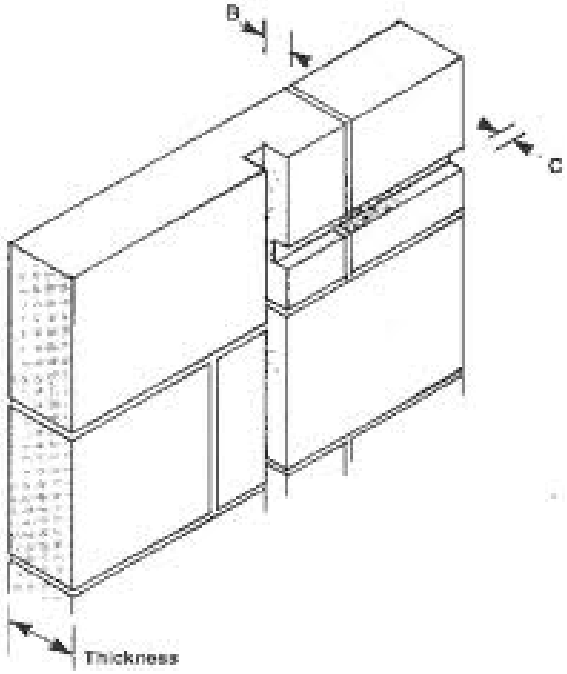
How close can the drilled hole be placed?

Hole should be no closer than 3 x their diameter.

Preparation techniques

Chasing

These seams are chiselled into walls to conceal pipework or cables. To cut a chase you will need to mark out carefully, then the chase can be removed by a lump hammer and chisel, or by an angle grinder then chisel.



Preparation techniques

Chasing

Vertical chases should not be deeper than ⅓ of the wall thickness or, in a cavity wall, ⅓ of the relevant leaf.

Horizontal chases should not be deeper than ⅙ of the wall thickness or, in a cavity wall, ⅙ of the relevant leaf.

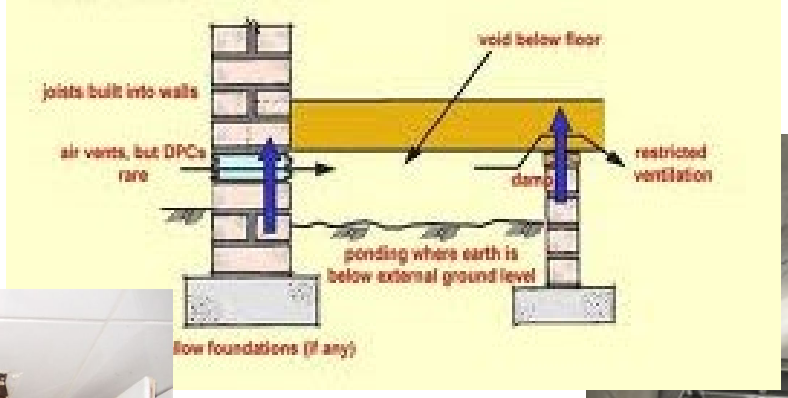
Chases should not position so as to impair the stability of the wall; back-to-back chases are not permitted.

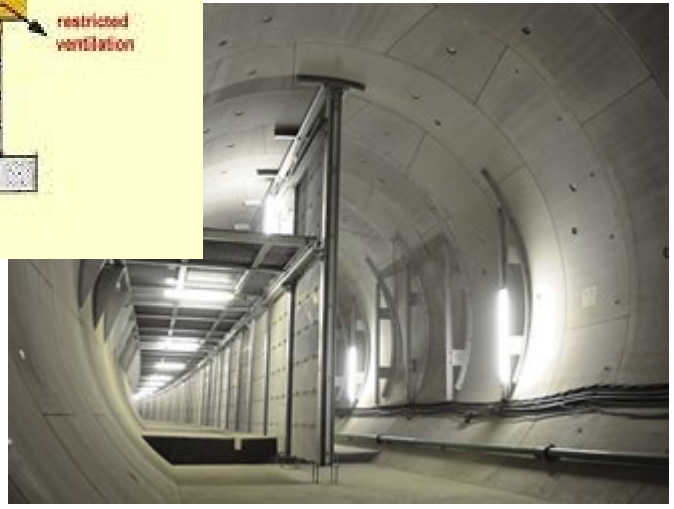
For hollow or cellular blocks, maintain a residual thickness of 15mm between the chase and the void unless otherwise recommended by the manufacturer.

Preparation techniques

Ductwork

This comes in many forms. It covers and contains pipework and cables for engineers to access: these can be underfloor areas made of wooden panels or, in commercial situations, purpose-built areas. Size-wise, they range from small up to walk-in areas.





Preparation techniques

All pipework in walls and ducts should be accessible. The Water Regulations state:

- Accessible
- Duct should be removable
- Floors able to be lifted

No fitting should be:

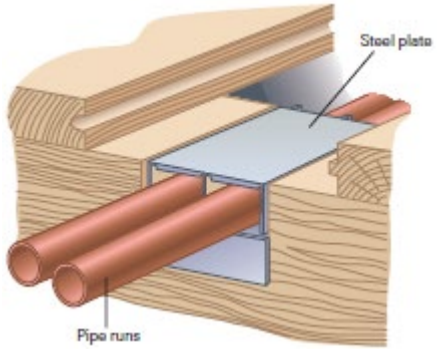
- Located in cavity walls
- Embedded in wall or solid floor
- Installed under a suspended floor

Preparation techniques

Sleeving

All pipework going through a masonry fabric **must** be sleeved to allow for movement. The sleeve is generally made of the same tube, but a size larger.

Pipework laid in floors and across joists should be covered with lagging to allow for expansion and contraction without any creaking noise. In some cases a pipe guard may be used to protect against nails and screws.



Preparation techniques

For all jobs

Walk the job: plan, visually assess, think about equipment and parts.
Prepare the job: clear access, lift boards, PPE ready, protect area and property.
Mark out: clip positions, levels, chases, drilling.
Install: carry out the necessary tasks.
Inform customer: where you are working; if utilities are going to be switched off; hazards.