

Progression from Level 1 in to Level 2 Site Carpentry 2020.

Enclosed is a small taster activity for you to be completing before your progression in to the Level 2 Site Carpentry diploma.

Stage 1. Contains practical information regarding one of the areas of site carpentry, you will need to read through and follow the provided links to complete the written tasks in stage 2.

Stage 2. Contains 10 questions that will require you to show competence in basic maths and the ability to research and comprehend the material provided.

Stage 3. This contains the detailed floor plan that you are to use to calculate all answers in stage 2.

Stage 1

JOIST COVERINGS

These are often termed decking; the main materials being:

- Timber floorboards usually planed, tongued and grooved.
- Flooring grade particle board mainly tongued and grooved or square-edged chipboard, but orientated strand board (OSB) is also used.
- Flooring grade plywood available as tongued and grooved or square edged.

Softwood flooring

This consists of ex 25mm x 150 or 125mm tongued and grooved boarding.

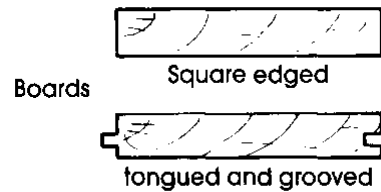
Standard floorboard sections have the tongue and groove offset away from the board's face. This identifies the upper face and increases the wearing capacity of the board.

Boards are fixed through the face using *floor brads*, *lost heads* or by using a *nail gun*. Lost-heads and brads need to be punched in using a nail punch whereas by using a nail gun it can be set to punch in the nails below the surface of the board.

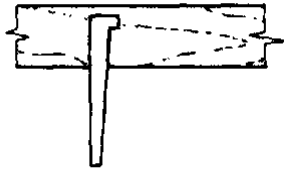
Boards can be secret fixed through the tongue using lost-heads or by using a proprietary floorboard nailer.

Nails should be approximately 2.5 times the thickness of the floorboard in length. Splayed heading joints are used on better quality work as there is less chance of the board splitting.

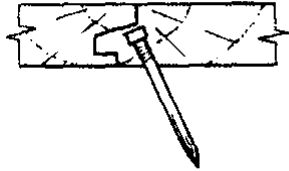
Heading joints should be staggered evenly throughout the floor for strength; these should not be placed next to each other, as the joists and flooring would not be tied together properly.



Fixing flooring

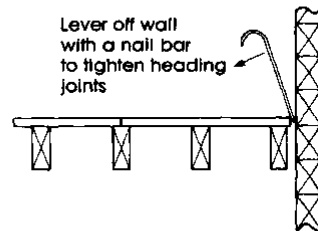
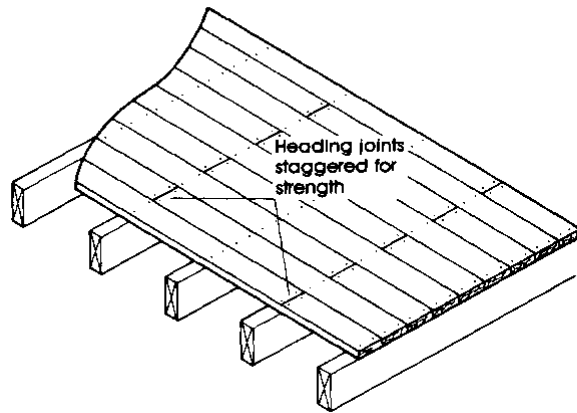


Floor board nailed through face and punched in

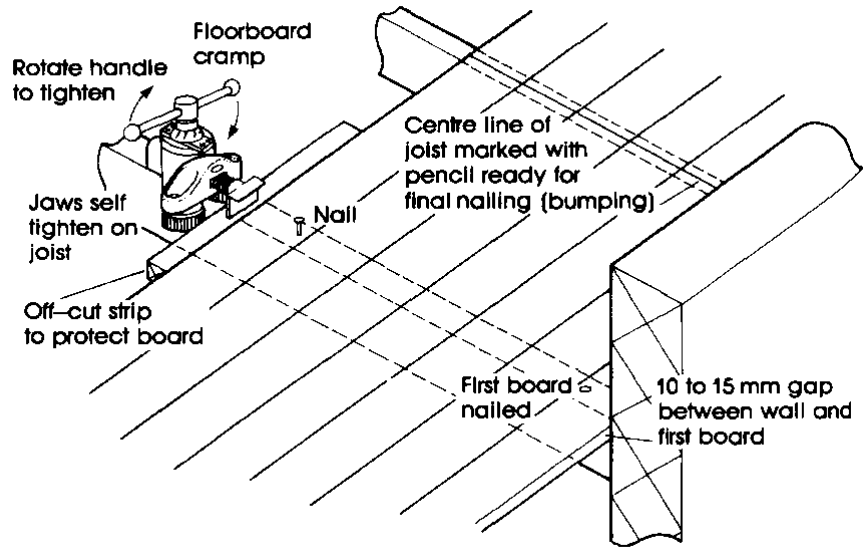


Lost heads used to secret nail through tongue

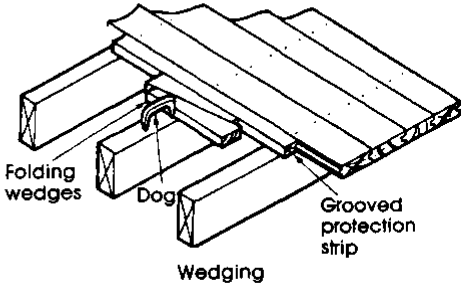
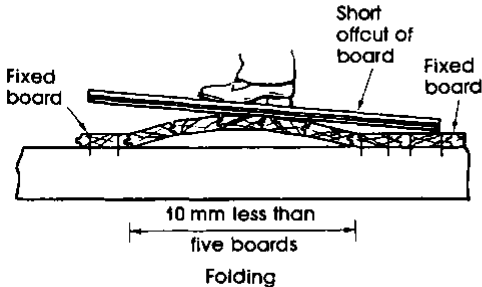
Staggered joints



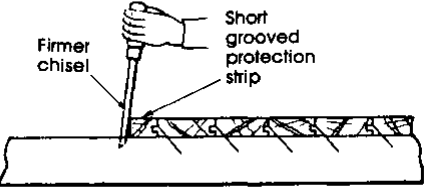
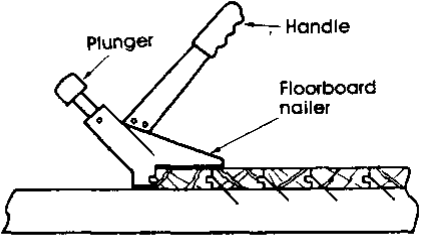
Floorboard cramps



Tightening floorboards



Floorboard nailer



Face fixing

Boards are fixed at right-angles to the joists. The first board should be fixed at least 10mm away from the outside wall. This helps prevent damp from the wall and allows the flooring to expand without causing bulging of the floor or the outside wall. The remainder of the boards are laid four to six at a time, cramped up with floorboard cramps and nailed to the joists.

Alternatives to cramps are 'folding' or 'wedging'. These are not as successful as cramping.

Secret fixing

Secret-fixed boards must be laid and tightened individually, and cramping is not practical. Secret-fixed boards are usually between 70mm and 95mm wide so as they can be fixed successfully.

They can be tightened by levering with a firmer chisel driven into the top of the joist, or with the aid of a floorboard nailer. This tightens the boards and drives the nail when the plunger is struck with a hard mallet. Secret-fixing is used on high class work or **hardwood** flooring, as the increased laying time makes it considerably more expensive.

Chipboard flooring

This is the most common form of domestic flooring. Flooring grade chipboard is available with square edges in 2440mm x 1220mm sheets, and with tongued and grooved edges in 2400mm x 600mm sheets (the thickness of the sheets depends on the joist spacing). Square-edged sheets are laid with their long edges over a joist with noggins fixed between the joists supporting the short ends

Tongued and grooved sheets have their long edges at right angles to the joists and their short edges joining over the joist. Both types require noggins between the joists where the sheet abut a wall (perimeter noggins). Joists should be spaced to accommodate sheet flooring dimensions.

Fixings

Sheets are laid staggered and fixed every 200mm with 50-65mm annular ring shanked or serrated nails. Modern installations use the speed of a nail gun to increase productivity. For greater resistance to movement 50-65mm screws can also be used as an alternative to nails.

Chipboard flooring should be glued along the tongues and grooves with PVA or PU glue to prevent joint movement and stiffen the floor.

Plywood flooring is laid in much the same way.

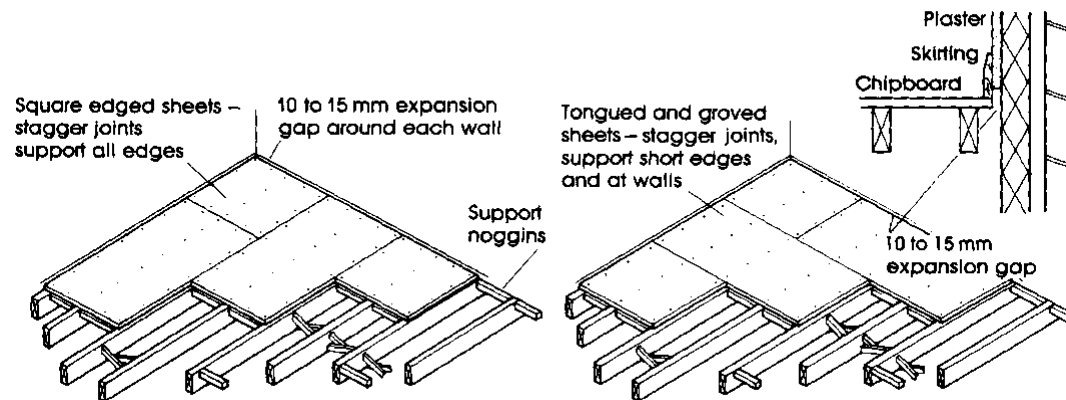
After laying the floor it should be protected by covering with building paper and not removed until the building is occupied.

With modern floor joist arrangements plastic-coated chipboard sheets are glued to the joists as well as within the tongue and groove itself. PU adhesives such as Caberfloor Caberfix P5 is a gun-grade adhesive and sealant that is used to give strength, stability and flexibility whilst providing a silent floor.

<https://www.jtatkinson.co.uk/caberdek-tg4-chipboard-2400x600x22mm.html>

<https://norbord.co.uk/resources/help-advice/installation-instructions/>

Sheet flooring

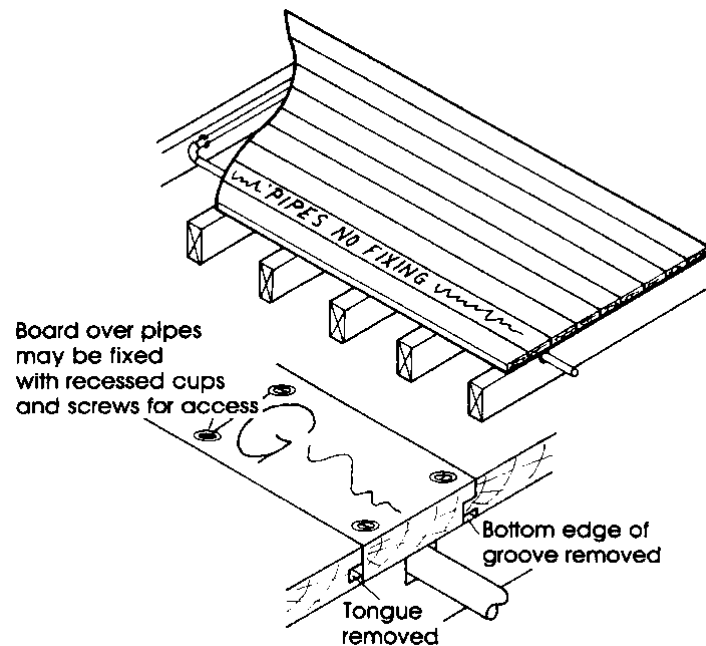


Services

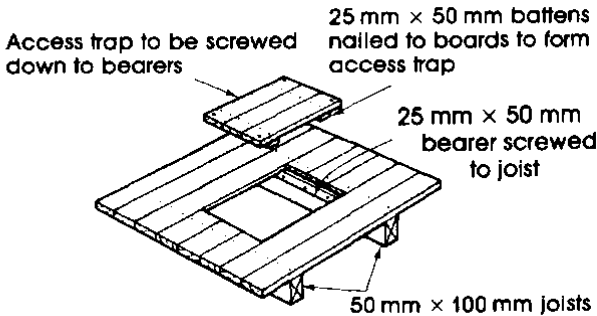
Where water or gas pipes or electricity cables run within the floor, there is the danger of driving nails into them. They should be marked according to their position using chalk or permanent ink pen to prevent this.

Flooring over services can be fixed using screws and cups to allow easy access and to identify their location.

Marking position of services



Providing access to services



Stage 2

FLOOR COVERINGS TASKS

As part of a carpenter's or joiner's role, floor coverings will have to be cut and fixed. So, one of the first jobs at first-fix stage is laying floorboards or sheet flooring. Look at the first-floor areas of the upper floor plan.

The two block walls parallel to the staircase and the chimney stack do not form part of the floor areas, **however, doorways do!**

Remember the flooring may have to be joined; the best place is in doorways as the door will hide the join.

The internal stud walls will be fixed after the floor covering has been laid, so do not include them whilst calculating the floor areas.

1. Calculate the first-floor areas for each room and clearly tabulate your results (all your workings out will need to be shown).
2. Using the joist coverings specification, calculate how much chipboard flooring (2400mm x 600mm x 22mm) at £18.16 per board will be required for bedroom 2 and 3. Calculate how much the material will cost allowing 10% for cutting and waste (all your workings out will need to be shown).
3. Using the joist coverings specification, calculate how much softwood T&G flooring (125mm x 22mm) at £ 6.11 per meter will be required for the landing. Calculate how much the material will cost allowing 10% for cutting and waste (all your workings out will need to be shown).
4. When joining floor coverings of different materials (like hardwood flooring in bedroom 1 and softwood flooring on the landing) where would it be jointed, and how would it be supported?
5. Why should joints in flooring be staggered?

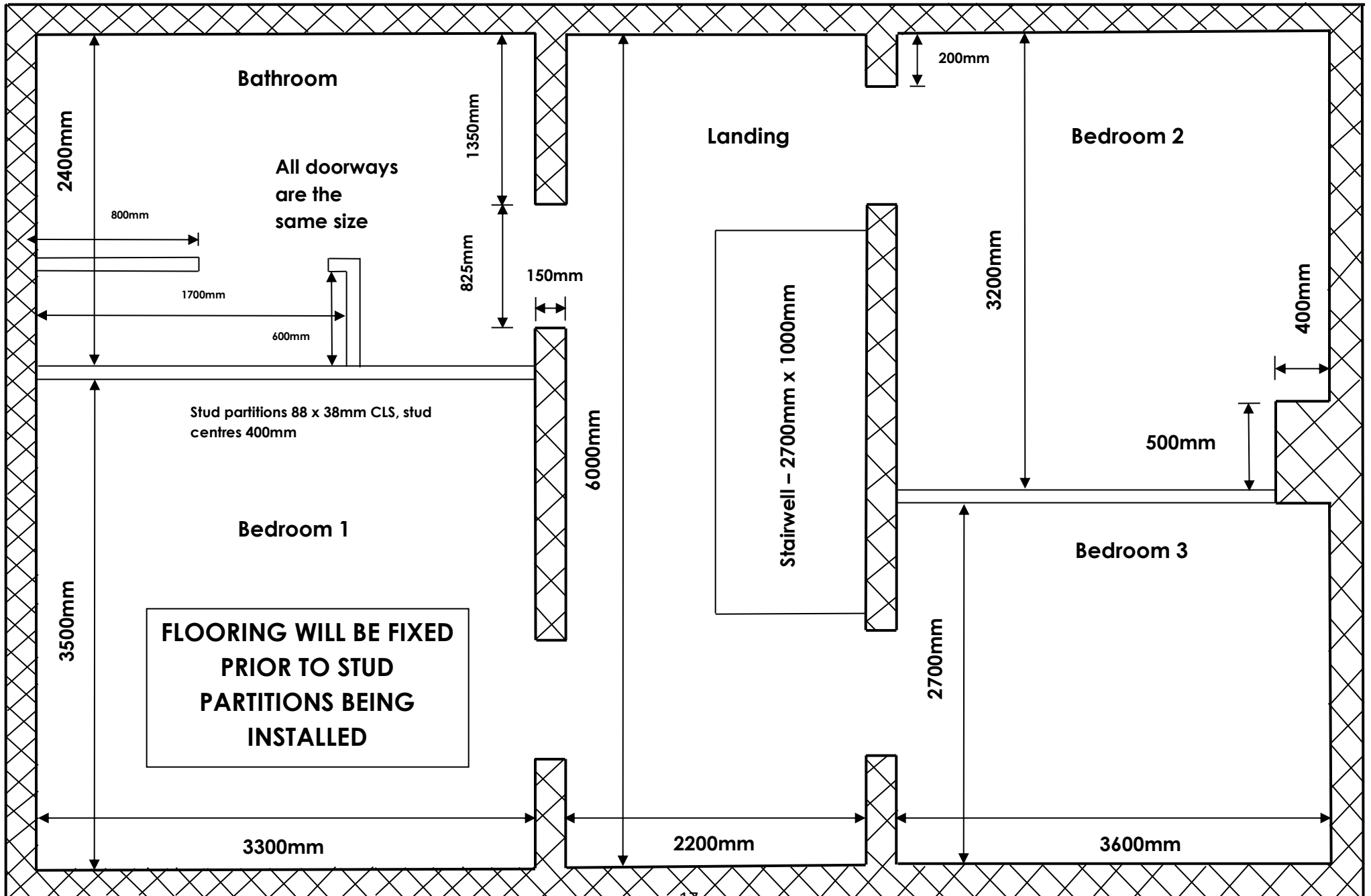
6. What is the name of the joint used between the ends of floorboards?

7. What is the purpose of a 10-15mm gap between walls and flooring?

8. If chipboard flooring is 22mm thick what type of nail is required and the most appropriate length of nail to use for fixing?

9. State three methods that can be adopted for cramping up floorboards. Why is cramping necessary?

10. How can services be accessed after a floor has been laid?



UPPER FLOOR PLAN (NTS)

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