Builder's Guide to Timber Decking

For new homes, the National House Building Council (NHBC), requires that all decks are built to Timber Decking and Cladding Association (TDCA) guidelines.

The information given in this publication is based on those guidelines for installation on domestic properties. Commercial decks require more robust design, materials and construction to deal with the loads placed on them and are not covered by the guidance in this brochure.

Timber decks can either be attached to a property or free-standing. The complexity of build varies depending on the site, height from the ground and load-bearing requirement. There are four types of deck:

1. GROUND LEVEL
A platform built directly onto the ground.

2. RAISED
A raised platform less than 60cm (24") from the ground.

3. HIGH LEVEL
A raised platform more than 60cm (24") from the ground.

4. ROOF TOP
Decked areas on existing flat roofs.

BEFORE STARTING WORK

Is planning or building consent required? It is the property owner's responsibility to find out before work commences. Always check with the Local Planning Department first if:

1 The deck platform is more than 300mm from the ground.

2. The deck is within 20 metres line of site of a road.

3. Together with other extensions, outbuildings etc., the decking or platforms cover more than 50% of the garden area.

4. The deck is in a conservation area, national park or attached to a listed building.

Building control consent applies to any construction work that requires planning consent.

CHOOSING THE RIGHT TIMBER

Only use timber capable of giving a minimum service life of 15 years. This means using wood that is naturally durable (resistant to decay and insects) like some hardwoods or a softwood that has been preservative treated to the right level for the job.

Check the table below to make sure the wood you are buying is suitable for the intended end use. There are four different construction "use classes"; if you buy wood that is not treated to the correct standard, it is likely to fail prematurely and you are putting your reputation at risk.

Only use timber that is certified as being sustainable from legal sources.

BRITISH STANDARD USE CLASSES FOR TIMBER (BS EN 335:1)

Use class	Area of use	Typical products
1	Internal	First floor joists
2	Internal – risk of wetting	Roof timbers with risk of wetting/ condensation. Ground floor joists, timber frame external doors.
3	External – out of ground	Deck beams, joists, deck boards,soffits, cladding and fascias.
4	External – ground contact	Posts and ground level joists.

The level of treatment given to protect wood is tailored to its use class.

TIMBER STRENGTH CLASS

To comply with building regulations all decks should be built with strength graded timber – C16 is the minimum strength class that should be used but C24 strength class is recommended for domestic decks that will carry heavy loads.

LOOK FOR DECKMARK QUALITY MATERIALS

Components supplied with the TDCA DeckMark™ quality accreditation have been independently assessed for manufacturing quality.

THE BASIC PRINCIPLES OF DECK CONSTRUCTION

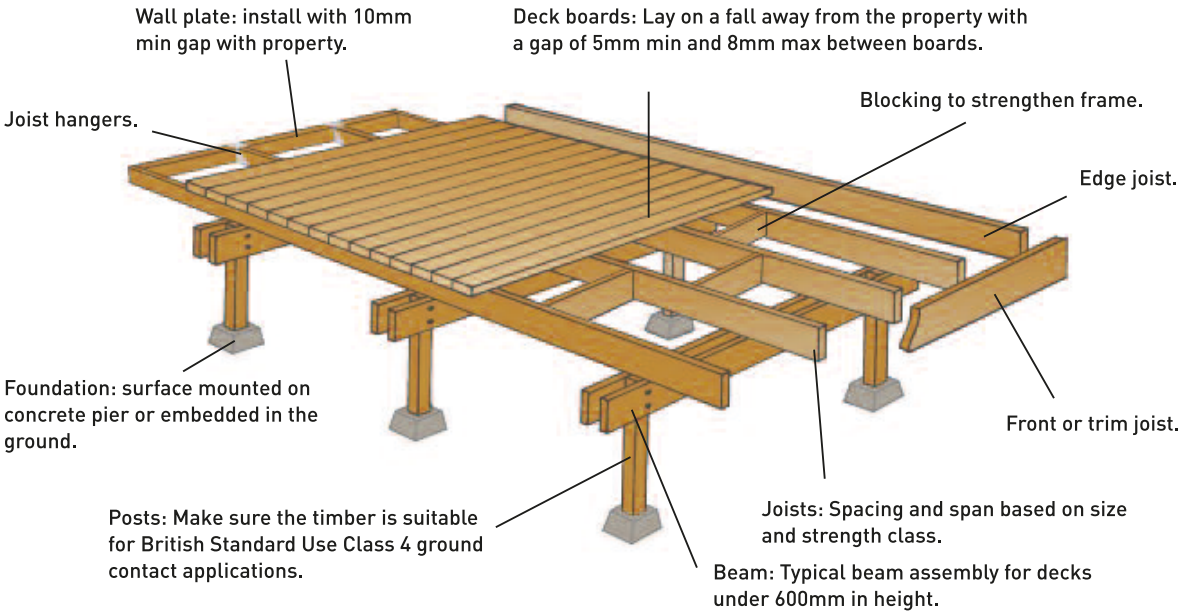
SITE PREPARATION

Clear all vegetation from the site of the deck. Lay weed suppressing sheeting held in place with clips or a layer of gravel if the under deck area is visible.

CONSTRUCTION

The diagram below shows the basic principles of deck construction. Wall plates (sometimes called ledger boards) are used where a deck is attached to a property.

Leave a gap (10mm minimum) using washers or packing pieces between the property and the wall plate to allow rainwater to drain freely. Take care not to damage or bridge the damp proof course of the property.

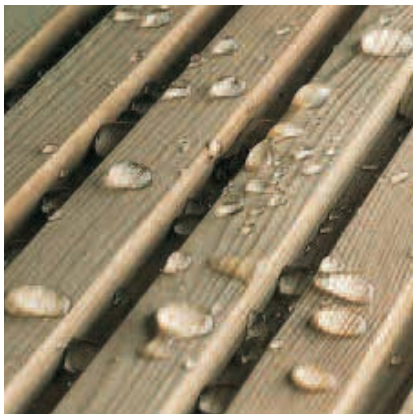


DECK BOARD CHOICE

There is a wide variety of timber types, surface styles and visual qualities to choose from. The price will vary according to quality or type. Always make sure that the person for whom the deck is being built sees a sample and agrees the quality of the board that is to be used.

Be aware that the channels in grooved boards are designed to channel water. As such they must always be laid on a fall and keep clear of debris otherwise standing water will saturate the wood and cause a slippery surface.

For steps or ramps use boards that incorporate strips of an anti-slip material.



Grooved

Plain

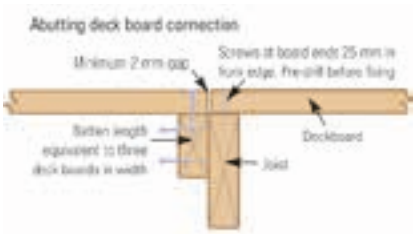
Enhanced grip

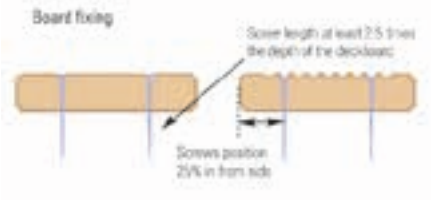
MAXIMUM JOIST SPANS – C16 STRENGTH CLASS

Joist size	Domestic decks			Heavy load bearing decks		
	Joists centres			Joists centres		
	400mm	500mm	600mm	400mm	500mm	600mm
150 x 50mm	3.00m	2.81m	2.64m	2.20m	1.97m	1.80m
100 x 50mm	2.00m	1.66m	1.75m	1.47m	1.33m	1.22m

LAYING DECK BOARDS

- Always build a slight fall into a decked surface and lay grooved boards in the direction of fall. Plain boards can be installed in any direction.
- Leave a space between boards of 5mm to 8mm to assist drainage and allow for seasonal expansion and contraction of timber. Leave a 5mm space where a board end abuts a post.
- Always locate abutting boards over a joist to which an additional section of joist or batten has been attached for support. Position fixings 25mm in from each end. Pre-drilling these fixing points will help prevent splitting.
- Every time a board crosses a joist it should be attached using two fixings positioned at the quarter points of the board.
- On grooved boards, always position fixings at the bottom of a groove.
- Make sure all fixings are flush with the surface, not driven below it, as this can cause localised water retention.
- When installing hardwood boards, always use screws and pre-drill every fixing point 2mm oversize. This allows for any seasonal movement to take place without damage to the wood.





METAL FIXINGS

Corrosion is the biggest threat to fixings used out of doors. Stainless steel, hotdipped galvanised or high quality coated carbon steel fixings are best.

Electroplated, brass or uncoated steel fixings should not be used. Always use the same type of metal for fixings and connectors to prevent galvanic corrosion weakening the fixing.

CROSS CUTTING

When cross cutting or notching preservative treated wood on site always swab the cut area with an end-grain preserver available from your timber supplier. This ensures the wood will continue to be fit for purpose and avoids invalidating any warranty given on the treatment.

DECK PARAPETS OR BALUSTRADES

Building regulations require that parapets (balustrades) are at least 900mm in height for decks that are less than 600mm from the ground. Above 600mm and the parapet hand rail must be 1100mm in height.

Within the design, no space between individual components like balusters shall exceed 100mm. All vertical elements (e.g. newel posts) should be capped to avoid water being absorbed into the end grain.

On decks more than 600mm in height, Building Regulations require that the parapet is robust and safe. Look for balustrade systems with the DeckMark Plus performance rating – they have been independently load tested as fit for purpose for high level decks.

FURTHER HELP AND INFORMATION

The TDCA Decking web site www.tdca.org.uk gives access to more detailed information about deck design, construction and maintenance. It also features quality approved products and answers to frequently asked questions.

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Tell me more

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