

Creating a low level deck

When it comes to extending the living space out of doors there is nothing to beat a timber deck. Decking is not only a good-looking, natural material, it is also extremely quick and cost effective to install. Whilst elaborate raised structures are best left to a professional, creating a low level deck or walkway is well within the DIY capabilities of most people. Making-over an unsightly concreted or paved area or building a simple garden deck are projects that can be accomplished on a fairly modest budget over the course of a long weekend.

Steve Young of the Timber Decking Association explains the basic principles involved.



Makeover for an old patio

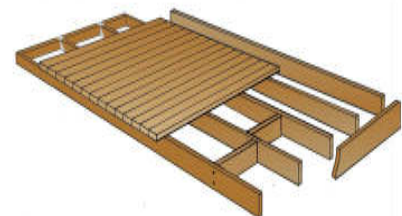
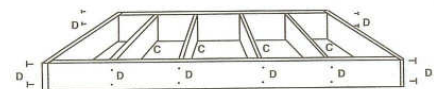
Assuming that the existing surface is flat, all you need to do is create a sturdy frame from joists spaced at regular intervals and then lay deckboards across them. Say your old patio measures 5 metres x 2 metres – covering 10 square metres in total. The frame would be created using standard 4.8m long, 44mm x 92mm (2" x 4") joists. The joists we are using are made from European Redwood sourced from a sustainable (FSC accredited) forest and pressure preserved to Use Class 4 standard (for permanent in ground or water contact). For the deck surface, we have gone for a 33mm x 120mm (1¼" x 5") board with grooves on one side and a plain finish on the other. These boards are made from the same European Redwood and pressure preserved to Use Class 3 Standard (exterior uses out of direct ground contact). Both the joists and the deckboards are standard products from a widely available range of components that meet the **DeckMark®** quality requirements set by the Timber Decking Association and come with a 15-year performance guarantee.



Double-sided deck board
DeckMark quality assessed.
Sourced from sustainable forests.
Pressure pre treated.
Guaranteed for 15 years

Creating the frame

To create the frame we first positioned six 4.8mtr joists (C), at 400mm centres, parallel with each other. We then cut two, 2 metre long side joists and, after brushing the cut ends with preservative (a condition of the guarantee), fixed these with rust resistant landscaping screws to the two outer joists, using two screws for each connection (D). Having created the outer frame we first checked it for square, measuring the distance from corner to corner and then checked for level as we wanted to build a slight slope into the surface to assist drainage. We fixed the intermediate joists in the same way. From the remaining joist we cut ten pieces 356mm long and fitted these between the internal joists in an offset arrangement to increase the rigidity of the



The basic principles of a ground level deck – joists, reinforcing noggins and deckboards.

frame. These reinforcing pieces of wood are known as noggins.

Once you are happy with the frame you can secure it to the old concrete base using a metal fastening plate made from hot dipped galvanised material. You can use off-cuts of treated wood to pack out the frame at various intervals.

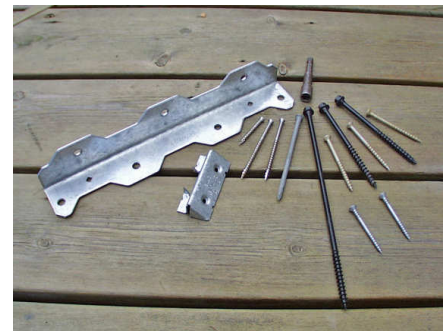
Make sure that if your deck is adjacent to a building you leave a gap of no less than 10mm between the frame and the property so that water can run down the wall freely.



On this old concrete patio the deck frame is supported on 150 x 45mm (6" x 2") joists to lift it to the level of the French windows.

Fixing deckboards

The next job is to fix the deck boards in position using metal fixings that are suitable for exterior use with pressure treated wood. You can use nails but screws are far better as they allow access for maintenance or to manholes and can be tightened to take up loosening of a board that may arise from natural seasonal expansion and contraction of the wood. Nail guns should be avoided as they can split timber which can be unsightly and cause splinters. Screws made from stainless steel or coated case hardened steel are best with self-countersinking heads.



Only use corrosion resistant metal fixings

When fastening the boards a space should be left between each board of no less than 6mm to allow for seasonal movement of the boards and aid drainage and ventilation of the structure. Use screws with a length 2.5 to 3 times the width of the deck board. Two screws should be used to fasten each board where it crosses a joist. Each screw being positioned 25% in from the boards edge. On grooved boards, take care to position the fixing at the bottom of the groove. Drilling pilot holes will prevent the wood from splitting – particularly at the end of a board.

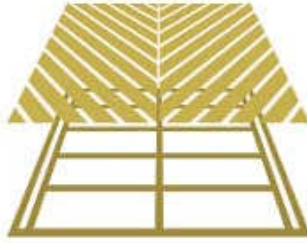


Different board layouts add individuality

Boards can be laid in many different patterns so long as the joist arrangement is designed to cater for the layout chosen. Our deck has been customised by laying the deckboards at a 45-degree angle and by alternating plain boards with grooved boards. A border has been added as a further design feature.

Deck boards can be laid in a wide variety of patterns such as those shown here. The important thing to note is that whatever layout you choose, this must be reflected in the joist assembly.





Left: Basket weave; Centre: Chevron; Right: Herringbone

Materials and budget for makeover of old patio.

The frame	Cost inclusive of VAT
7 x 4.8mtr lengths of 44mm x 97mm (2" x 4") European Redwood C16 strength class joists treated to Class 4 Standard for ground contact	£176.25
Deckboards	
84 metres of 33mm x 120mm (1¼" x 5") plain/grooved double sided European Redwood deckboards treated to Use Class 3 Standard	£89.00
Small tin end grain preservative	£5.90
Fixings	£35.25
Total budget	£306.40
Time taken as DIY project	12 - 14 hours

NB All the materials are DeckMark® quality and FSC accredited and sourced from a traditional timber merchants outlet.

Building a deck over a lawn or soil

If you are building a deck over an area of lawn or flower border then turf and vegetation should always be removed first. The ground should be compacted level and covered with black plastic or garden sheeting to prevent weeds growing. Ideally this sheeting can be held in position by a layer of builders gravel.

If drainage could be a problem under your deck or the ground is not firm enough then excavate the topsoil to a depth of 100mm(4") and backfill with gravel or hardcore and compact to provide a firm, level surface. Then lay the weed barrier before constructing the frame.

Building a floating deck

If your site is sloping or uneven then the best approach is to create a floating deck raised above the ground using a post and beam assembly. These posts can be installed either by embedding them in a hole backfilled with a dry-mix of concrete and gravel or by fastening them to a metal bracket fixed at ground level to a solid concrete footing. Make sure that the posts are pressure treated to Use Class 4 standard for in ground or



After the frame is finished and in its final position, backfill around the joists and over the weed barrier with gravel or pea shingle to a depth of 50mm.

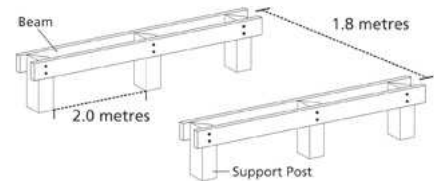


are pressure treated to Use Class 4 standard for in ground or freshwater applications. Once the posts are secure and cut to height, prepare the site with ballast, weed suppressant membrane and gravel.

Two 44 x 145 (2" x 6") joists are through bolted to these posts to create a support beam – one joist on either side of the post. Individual beam support posts should be no more than 2 metres apart and the maximum span between beams should be no more than 1.8metres.

Intermediate joists are then hung from these beams at 400mm centres using metal joist hangers. Alternatively joists can be fastened across the top of the beams.

Site prepared for a floating deck with posts ready for beams.



Galvanised joist hanger



Joists can also be fixed on top of beams



Obviously these type of deck structures are more complex than a simple deck laid over an old patio and will take longer to complete and require the purchase of additional materials – posts, concrete, gravel, weed barrier and metal fasteners.

If you want to fit a balustrade to your deck

Whether you are building a ground level patio deck or a floating deck raised off the ground, newel posts should always be installed before fitting the deck boards. Building decks using the double beam principal is a major advantage for those wishing to add newel posts and balustrade to their deck. The double beam provides a natural and robust housing for 90mm x 90mm(4"x4") newel posts which are secured at no more than 1800mm (6'. 0") intervals using through bolts or landscaping screws.

Double beams provide a ready and secure housing for balustrade newel posts

For ground level decks, newel posts can be fixed to the side joists of the frame or again a double joist assembly can be created to act as a secure, load bearing housing for post. When fitting deck boards around newel posts leave a space of 4mm to enable rainwater to drain away freely.



Leave a 4mm gap when fixing deck boards around newel posts to assist drainage.

Key things to remember about parapets

The standard height of parapet balustrades is 900mm for low level decks (i.e. decks no higher than 600mm from the ground) but for decks over 600mm from the ground then building

regulations require balustrades to be 1100mm high.

There are many different balustrade systems and styles available and it is important to remember that most are designed as decorative additions to decks rather than serving as load bearing safety barriers.

Where such structures are required to meet building regulations requirements, particularly on high level decks, it is advisable to contact the Timber Decking Association for guidance.



More elaborate structures require specialist skills

If you are planning a raised deck, changes of level or are thinking about a hot tub or use by large numbers of people then specialist knowledge is required to ensure the deck is structurally safe.

Raised decks involve selecting the correct structural grades and sizes of timber and verifying spans and load bearing capacities of beams, joists and balustrades. It is for this reason that such structures are built by experienced design and installation companies who will ensure that the deck is properly engineered and fit for the purpose you want to use it for. A list of quality-assessed installers that comply with the DeckMark scheme is available from the TDA on 01977 558147 or on www.tda.org.uk.



Caring for your deck

No matter what board style you go for make sure you sweep the deck surface regularly to keep dirt and other debris at bay. Surface deposits such as these together with mildew, algae and fine mosses can cause any surface in the garden to be slippery in wet weather. An annual clean with a jet spray or specialist deck cleaning product should help prevent this.

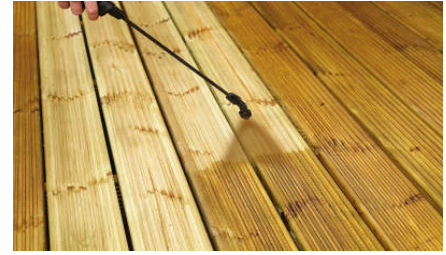
If improved grip is required on steps or adjacent to doors then use Cuprinol anti slip decking treatment or a specialist deck board that incorporate strips of an inert anti slip material.



An annual clean will keep your deck looking like new (above). Specialist deck boards are available with anti slip inserts.



Every couple of years give the timber a coat of a clear water repellent. Although pressure treated wood will last almost indefinitely, it has to be remembered that timber is a natural material containing moisture and expands and contracts as moisture levels change with the seasons. Giving your deck a water repellent coating every few years will help to minimise this movement and the characteristics that accompany it e.g. surface cracking.



If you want to add colour to your deck there are now easy to apply products available such as the new deck spray from Cuprinol – the only decking care manufacturer with products accredited to the DeckMark QA standard.

The Timber Decking Association (TDA), tel 01977 558147, a technical and advisory organisation that sets the standard for decking materials and installation practices in the UK.

The Association operates the DeckMark™ quality assurance scheme for product manufacturers and installers and keeps a register of suppliers whom it has independently assessed. It produces a range of publications and its web site www.tda.org.uk is packed with useful information.

The photographs and diagrams featured in this article are from the Q-deck range by TDA manufacturing member Hoppings.

© Feb 2006
Timber Decking Association

Top Tips from the TDA

- Planning permission is not generally required for low level decks unless the proposed deck is attached to a listed building, is within 20 meters direct sight of a road or would affect the privacy of neighbouring properties.
- Wood used out of doors and in contact with the ground or water needs to be highly durable. Only use wood that is highly resistant to decay and insect attack – a pressure treated softwood or naturally durable hardwood
- On grounds of cost, the majority of decks built in the UK are made from pressure-preserved softwood. For complete peace of mind buy decking components that meet the **DeckMark™** quality standard which come with a 15 year guarantee.
- Not all pressure treated wood is the same – nowadays the level of preservative treatment is tailored to where the component will be used. For a joist or post that will be in direct contact with the ground you should only buy wood that has been treated to the Use Class 4 standard. Make sure you are not given joists treated for internal construction – they will not last out of doors.
- Do not lay your deck directly onto grass or soil. Remove turf and cover bare ground with 'ground paper' or black polythene to prevent weeds from growing underneath and retain it in place following the manufacturers instructions. A layer gravel over the surface maximise its effectiveness and life.
- The most important job when creating a deck is the supporting framework which should be rigid with a slight slope of 1:100 away to aid surface water run off.

- Deckboards come with either a plain, ribbed or grooved surface. Remember, grooved boards are designed to help drain water and should always be laid in the direction of fall away from your home.
- Wood is a natural material and will expand and contract as weather conditions change throughout the seasons. Lay deck boards with a minimum gap of 5mm between each board to provide drainage, ventilation and room for expansion and contraction over the seasons.
- Brush all cut ends with an end grain preservative to maintain the integrity of the pressure treatment. Any guarantee given on the wood will be lost if you do not do this.
- Only use fixings that are fit for purpose made from rust resistant materials or with highly durable corrosion resistant coatings. Pre drill screw holes to prevent splits in deckboards.
- Keep your deck looking good with the extensive range of cleaning, decorative and water repellent products.
- If appointing a contractor to do the job choose a TDA registered installer whose workmanship has been independently assessed for compliance with TDA guidelines. They will also give you a long term warranty backed by an independent insurance company.
- NHBC Standards require that timber decks and associated landscape joinery comply with the guidelines set by the TDA.

For more help and guidance check out: www.tda.org.uk