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Worktops

The worktop is the most important visual element in the kitchen. This large horizontal area is the first to meet the eye. It is also the place where all the preparation and serving of cooking takes place.

Worktops for kitchens should be hardwearing, heatproof, water resistant, not too hard to break crockery, but not too soft to be easily scored with a knife, light in colour – both to reflect light and to disguise food residues which tend to be light in colour (dark colours also show up scratches, dust and wear), and last but not least, good to look at.

A tough specification and some compromises will be inevitable when selecting a finish for a top.

Sheet materials are essential. Joints in tiles or mosaics are soft and quickly ingrained with dirt, so become a breeding ground for undesirable bacteria as well as looking unattractive.

There are no perfect surfaces, most will be marred by very hot pans, so trivets should always be to hand or stainless steel pan supports inserted near the hob.

All will be spoiled by heavy scoring, so chopping boards should always be used.

Fabricating worktops is a specialised and often expensive business. Where possible employ specialist contractors to measure and make templates on site, prefabricate, deliver, fix and finally clean/seal/polish on site.

Plastic laminate faced worktops

Plastic laminate is still one of the most practical and cheapest materials for facing kitchen worktops.

It is made up of several sheets of *kraft* (Swedish for strong) paper and a printed decorative sheet protected with a transparent melamine overlay. These are impregnated with thermosetting resins and fused together under heat and high pressure. Typical sheet size: 3660 × 1525 × 0.8 mm with some patterns available up to 4100 mm long.

The laminate is abrasion, scratch and impact resistant, also heat resistant up to 180°C for short periods. It is hygienic and can be kept clean with water and mild detergents and non-scratch liquids so it is an ideal, maintenance-free, decorative surface for domestic kitchen worktops.

Grades and finishes

Plastic laminates are available in several grades such as: general purpose, post forming and vertical surfaces.

These sheets are also available in various finishes most typically *velour* (satin), gloss and matt.

Surface textures can also vary between flat, granular and heavily textured.

The most suitable choice for kitchen worktops are light colours with small patterns. These show least scratches and abrasions. Avoid dark, heavily textured or gloss finished laminates.

Wood laminates

There are two types of wood laminates – those using real wood veneers and cheaper versions using photographic prints of real wood. The former consists of genuine wood veneers laminated to a phenolic core which, with a melamine overlay, has the same practicality of standard plastic laminates. Do not use wood laminates with polyurethane or wax finishes for kitchen worktops.

Metallics

These are laminates using real metal foils over a laminate core to produce lightweight laminates which weigh far less compared

with sheet metal. Some come with geometric patterned textures. NOTE that this type of laminate is suitable only for *light duty, vertical, interior surfaces*. However manufacturers are still developing new metallic laminates which they are confident will be suitable for work surfaces in the future.

Postforming

Most laminates can be postformed to bend over worktop front edges and over upstands at back of worktops. The usual recommended minimum internal radius is 10 mm, although some manufacturers can use a 3-mm radius which produces an almost square-edged look mimicking that of natural stone worktops.

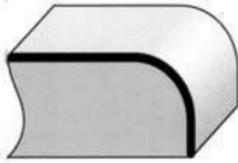
Worktop manufacture and substrates

Plastic laminate worktops are always made in specialist workshops as it is difficult to achieve bubble-free bonding of the laminate to the substrate and to make perfectly mitred corner joints. Where worktops are made on site, advice should be sought from the manufacturer as to the most appropriate adhesive as these may vary from product to product.

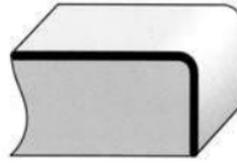
The most suitable substrates for plastic laminates are moisture resistant chipboard, MDF and plywood as these are cellulose based with dimensional movement characteristics similar to those of decorative laminates.

Typical thickness is 28 or 38 mm. The underside and rear edge of the substrate should be faced with moisture resistant foil.

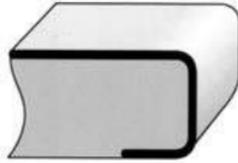
The most practical front edge profile is *bullnosed* or *double pencil round* where a postforming grade laminate is carried down the front face and back 15 mm underneath where it should meet the moisture resistant foil. This joint should be



Single round



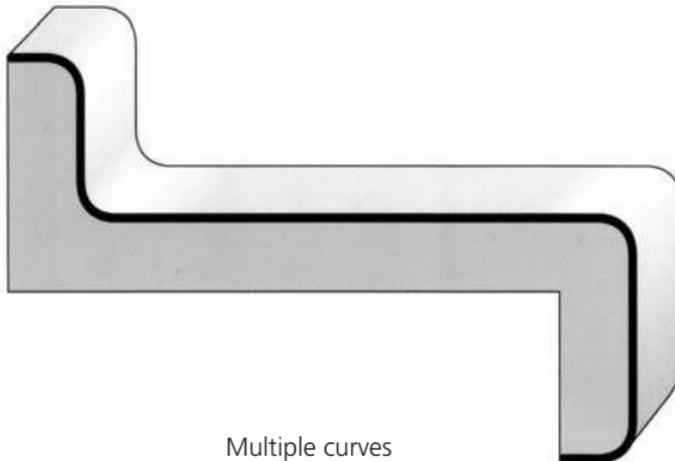
Pencil round



Double pencil round



Bullnose



Multiple curves

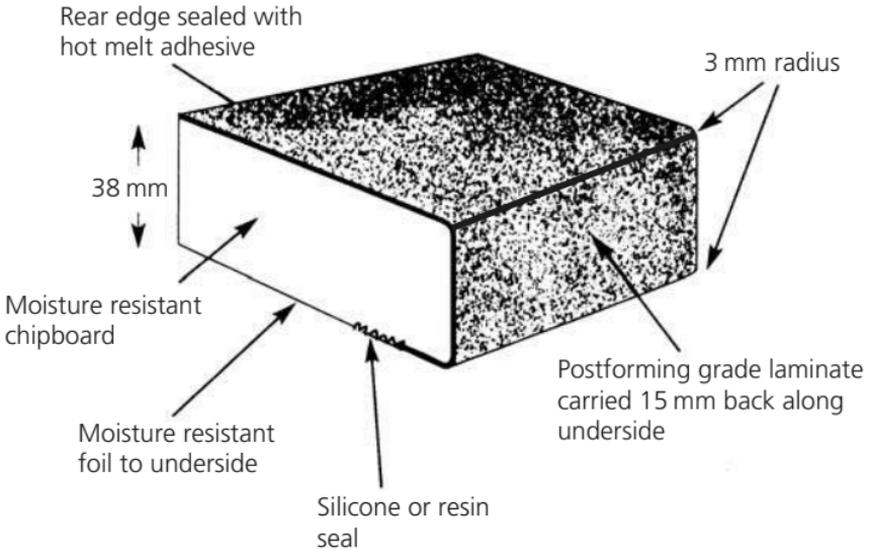
Front edge and Upstand profiles for plastic laminate worktops
by Spa Laminates

sealed with a silicone or resin seal. The distance of 15 mm is so that any drips from the front edge will fall on the face rather than the top edge of the cabinet doors below. See p. 160.

Front edges may also be lipped with hardwood or aluminium trim.

For a better, easy-to-clean, moisture-proof kitchen worktop, an integral upstand 75 to 100 mm high should be fixed to the back with the laminate taken up and round the top edge.

Holes for sinks, taps and hobs are generally best cut on site as the exact positions of these fittings can vary slightly from the drawings.



Typical postformed front edge detail to plastic laminate worktop

Other plastic laminate products

In addition to the standard decorative laminate sheets, there are also thicker sheets with a decorative face on both sides and a black or brown core. These are 3 to 20 mm thick and are primarily used for doors. Suitable also for worktops as it is very strong, high impact and moisture-resistant material.

They can also be postformed if required.

No substrates are needed over 6 mm thickness.

Recommended thickness for worktops is 10 mm.

Also available are solid colour melamine sheets 1.3 to 2.6 mm thick. These sheets can be glued together in layers, using epoxy adhesives, to make from 6 to 12 mm beautiful, hard-wearing and expensive work surfaces.

This product cannot be postformed but the surface can be routed, engraved or sand blasted.

Source: Formica Ltd

Hardwood worktops

Hardwood worktops are long lasting, hardwearing with great natural beauty. Timber seasons slowly and will darken with age. The main disadvantage to using hardwood for worktops is that it is important to avoid too much water sitting on the surface and it requires oiling from time to time to maintain water resistance.

Timber species

It is vitally important in today's concern about endangered species that all hardwoods are known to have come from a renewable source. The only safe guarantee that this is so is if the timber is certified by the *Forest Stewardship Council* (FSC). Consult the FSC for lists of accredited suppliers.

The following list describes the species that are considered suitable for domestic kitchen worktops.

Ash *Fraxinus Americana* from N. America

Light straw colour with occasional darker chocolate areas and strong textured grain. Suitable for worktops, but reacts more to moisture so must be well oiled in wet areas.

Bamboo *Phyllostachys pubescens*

Strips of thick straight stems, kiln dried, planed on all sides and glued together under pressure which can be worked like any hardwood. It is 27% harder than N. American red oak and 13% harder than maple. 3 m long × 30 mm thick available for worktops, it is kind to fabricators as the sawdust is heavy and falls to the ground.

Beech *Fagus sylvatica* from Germany and Romania

Straight, fine grained, pinkish-blond colour. Extremely hard and dense, but must be well oiled in wet areas.

Cherry *Prunus avium* from N. America and England

Excellent work surface material with some wavy grain which darkens from pale pink to reddish brown with the odd darker fleck. English varieties may have some green patina.

Iroko *Chlorophora excelsa* from W. Africa

Stable, solid timber which dramatically changes colour. Newly machined wood is very light with a distinctive buttery sheen which after several months changes to dark chestnut brown. Naturally oily and sometimes known as 'poor man's teak' it is none the less probably the best timber for kitchen worktops.

Mahogany *Swietenia macrophylla* from W. Africa

Reddish hardwood which matures to a rich dark colour in a few months. It has a fine texture which finishes to a very smooth surface. Grows to great heights so long lengths are obtainable.

Maple *Acer saccharum* from America and

Acer pseudoplatanus (sycamore) from Europe

Traditionally used for work surfaces and end-grain butchers' blocks because of its dense, hard surface with a fine texture and even, creamy, pink-tinged colour. The European variety is less dense and heavy but has long been used for kitchen and dairy worktops.

Oak *Quercus alba* from England, France and N. America

Extremely strong and durable, mid-brown in colour with some grain figure with a few small flecks of red and white and occasionally small clean knots in long lengths. It has a high tannin content which can be drawn out and make dark stains if exposed to moisture, so care must be taken to keep it well oiled in wet areas.

Teak *Tectona grandis* from Burma

Now sadly an endangered species and so difficult and very expensive to obtain. It is also not popular with fabricators as it is grown in gritty soil which enters the timber and can ruin machine tools. It also contains a glutinous substance which makes it hard to work.

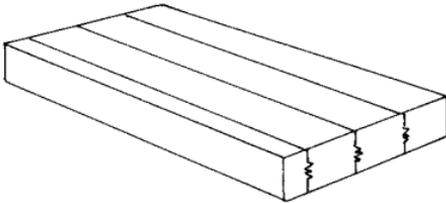
Walnut *Juglans nigra* from N. America

A quality timber with a blue-grey patina producing a dark finish when oiled. It is tough and finishes to a very high standard.

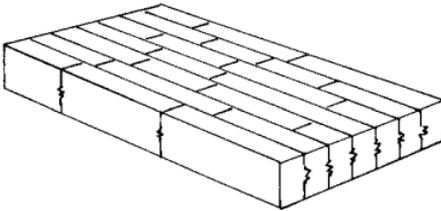
Construction

The best quality hardwood worktops are made up of *staves*, i.e. planks which vary in width from about 90 to 130 mm, depending upon species. They are held together with a finger joint and glued with water-resistant polyurethane adhesive.

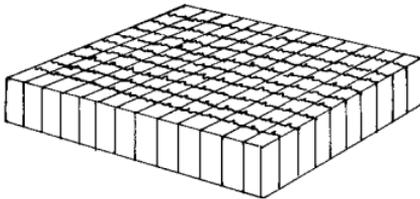
maximum length: about 3.6 m
thickness: 30, 40 and 60 mm



Top quality hardwood worktop made up of continuous staves 90–130 mm wide tongued and glued or finger jointed together



Standard hardwood worktop made up of 40 mm wide staves of various lengths



Endgrain worktop made up of staves glued together vertically in one direction and tongued and grooved in the other

Considerably cheaper hardwood worktops are made up of solid hardwood pieces 40 mm wide, comb-jointed and fixed with radio-frequency glue. As a result, this type of worktop will have a more varied colour and grain pattern than worktops made with continuous staves.

maximum length: 4.2 m
thickness: 27 and 40 mm

End grain worktops are made up of staves glued vertically with tongued and glued joints in one direction and butt joints in the other.

maximum size: 1 m²

thickness: 40 to 150 mm

'L'-shaped worktops normally have straight butt joints so the grain of each leg will be at right angles to one another.

Diagonal joints are possible but more expensive as one leg will have to be longer and care must be taken to provide good support at the outside corner. Worktops are joined together using biscuits and bolts let into the underside.

Where timber worktops abut an Aga type range cooker, a *cross band* must be fixed to the end of the worktop to protect the end grain from the constant heat.

Front edges can be profiled as desired and holes cut for sinks, taps and hobs.

Draining grooves can be inserted next to sinks.

Stainless steel rods can be inserted slightly upstanding next to hobs as a rest area for hot pans.

If matching upstands at the back of the worktop are provided, then these must be fixed to the wall, NOT to the worktop to allow for differential movement.

Timber will always move in seasonal changes of humidity, so fixing hardwood worktops must allow for this. If possible arrange for the fixing to be done by the supplier.

The recommended finish is two or three coats of *Danish oil*. This oil is made up basically of Tung oil, some finishing oil and 2% urethane which provides the necessary water resistance. It is not a good idea to use polyurethane as a finish because if the surface is scored, moisture will penetrate the surface and lift the varnish. The oil also allows for the timber to move naturally.

Hardwood worktops should be re-oiled at regular intervals to keep them moisture resistant. When new, some areas may feel a little rough in the first few weeks of use as the grain lifts from the application of the oil. This can be made smooth with fine sand paper.

Source: Woodentops

Solid surface worktops

There are a range of man-made materials which resemble natural stones such as granite and limestone. They are made up of a composite of small chips of quartz, granite or aluminium trihydrate which is bound with pigments and resin or polyester resins.

The advantage of solid surface worktops over real stone is the possibility of having a large jointless surface of uniform colour and texture. They are said to be waterproof, hygienic, stable, durable, very hard, heat resistant to 180°C, stain resistant, colourfast indoors with a wide range of colours and patterns.

Very hot pans will scorch and bleach the surface. The marks can be removed once or twice with scouring powder. Undiluted bleach should not be left on the surface. Serious holes can be replaced with inserts to match by the fabricator.

Sheets suitable for kitchen worktops are generally 12–13 mm thick, bonded on to a substrate of MDF or plywood with the composite sheet covering the front edge which can be made to various profiles. Joints are solvent welded on site. Upstands at the back can be provided and some manufacturers make sink bowls which can be almost seamlessly welded to the worktop.

maximum length: 3.6 m
maximum width: 900 mm
thickness: 12 to 13 mm
weight: 24 kg/m²

Cost is about 85% that of natural stone worktops.

Solid surface worktops are easy to wipe clean. Fine scratches can be smoothed with scouring powder or fine wet-and-dry sandpaper.

Stainless steel worktops

Stainless steel is the only material for serious long-term use for kitchen worktops. It is the preferred choice for commercial kitchens, primarily because the absence of allergens and toxic emissions makes it a most hygienic surface.

Stainless steel looks stylish and will remain good looking after many years of hard use.

It is easy to clean but will show limescale drips in hard water areas unless the water is softened. Very strong bleaches, silver-dipping liquid and strong acids may dull the surface.

Various round and rectangular, single and double sink bowls can be welded seamlessly to the worktops.

At least 35 mm must be kept between sink and worktop edge. 80 mm minimum must be allowed behind sinks for tapholes. Sound deadening panels are fitted to the underside of sink bowls to prevent drumming.

There are different front, back and side profiles to edge the worktop with a typical front edge being 20 or 30 mm high.

At the back, upstands can rise up to 100 mm or be made with a small turn-up to receive wall tiles.

Worktops are mounted on 18 mm sealed blockboard substrate. L-shaped worktops are made in two pieces with a right-angled joint. The adjoining edges are turned down, bolted together from the underside with a silicone seal in the joint.

A textured finish is available for the whole surface of a worktop. This is said to facilitate drainage and mask scratches.

maximum length: 5 m

maximum width: 1.8 m

thickness: 1.25 mm standard, 1.0 mm textured finish
1.5 mm for acid resistance

weight: 21 kg/m²

composition: 18/8 grade satin SS as standard

Source: GEC Anderson Ltd



Stainless steel worktop, sink and cabinets – by GEC Anderson Ltd



Concrete worktop
by Cast Advanced
Concretes



Hardwood worktop with SS under-
mounted sinks – by Second Nature



Stainless steel worktop
by Second Nature

Concrete worktops

Concrete for kitchen worktops is a relatively new product. It comes as a 40 mm thick slab made up of a 15 mm thick top surface with a 40 mm thick front downstand backed with a 25 mm MDF core which makes the slab less heavy and provides an easy surface for fixing from the underside.

The tops are factory made and finished with a two-part polymeric satin-finished sealant system which chemically bonds to the concrete and which the manufacturers claim makes it waterproof, alcohol resistant, UV stable, heat tolerant to 230°C with excellent wearing properties.

The colours available range from chalk-white through to limestone/sandstone colours to black.

maximum length: 3 m

maximum width: 1.2 m

thickness: 40 mm standard
30–100 mm also available

weight: 44 kg/m² for 40 mm thick slab

Concrete worktops will need good support to carry the weight.

Front edge profiles can have 3 mm *pencil-round* edges as standard or 45° *filed arrises* or be *bull-nosed*.

Holes cut for sinks and hobs must have at least 90 mm surrounding to maintain stability of the slab.

10 mm × 500 mm soft-edged draining grooves can be made for under-mounted sinks.

Source: Cast Advanced Concretes

Slate worktops

Slate is formed from the metamorphosis of sedimentary shale, clay and other minerals formed up to 590 million years ago. It is exceptionally durable, unaffected by normal extremes of temperature, resistant to acid, alkalis and other chemicals, retains its colour, is waterproof and non-combustible.

Traditionally used for larder shelves and draining boards, it makes a handsome material for a kitchen worktop which is particularly suitable for pastry making due to its cool surface.

However, it is dark in colour ranging from dark blue-grey and heather-grey from Wales to green-grey from Cumbria – and will show up food residues and will not reflect light. Therefore slate worktops must be well-lit, both naturally and artificially.

Slate slabs for worktops are usually finished *fine rubbed* and polished *matt flat*. Exposed edges may be rubbed down to a *pencil round* or a *semi bull-nosed* profile.

At least 100 mm should be left round holes for sinks and hobs. If this is not possible, units can be made of smaller pieces, pre-drilled in joints for dowels and assembled on site.

Slate worktops are heavy and must be well supported

maximum length: 1.8 m – larger sizes may be available but
are difficult to transport and install

maximum width: 900 mm

thickness: 25 mm as standard

weight: 71 kg/m² for a 25 mm thick slab

Slate needs no sealant and should not be oiled as it sits on the surface and gathers dust.

Wash with a neutral pH detergent, rinse and wipe dry. Scouring powders with abrasives may dull the surface. Minor scratches may be rubbed down with wet-and-dry sandpaper.

Source: Wincilate Ltd and Welsh Slate

Granite worktops

Granite is an igneous stone formed by cooling of molten rock far below the earth's crust over 5000 million years ago.

Its appearance is granular with crystals making a great variety of colours and textures. Colours range from pale grey through pink, red, yellow, brown, green to black.

For centuries it has been prized for its durability, hardness, density and impressive appearance when polished.

It is waterproof, stain resistant to all common liquids, very heat resistant, difficult to scratch and easy to keep clean.

If wine, oils and acidic products are left on the surface for a long time, they may stain or remove the polish and should be wiped off. Limescale removers should not be used.

Lighter colours tend to be cheaper than dark and also have the advantage of showing food and limescale deposits less. Surfaces should be *highly polished* for kitchen use.

Avoid *honed matt* or *antiqued* finishes which may show stains and show up dirt.

Cut-outs for hobs, sinks and mixers should be undertaken by the fabricator. Front edges can have various profiles.

maximum length: 2.7 m

maximum width: 1.5 m

thickness: 30 mm without substrate

20 mm with 22 mm MDF substrate

weight: 90 kg/m² for 30 mm thick slab

65 kg/m² for 20 mm thick slab

Granite is heavy and will need strong support.

Joints have sawn edges with a slight arris to the top edge.

They are glued together with a two-pack resin and hardener, coloured to match the granite and fill the groove made by the arrised edges. L-shaped worktops are joined at right angles.

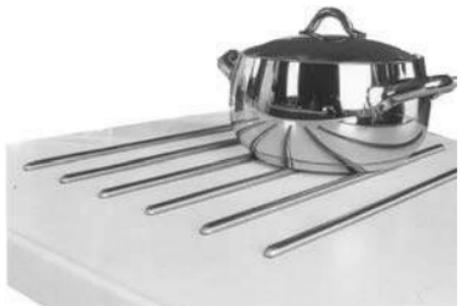
Source: Granit-ops



Granite worktop with draining grooves for Belfast sink – by Second Nature



Solid surface worktop with integral sinks with SS bases – by Corian



SS rods embedded into solid surface worktop for pan rest by Corian

Marble worktops

Marble is NOT recommended as a practical surface for kitchen worktops.

It is far less hard wearing than granite and will be stained badly by olive oil, lemon juice and spices.

It is, however, eminently suitable for use in bedrooms and bathrooms.

Limestone worktops

Limestone has recently become popular for wall and floor tiling and can be used for kitchen worktops, although it is not as suitable as other stones because it may be etched by acids such as lime juice. For this reason it is imperative to select a limestone of low porosity and maximum density. This type of limestone tends to come from Portugal, Spain, Italy and Israel.

The choice of finish is *fully polished* which cannot be sealed as sealants tend to sit on the surface. Alternatively, the surface can be *honed* which can take a polyurethane-type sealant which can be renewed professionally after some years of use.

Wash with a neutral detergent to keep it clean.

Scouring powders and cream cleaners should be avoided.

maximum length: 2.4 m

maximum width: 1.2 m

thickness: 30 mm recommended
20 mm will suffice with 6 mm MDF substrate fixed to top of cabinets

weight: 81 kg/m² for 30 mm

54 kg/m² for 20 mm

Upstands at the back edge should be fixed to the wall with a silicone joint between upstand and work surface.

Source: Kirkstone Quarries Ltd