



General Maintenance of Timber Decking

Slip resistance

It is a common perception that timber decks are slippery and potentially hazardous when wet. Whilst there is certainly a potential for this, the risks are often overstated and the problem can be eliminated, or minimised, with careful detailing, choice of appropriate materials and routine care and maintenance. The main areas of risk are ramps, steps and landings at the head of steps, or immediately adjacent to doorways.

The primary and most common cause of slipperiness on timber decks is standing water, which can drastically reduce underfoot grip and can also cause the timber to become saturated and inherently more slippery than dry wood. Practical steps can be taken to ensure that standing water does not occur. These include ensuring that decks are installed level without any low points or, preferably, installed with a positive drainage fall. The extent of fall need only be slight and this would probably not be detectable to the user, but it is important that falls run away from a building to the outer edge of the deck or to a drainage channel provided.

A secondary cause of potential slipperiness is the occurrence of algae, moulds and slime growths which can occur on timber which is waterlogged or which remains wet or damp for extended periods. Areas of decking in constant shade or under tree or plant cover are particularly susceptible and where such growths occur they can lead to extreme slipperiness, particularly in wet conditions. The problems can be particularly pronounced in the autumn period.

The incidence of algae, mould and slime growth can be minimised by careful positioning of the deck to avoid areas in constant or prolonged shade. Similarly, overhanging trees and adjacent plants and vegetation should be controlled to prevent constant damp conditions. Occasional surface applications with anti-fungal solutions can limit organic growth on decks subject to these conditions.

The final cause of slipperiness is a seasonal problem of surface frost and ice on the deck boards. In this respect timber is no different from any other walkway material and shedding surface water through drainage is the prime means of reducing the problem. Unfinished timber will, nevertheless, absorb some surface water which could result in slipperiness in icy conditions. The use of water-repellent treatments or finishes will reduce moisture absorption into the timber but may risk surface icing.

If surface frost or ice does form, standard rock salt can be used to alleviate the problem. However it should be pointed out that this could transfer salt indoors on shoe soles and in addition some surface staining of the deck boards may occur, although this can usually be removed later by cleaning in the spring. The use of rock salt could also have a detrimental effect on previously applied coatings. The use of sawn, textured or grooved boards will improve slip resistance over plain boards but consideration should always be given to the 'comfort' of the deck finish, particularly in a domestic situation where users may be barefooted.

Sometimes very dense hardwoods are specified for strength or wear resistance in heavily trafficked areas, but these woods can become highly polished with use, resulting in increased slipperiness. Less dense hardwoods will roughen with age, possibly improving their slip resistance.

When laying decking it is important to allow an adequate drainage gap between each board rather than butting the boards together.

Grooved boards are popular and widely available with a variety of differing profiles and patterns. The main purpose of the grooves is to provide drainage channels to remove surface water and therefore it is important that the spacing, depth and width of the grooves are adequate and that they do not become blocked with debris. The boards should be laid with the grooves in the direction of fall. Where there is considered to be a higher risk of slipping, such as ramps, steps or landings on decks used by the public, specialist decks coatings are available in the form of clear sealers or varnishes with sand, pumice or mineral grit to improve traction. To maintain their performance these coatings need to be regularly re-applied in accordance with the manufacturers recommendations. Alternatively boards are manufactured with non-slip inserts installed or bonded into grooves

Maintenance

All timber deck structures should be designed to ensure structural integrity and to give a long-term life expectancy. Some suppliers offer standard guarantees on workmanship and extended guarantees on materials. However it is important to realise that routine care and maintenance can also enhance the long-term appearance and durability of the deck structure.

As timber weathers, surface checks and splits are inevitable and result from the natural variation in moisture content and the effects of intermittent wetting and drying of the timber surfaces. Such features should not be considered as defects and have no structural effect on the performance of the deck structure. However, if major cracks or through-splits occur, it is advisable to contact the deck supplier or contractor immediately to avoid structural failure or consequential damage.

The regular application of surface treatments and finishes can reduce the uptake of moisture and the consequent swelling and shrinking that leads to checking but these products should always be used and maintained strictly in accordance with manufacturer's recommendations. Where decks are under trees or in close proximity to foliage, occasional, but regular, applications of an anti-fungicide solution will prevent accumulation of mildew and algal growth.

Cleaning

Any decking will benefit from regular cleaning although the frequency will depend on usage. Occasional brushing with a stiff broom will normally be adequate for most decks to remove dirt, dead leaves or any slight surface growth in areas where there may have been little wear. The brush should be stiff enough to remove dirt that may have accumulated in drainage grooves or gaps but not so stiff as to damage any applied surface finish.

Brushing the deck regularly will not only maintain the appearance but will reduce the risk of slipperiness developing from surface growth, ingrained dirt, or standing water accumulating due to blocked grooves or gaps between the boards.

Cleaning public decks is frequently carried out by mechanical brushes but rotary brushes are less effective than the cylindrical type in cleaning dirt from grooves and gaps. One advantage of running boards along the deck, rather than across, is that the grooves and gaps can be more easily cleaned by machine. Coarse fibre brushes will tend to remove a surface finish very quickly and can seriously scour the surface even of dense hardwoods. It is important that an appropriate brush stiffness is chosen. Steel brushes are not recommended because fragments or swarf may become embedded in the timber and corrode, causing staining, particularly in timbers with a high level of tannin, such as oak. Alternatively, the use of specific timber deck cleaners will remove growths, clean and may brighten greyed timber.

On large decks for public use it is especially important to keep the drainage grooves clear because, even with clean drainage grooves, it takes longer for any surface water to drain away from a large area. If a non-slip surface finish is applied, or there are non-slip inserts in the grooves, particular care must be taken with mechanical cleaning to ensure that the surface finish is not removed or the inserts dislodged by the brushing.

It is not advisable to wash down timber decks with large quantities of water or hoses because there is a risk of wetting the boards sufficiently to cause moisture movement. This could affect the life of any surface finish and lead to increased surface checking when the boards dry in the sun and shrink. However cleaning with a high pressure hose which combines air with a small quantity of water, will dislodge dirt effectively without excessively wetting the wood.

Local soiling and surface growth can usually be removed by mild detergent solutions but if stains are more deep-seated on unfinished boards it may be necessary to use specialist deck cleaners which remove dirt, algae and mildew. Dilute household bleach can be used but the effect should be tested to determine the appropriate strength before it is used in any quantity on the boards. If the stains are from chemicals or metals and still resist this treatment it may be necessary to use special products available for deck restoration which can generally remove quite deep seated stains. To avoid uneven bleaching, or variation in the colour of a stain finish, it is advisable occasionally to move around furniture, or other objects, kept permanently on the deck. Planters or plant pots should be stood on trays so that watering does not result in the deck under the pots being permanently wetted, leading to discolouration and mould growth. If the drip trays are supported on battens the top surface of the deck will also be well ventilated.

Tightening fixings and re-surfacing

After the deck has been in use for some time it may be necessary to carry out two forms of maintenance.

The first is to ensure that all the boards are firmly held down. Shrinkage and sometimes wear can result in the loosening or 'popping' of fixings. Nails should be driven home flush to the surface of the boards, and screws tightened as necessary. Occasionally it may be necessary to replace individual boards that have distorted or become excessively worn in heavily used areas of the deck.

Besides tightening the deck fixings it is advisable to also inspect any bolted or screwed connections in the sub-structure which may have become loose through shrinkage of the wood, and tighten these as necessary. It is advisable to first do this check about six months after the deck has been completed, by which time any substantial shrinkage in the wood should have taken place.

The second form of maintenance would normally only be required for unfinished decks where the surface may have become encrusted or worn over time. If the decks are of unfinished hardwood occasional mechanical scouring with stiff brushes or sanding will remove mould growth, loose material, ingrained dirt or surface staining but it is important to avoid scouring or sanding to the extent that the surface is excessively worn down or, alternatively polished to a level that would increase the slipperiness of the surface.

Re-finishing

Surface finishes will require regular inspection and occasional re-coating. Clear moisture resistant coatings should be re-applied in line with the manufacturer's recommendations, normally every two years. Pigmented stains will last several years (depending on the product, the quality of application, the exposure and usage of the deck). It is important that the deck and the grooves and gaps between boards are completely cleaned and allowed to dry thoroughly before the application of a new coat of stain.

If the existing stain has broken down to the extent that the wood has begun to turn grey in places, it is also important to brush away any loose fibres from the surface or treat with a cleaner before re-applying stain. However, it should be noted that if surface degradation has proceeded to the extent that greying has occurred, this is usually sufficient to compromise the performance of any future coatings or treatment.

The deck should be as dry as possible before the stain is applied and the temperature should be within the range prescribed by the manufacturers. It is always advisable to use the same product for re-finishing to ensure that the new coating is compatible with the old