Introduction

Termites or ‘white ants’ are present throughout Australia and from time to time when building protection is compromised timber floors can be attacked. Termites are categorised into three categories being dampwood, drywood and subterranean and of these the subterranean termite is the one that is more likely to attack a timber floor. Subterranean termites live in the ground from where they generally obtain their source of moisture. This information sheet will discuss how timber floors may be assessed to determine if termites are responsible for the damage in the floor.

Termite resistant timbers

There are many different species of subterranean termite with some being more aggressive and capable of greater damage in a shorter space of time. Generally the further north you go the more aggressive the termites are. However, it also needs to be considered that some timber species are more susceptible to termite attack than others, so although termites may be present, your floor may not be at great risk. Cypress, a softwood, is well known for its termite resistance and many of the higher density hardwoods are also termite resistant, particularly as timber flooring is a dried product. Such species as Blackbutt, Spotted Gum, Tallowwood, Ironbark, Turpentine, Grey Box, White Stringybark, Red and White Mahogany and Forest Red Gum are termite resistant. However, not in this list are many common flooring species such as Tasmanian Oak, Victorian Ash, Manna Gum, Jarrah, Sydney Blue Gum, Rose Gum and Brush Box.

Termite activity in timber floors

The diagram shows the life cycle of termites which live in colonies and within the colony there are various types known as castes differing not only in the functions they perform but also in body shape. The king and queen produce what are known as the workers and the soldiers. The soldiers defend the colony but in terms of numbers, the workers dominate and will build nests and galleries, gather food, tend eggs and young and feed castes that can’t feed themselves. Termite activity is more prevalent in the warmer months and...
during early summer we often see the winged reproductives flying in an attempt to establish a new colony. However, it is not these that we need to be as concerned with but those that enter our houses from their underground galleries. These galleries can extend 50m from the nest for many species and even much greater distances with the larger northern living species.

**The signs in timber floors**

It was indicated above that subterranean termites primarily get their source of moisture to live on from the ground. It is also not uncommon for termites to bring moisture with them into a dwelling and particularly if they set up a satellite nest in a wall. However, even the ‘mud’ that they bring in to make their galleries contains significant quantities of moisture. This moisture not only causes high moisture contents in infested boards, but also results in expansion pressure in the boards that have already been weakened by the galleries. It is therefore deformation of the boards that is first noticed where boards in a floor may tent or buckle.

The first photo shows tenting of two boards in a floor and care is needed as many looking at this floor, and particularly with the uneven appearance in the foreground, would jump to the conclusion that washing the tiles has affected the floor. However, the second photo tells us a different story. This photo is a close-up of the two boards that have tented and it is apparent that the cavity is filled with termite ‘mud’. Note that this ‘mud’ would also have been put in place by the termites after the tenting of the boards occurred. If similar to this is discovered, it is important not to disturb the boards but to contact a termite specialist to address the termite problem first. Following this, provided there are no wider structural or safety concerns, the timber flooring contractor can be brought in to address the problems with the floor. Not that termite damage is generally not covered by insurance.

The damage from termites to floors although often relatively small, should not be underestimated. In some situations damage can be extensive as shown in the next two photos.
It was indicated above that it is easy to come to a premature conclusion that either cleaning practices, a pipe leak or building leak has affected a floor. Many often do not consider termite activity to be the source of the moisture. In our final example the termite activity was beneath and adjacent to a fridge. The boards deformed in the floor and not only was the fridge blamed but also plumbing leaks resulting in expense to the owner to have the pipework pressure tested. Naturally the pressure test revealed no detection of any leaks. So in this floor what were the signs apparent? With reference to the diagram, two boards in front of the fridge had deformed with a raised section in the middle of the boards. The floor was tight in this area and moisture meter readings with a capacitance meter gave high readings. However, further from the fridge there were some gaps at board edges and low moisture meter readings were obtained. In fact the readings were in some boards lower than expected and this was likely due to the effects of the termite galleries creating hollow sections in those boards and affecting readings. As the problem appeared to be associated more with the fridge recess, the fridge was moved and a resistance moisture meter used. This not only gave very high readings but also determined the weakness in the boards from termite damage beneath. This is shown in the photo.

This illustrates an approach that can be taken and also illustrates the need to not only observe carefully what is happening in the floor but the need to use moisture meters and consider the pattern of expansion in the floor. Although ‘mud’ is generally present where termites are present, the galleries are often clean and weave smooth trails down the length of the board but not through the surface. This differs to the likes of the Lyctus borer which becomes apparent from the dust around and emergent hole through the boards surface.