

Property Guarantee Administration



Assessment, Identification and Control of Woodworm

Part 3: 'Woodworm' treatment options

Section 1.0: How do you deal with a woodworm infestation?

Woodworm infestations are usually dealt with by applying a timber preservative onto the timber surface. When dealing with woodworm it is only necessary to use an insecticidal preservative – there is absolutely no point in using a material that also contains a fungicide.

The course of action that should be taken is dictated by identifying the type of infestation, whether or not it is active and, if treatment is necessary, the accessibility of the timber. Remember you may be looking at evidence of an infestation that no longer poses a risk. You could be seeing historic damage or evidence of an infestation that was caused when the tree was in the forest or freshly felled. When assessing activity not only should one take into account visual evidence but also examine documentary evidence such as guarantees, treatment specifications etc of any previous measures taken to deal with the infestation in the past. Always consider the possibility that if you are seeing evidence of an infestation a previous surveyor or owner may also have seen the same evidence that you are looking at and applied treatment in the past.

Section 2.0: How does treatment work?

The bulk of a standard preservative is what is termed the 'carrier' and in most professionally used formulations the carrier is water. The carrier is a medium into which the active ingredient is suspended or dissolved and the means by which this is deposited in the surface of the timber onto which it is applied. The level of active ingredient is very small and a typical modern full strength insecticide preservative will contain 0.2% Permethrin.

A standard preservative applied by brush or spray application will only penetrate 4 – 6mm into the surface of the wood which is all that is required. During the life cycle of a wood boring insect (*see Part 1 of Manual*) it has to pass through the surface of timber either when boring in as a larva or when emerging as an adult. It is these vulnerable stages of the life cycle that are exploited by surface applied preservatives.

In general terms there are two kinds of material applied to timber to prevent or 'control' woodworm infestations. These are referred to as preventative formulations and curative and preventative formulations. Both of these formulation types will achieve the same end result – the infested timber will eventually be free of any infestation and protected in the long term, they just go about it in different ways.

2.1: Preventative formulations

A *preventative* material usually has to be ingested for it to work. It does not contain contact killing properties and as a consequence it will only 'prevent' future infestations. A surface applied *preventative* material will have little effect upon any infestation that is already present in timber. Since in most cases an adult beetle only chews its way out of the timber and does not ingest any material upon exiting, it is able to emerge through a *preventative* treated surface and survive since no contact killing properties are present.

However should any eggs be laid on the surface of timber treated with a preventative formulation then no larvae would be able to penetrate into the timber and survive as they would have to ingest wood that contains it. Tests have shown that in these circumstances the larvae are more likely to starve since quite naturally they avoid materials poisonous to them. Borate is an example of a commonly used *preventative* material.

2.2: Curative and preventative formulations

A curative material is one that has contact killing as well as stomach poisoning properties. It is therefore able to eradicate (cure) any infestation already present in timber as well as prevent future infestations occurring. If the larval or adult stage of the insect comes into contact with timber treated with this type of formulation the active ingredient will involuntarily be absorbed and the desired effect achieved. Permethrin is an example of a commonly used preservative.

2.3: Treatment General

For any surface applied curative or preventative insecticidal timber preservative to be effective it has to be applied onto all surfaces of a piece of timber at the prescribed application rate. The timber must be bare and not coated with paint, varnish or any other material likely to inhibit penetration of the active ingredient.

Section 3.0: Treatment options available

Having established that a woodworm infestation is of a type found in seasoned timber incorporated into a property that will cause ongoing damage and there is evidence of activity what treatment options are available?

3.1: Do nothing

The option to do nothing is a real option. In many circumstances this option is unwittingly taken since many infestations are secretive and in places that are difficult to access or see. It is only when structural collapse occurs that the degree of infestation become apparent and repairs necessary.

If the option to do nothing is a conscious decision then regular visual monitoring should take place and the structural integrity of any infested timber should be established and checked regularly.

3.2: Brush and spray application

Virtually all timber preservatives offering protection against woodworm activity may be brush or spray applied. There are a few exceptions where the preservative is in the form of a paste or gel and in these circumstances only brush application or injection from a mastic tube or similar into a pre drilled hole is possible.

By far the most popular method of applying timber preservative onto timbers already built into a property is to use spray application. The main advantages of this method are that it is quick, less labour intensive and has the ability to reach timbers that would otherwise be extremely difficult to do so.

The actual pressure of the spray has little or no effect upon the depth of penetration that the preservative will achieve. If the pressure is too high then large quantities of the preservative will just 'bounce off' the surface and be wasted. High pressure also creates larger quantities of air borne preservative vapour, which is to be avoided.

All that is required is a coarse low pressure spray application. Naturally the application rates specified on the label must be followed in order to achieve effective treatment. This may mean that more than one coating is required on vertical and undersides where unavoidable 'run off' occurs.

For application procedures that should be followed when treating roof, flooring and staircase timbers please refer to *Woodworm Manual: Part 4*

3.3 Industrial (pre) treatment

This is a treatment process that requires a large processing plant to impregnate preservative into timber in a sealed vessel using a vacuum or pressure process. The preservative is usually an insecticide and fungicide and depth of penetration into the wood is far greater than that achieved by brush or spray application.

This procedure is mainly used on timber that will be exposed to the elements or in direct contact with the ground where there is an increased risk of fungal decay.

Industrially pre-treated timber is sometimes used in new buildings and indeed it must be used in parts of south east England where House Longhorn beetle is prevalent. Industrially pre-treated timber should also be used when replacing timbers within a property that have been affected by dry rot. This method of preservative application is not a practical option when considering the treatment of timber already built into a structure.

3.4: In situ pressure injection

This is a process that injects preservative under pressure into timber already built into a structure. It makes use of conventional liquid preservatives and specially designed one way valves that are inserted into predrilled holes in the timber.

The procedure is as follows:

Subject to the size of timber being treated, holes at predetermined positions and depth are drilled into the wood, but not all the way through. A timber injector one way valve is tapped into the hole using a nylon drift so as not to damage the one way valve/nipple. An injector, similar to that on a grease gun, is attached to the trigger of a spray lance and located onto the nipple of the timber injector. Preservative is then introduced under pressure into the predrilled hole via the injector and the pressure is held for a period of time before disconnecting the injector. The preservative in the hole is now held under pressure and as a consequence it diffuses into the surrounding timber. Once it is known that the preservative being contained under pressure by the injector has fully diffused the protruding nipple may be cut off with a chisel and the hole made good.

This process is often used when dealing with Death Watch and House Longhorn beetle infestations where a high initial kill is required because of the amount of damage that these insects are able to cause. This procedure is also used in the protection of external window joinery but a fungicidal preservative is used. Obviously the lower the moisture content of the timber being treated the more successful the treatment will be.

3.5: Targeted Treatment

Targeted treatment is a term used when the preservative is only being applied to the area of known infestation. For example a Death Watch beetle infestation may only be affecting embedded timbers and therefore the treatment will only be applied (targeted) to the embedded timbers and perhaps those immediately adjacent.

The advent of highly versatile Borate based timber preservatives, where the Borate active ingredient is available in three working strengths and three levels of viscosity enables highly effective 'targeted' treatment to be designed and applied. Timber injection described in 3.4 is another form of targeted treatment.

3.6: Heat Treatment

Heat treatment involves the heating up of timber to a temperature that is lethal to any larvae present within the wood. This is not really a practical option when dealing with infestations in properties though some have adopted this process when dealing with fungal decay because it is perceived as a 'green' option. What should be taken into account is the fact that literally tons of carbon dioxide is emitted into the atmosphere when generating the amount of heat required for a whole property. Once the heat has been removed no ongoing long term protection exists so there is the possibility of future infestations occurring. This method of treatment is used for artefacts and valuable items of furniture known to have a woodworm infestation.

3.7: Fogging and Micro Spraying

Fogging and Micro Spraying are terms used to describe another method of applying a preservative. The process involves passing the preservative through a machine that then emits it as tiny air borne droplets that are either allowed to drift and eventually settle or they are applied via a nozzle that is directed. There are circumstances where such application techniques may be justified such as gaining access behind decorative wall panelling, or areas where physical access is not practically possible, but if conventional spray application is possible then there is no reason to substitute it.

The fact that the preservative may reach timber surfaces by fogging or micro spraying techniques is not in dispute. What has been questioned is the amount of preservative deposited on and in the wood (the loading) for it to be effective. The statutory labelling of a preservative includes the application rates that must be adhered to. To achieve the prescribed levels of application for the treatment to be fully effective using fogging or micro spraying would take very many hours to achieve and may therefore not be cost effective.

3.8: Dip and Immersion

This is what the title suggests. The timber to be treated is either dipped or immersed in a container of preservative. Subject to the moisture content of the timber the longer timber is immersed the greater the potential penetration of the preservative, especially into end grain. When treating for the control of wood boring beetles this advantage is marginal.

This method of application is a quick way of applying preservative onto awkward shaped timber products and is often used by joinery manufacturers.

3.9: Environmental control

It has been suggested that woodworm is on the decline in the UK due to central heating keeping timbers dry. Some of the more obvious reasons why this argument is flawed are that central heating is not in use all year and even then it is rarely on 24 hours a day. Furthermore timbers within a roof void and flooring timbers at ground floor level are not affected by central heating. In fact because of the increased incidence of condensation occurring in poorly ventilated insulated roofs of centrally heated properties the timbers would be more susceptible to attack.

Wood is a hygroscopic material and its moisture content varies subject to the relative humidity and temperature of the atmosphere in which it is present. To maintain structural timbers of a property at a sufficiently low moisture content to deter a woodworm infestation would be virtually impossible.

Property Guarantee Administration Ltd.
PO Box 956, Bradford, BD4 8WX
Tel: 0870 067 1610 Fax: 0870 607 0091
info@specifypga.com www.specifypga.com

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