



Bed Bug Treatment: What You Should Expect

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Introduction

So you found a bed bug in your home or office, DON'T PANIC! Finding a bed bug is not the end of the world, and you will need a clear head to handle the situation properly. If you own a retail facility do you need to close your doors over a single bed bug sighting? Will closing cause you unwanted media attention? If you have a bed bug in your home should you start throwing furniture or other items away before you have spoken with a professional? Take a moment to stop and think. Be aware that you do not have to (re)act instantly with regard to bed bug treatment. Taking a day or so to find the right pest management company will provide far better results than hiring some company out of panic. Also, keep in mind that you need to know what the bed bug treatment involves. Don't just hire a company who says they will "get rid of the bed bugs." Ask them exactly what they are going to do and why they think that their treatment will work.



The National Pest Management Association (NPMA) has recently (2011) put together a list of best practices for pest control professionals to use when treating bed bugs. This list of best practices is available at <http://www.bed-bugbmps.org/>. The information below discusses some of the best practices that you should expect from a pest management company coming to your home or office to control bed bugs. Look for these best practices in your pest management company's bed bug treatment protocol. If any of the practices are missing from their protocol, ask them why. Not all practices may be appropriate for your situation but you should make sure that your company is aware of them. This document contains information regarding conventional IPM methods (including insecticide use). For information regarding whole room heat treatment or the Cryonite (frozen CO₂) system see fact sheets titled *Using Heat to Kill Bed bugs* and *Non-Chemical Bed Bug Management*.

Selecting an Experienced Pest Management Company

You may already have a contract with a licensed and certified pest management company. However, that company may have little or no experience with bed bugs. Find out immediately. Call and ask the manager (not your technician or salesman) about the company's bed bug experience. How many bed bug jobs did they do last year? Do they have a printed copy of their treatment protocol? What products do they use? What is their protocol for follow-up treatments? Ask them to provide you with bed bug references. If your current company does not have the expertise you need, find one who does. The price of a good bed bug company will be higher than you have paid for routine pest control. But keep in mind that time = money in bed bug control. You want your company to take the time they need to get the job done, or you risk not being satisfied with the results.

What Information Should You be Given Regarding Treatment?

Many people expect their pest management company to come in and apply a magic potion that will get rid of the bed bugs forever in one easy application. However, pest control operators across the nation agree, bed bugs are the **most difficult pests** that they have ever had to control. To be effective, your pest management professional must be knowledgeable about bed bug biology and behavior and up to date in the latest bed bug control techniques. After a preliminary inspection of the premises the pest professional should be able to provide you with the following information:

- **Information regarding basic bed bug biology, behavior, and medial importance**
- **The potential scope of the infestation, emphasizing the limitation of visual inspections**
- **A copy of the treatment protocol including the specific terms of the service agreement**
- **Your treatment preparation responsibilities**
- **A list of the chemical and non-chemical treatment products that they will use**
- **An estimate of how long treatment will take to complete based on the company's current manpower.**
- **The labor for two technicians minimum and pricing estimates**

The pest management professional should also be able to answer questions regarding the pros and cons of each treatment method, and why their treatment methods may differ from other companies you may have interviewed. Some companies will provide a 30 or 60 day treatment warranty/guarantee. Be aware this is not a guarantee that the bed bugs are gone. It just means that their company will treat again for free (or for less money) if any bed bugs occur within 30 or 60 days of treatment. Beware of anyone who guarantees that all the bed bugs, every last egg, will be gone after treatment. They are amateurs. How could they possibly know?

Disposal of Furniture

Before throwing away expensive items that you may have difficulty replacing, speak to your pest management professional about your options. Instead of throwing away your bed, have the mattress and box springs put into a mattress encasements (see below), then have the bed frame treated with a low toxicity insecticide. If you do decide to throw away furniture items, your pest management professional can advise you how to wrap it and remove it from the premises without dropping bed bugs on the way out. Many pest management companies will wrap and remove the item for you. Your company can also advise you how the item should be marked or damaged so that other people do not take it out of the trash and spread the infestation. Your company should also dissuade you from replacing any infested furniture until after the treatment protocol is complete. You do not want to bring new furniture into a room that may still contain bed bugs.

Treatment Preparation Instructions

Your company should supply you with instructions regarding how to prepare the apartment, office, or room for bed bug treatment. These instructions will typically include the removal of clutter (stacks or boxes of stored items that bed bugs can use as places to hide), laundering clothing, and making small repairs. Some companies may have extensive preparation instructions (stripping the bed, emptying closets, etc.), while other companies will not want the bed bugs disturbed prior to treatment. In this case, the preparation instructions only include cleaning out items from under the bed and bagging clothes that are on the floor. If the structure is going to be heat treated (see below), the preparation instructions will be minimal. Regardless of what your company's instructions may be, follow them to the letter so that you have the best chance of being satisfied with the treatment results.

Integrated Pest Management (IPM) for Bed Bugs:

Integrated pest management (IPM) is a term used to describe a multi-faceted approach to bed bug control. Basically, IPM means that many treatment methods, both chemical and non-chemical, will be used simultaneously to attack the bed bugs from several angles at once. The methods listed below are considered best practices that can be incorporated into a bed bug IPM program.

Inspection. Your pest management company will most likely do a cursory inspection of the premises at the time of your initial call. They will then give you a time and treatment estimate. On the day of the treatment, the company will conduct a thorough inspection, looking for all possible bed bug hiding places, and treat the structure or infested room. The beds will be stripped and the mattresses inspected.



The box springs will be opened and inspected with a flashlight. All furniture, head boards, picture frames, drawers, air conditioners, holes for set in screws, chips in the paint, loose wallpaper, curtain rods, curtains, cabinets, drawers, closets, carpet tack strips, baseboards, popcorn ceilings, electrical outlets, desks, light fixtures, electronics, toys, wheelchairs, smoke detectors, books, magazines, basically **everything possible**, will be carefully searched for signs of bed bugs. If you have something you don't want the inspectors to see, inspect it yourself and get it out before the treatment date.

Bed Bug Monitoring Devices. If someone in the structure is complaining about bites, but no live bed bug has been found, your pest control company will want to put out bed bug monitor(s). The monitors will attempt to catch bed bugs that might not be obvious due to a low level of infestation. Some bed bug monitors use host cues like CO₂ to lure bed bugs into a trap. Others are passive monitors that use the host as a bed bug lure. The most widely used monitoring device at this time is the ClimbUp™ Insect Interceptor. The ClimbUp™ interceptor is a passive device that uses the human as bait. One ClimbUp™ is typically placed under each bed or couch leg so that the leg sits inside the inner well of the device. Hungry bed bugs coming to feed on the host crawl up the outside of the ClimbUp™ and fall into the outer well where they cannot escape. At this time, there is no monitoring device that is 100% accurate. If the monitor does not catch a bed bug in 24 hours, it does not mean there are no bed bugs. The bed bugs may not be hungry today. Monitoring devices need to be left in place for several days (or weeks) if a bed bug infestation is suspected but not seen.



Mattress Encasements. If the infestation is in a sleeping area or even close to one your pest management company will use mattress encasements. These are mattress covers that have been tested to ensure they are bed bug bite proof and escape proof. The mattress covers will be placed on both the mattress and the box springs. If only one encasement is used, it must be on the box springs. This is because the box springs are a favorite bed bug hiding place, and much more difficult to treat than a mattress. The encasements do not prevent or control bed bugs. They simply make treatment easier by eliminating bed bug hiding places, and you save the mattress from being thrown away.

Steaming. Bed bugs are easy to kill using heat. Their thermal death point is reported to be 118-122°F. Putting infested clothing in a hot dryer is an excellent way of killing bed bugs and their eggs. Heat in the form of steam can also be used to kill bed bugs and their eggs on furniture and carpeting. Many pest management companies are using professional steam cleaners to kill bed bugs in infested apartments. The steamers are used to kill bed bugs on mattresses, couches, and other locations where insecticide applications are undesirable. Steaming bed bugs is a slow process that takes patience. The technician must move slowly enough so that the heat concentration is maintained over every inch of surface. The steamer head must also be large to avoid the steam coming out at such velocity that it blows bed bugs and their eggs across the room. Steam cleaning is an effective way of reducing an infestation quickly. However, steam alone will not eliminate an infestation.

Vacuumping. The value of vacuuming is not that it controls bed bugs, but that it makes inspections so much easier. In large infestations, bed bug harborage and aggregation sites are not only filled with live bed bugs, but also with their debris, dead bed bugs, molted skins, hatched egg shells, and feces. It is often difficult to distinguish what is alive from what is dead in a messy harborage, particularly after treatment. A high powered vacuum is very useful for removing this debris. While no vacuum is powerful enough to remove all of the bed bug eggs (eggs are cemented into place), the removal of the bed bug debris makes it much easier to see if anything is still alive in these harborage sites after they have been treated. Just make sure that the infested vacuum bag is sealed and thrown away outside of the building.

Insecticide applications. Your pest management company will be able to give you a list of all the insecticide products and their product labels they are going to use. A variety of low toxicity products should be applied according to the label directions, in different locations to kill bed bugs. You may have heard the bed bugs are resistant to many insecticides. This is true, and many will not die if only exposed to dried residues. Therefore, your pest management company will attempt to treat all bed bug hiding places in order to hit the bed bugs directly with the insecticide. For a more complete explanation of the insecticide formulations listed below see Bed Bug Treatment Using Insecticides.



Insecticide sprays (including insect growth regulators) will be used to spot treat bed bug harborages in cracks and crevices, behind baseboards, along ceiling-wall and floor-wall junctions, in closets, behind crown molding, and along window and door frames.

Aerosol formulations will be used in cracks and crevices, the under sides of drawers, drawer slides, nail holes, chipped paint, carpet tack strips, and in the wood framing of the box springs. Some aerosol products (not all) can be used on upholstered furniture. Many aerosol products have the advantage of being able to kill bed bug eggs. Most insecticide sprays and dusts will not.

Insecticidal dust will be used to treat wall voids and electrical outlets. Dusts have the advantage over liquid insecticides in that bed bugs walking on dusted surfaces will become covered in the dust resulting in superior kill.

Insecticidal dusts cannot be used out in the open where they might be picked up on air currents.



Desiccant dusts kill bed bugs by absorbing the protective wax layer on the outside of their body. The bed bugs dehydrate and die within a couple of days. Diatomaceous Earth is a desiccant dust that is very safe to use around children and pets and has a broad label. Diatomaceous Earth can be used in many locations where insecticidal dusts cannot (on mattresses, carpeting, pet bedding, etc.).



Dealing with Units Adjacent to an Infestation.

Bed bugs will move between hotel rooms, apartment units and condominiums that share common walls. Therefore, inspection and possible treatment of units sharing a common wall with an infested unit must be standard procedure. Apartment managers are often reluctant to have adjacent units inspected because of the expense, and fear of alarming the residents in those units. However, to control a bed bug infestation it is absolutely essential the units on either side, and units above and below, be inspected for bed bugs. If bed bugs are found in any of the adjacent units, the units adjacent to that unit must also be inspected. A proactive and relatively inexpensive method for monitoring adjacent units is to install ClimbUp Insect interceptors™ under the legs of the bed and other furniture. (See Non-Chemical Bed Bug Management). The presence or absence of bed bugs in the ClimbUp™ at a two week inspection intervals is a good indicator of whether the adjacent units have bed bugs or not.

Post-Treatment Evaluations

It is recommended that initial bed bug treatment is followed up by a least two supplementary service visits, spaced at two week intervals. The supplementary service allows your pest management company to inspect and treat any bed bugs that were missed in the initial treatment. It also allows them to treat any eggs that may have hatched. During these subsequent visits, the pest management professionals should ask the resident or people working in the location if they have seen any bugs or experienced any additional bites since the previous treatment. Once all treatments are completed, and no one has seen any new bed bug activity or evidence, your company will call the infestation “con-

trolled,” at which time the company should provide you with the service history. The service history will include documentation of all of their procedures, your cooperation, and the treatment results. Be aware that no one can guarantee the infestation is completely gone or that new bed bugs will not be introduced into the facility.

Bed Bug Management for Large Facilities

When bed bugs are introduced into retail facilities or large office buildings a bed bug sniffing dog is often the best option for isolating the source of the infestation. While some dogs and their handlers are better than others, any dog that has been trained correctly is far better at detecting bed bugs than a human. Similarly, there are advantages to treating large facilities with alternative treatment methods like thermal remediation (heat treatment). In many cases, such as high-rise apartment buildings where conventional control methods have failed due to resident behavior, structural fumigation may be the best treatment method available. For more information on these methods see *Bed Bug Action Plan for Hotels (Canine Scent Detection)* and *Using Heat to Kill Bed Bugs (Whole Room Heating Systems)*, *Bed Bug Action Plan for Apartments (Chemical Fumigation)*.