



## BED BUG PREVENTION AND EARLY DETECTION



### Traveling

People traveling can be at risk for encountering bed bugs. It is always good practice to check your room for bed bugs, regardless of your type of accommodations. Bed bugs can enter the home when carried in on clothes, backpacks or luggage. Follow these tips when traveling:

- Inspect your room before you settle in. A safe place for your luggage would be the bathtub while you inspect. Look for bed bugs and their feces [dark red/brown blood stains] by peeling back the bed sheets and look between the mattress and box spring paying particular attention to the head of the bed, check the mattress seams, headboard area, under the alarm clock, lamp and telephone. Bed bugs can be found wherever a person sleeps so an inspection of sleeper couches should also be conducted.
- If you find bed bugs or their signs, call the manager immediately and request a different room.

After the room has been inspected with no sign of bed bugs:

- Avoid unpacking clothing and storing items in drawers. It is best to hang clothing or leave them in your luggage. Elevate luggage off the floor using luggage racks or in the bathtub. **Do not** leave clothing or personal items lying on the bed or furniture.
- Cover up. Bed Bugs feed on exposed skin. You may limit bites by wearing pajamas that cover as much skin as possible.
- Be aware of any unexplained reddened areas (bites) on exposed skin that you may find in the morning as this could be the result of bed bugs. Look for fecal spots on bed sheets or nearby areas. Note: bed bugs cannot be identified or confirmed by a bite.

Upon returning home from a trip:

- Immediately launder washable items in the washer at the highest heat setting and dry on the highest heat setting for at least 20 minutes. Clean clothing can be placed in the dryer at the highest heat setting for at least 20 minutes. If clothing items have specific

instructions about not washing or drying on hot temperatures, you should seal these items in a plastic bag and consult a dry cleaning company.

- Carefully inspect your luggage, paying attention to seams and crevices.
- If the inspection makes you suspect a bed bug problem, isolate your luggage and tightly wrap in plastic or tightly seal in a plastic bag and leave sealed for one year.
- Backpacks and duffle bags without wheels can be dried at the highest heat setting for at least 20 minutes.
- If you are a frequent traveler, you can purchase PackTite devices and heat treat your luggage each time you return home from travelling.



## Home Monitoring

- Learn how to identify bed bugs and bed bug waste so you can spot an infestation early and take action. Conduct quick inspections of your home on a regular basis. [See Polk County Manual for Prevention and Control of Bed Bugs, Inspection section.](#)
- Use laboratory-tested, bite-proof encasements on your mattress and box spring. If the couch is used for a sleeping area you can also purchase couch encasements.
- Use monitoring tools to assess for infestation. A monitor gets in the bug's pathway. A trap can be created by applying double-sided tape or purchasing an interceptor device. This will either trap the bugs or show their fecal matter. Monitoring is most effective in a room where people regularly sleep. If you find bed bugs or cast skins, you should contact your Pest Management Professional.



## Used Furniture and Bedding

**Do not** take bedding and furniture that has been discarded and left by the curb for disposal.

Before purchasing bedding and furniture from garage sales, flea markets, online or offline classifieds or accepting second-hand or donated furniture and bedding **inspect for bed bugs**. If purchasing from a rent-to-own or second-hand store, ask for their bed bug prevention policy. Note: Bed bugs are not limited to beds and mattresses, they can also be found on couches,

recliners and other upholstered furniture; as well as nightstands, dresser and in or on other furniture that is close to a person's sleeping area. See Polk County Manual for Prevention and Control of Bed Bugs, Inspection section.



## DISPOSAL OF BED BUG INFESTED ITEMS

Sometimes when people get rid of bed bug infested goods, unsuspecting people pick them up and bring them into their homes. If you are instructed by a pest management professional or choose to dispose of bed bug infested furnishings or bedding you should:

- Deface the furnishing by labeling in bold clear lettering this “item is not for reuse”.
- Slash mattresses and plush furniture; saw through the wood frame of box springs and damage dressers.



**Polk County Health Department  
Polk County Bed Bug Task Force**

## Treatments to Eliminate Bed Bugs

Bed bugs are challenging pests to control. In most cases, it will be prudent to enlist the services of a professional pest management firm. Experienced companies know where to look for bed bugs, and have an assortment of management tools at their disposal.

### **Steam treatment**

Steam treatments, when properly and directly applied, kill all life stages of bed bugs, including the eggs. Combined with pesticides and other methods, steam is very effective and will also reduce allergens and dust mites in the immediate area.

Steam can be used on mattresses and plush furniture, such as couches and chairs. However, steam will only kill bed bugs in places where the steam can reach. Contact time for heat is critical. Move the steam cleaner nozzle slowly (20 seconds per linear foot) to maximize depth and time of exposure.

The best choice in a steam machine is a professional type with a large water-holding capacity, many types of attachments, and variable output rates. Dry-steam or low vapor steamers are better because they use and leave behind less moisture. Steam cleaning should be done before vacuuming because steam will flush bed bugs out of their hiding spots, allowing them to be killed or later vacuumed up. By reducing the number of live bed bugs vacuumed up, it also reduces the chance that the vacuum will become infested and spread bed bugs to new areas. Details of the use of steam for controlling bed bugs can be found in the book "*Bed Bug Handbook*" (Pinto et al. 2008).

### **Thermal Remediation Using Ambient Heat (Convection Heat)**

Heat treatments come in many forms from clothes dryers to heating units capable of treating an entire house. Heat has the advantage of killing all stages of the bed bug's life cycle. Whole unit heat treatments use a series of heat generating equipment and fans to circulate super-heated air. The entire unit is brought up to a temperature that does not harm most belongings, but is deadly to bed bugs and their eggs. In multiple-unit facilities, however, room/unit inspections must be done on adjacent units to prevent bed bugs from re-infesting the unit following heat treatment.

### **Freezing and the Use of Dry Ice or Liquid CO<sub>2</sub>**

The use of cold temperatures or freezing is often recommended as a method to kill bed bugs; however, its effectiveness can vary. The literature has examples of bed bugs that can recover from being frozen if the temperatures are not too low or too long. Studies have shown that freezing bed bug infested items at <0°F for two or more hours is effective. Using this method, it takes approximately 8 hours for 5 pounds of dry laundry to REACH 0°F. Many items, however, cannot be treated with this method due to size or item type. A new rapid freeze technology called Cryonite™ has been developed. This

method uses carbon dioxide snow to rapidly freeze and kill bed bugs. It is applied in much the same way that steam is used, primarily as a crack/crevice treatment.

**Pesticides**

Pesticides are an important tool in the fight against bed bugs. However, they should be applied by a certified and well-trained PMP.

Residents of multi-unit housing **SHOULD NOT** attempt to do their own pest control, but should contact their building management to report pest problems. The PMP will provide residents with guidelines for cleaning and room preparation. Incorrect use of pesticides for bed bugs poses several risks (contamination, unnecessary exposures, permanent damage, and/or serious health concerns).

**Summary of Bed Bug Treatment Processes**

<b>Management Method</b>	<b>Primary Responsibility</b>	<b>Commentary</b>	<b>Compatibility with other methods</b>
Laundering *	Resident	Laundered fabrics will be free of bed bugs as long as they are kept isolated from infested areas.	Include in every control effort.
Unit Preparation*	Resident	Poor housekeeping and sanitation are not necessarily conducive to bed bug infestations, but bed bugs are more likely to remain undetected and pest management efforts are more likely to fail in a cluttered home.	Include in every area so that the PMP can properly inspect the property.
Encasements *	Resident	Bed bugs that are trapped in an encasement designed for use in bed bug control will not be able to feed or escape and will eventually die. Encasements keep bed bugs from infesting mattresses, box springs, and other furniture.	Use encasements either after treatment or before an infestation is found.

<b>Management Method</b>	<b>Primary Responsibility</b>	<b>Commentary</b>	<b>Compatibility with other methods</b>
Monitors	PMP, resident, or staff	Monitors will catch bed bugs, but are not meant to control infestations.	Monitors can be used alone or in combination with other detection and control methods to confirm active bed bug infestations
Vacuuming*	PMP, trained staff, or trained resident	Vacuuming is not reliable as an exclusive control method.	Vacuuming may be used with other treatment methods.
Steam	PMP	Steam wand must be moved at a rate that heats the area to a lethal temperature.	Use with other methods such as insecticidal dust for voids that steam cannot penetrate. Mattresses and box springs must be dry prior to placing in encasements.
Thermal Remediation Using Ambient Heat	PMP	Lethal temperatures must penetrate all items for the treatment to kill all stages of bed bugs.	Heat treatment is a good option for cluttered homes where preparation is not realistic.
Bed Bug Detecting Canine	PMP	Dogs are effective for bed bug detection.	Use with visual inspection. Inspect, then treat in areas where the dog alerts.
Pesticides	PMP	Selected for a situation based on location of application, effectiveness, residual, and ovicidal properties.	Pesticides are used as a treatment method or as needed in combination with other treatment methods.
Freezing Using Dry Ice/Liquid CO2	PMP	Not widely used in the USA, but widely used in Europe. Insufficient information for adequate assessment at this time.	More research is needed comparing the penetration of both heat and cold.
<b>* Should be incorporated into every treatment plan for optimal success</b>			

## Post-Treatment Evaluation

Bed bug management is a time-consuming and difficult task. To rid a household of bed bugs in a timely manner, it is important to evaluate the effectiveness of the treatment methods being used and adjust accordingly. After physical repairs, cleaning, and treatment have been conducted it is important to monitor for surviving bed bugs. Whatever treatment method(s), there may be surviving eggs that will hatch. This does not mean the treatment was ineffective. As eggs hatch it will be necessary for continued monitoring and follow-up treatments. Expect the treatment to progress over several weeks. Monitors (sticky traps, bed bug interceptors) are useful in these situations. If a significant reduction in bed bugs is not observed after the first treatment, it may be necessary to consider a combination of methods or an alternative to the one being used. Reasons for treatment ineffectiveness may be:

- All sources of bed bugs were not treated. Consider re-inspecting adjacent units (they should be inspected prior to treatment).
- Ineffective pesticides or insufficient contact time by heat methods.
- Re-introduction by infested items – Do not move items out of the home or area to be treated before you consult your PMP. They may harbor bed bugs which may not be treated.



## POST-BED BUG TREATMENT ACTIVITIES

**Follow your pest management professional's advice to re-enter your home after treatment. The following guidelines may assist you in post-treatment:**

- Vacuum flooring and furniture thoroughly before moving furniture back in place.
- Follow the advice of your pest management professional before washing treated surfaces with soap and water or other cleaning materials (washing surfaces may diminish treatment).
- Launder bedding, clothing, and washable toys as advised by pest management professional.
- Bed bugs don't discriminate based on someone's social status or the cleanliness of their home; however, clutter can make it much more difficult to control or eliminate a bed bug infestation. Now is a good time to address home clutter issues.

- It is not necessary to discard mattresses and box springs. After your dwelling has been treated for bed bugs, place laboratory-tested, bite-proof encasements on your mattress and box springs (they also have bed bug couch encasements). Encasements are zippered enclosures that cover bed components. Encasing both mattress and box spring eliminates the need to discard bedding. Leave encasements on for at least one year or follow manufacturer recommendations. If bed bugs were not completely eliminated by the initial treatment, bed bugs are trapped inside the encasements and prevent bed bugs from feeding while you sleep.



- Monitor to assess for presence of bed bugs. A monitor gets in the bug's pathway. Monitoring is most effective in a room where people regularly sleep. A trap can be created by applying double-sided tape or purchasing an interceptor device. This will either trap the bugs or show their fecal matter. If you find bed bugs, cast





skins, or have any questions or concerns about treatment, you should contact your Pest Management Professional.



Simple repairs reduce the number of places bed bugs can hide. **If you are a tenant do not make repairs on your own. Discuss possible repairs with your landlord or building manager.** Simple repairs for the sleeping area include:

- ✓ Caulk with silicone sealant moldings and joints around the room perimeter (floor, doors, cabinets, and windows).
- ✓ Seal openings around pipes or other structures that come through walls, floors and ceilings.
- ✓ Repair peeling wallpaper.
- ✓ Repair cracks in walls or floors.
- ✓ Repair or replace damaged interior doors.

**Polk County Health Department  
Polk County Bed Bug Task Force**

