

# Bed Bugs and Fire Stations: How to Avoid Bringing the “Hitchhiker” Home with You

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These days, the term “bed bug” has the ability to wreak havoc and cause anxiety attacks for many residents, homeowners and just about anyone who goes out in public. As a firefighter running into a home to put out a fire and save lives, you might not be searching for critters that are hitchhiking a ride back to the station with you. Unfortunately bed bugs don’t discriminate and they don’t care about your socioeconomic status, however, they don’t have to be a life sentence either. With the proper inspections and precautions it is possible that you can prevent one bed bug from becoming an infestation.

## History & Biology

Despite a surge in bed bugs over the last decade, they are not a new pest. Bed bugs were a part of normal life in homes around the world until the 1940s. Pesticides with residual effects such as dichloro-diphenyl-trichloroethane (DDT) were introduced to the market shortly after World War II and seemed to all but eradicate bed bugs from North America. These products were cheap, easy to use and their effects could last for months or years after they were applied.

Adults bed bugs are small, light brown, wingless insects. They are relatively flat, round, and about ¼” inch long (about the size of an apple seed). Nymphs are smaller and typically lighter in color. All stages of bed bugs need to feed on blood to grow. Bed bugs are typically nocturnal and usually feed at night while a person is asleep (hence, the likely origin of the term “bed bug”). Bed bugs are master hidiers, when they are not feeding they hide in undisturbed, dark places such as box springs and cracks and crevices within walls, making them difficult to find during inspections.



As mentioned before, bed bugs can move from place to place by hitchhiking onto clothing and other personal belongings like luggage, but they can also move on their own within homes or apartment complexes via floors and wall voids.

### Resurgence

Over the last decade, the appearance of bed bugs has increased with a vengeance and there are a few reasons for this including pesticide resistance, a worldwide increase in people movement as well as society's lack of knowledge on this pest.

Since bed bugs have "returned," they have become increasingly resistant to one particular class of insecticides known as pyrethroids, which comprise most household pesticides. Many chemicals on the market today are proving to not be as effective against bed bugs as professionals hoped, and many liquid pesticides do not have much "staying power" against bugs after they have dried.

While travel, immigration and less effective pesticides have all been linked to the resurgence of bed bugs, no exact reason has been identified. Bed bugs have been known to go where people go and isolated incidents have reported bed bugs to be found on planes, trains, cars and many places in between.

An additional complication when treating for bed bugs is that many times the people who have more severe infestations have psychological and/or physical limitations and therefore the bed bugs don't get reported early. Unfortunately if this is in an apartment setting, waiting until the infestation has gotten out of hand typically means the bugs are already spreading throughout the building making the problem much worse.

As of now, nothing on the horizon appears to slow the resurgence of bed bugs and nothing will get rid of them the way we were able to in the 1950s. It's not all bad news though- it is possible to control infestations and eradicate the bugs after you've found them whether it's at home or the fire station.

### Monitoring & Treatment

The first question is whether or not you have bed bugs. Bed bugs are attracted to carbon dioxide (CO<sub>2</sub>), heat, and chemicals released through the skin such as sweat. These three things can be used to attract and capture bed bugs and monitors that use these as attractants are called active monitors. Passive monitors, such as glueboards, are those that have no attractants and most have been found to be not as effective as monitors that use attractants. There is no harm in using glueboards for monitoring purposes, however it is important to note that the absence of bed bugs doesn't mean that there are none in a home. While CO<sub>2</sub> is one of the best attractants for bed bugs, there are few currently available on the market and most are cost prohibitive. Early detection is key to ensuring that infestations don't get out of hand and make it easier for pest control companies to eradicate a low-level infestation (typically defined as less than 20 bugs).

Interception devices have been the most widely researched devices for bed bug monitoring and can be broken in two categories- under-the-leg and free standing. Under-the-leg monitors (such as SenSci BlackOut®, pictured below) are used exactly where the name implies- directly under

the legs of beds, couches, and chairs. These monitors use the host as the attractant; when bed bugs are walking along in search of a host, they fall in the monitor and can't get out. Free standing monitors sit on the floor, not underneath legs of beds and couches, and are often used with an attractant (such as SenSci Activ®Volcano®). Interception devices have been proven to be 80-95% effective at detecting all levels of bed bug infestations within 4 weeks of installation. In addition, they can provide valuable information when used as part of a known infestation that is being treated.



SenSci BlackOut® Under-The-Leg monitor



SenSci Activ®Volcano® Free Standing monitor

## Treatment

When we talk about treating for bed bugs, most people want to talk about pesticides. Although pesticides can be a viable option for treating bed bugs they shouldn't be solely relied upon as there has been many cases of resistance reported throughout the world. A liquid pesticide should be used to treat surfaces consistent with label directions as well as a dust to treat cracks and crevices, which is where many bed bugs are hiding in the first place.

Heat is also another effective method of killing bed bugs; live bugs and eggs will die when heated to temperatures of 120°F and above. Simply putting suspected garments and bedding into a hot dryer for at least 30-40 mins is enough to kill any remaining bugs or eggs.

In addition to pesticides and heat, bed encasements can be used to protect bedding from bed bugs as well as trap any bed bugs hiding in the bed and box spring. Vacuums can be used to remove visible bed bugs, making sure that vacuums are cleaned thoroughly of captured bed bugs. Steam can be used to kill bugs and eggs on contact. Monitors, as mentioned before, can be used as part of a treatment program in order to catch bugs between inspections and treatments.

## Conclusion

There are many effective, simple, and non-chemical methods that can be used in combination to free a fire station of bugs while also monitoring for future infestations. If you've been in a home that you suspect may have bed bugs then isolation and inspection of your suit and equipment is key to preventing the spread of bed bugs to your station or home.

Being proactive and taking the necessary precautions will not only decrease the likelihood of bed bug populations becoming established in your station, but will also ensure that you don't bring bed bugs home with you.

Call-out box for the article:

### Inspect and Isolate

- Inspect your Turnout gear and equipment immediately if you suspect you've been in a home with bed bugs. Dry your station wear on the highest heat setting available for at least 30-40 minutes to kill any bugs and eggs. If this isn't possible, place items in a sealed plastic bag or airtight container until they can be laundered.
  - If bugs are found during inspection, remove the bugs and dispose of them in an outdoor trash receptacle or in the toilet
- Install interception devices for proactive monitoring. Interception devices such as the SenSci BlackOut® and Volcano® can be used in a variety of settings.
- Early detection is critical. Identifying a bed bug infestation when there are only a handful of bugs will help with ease of treatment and also alleviate costs.