

## Excluding Bats From A Structure

If bats are located in the attic of a structure, the following procedures should be employed:

- All openings connecting the attic to inside living quarters should be sealed.
  - Draft guards and weather stripping should be applied to doors and hatches into attics.
- All openings into the attic should be sealed and bat excluder(s) should be installed.
  - Electrical and plumbing holes, cracks and crevices should be filled with steel wool, caulking, weather stripping, flashing or screening.
  - Caulk should be applied early in the day so that it is dry by evening.
- Bat excluders or devices that function as one-way valves must be placed over the openings bats use to enter and exit. The structure owner is advised to observe the entrance and egress sites of the bats. The image below shows examples of openings where bats may enter and leave structures.

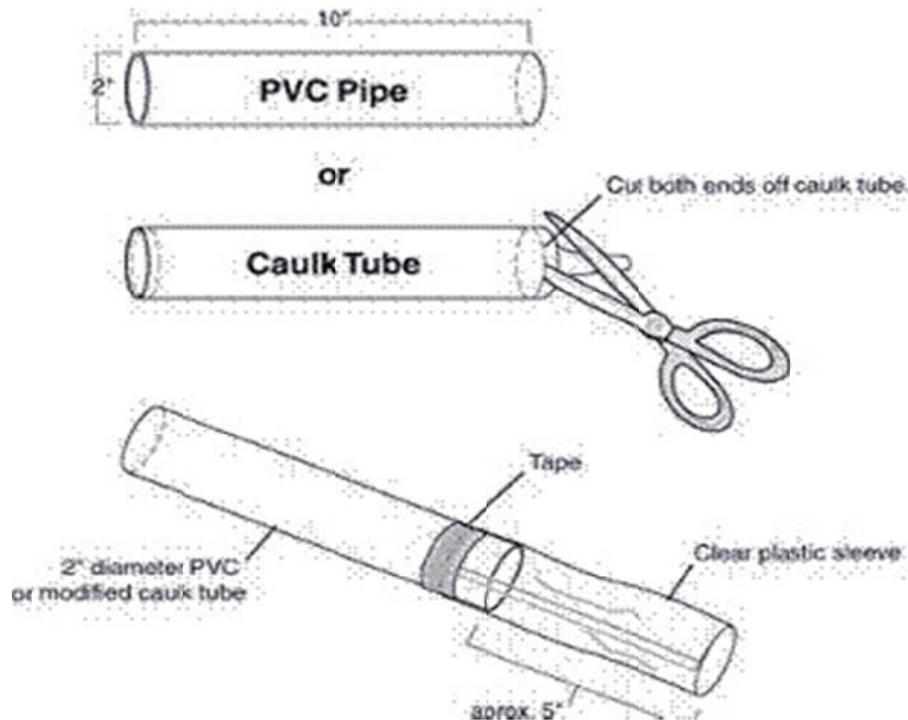


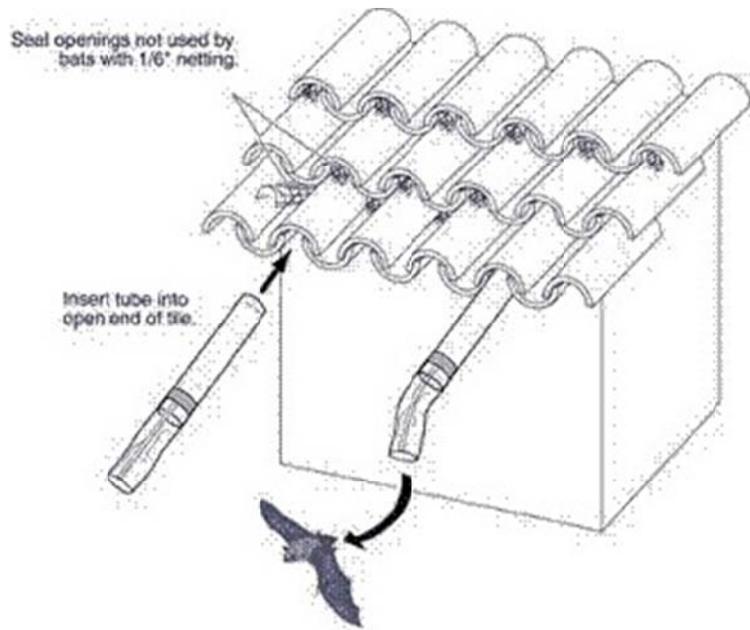
- These one-way valves or bat excluders allow bats to leave, but not reenter the building. These exclusion devices should be left in place for five to seven days to ensure all bats have exited. It is not appropriate simply to wait for bats to fly out at night and then seal openings. Not all of the bats leave at the same time, and some bats may remain inside all night. Take weather conditions into consideration when deciding how long to leave the netting or tubes in place; there may be evenings (such as during storms), when no bats exit.

Construction of one way valves or bat excluders:

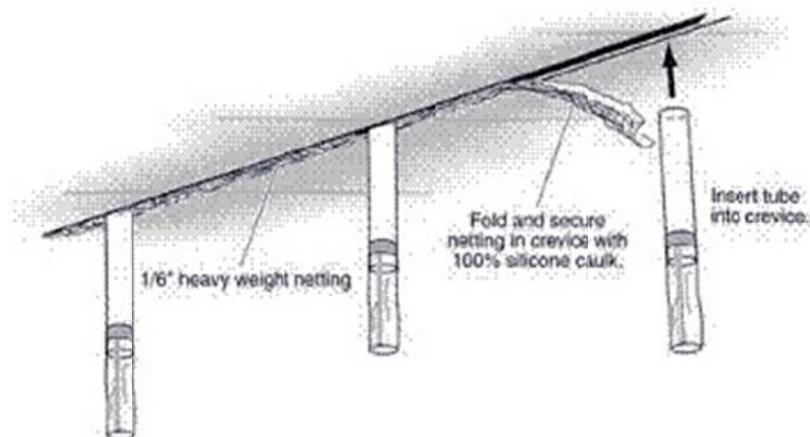
Excluders may be constructed from lightweight plastic pipes (pvc pipe) or tubes (empty caulk tubes). Make sure the surface on the interior of the pipe or tube is cleaned and smooth before use.

- Excluder tubes should have a 2 inch diameter and should be 10 inches in length. Flexible tubing can also be used, especially when sealing irregular openings into the structure.

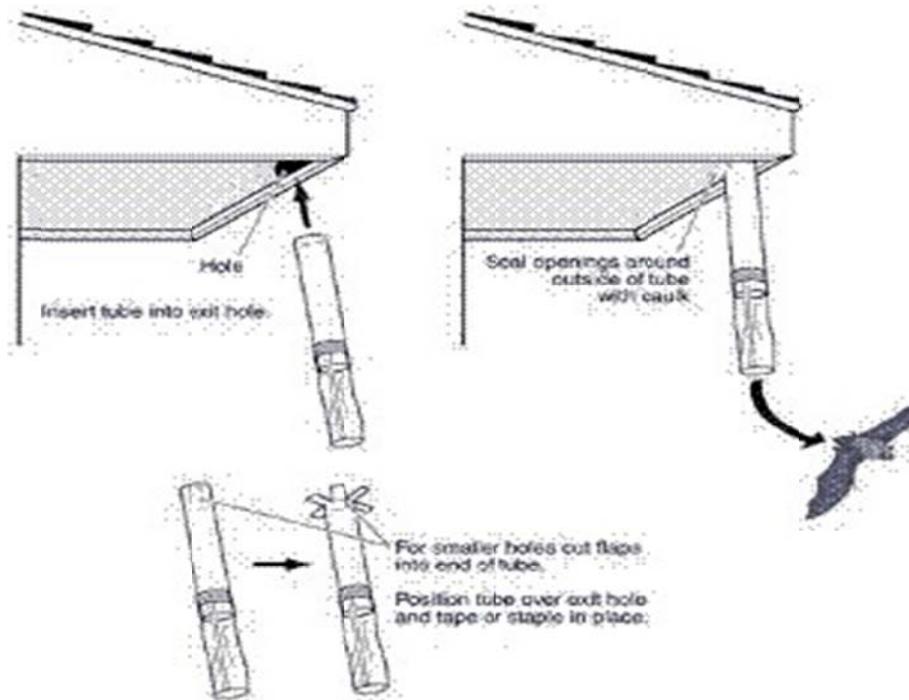




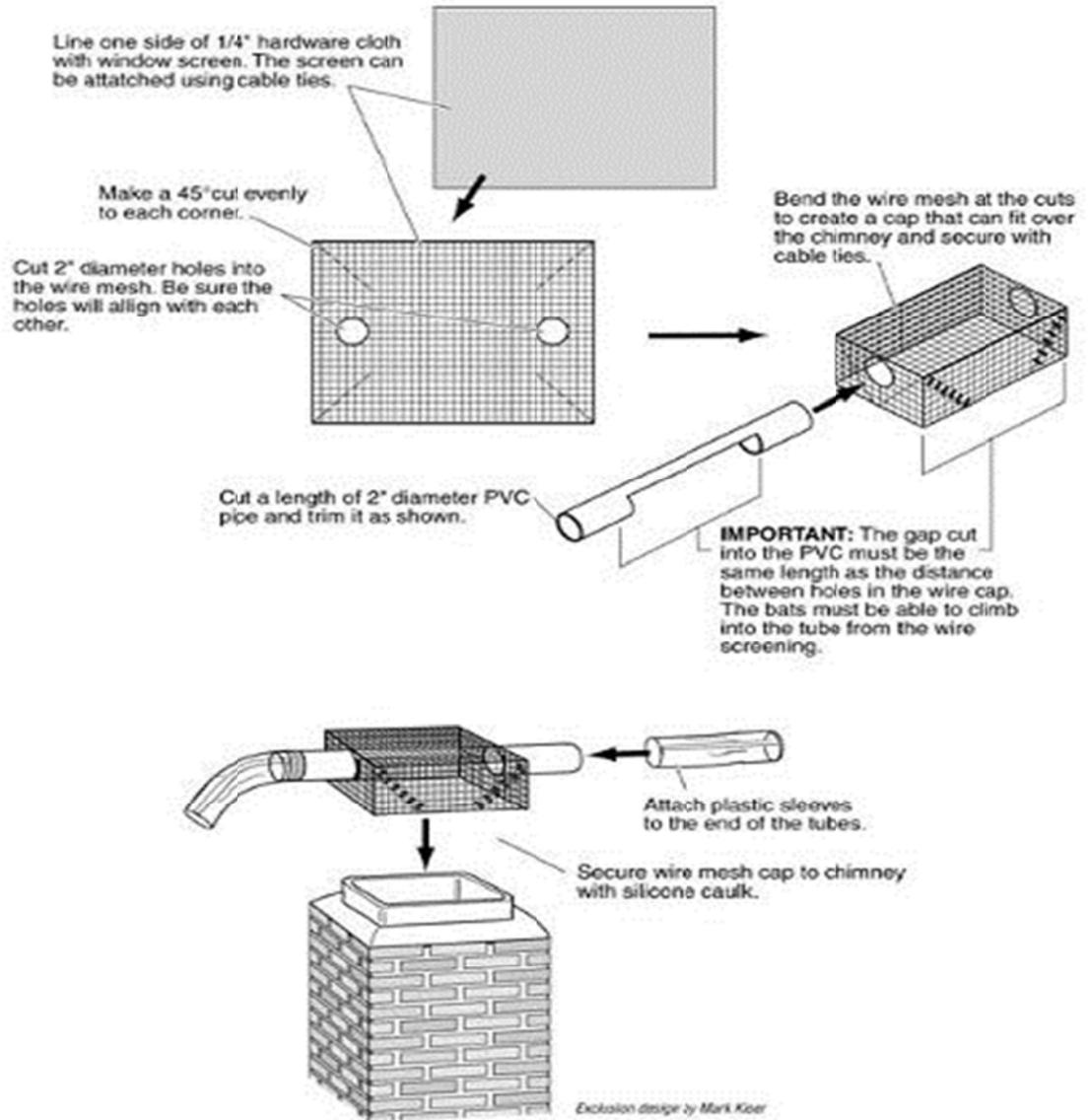
- When elongated crevices are present, multiple excluders need to be placed every few feet along the length of the crevice. The other areas of the crevice must be sealed with materials mentioned above.



- Do not let the tube extend more than  $\frac{1}{4}$  inch into the bat's dwelling (attic).
- Once the tube has been inserted into the hole, a piece of lightweight, clear plastic can be taped around the end (a long shirt sleeve can be substituted) of the tube that projects to the outside. Plastic sleeves or shirt sleeves collapse on themselves, preventing bats from reentering after they have crawled through the tube.



- Any spaces between the outer rim of the tube and the building must be sealed shut. Remember, all other openings into the building must also be sealed.
- Leave the tube in place for a minimum of five to seven days to assure the exit of all bats.
- After the bats have been excluded, the tube should be removed and the opening permanently sealed.
- Special modifications may be needed when bats roost in chimneys or in separations between chimneys and roofs. If bats are roosting inside the chimney, construct a wire cage from 1/4-inch hardware cloth lined with window screen. A section of PVC pipe can be cut and then inserted through holes cut into the sides of the wire cage (see diagram). Although bats are able to simply drop down and out of a vertically placed tube that extends below the roost, they are not able to grip the slick surface to crawl out if the tube extends upward above the roost. Therefore, the tubes should project horizontally or down. A collapsible plastic sleeve should be placed over the ends of all exclusion tubes used on chimneys. Once the bats have been excluded, a chimney cap should be installed.



Exclusion is the ONLY effective solution for permanently removing bats from buildings. Trapping and relocating is ineffective since bats have excellent homing instincts and simply return, even when released at great distances. The use of pesticides against bats is illegal and counterproductive. Poisoning greatly increases the likelihood of bats coming into contact with people and pets.

Naphthalene, the active ingredient in moth balls, and ultrasonic devices are often promoted as bat repellents. However, ultrasonic devices are ineffective against bats, and to be effective, naphthalene must be used in such large quantities that it poses a significant health hazard to humans.

This information was excerpted from *Bats in Buildings: An Information and Exclusion Guide*, which is available on the Bat Conservation International website: <http://www.batcon.org> .