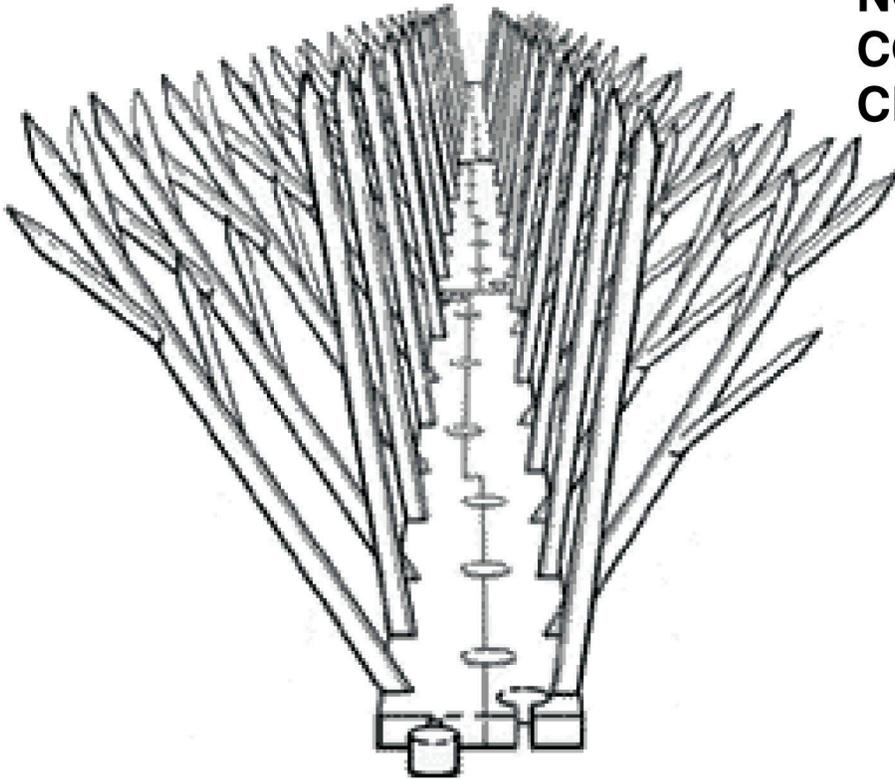


SPIKES® NEEDLE STRIPS

**NOTHING
COMES
CLOSE!SM**



INSTRUCTION MANUAL

Designed and manufactured by:



Chicago, IL USA

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INTRODUCTION

Bird-X, Inc. is proud to announce the development of **SPIKES®** Needle Strips, based on the latest in technology and materials.

Since 1964, **Bird-X, Inc.** has been recognized worldwide as the Bird Control "X-Perts." **Bird-X** is the only company anywhere that sells a *complete* line of bird repelling products, including ultrasonic and sonic sound generators, visual scare devices, non-toxic chemical roosting inhibitors, iridescent diffraction foil, netting, and polycarbonate needle strips. New products are continuously being developed.

Bird-X, Inc. specialists have become experts through long experience and extensive research. Our sales consultants are able to analyze problems and make recommendations based on each customer's specific needs. In addition, **Bird-X, Inc.** maintains and avails to customers a library of application case histories and other reference materials.

WHY CONTROL BIRDS?

Droppings are unsightly, unappealing, and render walking surfaces underfoot slippery and dangerous.

Birds and their droppings create unsanitary conditions and can cause over sixty transmissible (some even potentially fatal) diseases.

Droppings cost money. Cleaning crews, related equipment, and time spent can generate large financial outlays unrecoverable by revenues.

Birds are destructive to property, equipment and merchandise, any of which can lead to large financial losses. They deface rooftops, floors, walls, vehicles and equipment. They halt operations and make repairs necessary by entangling themselves in machinery or downing power lines. They spoil inventory by eating spillage, contaminating pallets of food, drugs or chemicals, or by bombarding aircraft and other durable goods with uric acidic excrement. They nibble at, or even tear out insulation. The corrosive effect of droppings causes irreversible damage.

USDA, OSHA, local health boards and other governmental organizations can cite and fine companies for bird mess problems, and even shut down those that leave problems uncorrected.

SPIKES® NEEDLE STRIPS

BRIEF DESCRIPTION OF PRODUCT AND HOW IT WORKS

SPIKES® Needle Strips, developed by the Bird Control "X-Perts", is a simple, humane, maintenance-free, permanent solution to the problem of pest birds. Needle strips have been used successfully on buildings and structures worldwide by architects, building/facility owners and managers, public works officials, public health personnel and more. Properly installed, **SPIKES®** will eliminate roosting and nesting surfaces and landing strips, both existing and potential. Birds avoid alighting on surfaces treated with **SPIKES®** for the same reasons that humans avoid walking on a bed of nails. **SPIKES®** is not lethal, just extremely uncomfortable.

SPIKES® Needle Strips is a one-piece mold of transparent (therefore unobtrusive) polycarbonate, including base and spikes projecting to one side. The mold is then ultrasonically welded to its mirror image so that spikes will project to both sides. "Branches" protrude from vertical projections to offer fuller coverage. Note: **NARROW SPIKES®** is simply half the width of **STANDARD SPIKES®**, in order to cover efficiently ledges less than 2½" wide.

SPECIFICATIONS - SPIKES®

| | | |
|-----------------------|---------------------------------------|-----------------------------|
| Dimensions: | Height (Highest Point) | 4½" |
| | Width (Base) | 1" (Standard) ½" (Narrow) |
| | Width (Widest Point) | 4½" (Standard) 2¼" (Narrow) |
| Net Weight (per 100') | 11# | |
| Material: | Polycarbonate | |
| Packaging: | Kits of 10', 25', 50' and 100' | |
| Color: | Clear | |
| Resistance: | Weather, most chemicals, UV radiation | |

SPECIFICATIONS - SPIKES® Special Adhesive (MSDS available upon request)

SPIKES® Special Adhesive, part #SSA from Bird-X, Inc. is a high-performance elastomeric adhesive. It exhibits exceptional bonding to a broad range of materials including metal, glass, plastic, composite, tile, cement, rubber, leather, wood and vinyl.

| | |
|------------------------------------|--|
| Waterproof, Flexible Bond | Non-Flammable |
| Color: Clear | Drying time 24-48 hours |
| Working Time 15 minutes | Durability: estimated to exceed 20 years |
| Shelf Life: 1 year unopened | Size: 10.5 oz. cartridge |
| Application: standard caulking gun | |

PRE-INSTALLATION

No two bird infestation problems are exactly the same. Treat yours as you would any well engineered project, and begin with research. Success depends on timing, organization and diversity. Collect and consider information related to the bird problem that may have bearing on the actual installation and its success:

Survey the birds. Gather specific data as to the type and population of birds, length of time of their residence, flight and time patterns, entries, exits and favorite areas, and nesting, feeding and roosting habits.

Survey your property. Discover what the birds find attractive about your area (food, shelter, hidden recesses...), and whether the same conditions prevail in neighboring properties. Note overhangs or foliage above current infestations.

Remove all inducements. Before installing **SPIKES® Needle Strips**, make sure to clean the area of all evidence of birds: nests, fledglings, droppings, dead birds, and the residual scent. (Adult birds are likely to return to their young in order to protect them or to assist them in leaving the area.) Also remove food spillage, garbage, nesting material and other items that may be appealing to birds.

Maintain a clean and changing environment. For maximum effectiveness, periodically clean the area of nests, debris and droppings. This should be done often on a new installation to ensure that birds do not drop debris into the needles.

Install early. It is always best to install **SPIKES® Needle Strips** before "bird season" begins; it is easier to keep the birds away than to rout them out once they have already established a living pattern.

Use products synergistically. Different kinds of devices (add a visual device or a sound repeller) produce a synergistic effect -- in combination the products yield much greater effectiveness than SPIKES alone. You may find this necessary if there are certain areas where it is undesirable or impractical to install spikes. This will maximize effectiveness throughout the entire property.

Contact **Bird-X, Inc. (312) 226-2473** regarding "companion" products.

Consider alternate locations. Make educated guesses as to where the birds will go when they are repelled from their current infestation. It may be very easy for birds to relocate to the other side of a roof, or to an nearby gutter or pipe. **SPIKES® Needle Strips** should be applied to these adjacent areas as well.

Familiarize yourself with the legal and public relations environment. Find out about related environmental laws in your area.

Precaution: **SPIKES®** are non-lethal. However, the actual projections are quite sharp, and care should be taken during installation and handling. Protective gloves may be worn.

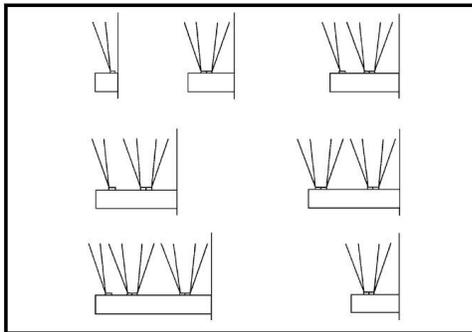
INSTALLATION

SPIKES® can be mounted on any surface whether flat, curved or irregular, and on any material, whether masonry, metal, canvas, glass or wood. Stackable 12" units affix quickly with **SPIKES® Special Adhesive**, screws, nails, wire ties, etc. Because each unit is exactly one foot long, measurement of the area to be protected quickly yields the number of units needed. A unit may be cut easily to fit lengths less than 12". Always firmly attach **SPIKES®** - never balance sections precariously or wedge them.

COVERAGE

Keep in mind that **SPIKES®** is only effective where it is applied; nearby areas unprotected by **SPIKES®** can encourage roosting. Make a working diagram during the measuring stage; it will translate into a well-covered installation.

Spacing: Measure (accurately) the *width* in inches of each area to be covered. For every 4" of width, use one row of **SPIKES®**; for fractions thereof, use one row of **NARROW SPIKES®** (equivalent to one-half row of **SPIKES®**). The projections from **SPIKES®** should extend at least ½" past the exposed edge or edges of the area.



Correctly spaced installations for various surface widths plus projections extending exposed edge

Calculation of Linear Feet Needed: Measure (accurately) the length in feet of each area to be covered, allowing for curves or bends in the surface - flexible **SPIKES®** will follow easily. Based on length (multiply each length by 2, 3, 4 etc. if necessary for each width as discussed above in **Spacing:**), order an appropriate amount of **SPIKES®**.

AFFIXING SPIKES® TO SURFACES

SPIKES® is versatile, and easily attached to surfaces of every size, shape and material. Use any of the following methods, or devise your own.

SPIKES® Special Adhesive: apply a bead of adhesive to underside of base. Firmly press **SPIKES®** onto surface so that it makes solid contact. Allow adhesive to dry. (Adhesive will form a "rivet" through the holes in the base.) Bond only to dry, clean surfaces. If two installers are working, one can carry a quantity of stacked units in one hand, and apply adhesive with the other hand, while another affixes each unit to the surface. If one installer is working, he/she

can lay each unit upside down (base side facing up) on the surface, in the place it is to occupy. Working along the line, the installer can apply adhesive to each base, then turn the unit over and affix it to the surface. ***SPIKES® Special Adhesive** is available from Bird-X, call 312-226-2473. One tube will affix approximately 20 linear feet of SPIKES®.*

Screws: Use #12 flat Phillips-head screws and a screwdriver with a shaft of at least 4".

Nails: Use 1/8" nails and a nail set.

Wire Ties: Recommended for cabling, piping and thin railings.

Clamps or Velcro®: Use for temporary installations.

GUIDE TO EFFECTIVE INSTALLATIONS (Reread PRE-INSTALLATION.) Thorough and proper planning, installation and follow-up maintenance are essential to the success of a bird control program.

Preparation: Surface must be properly cleaned, disinfected and repaired if damaged. During disinfecting, wear appropriate face, hand and body protection to avoid health hazards. See WHY CONTROL BIRDS? Next, remove any overhanging branches or foliage above the surface to be protected so birds cannot land to drop nesting material into **SPIKES®**.

Thorough Coverage: **SPIKES®** must be installed on all existing and potential lighting, nesting or roosting areas. Also install **SPIKES®** as necessary to surfaces directly above the currently infested areas, so that birds cannot drop debris into the **SPIKES®** from these higher surfaces.

Creative Coverage: Carefully, methodically cover all exposed surfaces and all inside corners and crevices. Because birds are creative and stubborn, complete protection of an area may require vertical, sideways, diagonal or upside down mounting, in addition to the standard flat, right-side up mounting.

APPLICATIONS

SPIKES® Needle Strips are designed to act as an important aid in routing birds from their infestations. Creativity and experimentation will govern. The Bird Control "X-Perts" are always available to offer suggestions; please contact **Bird-X, Inc. (312) 226-2473**. The illustrations below suggest a few of the countless application possibilities.

Louvers, Eaves:

Air conditioners: Use multiple strips to cover the entire depth.

Ledges, Sills, Gutters and Pipes:

Beams, Trusses, Support Structures:

Signs, Letters, Church Crosses: Carefully follow the shape on each letter or structure and cover every surface or crevice in which a bird can roost. **SPIKES®** is very flexible and can make both

concave and convex curves.

Bell Towers or Domes: As **SPIKES®** is very flexible, the bell can be covered with multiple strips of **SPIKES®** radiating outward and downward from the highest point of the dome.

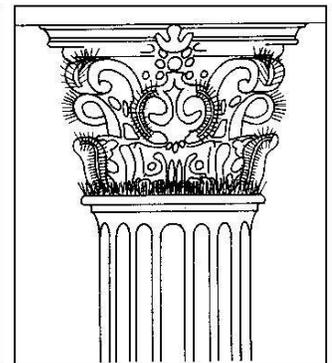
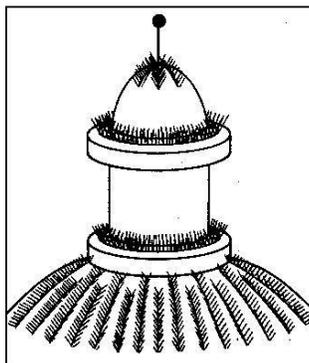
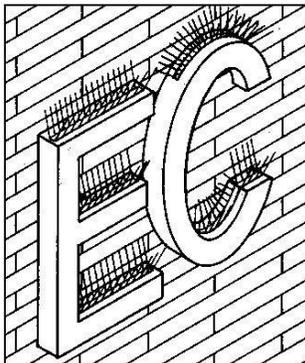
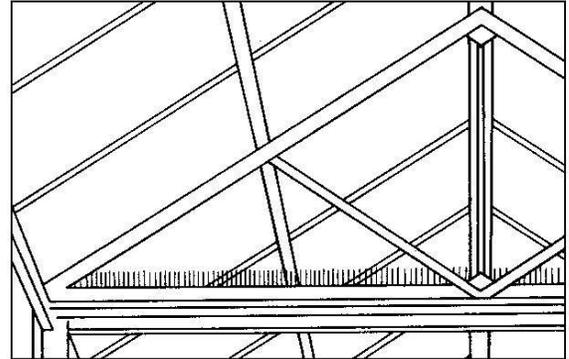
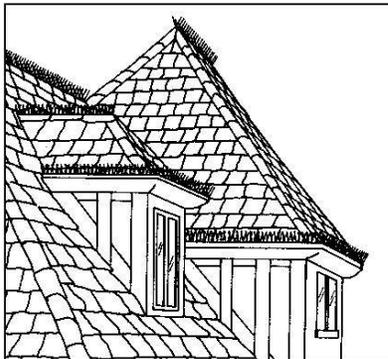
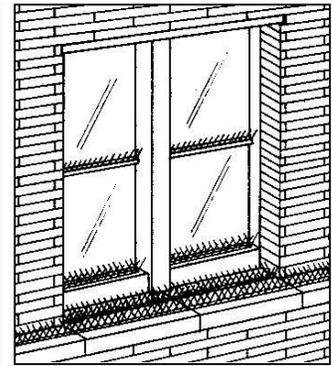
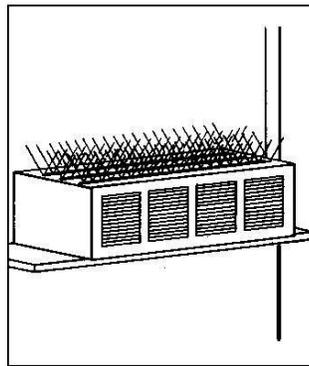
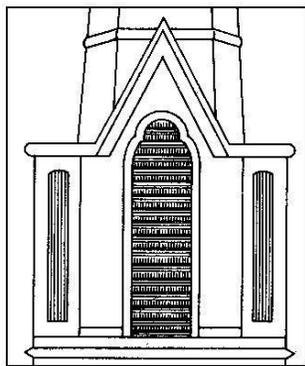
Statues, Columns, Cornices: Apply to base, and around head, arms, curves, crevices and openings.

Roofs: Apply to roof perimeter, chimney, antennae, and the ridge on a gabled roof. Apply **SPIKES®** to the inside of a chimney, with the projections facing horizontally inward, to prevent animals from entering.

Cables: Any cable thick enough to support a bird is strong enough to support **SPIKES®**.

Application is easy since the base is only 1" wide (base of **NARROW SPIKES®** is ½" wide.)

Trees: may be applied to tops of branches to prevent birds landing; also may be applied in separate rings around a tree trunk, first one 4' from the ground, then higher at 5" intervals, with projections extending horizontally, to discourage animals from climbing. (This defense against animals can also be used on Bird Baths and Bird Feeders.)



TROUBLE SHOOTING

Bird-X is very proud to have built a reputation of trust with distributors and end users. Based on our experience, we offer the following information: Every bird infestation presents a unique challenge. No two problems are identical, as numerous variables affect each one. Besides the obvious differences (such as type of bird, size of infestation, type of structure and physical location), there are many additional environmental factors that make it impossible to state rigid rules for the optimum utilization of **SPIKES® Needle Strips**. The following are suggestions to help maximize effectiveness, but experimentation is often required to find the ultimate solution. Birds are creatures of habit, and very stubborn. When **SPIKES®** are first installed, they will try to reclaim their previous areas, and may even attempt to alight. While they will be quickly discouraged, they will seek alternate locations (see below).

Ensure that the installer has first read this manual and completely understands the installation procedure.

Install sufficient linear feet of **SPIKES®**

Install sufficient rows of **SPIKES®** on surfaces wider than 5"

Ensure that non-yet-infested areas have been treated also. If pest birds are successfully routed from their original location only to move to a nearby untreated area, all efforts will have been in vain.

Ensure that the infested area has been cleared of nests, debris, etc., and cleaned and disinfected.

See **GUIDE TO EFFECTIVE INSTALLATIONS**. It may be necessary to repeat these steps.

If a flaw exists in the application, birds may find it and infest. It may then be necessary to amend the application.

WARRANTY

Manufacturer's Warranty: **SPIKES® Needle Strips** are warranted against defects in materials and workmanship for a period of one year from the shipping date. At the option of **Bird-X, Inc.**, the defective material will be either replaced or repaired.

SYNERGY AND OTHER PRODUCTS

You may find certain areas where it is undesirable or impractical to install spikes. If this is the case, we suggest that you protect these untreated areas generally by using other products (visual repellents, sound repellents) in conjunction with the spikes. This will maximize effectiveness throughout the entire property. Call (312) 226-2473 or visit www.bird-x.com for information on companion products.

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