

AviAngle® Operator's Manual



MANUFACTURER

Bird-X, Inc. AviAngle® is manufactured using Rigid PVC with UV inhibitors; resistant to virtually all weather and harsh environments when installed according to the manufacturer's instructions.

PRODUCT DESCRIPTION

AviAngle® is a Bird Exclusion device that excludes all pest birds and wildlife from ledge-based areas. A ledge is defined as any horizontal flat surface area that projects out from wall or similar structure. The combination of the smooth surface of the UV protected PVC material and the angle of the AviAngle® prevents birds and wildlife from being able to get a stable foothold on the areas that have AviAngle® installed. As such, birds and wildlife are permanently excluded from the treated areas.

AVIANGLE® APPLICATION AREAS

AviAngle® can be installed on several types of ledges and surface types where there is a flat surface and a back support section that creates a 90-degree angle. All ledge types and sizes such as eaves, I-beams, concrete girder ledges, angle iron, and more. AviAngle® applications include parking garages, structural eaves, bridges/overpasses, and more. Since AviAngle® is modular, you can cover virtually any ledge depth without excess material waste.

TARGET PEST BIRD SPECIES

All bird species (Pigeons, Starlings, Sparrows, and Swallows), Bats and Wildlife.

Complete AviAngle® Product Line

The AviAngle® Product Line is designed to exclude all pest birds and animals from landing on ledges. Birds, as well as other wildlife, are not able to obtain a level position and are unable to remain on treated areas and thus are excluded from treated areas.

Overall, the AviAngle® Base Unit is mounted on a flat surface to create a 45-degree angle. The depth of the surface area will determine what, if any, extender sections will be needed.

AviAngle® can be installed using polyurethane adhesive, wood screws, nails, or clamps, depending on the surface area and application.

AviAngle® is the industry standard on public and private RFPs. If installed properly, AviAngle® is long-lasting and requires NO maintenance.

AVIANGLE® BASE UNIT

1. AviAngle® Base Unit will cover approximately 6" of ledge depth when installed without any extender sections.
2. The top section of the AviAngle® Base Unit has score lines to score and snap off excess materials so that you don't need to use a table saw to trim excess materials.
3. The AviAngle® Base Unit has a vertical front drop-down leg. This feature allows:
 - a. The drop-down leg has adhesion ridges for better adhesion with the surface area.
 - b. The drop-down leg covers any deficiencies in the surface ledge area, whereby the birds or other animals can get a foothold between the ledge imperfections. Thus, providing complete exclusion of treated areas.

SHORT-EXTENDER

1. The AviAngle® Short-Extender is designed to provide installers the option to cover larger ledges with the AviAngle® product.
2. The AviAngle® Short-Extender adds approximately 3.7" to the AviAngle® Base Unit.
3. There is a mounting clip at the bottom of the Short-Extender. The mounting clip attaches to the top of the AviAngle® Base Unit to provide a greater coverage area for larger ledges.

LONG-EXTENDER

1. The AviAngle® Long-Extender adds approximately 7.2" to the AviAngle® Base Unit.
2. There is a mounting clip at the bottom of the Long-Extender. The back section of the clip is longer to allow easier mounting to the Short or the Long Extender of the AviAngle® Product Line and to create greater surface area for adhesion. Once PVC Cement is applied to the top of the AviAngle® Base Unit or to the Extender, it can be installed onto the AviAngle® Base Unit.
3. The clip also has adhesion ridges for increased adhesion.
4. At the top of the Long-Extender is a return leg. This drop-down return leg features adhesion ridges to increase adhesion and ensure the proper angle is maintained on the surface.

AVIANGLE® UNIVERSAL BASE JOINDER

1. When multiple sections of AviAngle® need to be joined together, the installer will use a Joinder to join the two sections of AviAngle® together.

AVIANGLE® UNIVERSAL END JOINDER & END CAP

1. When the ends of the AviAngle® are open, the installer needs to install an end cap to close off the area under the AviAngle®. The installer will first install the End Joinder. See diagram. The End Joinder is designed so that a slight gap remains between the AviAngle® Base Unit and the End Joinder and End Cap. When looking at the End Joinder, you will see a section of the Joinder that has an ID Stopper. This is the side of the Joinder that gets installed onto the face of the AviAngle® Base Unit. Now, take the End Cap and fit it accordingly. Trim off any excess, insert the End Cap into the End Joinder to close off the end of AviAngle® Base Unit. Note that we recommend applying PVC cement to the End Cap when installing it into the End Joinder.

SUPPORT

Bird-X has the most knowledgeable and experienced sales consultants in the industry. From initial bidding, custom consultations, product recommendations, and installer referrals, Bird-X is prepared to assist with project evaluations.

Call 1.800.662.5021 or email solutions@bird-x.com for more information.

Installation Guide

BEFORE YOU START

Examine the installation area. Notify the architect and/or contractor of any hazardous or detrimental work conditions prior to starting the installation. Do not proceed until work conditions have been corrected.

SURFACE PREPARATION

- Surfaces should be inspected and cleaned before beginning installation.
- Remove debris and make repairs as necessary – fallen tree branches, brush, peeling paint, loose parts, rubble, rust, etc.
- Use Bird-X Safety Solvent to clean and remove bird droppings and other residue from surfaces.
- Highly recommended that treatment area(s) are thoroughly power-washed prior to the installation.
- Make sure surfaces are dry before installation.
- The ideal outside temperature should be above 50 degrees Fahrenheit. For applications that are below 50 degrees Fahrenheit, the installer should use a polyurethane adhesive rated for colder temperatures and appropriate surface areas.

MOUNTING SYSTEMS

- Recommend using a polyurethane adhesive for all surfaces when installing AviAngle®. The installer must test the section of AviAngle® and the adhesive in the test area prior to installing AviAngle® to ensure proper adhesion. Installer must follow all recommended instructions for applying adhesive, e.g. prep instructions, application temperatures.
- Screws – #12 flat Phillips-head wood screws
- Clamps – for temporary installations

REQUIRED TOOLS

- 25' tape measure
- Grease pencil
- Razor blade knife
- Hand saw
- Compound miter saw 12" throat, table saw, tin snips
- Electric grinder (preferably cordless)
- Caulk gun and heavy-duty construction adhesive (we recommend you use an electric caulk gun)
- Oscillating multipurpose tools for cutting with fine tooth
- Access equipment or ladder (varying with installation height)



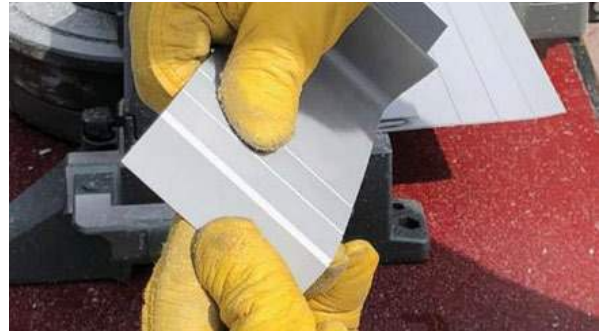
CRITICAL STEP

The installer must have a compound miter saw with a deep enough throat (recommended 12") to properly cut the AviAngle® Base Unit. Prior to making any cuts, the installer must make sure that the blade is appropriate for cutting the size/type of materials to avoid damaging the materials or injuring themselves. In most cases, **THE SAW BLADE NEEDS TO BE FLIPPED WITH THE TEETH FACING OUT AWAY FROM THE SAW.** This will ensure that when cutting the materials will not splinter and crack. Furthermore, you must use a finishing blade with 96 number of teeth. Recommended to cut a test piece first prior to cutting all sections.

Whenever using power tools, be sure the wear safety glasses, particle mask and appropriate personal protective equipment.

INSTALLATION PROCESS

- Install AviAngle® according to the Bird-X installation instructions.
- Install before 'bird season' begins – it is easier to keep the birds away than to route them out once they have already established a living pattern.
- Ensure that surface area is clean and dry (see Surface Preparation section).
- Note for applications where AviAngle® will be fit between end sections, e.g. like between cross sections in a parking garage, allow for 1/8" – 1/4" gap on both sides to allow for expansion and contractions of the AviAngle®.
- Measure the ledge depth to determine what AviAngle® sections are needed (AviAngle® Base Unit, AviAngle® Short-Extender, AviAngle® Long-Extender).
- Once you determine the appropriate AviAngle® sections, measure the lengths of the areas that need to be installed with AviAngle®. Determine the total linear footage required to complete the installation.
Note: We recommend adding 10% - 20% to the overall total linear footage. This way allows for any cut adjustments or additional areas. AviAngle® pieces come in 4' sections. (+/- 0" - 1")
- When taking measurements, ensure that the lower measurement and the top measurement are the same. More specifically, when measuring a parking garage, in most cases, the lower ledge is slightly longer than the top section. The top section is typically pitched in which would make the top section slightly smaller.



AviAngle® has pre-measured scored areas making it easy to cut without the use of a saw.



To cut, place the AviAngle® section face down with the base closest to the saw's center. Cut the desired length.



AviAngle® can be cut either straight or with a miter cut in order to fit the area that needs to be covered.



JOINING AVIANGLE® BASE UNIT WITH SHORT-EXTENDER OR LONG-EXTENDER



It is recommended that you do a dry fit without adhesive to ensure all cuts are correct.



Next, take PVC cement and apply to the top section of the AviAngle® Base Unit or extender.

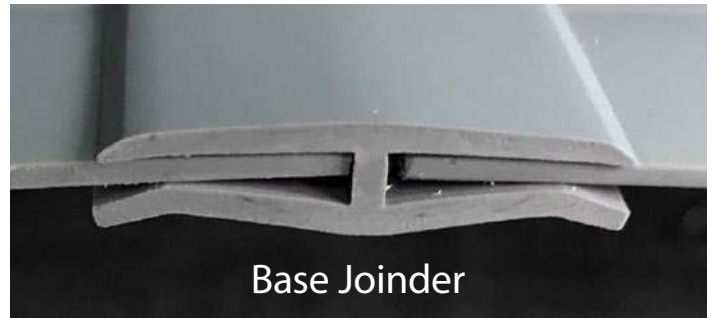


Clip on the AviAngle® Extender Sections and press firmly together. Allow section a few minutes to dry. In most cases, we recommend assembling several sections and allowing them to dry and then going back to install.



HOW TO JOIN MULTIPLE SECTIONS OF AVIANGLE®

When multiple sections of AviAngle® need to be joined together, you can use a Joinder to combine these sections of AviAngle® together. There are a variety of ways to join these sections together – please see the images below for samples.



Base Joinder

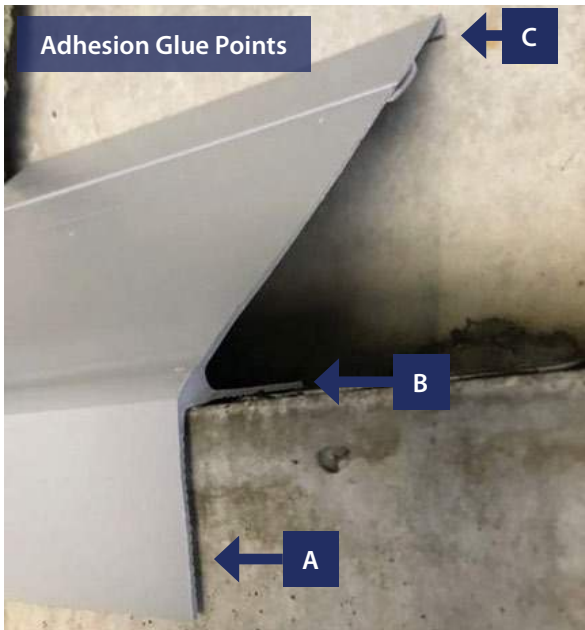


Extender Overlap



Joinder of Bases

WHEN INSTALLING AVIANGLE® TO CONCRETE OR METAL SURFACES



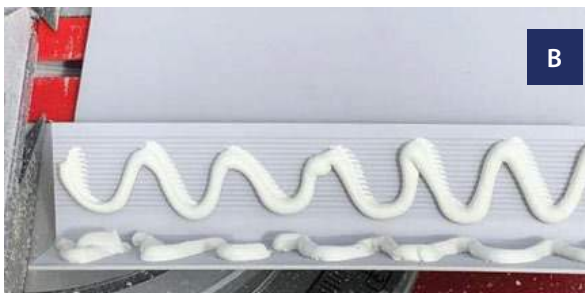
The installer must create a test section of AviAngle® and adhesive prior to installing AviAngle® to ensure proper adhesion. The installer must follow all recommended instructions for applying adhesive, e.g., prep instructions, application temperatures. Now that you have your complete AviAngle® sections together, apply adhesive to the front drop-down leg, the underside of the base plate that rests on the ledge, and the top drop-down leg at the top of the Top-Extender. Note that when applying adhesive to the front drop-down leg and the underside section, applying on a “S” pattern on the adhesion ridges will maximize adhesion rather than applying the adhesive in a straight line. Next, install your section of AviAngle® to the surface area. Firmly press down (15-30 seconds) to ensure that the adhesive is evenly displaced and not raised in any areas, and that a 1/8” – 1/4” space is even on both sides.

WHEN INSTALLING AVIANGLE® TO WOOD SURFACES

For affixing to wood, the installer would still follow the same application steps as described for concrete or metal applications. For additional support, the installer can use wood screws in the base plate to secure the AviAngle® Base Unit onto wood surface areas.

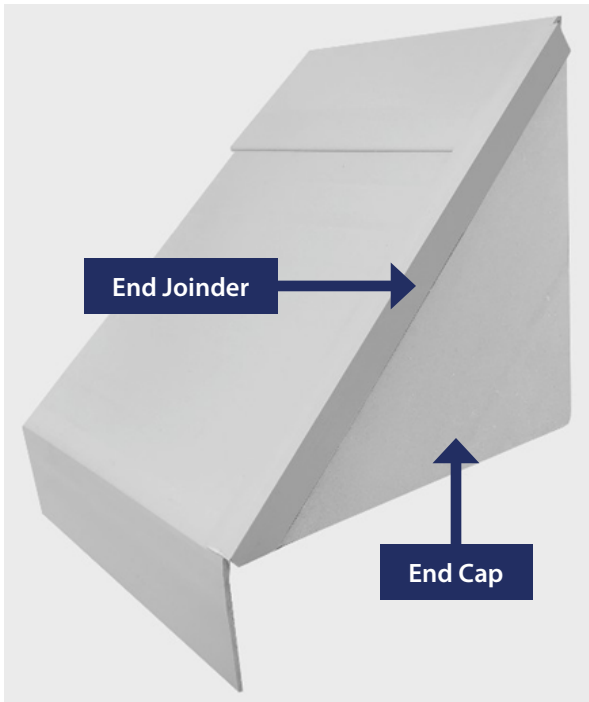
WHEN INSTALLING AVIANGLE® TEMPORARILY

For temporary installations, beam clamps can be used to secure the AviAngle® base to the metal ledge/beam. This can be accomplished by clamping on the ends to secure the AviAngle® base to the beam or a section can be cut into the front face to slide the beam clamp between the two sections.



WHEN INSTALLING AVIANGLE® ON UNEVEN SURFACES

There are times when a level, flat surface will not be possible. In these cases, the installer needs to trim/cut away the underside sections of the AviAngle® Base Unit to allow the AviAngle® to be installed and remain flat on the surface area. Note: When installing smaller AviAngle® Base Sections, it is recommended that you overlap the AviAngle® Long-Extender Unit to interlock the pieces. See previous page image.



AVIANGLE® UNIVERSAL END JOINDER & END CAP

When the ends of the AviAngle® are open, the installer needs to install the end cap to close off the area under the AviAngle®. The installer will first install the End Joiners. See diagram. The End Joiners are designed so that a slight gap remains between the AviAngle® Base Unit and the End Joinder and End Cap. When reviewing the End Joinder, you will see a section with an ID Stopper (see image below). This is the side of the Joinder that gets installed onto the face of the AviAngle® Base Unit. Now, take the End Cap and fit it accordingly. Trim off any excess, insert the End Cap into the End Joinder to close off end of AviAngle® Base Unit.

Note that we recommend applying PVC cement to the End Cap Plate when installing it into the End Joinder. (See section on how to join multiple sections of AviAngle®)

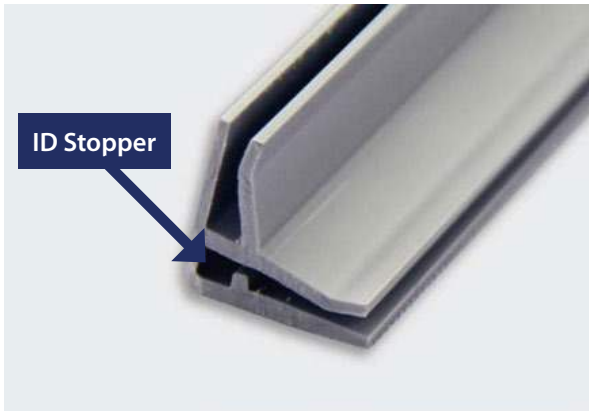
INSPECTION

Visually inspect AviAngle® installation for inadequate adherence to surfaces, loose screws, or interfering debris. Make any necessary repairs immediately.

STORAGE

Storage of Unused AviAngle® Product must be kept in a cool and dry place. Recommended that users store unused product at temperatures between 40-80 degrees Fahrenheit. The product may expand and contract over time. The PVC standard is +/- of 64th of an inch per linear foot of product.

Before installing AviAngle® base or accessory parts, the installer must inspect the product to ensure there are no product imperfections.



Ledge Measurement Guide

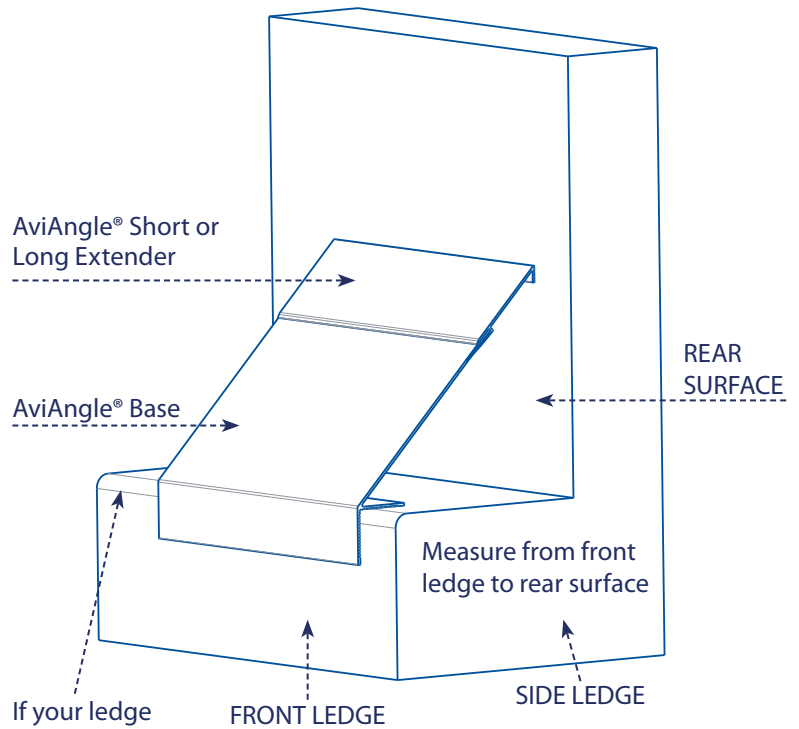
Before you order the appropriate AviAngle® components needed to complete your installation, the installer must determine the BASE LEDGE measurement.

STEP ONE: DETERMINE BASE LEDGE MEASUREMENT

Look at the condition of the front of the ledge.

- Is the face of the ledge DAMAGED?
- Is the face of the ledge BEVELED/ CHAMFERED?

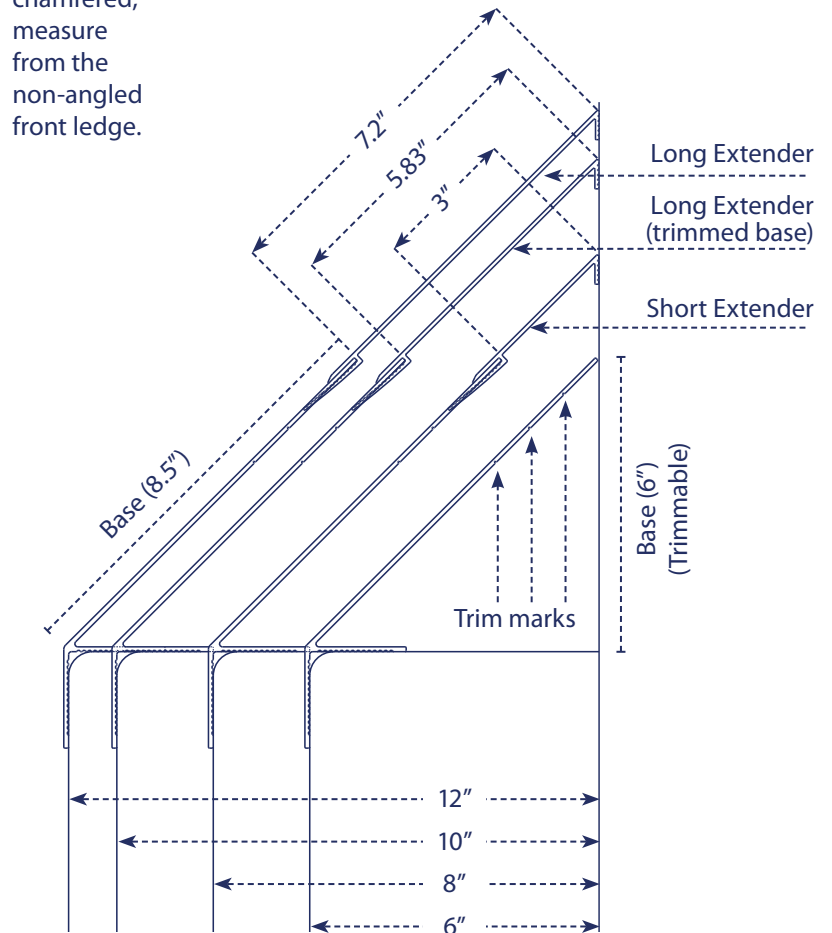
If the answer is yes to either of these questions, then start your measurement at the front of the ledge area. One technique to ensure an accurate measurement is to create a straight edge in the front of the (Damaged/BEVELED/ CHAMFERED) as if it were a perfect 90-degree edge. Take your measurement from the front ledge of the said point to the rear surface.



STEP TWO: REAR SURFACE HEIGHT

Look at the rear surface height.

- If the REAR SURFACE HEIGHT is greater than the BASE LEDGE measurement, AviAngle® will be suitable for your application.
- If the REAR SURFACE HEIGHT is less than the BASE LEDGE measurement, the installer may need to alter the REAR SURFACE HEIGHT, alter the bird control application, or change the pitch of the AviAngle® to ensure that the AviAngle® Extender has surface area to mount thereto.



AVIANGLE® ADJUSTMENTS

Depending upon the ledge condition, the AviAngle® component may need to be adjusted.

- If the surface heights vary between both ends of the treatment area, the Short or Long Extender can be raised on one side or the other to vary the height on one side or the other.