

Aerial FAQ

1. What are the Benefits of Aerial Infrared Survey?

- Prioritize roofs and/or walls worst to best .
- Save energy.
- Avoid IAQ problems.
- Risk management downturn, equipment loss, pre/post storm assessments, slips/falls
- Avoid/locate mold/mildew problems.

2. Why not do a walkover infrared moisture survey?

The American Society of Testing Materials specifically states that aerial infrared produces superior images and results to walkover procedures. Walkover is a sixty-year-old method that can capture only 200 sq. ft. at a time, at a 60 degree angle. Millions of square feet of data can be collected nightly, enabling large baseline studies, and hover-over (helicopter) surveys eliminate the perspective problems of the walkover survey. Our patented report & layered AutoCAD drawings give a clear, easily understood image of roof moisture intrusions. Hover-over surveys also eliminate access problems, ladders, and problems of climbing from level to level or over obstacles.

Note: Please see comparison of non-destructive surveys under the “More Information” section to gain a visual understanding.

3. What type of roof are aerial moisture surveys recommended for?

Aerial moisture surveys are recommended for flat or low slope roofs. Aerial surveys are not effective on standing seam metal roofs, slate, or barrel tile. Highly ballasted and highly reflective coatings can also cause problems.

4. Why are aerial infrared surveys flown at night?

At night, the energy absorbed from the sun radiates from the roof. This infrared energy radiates differently for wet and dry areas of the roof, making night ideal for detecting moisture intrusion.

5. Will your aerial survey detect leaks?

An aerial infrared survey is not leak detection, but it significantly simplifies leak detection. Leaks are found in areas of high moisture intrusion into the insulation, and are found quickly by maintenance personnel when they use the aerial survey to find areas of maximum moisture intrusion. Not all leaks will be found this way, of course. In some cases water will penetrate directly through metal materials such as broken flashing, cracked or ill-fitting skylights, damaged boots around pipes, and so forth.

6. What equipment do you use for your aerial infrared surveys?

We fly our team to your area via commercial aircraft. We rent a helicopter and hire a reliable, certified pilot from a carefully selected flying service. We use a high-resolution FLIR Military Recon COOLED camera for accurate recording of details. We always use Level II and Level III certified thermographers and analysts.

Note: Please see the "More Information" section for FLIR Military Recon details.

7. What kind of weather do you fly in?

We look for a calm, clear night after a bright, sunny day. We can fly in less than perfect conditions because of our excellent camera, and we can fly any time of the year. Weather conditions include but are not limited to precipitation-free for 24 hours, and wind speeds of less than 20 m.p.h.

8. Some aerial infrared I've seen is in color and others in black and white. Which one is better?

We use a FLIR Military COOLED camera, which has the best resolution of any infrared camera in the marketplace. The FLIR Military Recon produces black and white images with over 250 gradations of black and white. The 250 gradations reveal unique and specific patterns that are calibrated by our U.S. patent to specify areas indicative of moisture. Color cameras use the four primary colors as the basis for indicating problem areas. Obviously, using only four colors as the basis, instead of 250 gradations, limits the scope and accuracy of the final report. In addition, our experienced analysts spend eighty to a hundred hours per million square foot computer analyzing our results. Computer analysis is vital to obtaining an accurate report.

9. Do you need a baseline survey of building inventory for a positive result?

No. Reports from previous walkover or flyover surveys can be out of date or of low quality. We will ask for all **available** information about the roof, such as type of roof, age, construction material, locations of known leaks, and any existing inspection or survey reports. A baseline is obviously best to have as a benchmark of all roofs. The second best strategy is to identify roofs scheduled for replacement in the next five years to identify those that could be repaired instead of replaced.

10. What are your deliverables and how do they help us?

Our patented reports provide a marriage of scaled daytime photographs and enhanced night infrared imagery, analyzed to the pixel level. They identify moisture intrusion to areas as small as two square feet, and offer your maintenance personnel an excellent tool for finding leaks.

We prepare scaled reports without requiring you to provide roof dimensions.

As an additional service, we provide true AutoCAD drawings and data layers on a CD. Our AutoCAD drawings show penetrations on the roof such as vents and HVAC. We can detail the total square feet of the roof area and calculate the percentage of problem areas. Your staff can obtain report estimates on specific square feet areas instead of generalizing problems. We use a U.S. patented software analysis program calibrated to interpret infrared data.

We remove false moisture indications, such as heat coming from equipment, from the final report, and prioritize roofs from the worst to the best to help you prepare a three to five year budget. When AutoCAD is ordered, we also prepare a summary analysis of problem areas as a percentage of total roof area per building.

We hover over the site at zero m.p.h. to create virtually still imagery, perpendicular to the roof. These drawings are independent, unbiased, and legally admissible.

11. How often should we conduct an infrared survey of our roofs?

We recommend you survey all new roofs to make sure they weren't closed up wet, and survey again after six months to make sure the roof was properly installed. This will help the owners of the buildings with acceptance, bond, warranty, and insurance issues, and will help you hold contractors accountable.

On existing buildings, we recommend a survey every year or two. After you've repaired the faults discovered in the initial survey, you will want to find new problems while they are small and repairs not too costly. Frequent surveys have been shown to save considerable money on roof maintenance over the life of the roof, and to increase the life of the roof, sometimes by as much as double.

Frequent surveys also help with risk management, reduce punitive damages, and increase insurance recovery. If you are in a storm event area, pre and post reports are valuable in obtaining insurance/FEMA awards.

12. Why do you "hover over" in a helicopter instead on using an airplane?

We used to own a plane, but our experience was the plane had to fly too high and too fast, and thus created blurry imagery. A helicopter maintains a perpendicular stance over the target. Heat rises and we see an entirely different image when hovering over the roof than we see on our way to the site from a 60 degree angle.

13. What else should we know about aerial infrared roof moisture surveys?

Aerial IR surveys are fast, effective, and safe. For roof areas above 100,000 square feet, the cost is similar to the cost of walkover surveys, and you get better, more accurate results. For several small buildings, we can inspect more than one million square feet in one night, which is a fraction of the time it would take using walkovers. We then spend eighty to a hundred hours of computer time analyzing the

imagery with the added benefit of our U.S. Patent and the highly qualified infrared data analysts. And we assure you that we're knowledgeable about walkover surveys; that's the method we used twenty years ago.