Infrared Thermography is by far the most powerful of the nondestructive inspection tools. Properly utilized the savings can be outstanding.

Education, experience and are the keys to a successful program.

ATT can help your company reach it's goals for the present and the future.

"It is impossible to solve significant problems with the same level of knowledge that created them "

Albert Einstein

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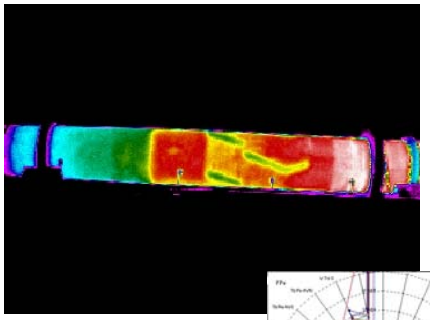

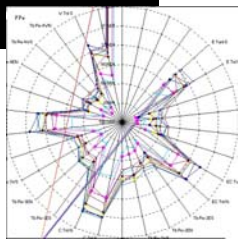

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American Thermo Tech

In business today, it's all about reaching for the next level of productivity, improving efficiency, maximizing yields, and building the skills of your staff. Tens of thousands of maintenance professionals around the world have learned that by applying more technology to their problems, they can be more effective.

ATT understands this and continues to pioneer the advancement of our technical expertise and field applications to better assist in solving our clients maintenance problems. Our staff of professional engineers and technical personnel are experienced and certified for both industrial and marine solutions.

ATT offers a full range from onsite inspection services, condition monitoring, program setup and evaluation, or training and certification in infrared thermography and vibration analysis from one of our Level 3 ASNT-TC1A certified instructors.

Whatever your companies needs might be **ATT** is committed to providing quality, timely, professional solutions for your business.

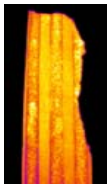
Infrared Thermography

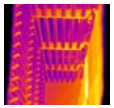
The Basics

Everything around us, including ourselves, continuously emit photonic energy to the environment in the form of invisible infrared radiation. This emitted infrared radiation, or energy, is detectable and associated with an object's temperature through the technique of infrared thermography .The human eye can "see" in a very narrow margin of the electromagnetic spectrum in the wavelength ranges of the from .4 to .7 microns. The infrared portion of the spectrum ranges from 1 to 100 microns. The amount of energy radiated at any given wavelength is dependent on the temperature and by applying the fundamental laws, the amount of energy can be predicted and quantified. For example in the case of steel, it will begin to glow in the visible spectrum with a dull red color at about 525°F and will radiate the most amount of energy at the 5.2 micron wavelength. While the physics of IR/T are well established, the interpretation of the thermal images are still to some degree qualitative. There are several factors such as varying surface texture and reflectivity that could cause apparent thermal differences in an object. For conclusive interpretation and accurate temperature measurements, an object's emissivity, distance, and the ambient reflected energy must be precisely known.

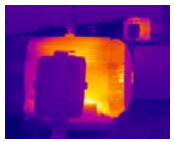
Petrochemical Application Examples:

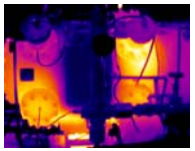
In Process Heater inspections, flame impingement, poor heat distribution, misaligned burners, bad thermocouple readouts, refractory failure, all contribute to the potential for catastrophic failures.



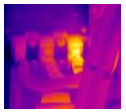


Mechanical inspections, such as compressors, can provide quick and accurate information on the condition of intake or exhaust valves prior to failure. This minimizes cost by controlling process impact. **E**lectric motors and most other rotating equipment can benefit from regular inspections for bearing and winding fatigue.

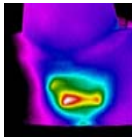


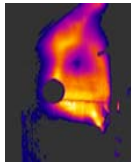


Electrical inspections may include distribution lines as well as buss runs, fuses, transformers, and circuit breaker connections.



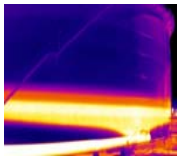
Refractory lined equipment is monitored for internal corrosion and decay. By establishing predictive trends to prevent process downtime.



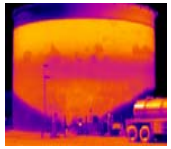


Injection Monitoring of refractory into trouble spots in vessel walls can be targeted both efficiently and cost effectively.

Monitoring the discreet levels of oil, water and sludge within a process tank, reclaim efforts and operations can be alerted to potential problems before they have a serious impact.



Environmental cleanup of waste water storage tanks is very expensive and by monitoring sludge and contaminant buildup, managers can control budget spending and equipment down time more effectively.



Process Equipment trouble shooting problems such as blockages in reaction towers can also be resolved quickly. Even simply confirming the proper operation of a reaction tower can provide vital information.