

Thermographic Imaging

... in the electrical industry failure is not an option...

That's why infrared thermography has become essential for managing electrical risk in many businesses around New Zealand. Since it is imperative to have electricity available at all times, electrical systems should be inspected on a regular basis. A thermographic imaging inspection is a non-invasive survey that measures the thermal performance of electrical and mechanical components at your premises in order to determine abnormalities that could lead to costly failures.

WHAT WE DO

An electrical engineer will come to your premises armed with a sophisticated camera that uses infra-red technology to detect heat.



Most electrical or mechanical parts that are damaged or ready to fail will generate heat. The camera will detect this heat and show it in graphic form. After capturing images of your systems we then prepare a written report showing which



**McNae Electrical
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equipment was inspected, problems that were detected and give recommendations for your attention.

ISN'T AN AUDIT EXPENSIVE?

You may think that a thermographic imaging inspection costs money that you don't have.

Think again... a thermographic imaging inspection costs little compared to what it might save. The little money spent up-front on regular inspections could save many thousands of dollars down the track in equipment replacement and lost production.



WHAT'S INVOLVED?

Electrical Inspection

We take thermal images of circuit breakers, switches and connections inside your switchboards. Deterioration is usually accompanied by an increase in resistance. This increase in resistance appears as heat, which is invisible to the naked eye, but which can be "seen" by the infrared camera. As the resistance to the flow of current increases, so the temperature will continue to rise until a failure occurs. This is always costly and quite often poses a serious fire risk.

Infrared thermography plays a vital role in identifying a wide range of problems in your electrical system including:

- poor connections
- overloaded circuits
- load imbalances
- faulty or improperly installed components
- early equipment aging

Mechanical Inspection

Under normal operating conditions, all machinery generates heat. However, excessive heat can be generated from friction caused by inadequate lubrication, misalignment of couplings, over or under tension of belts, and bearings nearing end of life.

Because temperature is one of the first observable parameters to indicate the health of a component, thermographic inspection is an excellent choice for monitoring the condition of your mechanical plant. This takes a minimum of two inspections. The initial report will give baseline thermal images showing the amount of heat being generated by components when they are operating under normal load. Subsequent reports will show any deviation from the normal thermal signature which will then provide evidence that a potential problem is developing.

Each inspection is non-invasive. It only requires our engineer to access each switchboard and item of mechanical plant at your site. There is no need to isolate any circuits or stop any work process.

INSURANCE REQUIREMENTS?

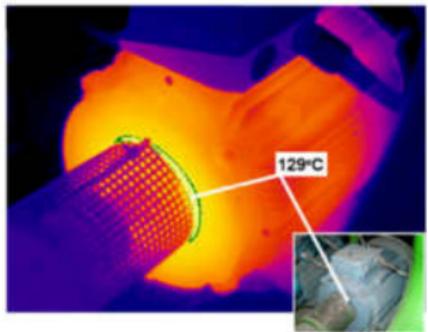
According to the 2009/10 Statistics from the New Zealand Fire Service electrical fires accounted for

24% of recorded incidents for fires in structures. Of those electrical fires 40% originated in a switchboard or meter box.

Because of this, many insurance companies are now insisting that a thermographic imaging inspection be completed as a means of assessing the insurance risk prior to formalising a policy.

WHY CHOOSE US?

Thermal imaging is not simply a matter of pointing an infrared camera at an object and displaying the resulting image in a report. First, it requires that switchboards have their covers removed. Only registered electricians can do this. Second, electrical engineering knowledge is required to know if the recorded temperatures are within normal ranges.



This can only be determined by measuring current flow at the same time and applying knowledge of circuit design and loading. As electrical contractors with years of experience, McNae Electrical Solutions brings this specialist knowledge to the inspection and report writing process. Your report will highlight the significant equipment hotspots so that you can see at a glance what requires your attention. Third—and you may not know this—many problems can be fixed on the spot. This can give significant time and cost savings.

WHEN TO INSPECT?

Most surveys are done annually. However, it really depends on the type of business, the age of the plant and equipment plus the risk factor.

The inspection needs to occur when all plant and equipment is being used to capacity in order to show equipment that may be deteriorating under full load conditions.

WE ARE LOCAL

McNae Electrical Solutions is a family owned business that has been operating in the Manawatu for over 25 years.

Yes, we do thermographic imaging inspections. But we also back that up with the experience and expertise required to implement any electrical repairs you may require. Our name says it all—we have the solutions to all your electrical needs—residential, commercial, and industrial.

OTHER THINGS WE DO

- Full residential, commercial and industrial design and installation service
- Repairs and maintenance with 24 hour call out service
- Lighting upgrades
- Solar electric installations
- Solar swimming pool heating
- Thermographic imaging inspections
- Automatic gates
- Commercial door systems
- Portable Appliance testing and tagging
- Vehicle hoists
- Industrial automation
- Generator installation and hire
- Power factor correction
- Alarm systems & security cameras
- Irrigation, dairy sheds, and farm systems
- Electronic and scientific equipment servicing
- Multimedia and projection systems



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