



Thermographic Surveys

What is the hazard?

Forty percent of industry's fire loss expenses and approximately twenty per cent of major fires are generated and caused by electrical faults. The usual causes include loose connections, the weakening of insulation, faulty or overloaded components, obstructed cooling or mechanical damage.

Losses resulting from the overheating of mechanical machinery due to an obstruction or the friction of worn-out machine parts also occur frequently. Since all of these incidents involve elevated surface temperatures, thermographic surveys are recommended as a fast and cost-effective preventive maintenance tool. Through this technique, weak points that become heated prior to failure can be detected and losses, including interrupted use, can be avoided.



Thermographic surveying

Surface temperatures, in other words their heat emission or infrared radiation, can be easily and reliably measured by thermographic imaging. The method involves the use of an IR camera, which produces a digital image of the surface. The image is interpreted and documented by skilled surveyors, who also give suggestions for corrective action. Surveys can be performed by qualified external specialists and should preferably be conducted under full electrical load. If you purchase an own IR camera, ensure that the users receive appropriate training. In many countries, thermographic imaging qualification training conforms to the requirements of ITC classes I, II or III as defined by the ASNT (American Society for Non-destructive Testing), CEN 473, ISO IS 9712, Guideline No 3 2003 CFPA-E or VdS 2861.

How to reduce the risk

Electrical maintenance: Conduct, as part of your preventive maintenance programme, at least annually a thermographic survey of all the important electrical components – transformers, substations, switchgear and control cabinets, electrical panels, fuse boards, terminals, joints, power factor compensation equipment, cable or bus bar installations, extension cables etc. Through this technique you can detect the weak points and avoid many losses, including fires.

New electrical installations: Perform an initial thermographic survey of new electrical installations (i.e. after installing new machinery or replacing electrical parts) in order to detect possible faulty components, installation faults, etc. and to give a baseline for future surveys.

Mechanical maintenance: Complement your maintenance schemes by monitoring mechanical devices and machine parts such as motors, pumps, gearboxes, clutches, bearings, brakes, heat exchangers, hydraulic systems and conveyors through the use of thermographic imaging.

Hot work control: During and after the performance of hot work, the fire-watch can use an IR camera as a useful tool to identify accumulated heat around the hot work area.

Industry-specific (an example): Furnace shells and refractory lining in the melting and heating industry can be monitored through thermographic imaging to identify hot spots.

This Hazard Info Sheet is and is intended to be a presentation of the subject matter addressed. Although the authors have undertaken all measures to ensure the correctness of the material, it does not purport to list all risks or to indicate that other risks do not exist. If P&C Insurance does not give any guarantee thereof and no liability is assumed by reason of this Hazard Info Sheet as it is only advisory in nature and the final decisions must be made by the stakeholder. It shall not be applied to any specific circumstance, nor is it intended to be relied on as providing professional advice to any specific issue or situation.

GLOBAL INSURANCE SERVICE with a Nordic touch

As a client with complex exposures in the Nordic countries or anywhere else in the world, you can benefit from co-operation with If P&C Insurance. Read more about the full coverage of international services at our website.

