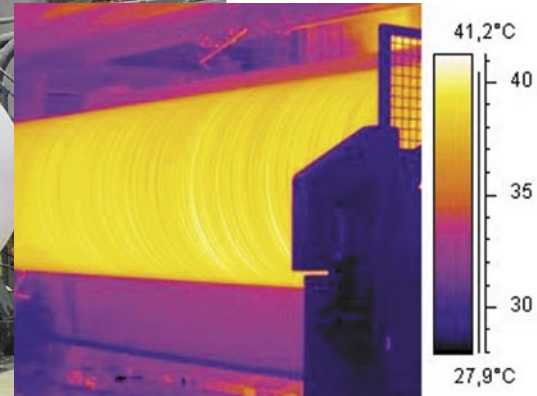


FLIR

APPLICATION STORY



Infrared camera prevents production losses at Parengo paper factory



Inspection of the moisture distribution in the paper web shooting past at a speed of approx. 1600 metres per minute.

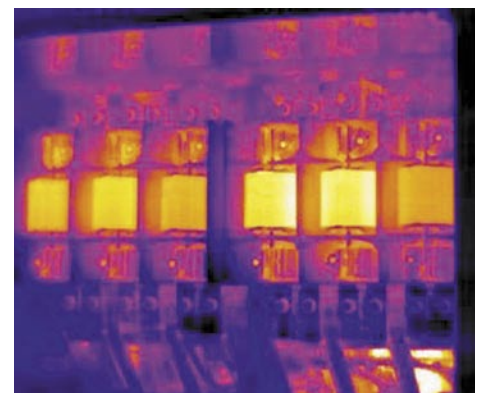
Parengo, the only manufacturer of newsprint in the Netherlands, forms part of Haindl Papier GmbH. This internationally operating group with over 1.8 million tons of newsprint per year is one of the biggest producers in Europe. The Dutch factory is building on a long tradition of paper manufacturing in Renkum. The paper mill of 1720 has grown into a modern plant operating 24 hours a day 7 days a week to manufacture various grades of newsprint.

INSPECTION IN ACCORDANCE WITH THE STATUTORY STANDARD

To guarantee the continuity of production radical measures have been taken. A stoppage of one of the two paper making machines means a loss of tens of thousands of Euros per hour.

A thorough preventive maintenance programme tracks down potential sources of faults in good time. An infrared camera plays a leading part in this. "Initially we had our electrical engineering installation

inspected periodically by an external thermographic consultancy bureau", explains Theo Janssen, Group Head of Electrical Engineering and Instrumentation. "The infrared images that we received from the bureau convinced us of the value and of the possibilities of using thermography. The need to increase the frequency of the measurements and in particular to extend their scope soon led us to buy our own infrared camera. The ThermaCAM™ from FLIR Systems fits in perfectly with our requirements".



The ThermaCAM PM 695 is the first camera in the world to produce an infrared and a visual image at the same time.

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INSPECTION OF HIGH VOLTAGE INSTALLATIONS DURING OPERATION

Parenco's in-house energy generation plant supplies a maximum power of 58 MW. The installed power amounts to approx. 132 MW. An electricity company sub-station provides any additional power required. "The high voltage components are of course extremely critical for the business process", explains electrical engineer Mark Kobus. "Defective contact resistances in a high voltage cable for example can cause serious damage. Thanks to the ThermaCAM we can now examine all the installations for suspected hot spots during full operation. We draw up a report on this including the infrared recording and send it to the responsible department. They determine whether the part must be replaced immediately or whether the replacement can wait until the next planned stop for regular maintenance".

THE INVISIBLE BECOMES VISIBLE

"A world opens up to you when you look at the installations with the infrared camera", says Barney Soerink. "You see things that remain hidden to the human eye. The enthusiasm of the two also inspires other departments within the paper factory to have thermographic measurements carried out. The camera is now also giving service in tracking uneven loads on motors and other (electro-)mechanical components; the heat distribution of the brush-holders in motors ruthlessly displays the load distribution. "After the first measurement we discovered another 17 motors with increased contact resistances", announces Mark Kobus. Temporary repair was able to prevent worse happening.

MOISTURE PROFILE OF PAPER

Making newsprint, in addition to the main raw materials of wastepaper and wood, also requires a lot of water. During the production process the moisture content is

reduced by drying and pressing from 1% consistency in the head box to a moisture content of 8% on the rewinder. Many parameters affect the drying process. An up-to-date moisture profile thus tells us a lot about the quality of the drying (and hence about the quality of the end product). The infrared camera gives a good picture of the moisture distribution in the paper web, shooting past at a speed of approx. 1600 metres per minute.

RAPID RETURN ON INVESTEMENT

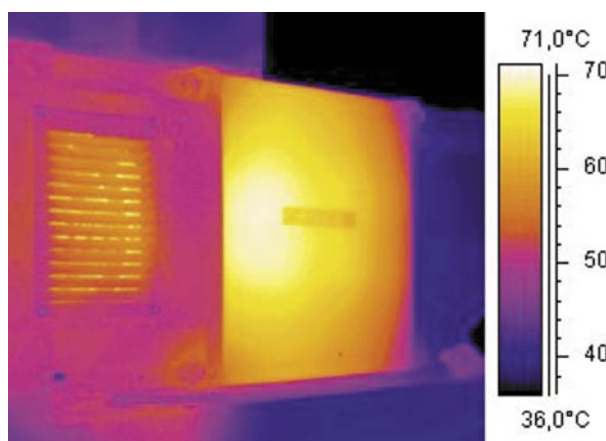
Most of the heat for drying the paper is added in the form of steam. The Renkum factory has an extensive network of steam piping. Very often the infrared camera has been able to detect a steam leak via striking temperature differences. "That is of course not critical to the business, but does mean a waste of energy", confirms trouble-shooter Barney Soerink with satisfaction. "The ThermaCAM has also amply paid for itself even without this energy saving". A number of unplanned outages have been prevented by the measurements. This has in particular contributed to a very short pay-back time for the ThermaCAM.

RIGHT IMAGE INTERPRETATION BY TRAINING

Mark Kobus together with colleague Barney Soerink followed the certified training as thermographers at the Infrared Training Center (ITC), the training institute for FLIR Systems. Both men think the training is a must for any (budding) thermographer. "You learn to interpret infrared images, as well as what environmental factors can affect the measurements. The cameras offer every facility to eliminate false

information, but you have to learn to recognise this possible interference. At the ITC they have information on every practical situation".

Both thermographers have their eye on the latest model ThermaCAM, the PM 695. This camera has an integrated video camera so it can take an ordinary photograph at the same time as the infrared recording. A separate digital camera thus becomes superfluous. The PM 695 also has facilities for recording all sorts of information on the measured object during the measurements in the field. The recording can even be accompanied by the spoken word. These facilities considerably simplify the reporting; virtually all the required information is after all recorded by infrared and visible photograph.



For further information contact:

FLIR SYSTEMS AB
World Wide Thermography Center
Rinkebyvägen 19
SE-182 11 Danderyd
Sweden
Tel.: +46 (0)8 753 25 00
Fax: +46 (0)8 753 23 64
e-mail: sales@flir.se
www.flir.com