



Infrared Increases Productivity and Improves Safety in The Plywood Industry

When manufacturing plywood and veneer, it is critical that logs be softened before they are transported into plants for peeling and further processing. If not sufficiently softened, logs can split in the peeling process, resulting in lost productivity and waste.

THE PROCESS:

To insure logs are properly softened in the plywood and veneer manufacturing process, they are bathed in outdoor troughs filled with a caustic hot-water solution. Once the logs are sufficiently softened, they are removed from these vats, loaded on conveyor belts and transported into the plant for peeling.

THE PROBLEM:

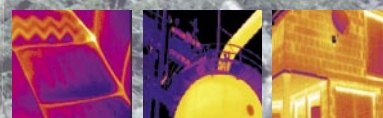
Logs frequently jam in the vats; to avoid production interruptions and/or downtime, a crane operator using a hydraulic arm unclogs the jams, and makes sure the logs keep moving onto the output conveyor. Seems simple enough, however, oftentimes the crane operator's view becomes obscured by steam created by the combination of the caustic hot water



Note the lack of visibility from a typical view of the assembly line.



The ThermoVision™ infrared camera helps the operator see through the steam to safely complete his tasks.



bath and cooler outdoor temperatures. During the colder winter months especially, the steam produces almost 'white-out' conditions, sometimes blocking the crane operator's view completely, making it impossible to see where he is swinging his boom. Out feed cab operators also are hindered when steam obscures visibility. Production comes to a complete halt when the loader can't see jammed logs through the steam. Not only does the presence of steam reduce productivity throughout the plant, it can compromise worker safety as well.

THE SOLUTION:

Infrared cameras detect heat energy and, as such, see through fog, steam, smoke and other obscurants. By using ThermoVision™ IR cameras, several major North American plywood manufacturers have implemented systems that allow crane and out feed cab operators to see through steam and maintain optimal productivity. FLIR IR cameras were placed on both the loader roofs and the out feed cabs. The infrared cameras are tilt-mounted and enclosed for protection against rain, debris and other harsh environmental conditions. Operators view images on high quality flat screen monitors, making it easy to see where logs are jamming regardless of weather conditions. These systems are affordable and easily installed by your in-house integration team.

RETURN ON INVESTMENT:

Before installing infrared cameras, plywood manufacturers were not able to operate effectively from November through March. After installation of the ThermoVision systems, production levels and safety were maintained year-round, regardless of steam produced by weather conditions. One major US plywood manufacturer reported estimated cost savings in productivity and operating output of over \$250,000 annually. If

you have problems with steam halting production in your facility because equipment operators cannot see through it, call us for free demonstration and expert consultation.

ABOUT INFRARED TECHNOLOGY...

Thermal, or infrared energy, is light that is not visible because its wavelength is too long to be detected by the human eye; it's the part of the electromagnetic spectrum that we perceive as heat. Unlike visible light, in the infrared world, everything with a temperature above absolute zero emits heat. Even very cold objects, like ice cubes emit infrared. The higher the object's temperature, the greater the IR radiation emitted. Infrared allows us to see what our eyes cannot.

Infrared cameras produce images of invisible infrared or "heat" radiation and provide precise non-contact temperature measurement capabilities. Nearly everything gets hot before it fails, making IR cameras extremely cost-effective and valuable diagnostic tools in many diverse applications. And as businesses strive to improve manufacturing efficiencies, manage energy consumption, improve product quality, and enhance worker safety, new applications continually emerge.

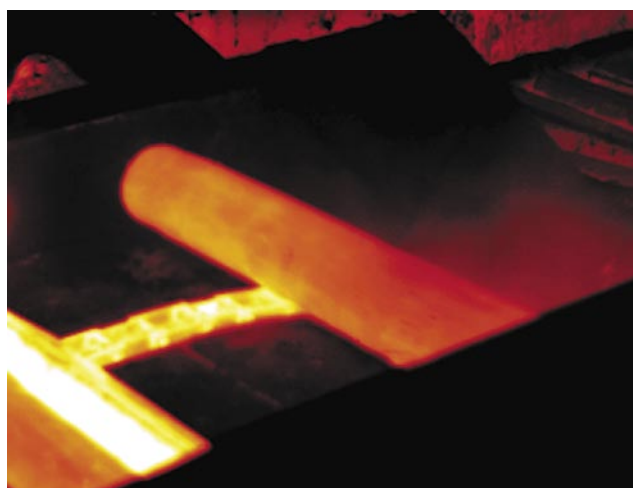
HOW DO INFRARED CAMERAS WORK?

An infrared camera is a non-contact device that detects infrared energy (heat) and converts it into an electronic signal,

which is then processed to produce TV/video images and perform temperature calculations. Heat sensed by a thermographic camera can be very precisely quantified, or measured, allowing you to not only monitor thermal performance, but also identify and evaluate the relative severity of heat-related problems. Recent innovations, particularly detector technology, the incorporation of built-in visual imaging, automatic functionality, and software development, deliver more cost-effective thermal analysis solutions than ever before.



Visual - Steam obscures view.



Thermal - Sees log vats clearly.



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