

# CASE STUDY

## ***A COMBINATION OF SENSINET® WIRELESS MESH SENSOR NETWORK AND SPECIALISED SENSORS ENABLES RAPID INSTALLATION AND PROCESS IMPROVEMENT AT A BUILDING PRODUCTS MANUFACTURER***

### **SUMMARY**

A manufacturer of high performance industrial building products faced a challenging process improvement problem. They needed to monitor critical variables in the process that were contributing to product quality problems and issues with downstream processing.

Their building environment and the constraints of the production equipment layout made the use of wired sensors impractical and very costly and time-consuming to install.

By using a Sensicast wireless sensing solution they were able to gather the data they needed and present it to shop-floor operators so that they could monitor process variables, be alerted to out-of-limit conditions, intervene to make corrections and investigate the root causes of the problems.

### **BACKGROUND**

On the production line in question the company manufactures a prefabricated fire-proof roofing panel formed of mineral insulation between profiled steel sheets. The manufacturing process involves a complex series of stages in a long production line where the steel and insulation are formed then bonded together at high temperature. Primary line operation is monitored and controlled from a centrally positioned operator station.

### **PROBLEM TO SOLVE**

The specific challenge was to monitor non-contact alignment and non-contact process temperature in different positions along the production line. The line is about 100 metres long and is enclosed in some areas. Space around the line is tight and operators and fork lift trucks are passing by constantly. Installation of correctly routed cables from sensors back to the control station would have been expensive and would have taken too long and caused too much disruption to ongoing operations.

### **THE SOLUTION**

A SensiNet® system was supplied by Adaptive Wireless Solutions Ltd and installed by a local systems integrator.

The system was configured with SensiNet® two channel 4-20mA sensing nodes to monitor



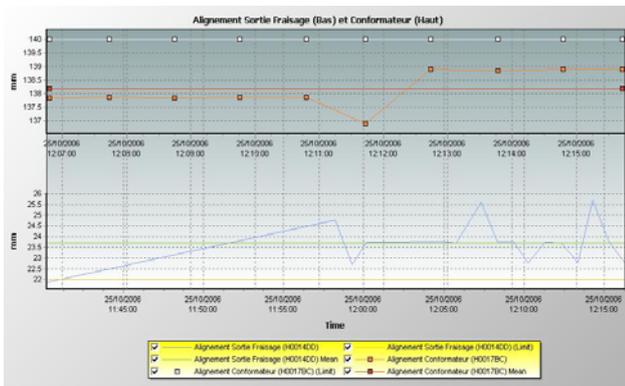
ambient temperature, non-contact process temperatures with infra-red sensors



and process alignment using very precise laser alignment sensors.



SensiNet® OnCall™ software was used to display the data, and generate alerts and the graphical user interface and data display made it easy to spot trends leading to process degradation.



The alerts from the OnCall™ software can be transmitted to pre-determined recipients by a number of means including Skype, e-mail, SMS text message, GPRS and web page.

## RESULT

A fast and relatively simple system installation is now providing critical data to the process operators and having a positive impact on process issue resolution and ongoing product quality and process up-time.

All recorded data is stored in a database for further review and analysis and to provide an auditable record of process conditions at a precise point in time.

## CONCLUSION

This project has demonstrated clearly that wireless sensor networks deliver business value by providing reliable solutions to obtain critical data where placing cables is not an option, or is simply too expensive.

In addition, once the wireless system is installed, additional sensors can be added very easily in the future allowing for a tailored approach meeting initial budget requirements while allowing for future growth and expansion.