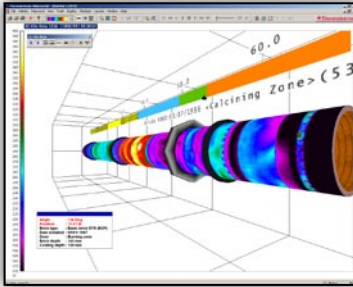




Centurion Infrared Kiln Shell Linescan System

WinCEM Kiln Shell Scanning and Visualisation System and ThermaScope at Industrias Cementos, Ecuador

Thermoteknix continues to maintain its position as a world leader in kiln shell scanning and kiln/cooler camera imaging throughout 2005. Thermoteknix' Centurion infrared kiln shell linescanner is designed to aerospace standards, with a diamond turned, off-axis parabolic mirror system that accurately focuses infrared energy transmitted by the kiln onto the rapid response, TE cooled Mercury Cadmium Telluride (MCT) detector. The cast aluminium enclosure is specifically designed for the rigours of the cement and lime industries. It has an integral plenum chamber, through which filtered air, supplied by a direct drive blower, is directed over the infrared transparent window to provide cooling and dust protection. Direct air cooling through the body of the unit, or, optional water cooling can be provided for very hot locations such as under a roof, or, adjacent to another kiln.



WinCEM 3D Kiln Shell Visualisation Software System

Tri-planar axis adjustment and alignment of the Centurion can be preformed with the mounting stand. For sites with obstructions between scanner and kiln, a stereo configuration of 2 Centurions can be used or fill-in spot pyrometers provide shadow free viewing and measurement. Patented PosiTrak software automatically eliminates the shadows to provide a single dynamic scan.

WinCem 3D is an advanced kiln imaging system that works with Centurion linescanners to produce a real time three dimensional view of the kiln as it turns. Operators can select any viewing angle, including internal views to show refractory thickness and coating wear, ensuring a complete survey of full kiln conditions. Multiple layers are displayed showing brick thickness, coating thickness, brick types and shell temperature. The Windows 2000 & XP based WinCem system is Client - Server designed to enable multiple client PC's to display and monitor kiln temperature throughout the plant. Wincem's powerful historical and trending features, full alarm and I/O functionality with remote monitoring and a fully user configurable interface.



The Centurion Installation at Guapan

In late September 2005, Thermoteknix installed a WinCem scanning system at Industrias Cementos, Guapan, Ecuador. Abnormally high temperatures had been recorded in the kiln and when the Thermoteknix commissioning engineer arrived on site, a small area of the kiln shell was actually glowing red hot. After installing the scanning system, 4 other previously undetected hot spots were immediately identified and action taken to prevent shell damage. Thermoteknix also supplied and installed a ThermaScope SLK High Temperature Kiln camera at the site. ThermaScope displays bright clear real time thermal images of high temperature processes and measures temperature at every point in the field of view. As fuel flow, operating conditions or fuel quality changes, ThermaScope gives operators and control engineers a detailed image and instantaneous temperatures at any spot or within any area of interest. Alarming will warn of unwanted temperature extremes and process variation whilst direct external outputs enable interfacing and automated control. Upon installing ThermaScope at the Guapan site, the Thermoteknix engineer was able to record images of large sections of the coating falling away from the kiln wall. A low cost non-radiometric version of the camera (ThermaScope HTV) is also available for installation in kilns or coolers.



Hotspot clearly visible on the Kiln Shell

Numerous cement plants around the world have had Thermoteknix temperature monitoring systems installed, including the following sites in 2005:

- Conch China Cement (Nanjing) - WinCem / Conch China Cement (Yingde) - WinCem
- Arabian Cement, (Rabigh) Saudi Arabia - WinCem
- Chaibasa Cement (Bihar) India WinCem, ThermaScope SLK and HTV
- Saudi Cement (Ain Dar) WinCem
- Rinker CSR (Florida) USA WinCem
- Cemex Knoxville, Tennessee USA WinCem
- Holcim (Guayaquil) Equador ThermaScope SLK
- Oyak Elazig Turkey ThermaScope SLK
- Italcimenti Salerno Italy WinCem
- MonarchCement, Humbold Kansas USA
- White Cement, (Ras Al Khaimah) UAE - WinCem



ThermaScope Kiln Camera Software Screenshot