

## Unitherm-Cemcon's project review 2001-2002

Report for World Cement July 2002 issue



### Lehigh Portland Cement, Union Bridge, MD, USA

The **Union Bridge** modernization project of **Lehigh's** largest and most modern cement plant in North America is completed.

Unitherm-Cemcon was selected to supply a M.A.S.® kiln Burner with a max. capacity of 145 Gcal/h which is designed to burn max. 20.000kg/h coal and 14.000 l/h fuel oil. The innovative low NO<sub>x</sub> kiln burner with patented flame shape adjusting device was selected by HTC-Allentown.

The plant construction project includes North America's most modern and highest kiln capacity of 5.500 TPD. The 5-stage preheater tower is equipped with a calciner burner for which Unitherm-Cemcon delivered the fuel oil firing equipment.

The fully automatic fuel oil feeding system was designed to reach the full plant capacity with fuel oil for normal operation as well as in case of coal feeding system failure. The new transfer pump station, high pressure fuel oil stations and burner control valve trains were delivered to feed the fuel oil from existing storage tank to both new burners. The burner control panels were designed to control the fuel oil feeding at the central control room.

The commissioning works for the kiln has started in winter 2001 and the full plant was successfully completed in early 2002.



145 Gcal/h M.A.S. burner for coal / fuel oil in operation, with hydraulically burner adjustment on the trolley.



full automatic kiln burner valve train for fuel oil, control range 1:30



### Inland Cement Limited, Edmonton, AB, Canada

**Inland Cement Edmonton**, a member of **Lehigh Portland Cement** has placed the order to Unitherm-Cemcon for a new M.A.S. kiln burner (72 Gcal/h) and a precalciner burner (90 Gcal/h) with burner carriages. This order is a part of the petcoke / coal conversion project.

Due to rising fuel costs the plant management decided to convert the present natural gas firing system, for the kiln burner and precalciner burner to a combined firing system for petcoke / coal, natural gas with the option to be partially substituted by landfill gas.

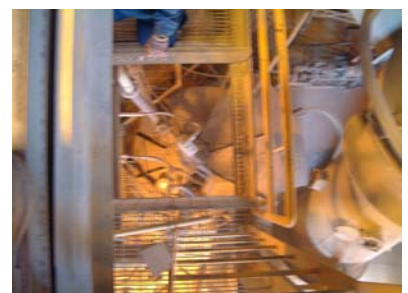
The new firing system is designed to reach a total kiln capacity of 3.640 TPD. Extensive engineering effort was necessary to fit the new firing system for petcoke/coal and gas into the existing plant.

In the past the precalciner was fired with five small gas burners on the calciner shell and on the top. The new top mounted tailor made precal-burner is suited to fit on the existing swirl chamber without expensive reconstruction works. The engineering includes the design of the fuel - and combustion air supply piping as well as the burner control equipment.

The commissioning and start-up for the new firing system is scheduled for September 2002.



Inland Cement, Edmonton AB, Canada, plant entrance



top view to existing precalciner swirlchamber where the new combined Unitherm Burner will be installed.



### Venezuela:

**Cementos Caribe C.A.** (a member of *Holcim Group*) has awarded Unitherm-Cemcon to supply a M.A.S. kiln burner for the 2800 TPD **Cement Plant** in **San Sebastian**. The burner is designed operate with natural gas, waste oil and two different fractions of solid alternative fuels. The scheduled substitution rate is designed to 45-50% of the kiln burner capacity. Commissioning starts in September 2002.



### Germany:

**Bosenberg Portland Cement** near **Ahlen** ordered a new M.A.S. kiln burner from Unitherm-Cemcon for the 480-550 TPD Lepol kiln. The new burner (20 Gcal/h) is designed to fire lignite, heavy fuel oil, and alternative fuels as plastics and animal meal. The decision of the management to buy a M.A.S. kiln burner was made due to the poor operating results of the conventional burner, already equipped for secondary fuels. Commissioning is scheduled for August 2002.



### Czech Republic:

**LAFARGE a.s. Cizkovice** has placed the order to Unitherm-Cemcon to supply a new M.A.S. kiln burner (66 Gcal/h) for the 2750 TPD plant. The burner is able to substitute coal and heavy fuel oil by plastics, textiles and liquid waste fuels. A "pneumo-Swirlor" in the secondary fuel channel improves the burning process due to the high substitution rate. The new burner will be commissioned in June 2002.

**HOLCIM a.s. Prachovice** ordered a M.A.S. Kiln Burner for a capacity of 135 MW for the 3200 TPD plant. This burner is designed for coal/petcoke, Bunker-C fuel oil, two DN 150 pipes for solid waste fuels in the center, waste oil and natural gas. This is in fact the biggest kiln burner diameter ever produced by Unitherm.

**Ceskomoravske Cement** (a member of *Heidelberg Cement*) has commissioned Unitherm-Cemcon for a re-design of the existing two M.A.S. Kiln Burners at the **Radotin Plant** near Prague. The burners were originally supplied in 1994 and were in fact one of the first M.A.S. kiln burners on the market. Due to customers satisfaction with these burners the management decided to invest into a reconstruction of the existing burners.

In order to run on secondary waste fuel, the system was designed to substitute up to 25% of the present coal consumption. The inner central burner channel was modified to burn different plastic residues. Both dry kiln lines were successfully commissioned in January 2002.



Combined M.A.S. kiln burner at Radotin plant, reconstructed for secondary fuels



### Switzerland:

**Holcim AG**, has placed the order to Unitherm-Cemcon for a new M.A.S. Kiln Burner with a capacity of 82 MW for the 2000 TPD plant at **Siggenthal**. The burner is designed to operate with coal, heavy fuel oil, solvents, waste oil and two fractions of dry sewage sludge. Due to the abrasion tendency of sewage sludge, it was necessary to have a special design for the alternative fuel channel, equipped with a "pneumo-Swirlor" to improve the burning process of that hard burnable fuel. The scheduled substitution of sewage sludge of 1.600 kg/h was increased to 2.800 kg/h without negative influence on the clinker quality. A short kiln shut down time for installing the new burner was desired due to high local clinker demand. Unitherm met all these tasks to the client's satisfaction.



M.A.S. kiln burner for 2 solid waste fuels, coal, HFO fuel oil, and liquid waste fuels. (Holcim)

Greece:

**G.M.M.S.A. Larco**, has awarded Unitherm-Cemcon the contract for a new M.A.S. kiln burner (25 MW) for their nickelferrous ore rotary kiln in **Larymma**. Due to the satisfied operation of a prior delivered M.A.S. burner the plant ordered a new firing system at Unitherm-Cemcon again. The burner is designed for steam coal, petcoke and heavy fuel oil operation. The contract includes a new burner trolley, primary air fan, secondary air fan, fuel oil valve train, high pressure fuel oil pump station, high pressure fuel oil heater station as well as a burner control system. The commissioning is scheduled for October 2002.

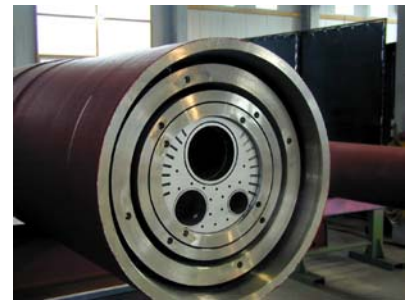
Ukraine:

Unitherm-Cemcon was selected by **Ivano Frankivsk Cement** to supply two additional M.A.S. kiln burners for a coal and natural gas operation at the wet kiln lines. The customer was very satisfied with the prior supplied burner in 1999 due to the fuel savings of 3-4% and the increase of kiln capacity.

**Odessa Cement Plant** has placed the order to Unitherm-Cemcon for two combined M.A.S. Burners (45 MW) which are designed to burn max. 8.000 kg/h coal and/or 4.500 Nm<sup>3</sup>/h natural gas. The wet kiln system is designed for a capacity of 430 TPD. Commissioning and start-up is scheduled for May/June 2002.

Bulgaria:

**Zlatna Panega Cement**, has signed a contract with Unitherm-Cemcon for a new M.A.S. Kiln Burner with trolley which is designed to burn coal, natural gas, solid and liquid waste fuels. The use of coal and solid secondary fuels is planned for a later stage. The burner capacity is designed to 65 Gcal/h for the 1500 TPD dry kiln line. Commissioning is scheduled for June 2002.



Unitherm's M.A.S. Kiln Burner for Zlatna Panega Plant at the workshop.

Pakistan:

**The 1800 TPD Kohat Cement Plant** has commissioned Unitherm-Cemcon to supply a new M.A.S. kiln burner (40 Gcal/h) for coal, heavy oil, natural gas and solid waste fuels. The contract includes a new kiln burner trolley in hanging design. The commissioning will be started in July 2002.

China:

**Zhejiang-Jurong Cement** has awarded Unitherm-Cemcon the contract to supply a new kiln firing system. The new M.A.S. kiln burner (47 Gcal/h) is designed for a combined operation of coal and heavy fuel oil at the 2500 TPD dry kiln system.

Myanmar:

CBMEC / China has contracted Unitherm-Cemcon for the **SIN-MIN 1 Cement Plant** at **Kyaukse** to supply a kiln burner with natural gas valve train. The 400 TPD wet kiln system with planetary cooler, is designed to fire 100% natural gas. Commissioning will be started in July 2002.