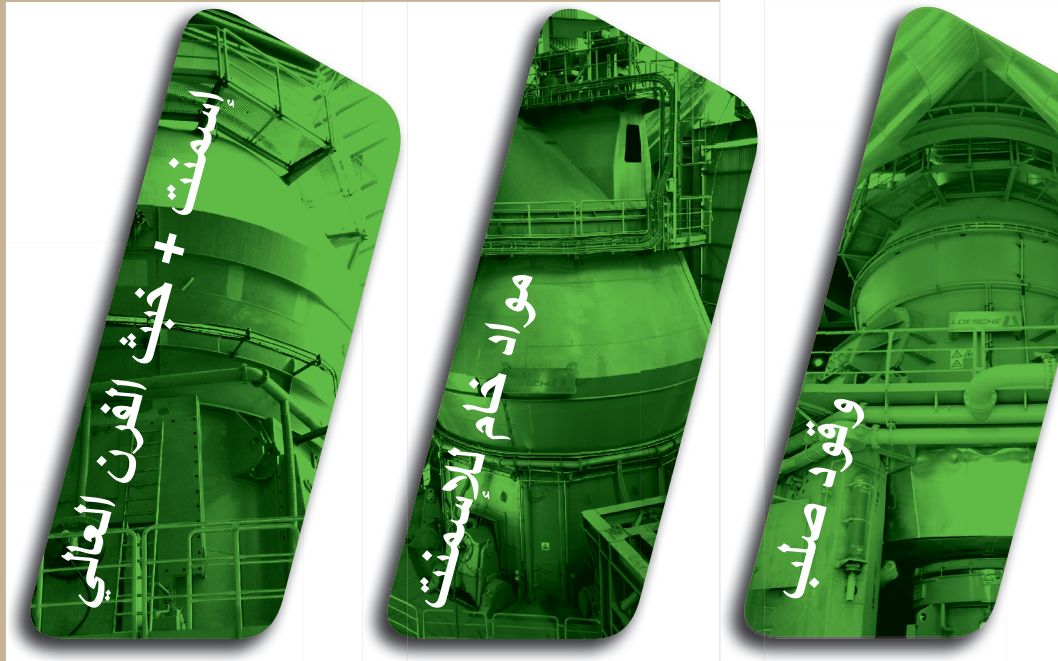




CEMENT & BUILDING MATERIALS REVIEW

Published by : Arab Union for Cement and Building Materials No.71 March 2018

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- *The Magazine editorial staff welcome the contribution of experts to enrich the contents of the magazine .*
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AUCBM's *Quarterly Cement and Building Materials Review (CBMR)*

EDITORIAL SCHEDULE FOR 2018

ISSUE	THEMES	EVENTS
June 2018	<ul style="list-style-type: none"> - New types of cement - Low carbon cement - White cement - Concrete - XRF and XRD analysis - Chemistry of cement - Cement additives - Silo Cleaning & Blockages - Silo design consideration - Drive systems - Weighing technologies - Sampling Techniques & Samplers 	
* September 2018	<ul style="list-style-type: none"> - Sustainable Development - Environment Protection - Alternative Fuels - RDFs / SRFs - Cleaner Production in Cement Industry - Filters, Baghouses & Dedusting Equipment - Emission Monitoring & Gas Analysis - Energy Saving - Case Studies 	<p>AUCBM's 23rd Arab International Cement Conference and Exhibition (AICCE23)</p> <p>Amman, Jordan 20-22nd November 2018</p>
December 2018	<ul style="list-style-type: none"> - Bagging, Packaging & Dispatch - Loaders & Unloaders - Feeder Technology - Bulk Storage and Handling - Storage of fuel - Conveyors, Bucket Elevators - Rock Blasting - Quarrying & Quarry Management - Occupational Health & Safety - QC circles 	

* September is a bonus issue that will be distributed to the Conference participants

Deadlines for receiving articles, press releases, or advert materials for remaining 2018 issues are as follows:

June issue: **28th May 2018**

September (bonus) issue: **30th August 2018**

December issue: **5th December 2018**

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ALGERIA

Biskra Cement ignites second kiln

Biskra Cement has started the kiln on its second new production line at its plant in Biskra. The 6000t/day line was supplied by China's Sinoma, and it included two production lines from raw materials to dispatch. The cement producer operates three cement production lines at its plant with a production capacity of 4Mt/yr.

Global Cement

Entreprise des Ciments et Dérivés d'El Chellif to open new production line in June 2018

Entreprise des Ciments et Dérivés d'El Chellif (ECDE) plans to open a new 2Mt/yr production line at its plant in Chlef in June 2018. The project covers an area of 15ha and has been presented as a new cement plant. Overall the new line will increase the plant's production capacity to 4Mt/yr. The company plans to increase its exports to make a return on its investment.

In order to combat speculation and fraud, ECDE will launch an entirely digital sales system.

Global Cement

ETHRB Group orders integrated cement plant from FLSmidth for Algeria

ETHRB Group has ordered an integrated cement plant from FLSmidth for a site at Relizane. The order has a cost of over Euro100m and it includes engineering, equipment supply, construction supervision, commissioning, and training. The deal comes from a partnership between FLSmidth and Beijing Triumph International Engineering Company, a subsidiary of China National Building Material Group Corporation, which will be responsible for the construction of the cement plant. The plant will mainly supply cement to the North African market. Once completed, the cement plant will have a capacity of 12,000t/day. Commissioning is scheduled for late 2020.

The scope of supply includes: two EV 200x300 Hammer Impact Crushers; one additive crusher; two

circular storages; one longitudinal storage; two ATOX raw mills; two CF-silos (Ø18m x 52m); two preheaters (two string ILC, five stages); two kilns (5.25m x 62m); two Cross-Bar coolers (16m x 50m); a clinker silo (Ø 46m x 60m); three OK61 - 4 cement mills; four cement silos (ø22x52 m); and six packing lines.

Global Cement

BAHRAIN

Bahrain construction market expected to benefit from lifting of export tariffs from Saudi Arabia

The local construction sector is expected to grow following the lifting of export duties on cement by Saudi Arabia. Saudi National Committee of Cement Producers chairman Jehad Al Rasheed told said that cement export duties were cancelled at the end of January 2018. Export tariffs were originally set at US\$23 – 35/t but were then halved in July 2017 to encourage the market.

Bahrain had been the only country allowed to import cement from Saudi Arabia since 2009. However, the price rose significantly in March 2017 after the Saudi government introduced new tariffs and permitted cement exports globally.

Global Cement

EGYPT

France's Vicat to invest EUR 50m in Sinai Cement

France's Vicat group plans to increase its stake in Sinai Cement, Managing Director of Egypt-based cement producer Gianfranco Tantardini said.

The French group will invest around EUR 50 million in Sinai Cement in order to reverse the company's losses as part of the group's plan to raise its stake in the Egyptian company through paying its debts.

In 2003, Vicat acquired 40% stake in Sinai Cement, Tantardini added.

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Vicat is waiting for the Egyptian government's approval to waive the 45% foreign ownership limits for the transaction to happen.

Mubasher

Arabian Cement eyes expansion into Africa and Asia

The Egyptian cement manufacturer wants to target new markets in Africa and Asia in order to improve its profitability and escape the stiff competition of the Egyptian market.

Arabian Cement is a joint venture between Spain's Grupo Cementos La Unión, the majority shareholder, and a group of local investors. The company is based on the Suez Governorate and has the capacity to produce 5Mta of cement, around 10% of the Egyptian production capacity. Arabian Cement is already experienced with the export market, having shipped cement to Libya, Yemen, Kenya, Madagascar, and Somalia.

Global Cement

Assiut Cement, Sohag University sign cooperation deal

Assiut Cement Company signs cooperation protocol with Sohag University's Engineering College.

The two parts agreed to collaborate on scientific and practical fields. Assiut Cement will provide EGP 50,000 per annum for a period of five years in financing to the college, and will also make the company available for courses and practical events.

The funding will include EGP 30,000 per annum to the acquisition of new computers, EGP 10,000 for scientific research purposes, and EGP 10,000 to support the annual graduation party.

Last year, Assiut had already provided the faculty with five advanced computers worth EGP 50,000 to pave the way for the protocol to be established.

Cemweek

IRAQ

Northern Cement acquires Dubai's Um Qasr for SAR 6 mln

The Saudi Northern Region Cement Co. has fully acquired Dubai's Um Qasr Northern Cement Co. Ltd. for SAR 6.06 million.

Jebel Ali-based Um-Qasr Northern Cement Ltd., which has AED 10,000 in capital, owns a 70% stake in Iraq's Um-Qasr Northern Cement, while Northern Cement Co. - Jordan owns a 25% holding in the firm.

www.argaam.com

MOROCCO

Cimar and LFH to build waste treatment plant

Ciments Maroc and Lafarge Holcim will invest in a household waste treatment plant that will treat 150,000 tonnes of waste to replace 35,000 tonnes of fossil fuels.

Daily Cement

thyssenkrupp to supply new cement production line to LafargeHolcim in Morocco

thyssenkrupp Industrial Solutions has won a contract from LafargeHolcim, one of the world's leading manufacturers of building materials, to supply a new 3.500 TPD cement clinker production plant in Morocco. The project will cover the engineering, procurement and construction (EPC) of the new greenfield facility. The line will be built in the Souss Massa region near Tidsi, situated about 65 km south-east from the regional capital Agadir. Start-up of the plant is scheduled for the first half of 2020.

thyssenkrupp will provide engineering, procurement and construction for the entire clinker production line, ranging from raw material preparation to clinker storage, and a grinding facility for solid fuels. The main components include a 1,000 t/h primary crusher, a longitudinal additives storage facility, a circular stockpile with a storage capacity of 12,000t, a QUADROPOL QMR² roller mill with an output of 290

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CemWeek

QATAR

Qatar National Cement to open fifth plant in first half of 2017

Qatar National Cement Company (QNCC) plans to open its fifth cement plant in the first half of 2018. The move will increase its cement production capacity of 5500t/day. However, its sales of cement fell slightly to 3.4Mt in 2017 from 3.7Mt in 2016.

Its net profit decreased by 31% to US\$90m from US\$130m. The company blamed the falling profit on a poor local economy causing poor demand and a reduced selling price since April 2017.

Global Cement

SAUDI ARABIA

Hail Cement renews power plant operation deal with Wärtsilä

Hail Cement has renewed its three-year asset management agreement with Finland's Wärtsilä for the power plant at its Turbah plant. Wärtsilä provides guarantees for the performance of the power plant and ensures the reliability and availability of its operations. The operations of the power plant are remotely monitored from a Wärtsilä Expertise Centre for real-time data gathering and analysis. The agreement, signed in November 2017, is already the second renewal of Wärtsilä's service agreement for the power plant in Turbah, the first agreement being signed in 2012.

The agreement covers the operation and maintenance of Hail Cement Factory's power plant, including the day-to-day operation of the power plant, preventive and predictive maintenance as well as plant operations manpower, health and safety management. The 53MW base load power plant is equipped with seven Wärtsilä 32 engines and provides energy for Hail Cement Company's cement factory as well as for the nearby residential area.

Global Cement

Al Jouf Cement starts export deal to Jordan

Al Jouf Cement Company has activated a contract to export 72,000t/yr of cement to Jordan with effect from late February 2018. The company previously signed the deal with Saudi Industrial Export. The financial effect from the agreement is expected to show in the company's results for the first quarter of 2018.

On the other hand, Al Jouf Cement has renewed its export licence for one year, till February 2019.

Global Cement



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Global Cement

Najran Cement takes US\$3m hit on stopping production line

Najran Cement says that the financial impact of temporarily stopping its third production line and reopening its second production line will be around US\$3m. The cement producer intends to sell stock from inventory to mitigate the cost.

On the other hand, Najran Cement has renewed its export licence for one year.

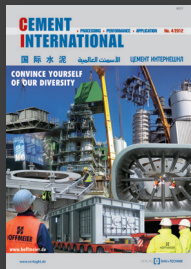
Global Cement

Wärtsilä provides update on power plant deal with Northern Region Cement

Finland's Wärtsilä has provided an update on a three-year asset management deal for Northern Region Cement's (NRC) power plant at its Turaif plant signed in October 2017. Wärtsilä will continue to be responsible for the operation and maintenance of the power plant and to ensure the reliability and availability of its operations.

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This agreement is an extension of Wärtsilä's previous service agreements for NRC's power plant. The first service agreement with NRC was signed in 2008.

The agreement covers all aspects of operating and maintaining NRC's power plant, including the day-to-day operation of the power plant as well as preventive and predictive maintenance. Wärtsilä's Customer Centre in Dubai remotely monitors the power plant's condition. Wärtsilä has also carried out electrical and automation services to improve the performance and extend the lifespan of NRC's power plant.

The 62MW power plant is equipped with nine Wärtsilä 32 engines and provides energy for NRC's Turaif cement plant. The cement plant has two production lines, producing nearly 10,000t/day of cement.

Global Cement

Tabuk Cement renews export license

Tabuk Cement renewed its export license.

The new license was issued on February 18 and will be valid for the period of a year counting from that date. Tabuk Cement obtained the former license from the Ministry of Commerce on March 2017.

Saudi Arabia has recently abandoned the export duty on cement, making selling cement abroad more attractive to local manufacturers.

CemWeek

Al Baha Cement to build 6000t/day plant

Al Baha Cement plans to build a 6000t/day plant that will manufacture sulfate-resisting Portland cement (SRPC). The company is looking for bids for a financial consultancy contract for the new plant. The project is expected to cost US\$100m, which will be raised from banks. The Minister of Commerce and Industry has approved the license for establishing the company. Tendering for engineering, procurement and construction is expected to occur in the second of half of 2018.

Global Cement

SUDAN

Sudanese cement sector solidifies its position

Domestic market is growing and attracting foreign investment as cement demand grows fast in Sudan. Sudan's cement market shows signs of strength as it attracts investment from the Gulf countries and other parts of the world while domestic companies are able to compete with international players.

The country is home to abundant reserves of raw materials that meet international specifications.



The Vdz Congress is an international scientific forum of the cement industry and its suppliers.

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Limestone availability has allowed for large construction projects such as dams to mount their own, on-site cement plants to cut on transportation costs.

The northern state of Nahr El-Neel has become the cement production hub of Sudan. There are five cement factories in the state (Alsalam, Takamul, Sakhr Alsudan, and Ghubush).

Cemweek

SYRIA

Syrian Company for Cement Industry & Construction Materials

The Company produced 773,441t of clinker and 541,947t of cement during 2017. Cement local deliveries registered 534,492t.

Clinker stock amount as on 31 / 12 / 2017 1474 529t

Cement stocks amount as on 31 / 12 / 2017 40988t

The Company's earnings during 2017 are estimated at around seven Billion Syrian Pounds.

TUNISIA

Tunisia to sell Carthage Cement shares

The Tunisian government has issued a call for expressions of interest for the acquisition of the 50.52% majority stake in Carthage Cement.

On the other hand, Carthage Cement has completed the loading of its first clinker shipment to Sub-Saharan Africa. The 38,000t consignment was loaded at the port of La Goulette. It is part of a 350,000t deal that the cement producer announced in December 2017.

Global Cement

UAE

Shree Cement acquires UAE's Union Cement for \$305 mn

Shree Cement today said its board approved acquisition of majority stake (minimum of 92.83%) in the UAE-based Union Cement Company (UCC) for USD 305.24 million. The transaction is expected to be completed in around nine months.

With this acquisition, cement capacity of Shree Cement will increase from present 29.3 Mta to 33.3 Mta. The acquisition will also help it create its first footprint outside the country.

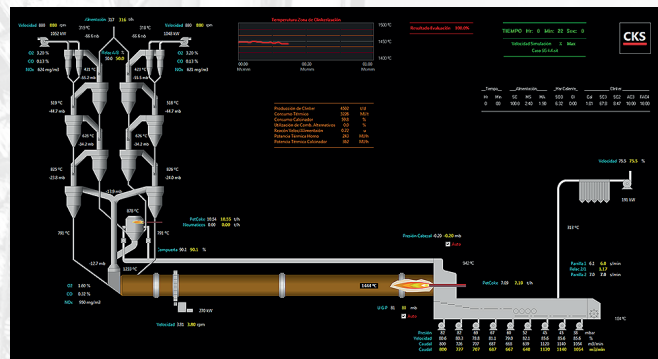
Established in 1972, UCC is one of the leading cement makers in the UAE. It has operations in the Emirates of Ras Al- Khaimah with a clinker capacity of 3.30 mt and cement capacity of 4 mt.

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National Cement Company



National Cement Company is heading toward raising production in order to meet demand in Yemen and the Horn of Africa.

National Cement Company, a subsidiary of Hayel Saeed Anam Group of Companies, is aiming at increasing its production capacity by 70% in the near future.

Eng. Abdulgalil Al-Maqraee, the Company General Manager, said that National Cement, operating in Yemen, has introduced new High Pressure Grinding Rolls (HPGR or Roller Press) to expand its milling capacity from 1.6Mta to 2.7Mta.

Eng. Al-Maqraee added that this technique will raise production from 240tph to 420tph if two mills were used. In case of operating one mill, the production will increase to 290tph, up at 20%.

“The introduction of this

technology comes in response to Company's customers demand and its strategic orientation towards neighboring markets in the Horn of Africa, and to cope with industrial developments in this field, in addition to improving energy efficiency by -10 units”, he told Cement & Building Materials Review.

Eng. Al-Maqraee indicated that National Cement Company was established in 2003 with a production capacity of 1.6Mta.

It is one of t Hayel Saeed Anam Group of Companies in Yemen, which is the oldest economical, industrial and commercial group in Yemen, which has contributed and continues to contribute effectively to sustainable development in the country.

In 2008, National Company started production under the brand ‘National Cement’, producing

Ordinary Portland Cement (OPC) according to European and American specifications EN 197 CEM and ASTM-C150 TYPE1. The Company has been using



Eng. Abdulgalil Al-Maqraee,
General Manager



state-of-art machinery, equipment and instruments in its production and technical operations, all of which are German, the innovative technology in the cement industry, energy generation and control processes.

Head of Marketing Department, Mr. Ali Al-Ahdal, explained that National Cement Company has exported its first order of cement in January 2008 to the African market.

In 2010, National Cement Company was granted the Investment Award for 2009 as one the top 20 investment companies in Yemen, and Number One company in cement manufacturing and marketing in Yemen.

In 2010, the company started producing and marketing sulphate



Mr. Ali Al-Ahdal
Head of Marketing Department

resistant cement (SRC), along with OPC.

In January 2013, the National Cement Company added a new cement type to its production varieties, namely National Portland Pozzolana Cement (PPC), to become the first cement company in Yemen to produce this type of cement, with European and American standards.

In July 2014, National Cement Company was the first cement company in Yemen to receive ISO 9001: 2008 certificate. The Company is now in the process of reviewing the new standard ISO 9001: 2015.

In the same year 2014, National Cement received the Investment Award for the second time. This award is organized by the Investment Magazine under the supervision of the General Investment Authority and the General Federation of Yemeni Chambers of Commerce.

Cement industry launches an industrial-scale carbon capture project

The cement industry has initiated a demonstration project to test a new breakthrough technology for the future of carbon capture. Based on extensive research undertaken by the European Cement Research Academy (ECRA),

oxyfuel technology will now be implemented in two cement plants in Europe. HeidelbergCement and LafargeHolcim will dedicate plants in Colleferro (Italy) and Retznei (Austria) respectively to test for the first time how the cement production process can be adapted to accommodate this cutting edge carbon capture technology. The project will require a significant investment volume and will rely on industry contributions, but significant funding from public sources will also be required.

ECRA's long-term carbon capture research project was started in 2007 and has advanced to the stage where definite steps towards establishing an oxyfuel kiln can now be taken.

Such kilns are intended to provide insight into the industrial-scale operation of a technology which provides a high CO₂ concentration exhaust gas stream for further carbon capture. It is even planned to process a small part of the CO₂ to test its further utilisation. "The technical feasibility of oxyfuel technology can only be proven in real-scale application, but we have sufficient information from our research to believe that we will obtain a positive result after the trials" said Daniel Gauthier, Chairman of ECRA.

Over the past few months ECRA has examined the suitability of sites which could potentially be locations for oxyfuel kilns. From the five sites which were examined in depth, two were identified as the most suitable to host the project from a technical standpoint: the Colleferro plant of HeidelbergCement in Italy and the Retznei plant of LafargeHolcim in Austria.

ECRA's members are leading

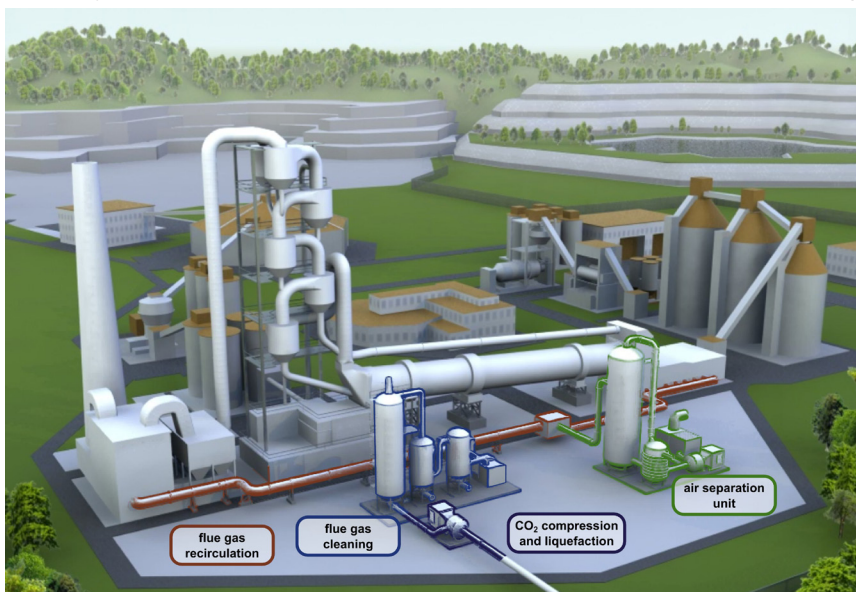
cement producers, relevant equipment suppliers and cement associations. Through their involvement the project can now be taken further. Based on opportunity studies and in-depth technical feasibility studies, the investment and costs for the test phase will amount to around 80 MEUR. While the cement industry has committed itself to contributing 25 M EUR, it is clear that substantial funding from European or national research schemes will also be required.

The European Cement Research Academy (ECRA) was founded in 2003 as a platform on which the European cement industry supports, organises and undertakes research activities within the context of the production of cement and its application in concrete. ECRA regards itself as part of a network which comprises various research facilities such as universities, federal institutes and the research centres of cement companies or equipment suppliers. The Academy is steered by a Technical Advisory Board staffed with representatives from major European cement producers.

Specimen copy requested.

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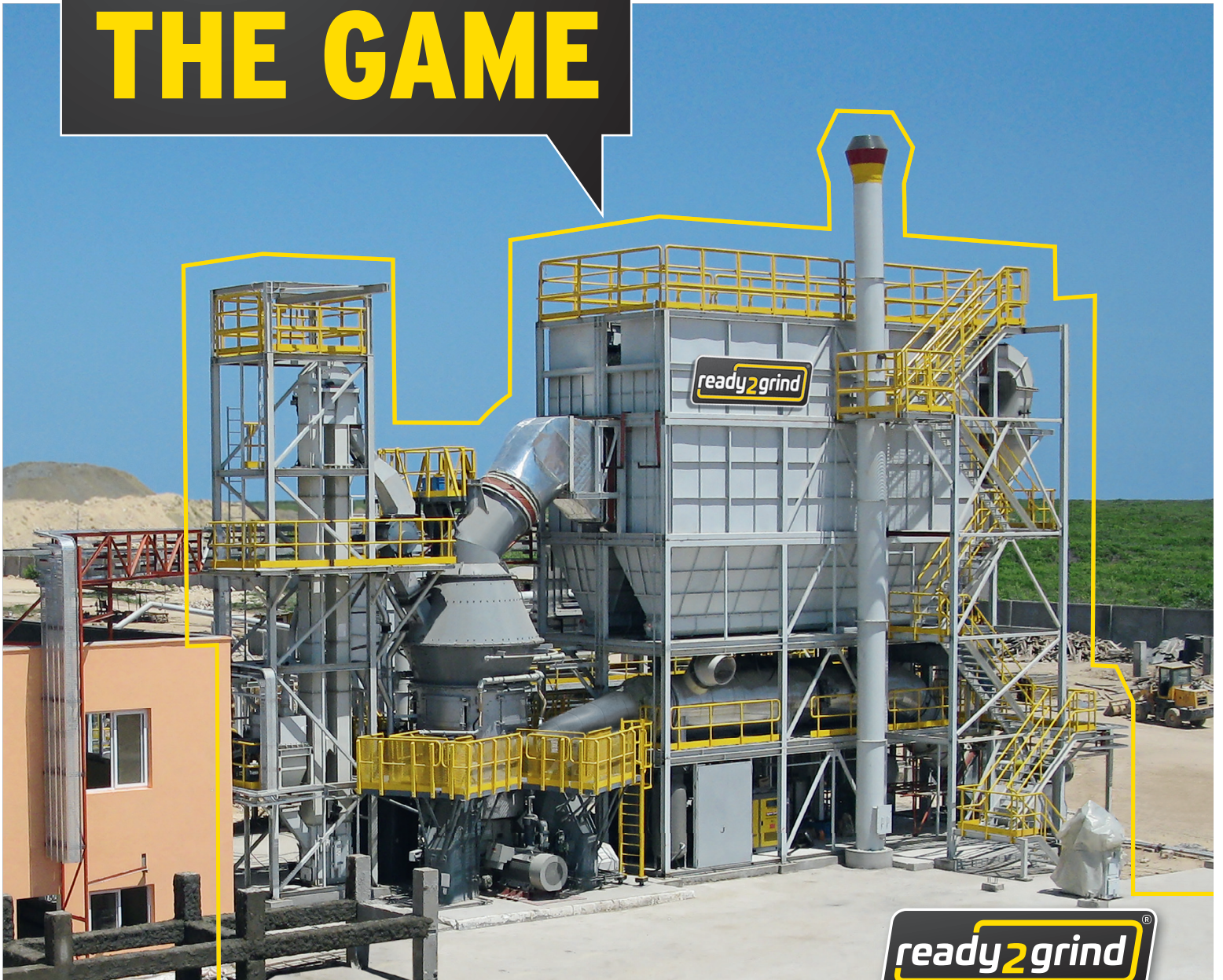


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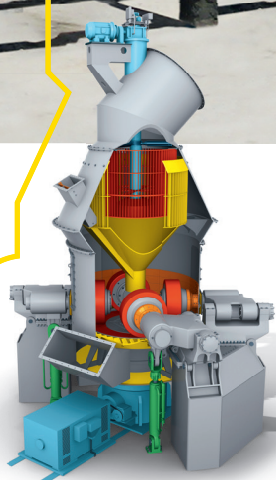
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Ropeway as a means to transport people and material from doppelmayr

The Cerattepe underground copper mine of the Turkish Eti Bakır A. Ş. mining company (a member of Cengiz Holding) is situated in very mountainous terrain approx. 3.5km southwest of Artvin, a city in the Black Sea region in north-eastern Turkey. The mined copper ore is transported to the river with a 4.5km long ropeway, which covers a difference in elevation of more than 1,500m on its way there.

The mouth of the Cerattepe copper mine is at approx. 1,700m above sea level. From there, the ropeway transports the ore into the valley over a distance of 4.5km across steep, wooded terrain. The incline is more than 43° at the steepest point. The ropeway can also be used to transport backfill material from the valley to the mouth of the mine.



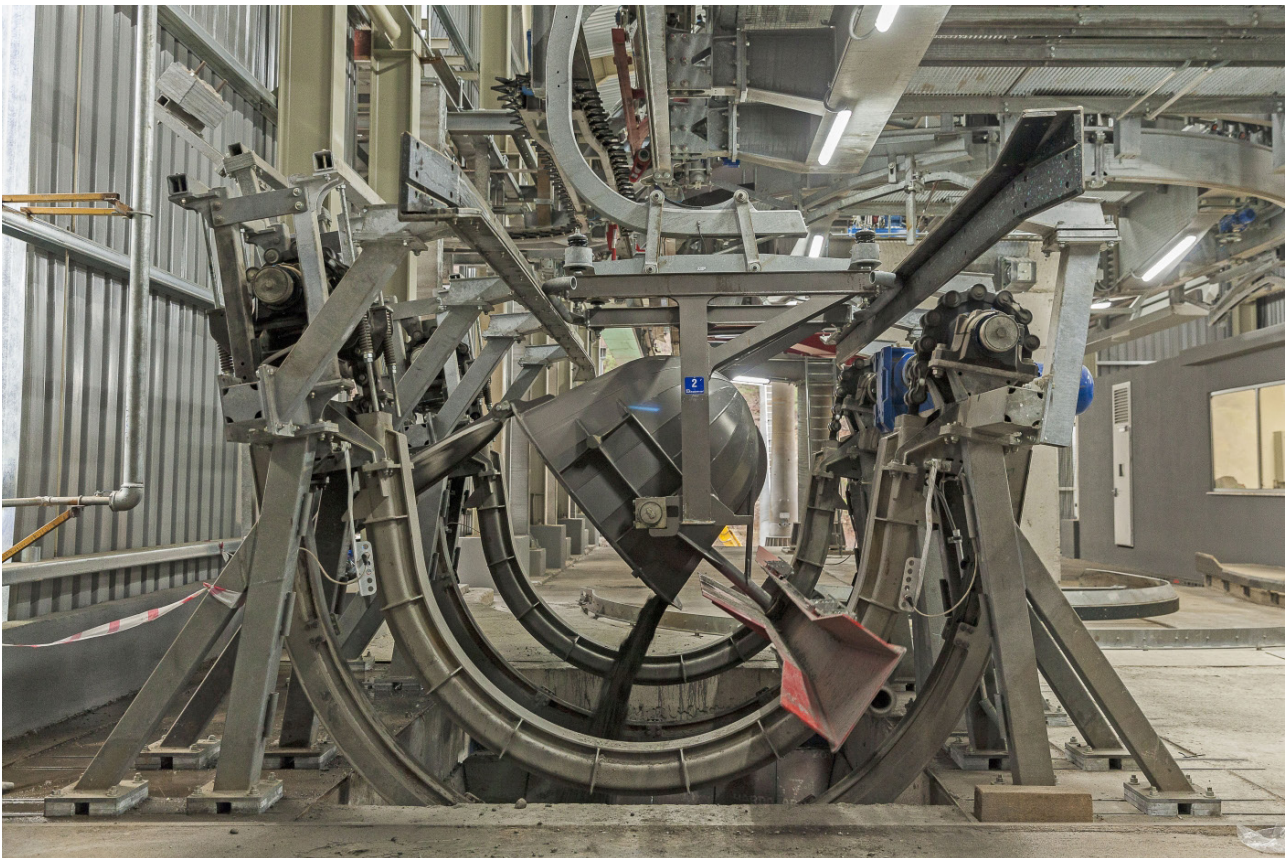
The system consists of a continuously moving steel wire rope to which the 51 material buckets are attached by means of a grip. The rope loop is driven by bullwheels in the loading station and tensioned via a return bullwheel in the unloading station in the valley. A mechanism in the stations opens the detachable grip of the material buckets and slows down each bucket. The buckets can thus be stopped for the loading and unloading procedures



in the stations but can still travel along the track at full speed. They are re-attached to the rope as they leave the station.

Furthermore, the Cerattepe ropeway allows for the combined transport of material and people. Apart from the material buckets in which the ore is transported, the system will also be equipped with some passenger cabins. In these cabins, the mineworkers can travel to their workplace comfortably and in safety. A trip in any of the cabins





takes approx. 20 minutes. Two different types of guides are installed in the stations: one for the material buckets, and one for the passenger cabins. Material flow and passenger transport can thus be kept separated.

To prevent soiling of the sensitive environment, the buckets have been fitted with lids. Any loss of material along the track can thus be prevented. In the unloading station, the lids are opened automatically via a special mechanism and the buckets are turned upside down so that the material will fall onto a chute. Then the buckets are tilted back to their normal position.

Operation of the ropeway is fully automatic. Operating costs can thus be optimised. There are also hardly any moving parts along the track. All material buckets and cabins travel through the stations regularly and can be easily inspected and maintained there.

To cover the entire distance and the enormous difference in elevation of 1,500m, the ropeway requires only 11 towers. The footprint on the ground can thus be minimized, and because the system is elevated off the ground, it does not represent an insurmountable obstacle for man or wildlife.

The ropeway took up operation in December 2017 and has since been transporting 60 tons of copper ore per hour into the valley.

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Duravit Ceramics, third Riedhammer kiln supplied to Egyptian plant

New shuttle kiln, which joins existing sanitaryware firing/re-firing machines, successfully tested. Germany-based Duravit thus renews its faith in a solution characterised by unique versatility, reliability and user-friendliness.

The installation of a third Riedhammer shuttle kiln at the firm's Egyptian factory underlines the strength of the successful partnership between the Sacmi Group and Ceramica Duravit, the world-leading manufacturer of high quality, beautifully designed sanitaryware. This recently tested Riedhammer SSK 440/ 198 -8 has been

installed alongside existing sanitaryware firing/re-firing kilns.

Equipped with 8 modules having effective internal dimensions of 15 x 4.4 x 2 metres, the kiln has a cordierite/mullite refractory lining, a feature that avoids the maintenance on exposed fibres that can sometimes lead to product defects. Moreover, it's equipped with a rapid cooling system that ensures the entire first firing cycle is completed within 14 hours.

Following its purchase of the first machines back in 2005, Duravit has, then, once again gone for Sacmi-Riedhammer technology, a decision brought about by the extreme flexibility, reliability and usability of these solutions. In fact, the company is already planning to install a fourth shuttle kiln in Egypt, now the most important overseas market for this outstanding German sanitaryware player.

Sacmi, offer layouts meet cutting-edge IT

As of today, Sacmi's offer layouts feature the QRCode. Framing it gives customers fast, simple access to machine brochures, taking Sacmi another step closer to the 4.0 smart factory.

An everyday tool used throughout the world, smartphones can now be used to gain fast, easy access to a full range of technical info on Sacmi machines.

This latest development is part of the recent changes to Sacmi's offer layouts, which can now include QRcodes for the main machines. These give real-time access to all the technical materials already available on the Sacmi portal.

Customers can now acquire comprehensive information on the offered machines simply by framing the QRcode with their smartphones, without any need for further web or paper browsing. In short, a "smart" layout that simplifies and speeds up the task of analysing the offer: another small step, then, by Sacmi towards achieving the full potential of the 4.0 smart factory.





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CEMENTTECH

THE GULF AND NORTH AFRICA - A REGIONAL OVERVIEW BY CEMENT BUSINESS RESEARCH

By: Terry Pavlopoulos // Cement Business Research, UK

Terry Pavlopoulos provides a market analysis of the cement industries in the Gulf and North Africa

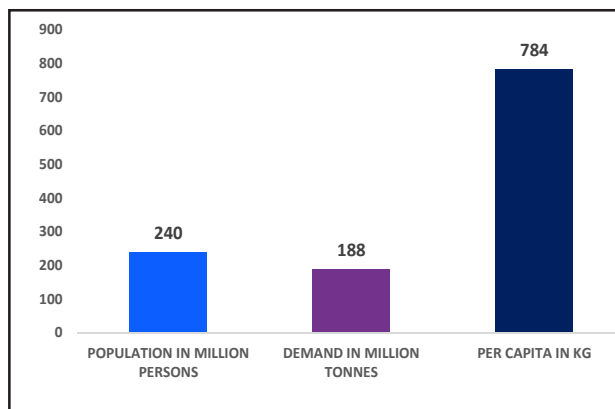
A review of the Gulf and North Africa regional report published by Cement Business Research

Cement Business Research is a research firm addressing the global cement sector. Our research and insights are combined into regional reports. The markets we have assessed in this regional report are: Algeria, Egypt, Kuwait, Morocco, Oman, Qatar, Saudi Arabia, Tunisia and UAE.

Some of our findings are:

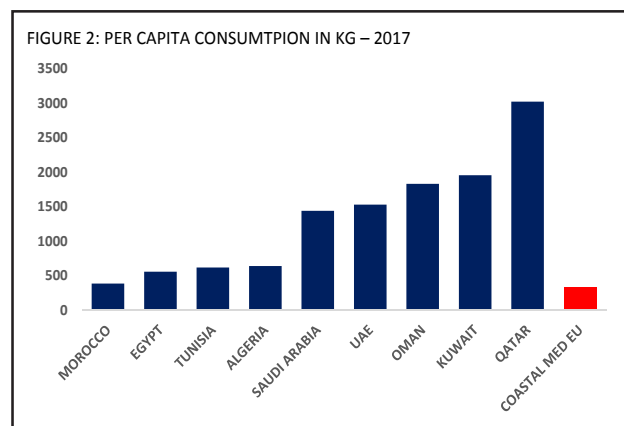
The current situation: in 2017, the region had a population of 240 million and a cement demand of just under 190 million tonnes. This yields an average per capita consumption of just under 785 Kg.

FIGURE 1: REGIONAL DATA



There is significant variation in the per capita consumption between the countries; the Gulf states being some of the highest consumers of cement in the world. Even the North African countries currently show per capita consumption significantly higher than the average of twelve European countries located in the coastal Mediterranean region.

FIGURE 2: PER CAPITA CONSUMPTION IN KG – 2017



This demand is met by regional supply of just under 275 million tonnes (from over 90 integrated and over 20 grinding plants – this assumes that all grinding plants in UAE can operate with imported clinker). This results in a Domestic Capacity Utilisation Factor (DCUF™) in the region of around 69%. The various markets in the region exhibit varying supply – demand characteristics and significantly different DCUFs™. We have also assessed several other issues regarding products, imports/exports, vertical integration, distribution chain, existing cement plant locations/capacity/ownership for each market and a provided a discussion as to whether a market is regional or national. We have found that there are significant differences in the various countries but also some common characteristics.

The future outlook: by 2022 demand in the region is projected to grow at around 4.5% per annum to around 235 million tonnes. At the same time, we expect capacity to grow at less than 3% per annum to around 315 million tonnes. We have included in this capacity projects that have a high degree of certainty. This will only slightly shrink the excess capacity in the region by a few million tonnes between 2017 and 2022. However, the DCUF™ will improve from 69% to around 75% as demand grows at a higher rate than supply. The various markets within the region are projected to grow at different rates of demand whereas new capacity additions are almost exclusively in the North African countries.

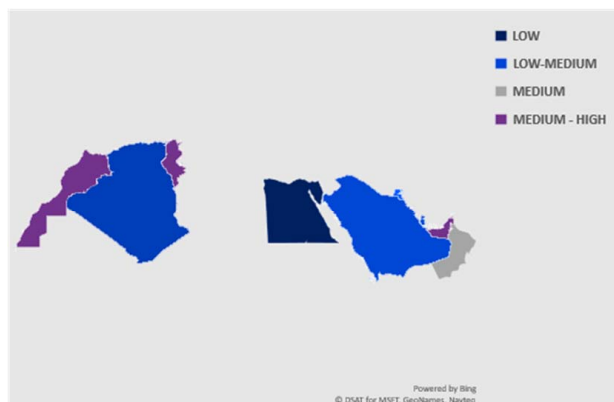
The demand projections were risk adjusted by asking the following questions: Is there a need for such growth? Does the country/industry have the capability to deliver such growth? and Is funding available to support such growth? We have found that this assessment varies from country to country with the risk being on the upside in some countries and in others on the downside.

Given the overall oversupply situation in the region (and in most individual markets within it), we have also assessed the ability and potential of each market to export its excess capacity. For this purpose, we examined the International Trading Assessment Matrix (ITAM™). This analytical tool also works for markets that need to import (some of the Gulf States) and ascertains whether consumption can, in some cases, be supply restrained. The criteria examined in ITAM™ are the following:

- Trade supporting legislation
- Port infrastructure and capacity
- Existence of coastal plants
- Cost of haulage
- Economics of trading

An overall assessment was made for each country. A graphical representation for the ITAM™ findings for the region are shown below:

FIGURE 3: ITAM™ FINDINGS FOR THE REGION



Each market has a different level of need to export or import. This is indicated by the DCUF™ of each market. The DCUF™ and ITAM™ combined examine the propensity and ability of each market to export / import. However, we considered that these were enough to determine whether an industry will actually export (or import). For this reason, we have also assessed each industry's existing or potential destination markets to see whether exporting their excess capacity is a viable solution.

We have found that in many cases in this region, such opportunities are not available. A notable example here is the switch of Algeria from an importing destination

(significant volumes in the past) to a market that is projected to experience excess capacity during the forecasting period. As the few deficit markets in the vicinity disappear or become the subject of fierce competition by traditional exporters, the industries in this region may find exporting their excess capacity a challenging task.

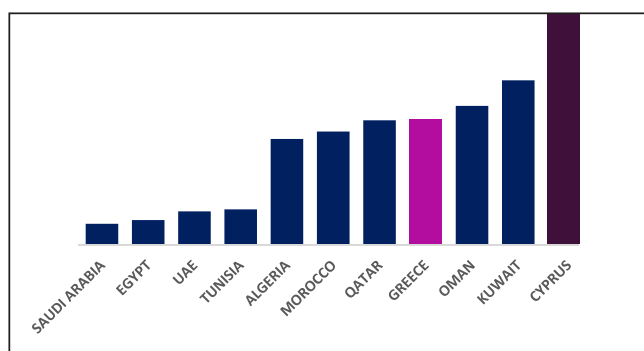
Conversely, in some of the importing markets the above considerations indicated that there are limitations in increasing consumption due to low ITAM™ scores and other issues such as government interference. A case can be made for Kuwait that potential growth in the market may be supply constrained.

Industry Structure and Dynamics (ISD™): This examines in detail the nature of participants, the consolidation index of the industry and the cost structure and dynamics of the industry.

Our findings in the ISD™ analysis were extremely informative and insightful. The nature of participants determines their behaviour in each market whereas a highly consolidated industry provides useful messages regarding prices going forward. In the industry cost structure and dynamics analysis we examined the current situation of the industry in terms of technology, improvement potential and industry profitability. Some of the regional findings of ISD™ are shown below:

The industry consolidation (Consolidation Index) provides a view of the competitive situation within a market. The region exhibits the following consolidation characteristics:

FIGURE 4: CONSOLIDATION INDEX



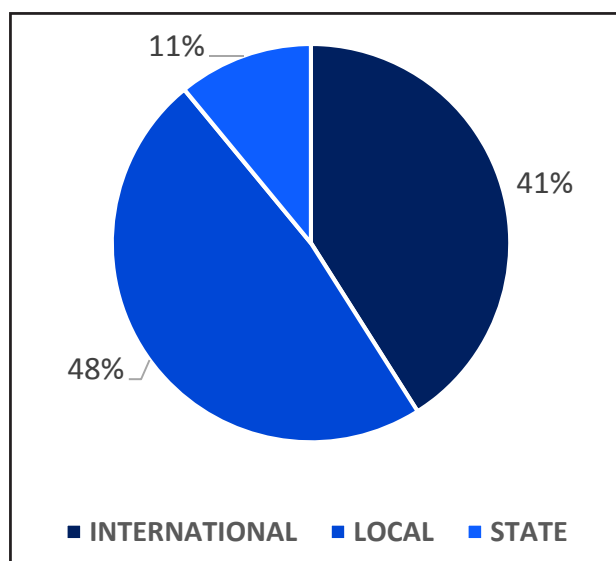
The graph shows the Consolidation Indices (CI) of all markets in the region. The lower the number the lower the consolidation in a market. The region is made up of markets of varying levels of consolidation. Saudi Arabia, Egypt, the UAE and Tunisia are considered highly fragmented markets whereas Oman and Kuwait are highly consolidated. Algeria, Morocco and Qatar are somewhere in the middle.

The nature of participants also provides some very useful insights into each industry. We have found that

the absence of international cement players from a market for example, impede vertical integration (some of the Gulf States being a good example here). The involvement of the State in the industry (as owners of cement businesses) is another characteristic we have identified, particularly in the North African countries. How would this develop? Would enlightened governments manage to privatise their assets (for example the recent announcement of the disposal of the 50.52% of Carthage Cement in Tunisia – perhaps more to come...) or will they continue their involvement unabated (the military in Egypt is a good example here)?

The current nature of participants in the region is as follows:

FIGURE 5: NATURE OF PARTICIPANTS



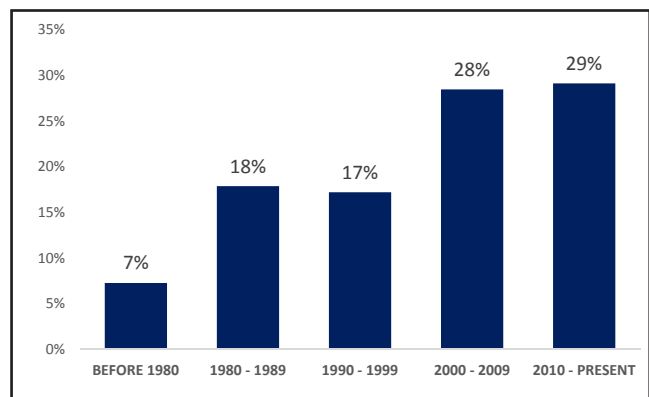
NB: As calculated by the ownership of cement capacity

We have made a distinction between international producers and local producers depending on their presence in markets other than their own. Also, a third category was the state-owned players (including the military). We have found that the largest part of capacity in the region is in the hands of local players, often owning one plant and with no presence in other markets.

The industry cost structure and dynamics analysis provided the following insights on the assets in the region:

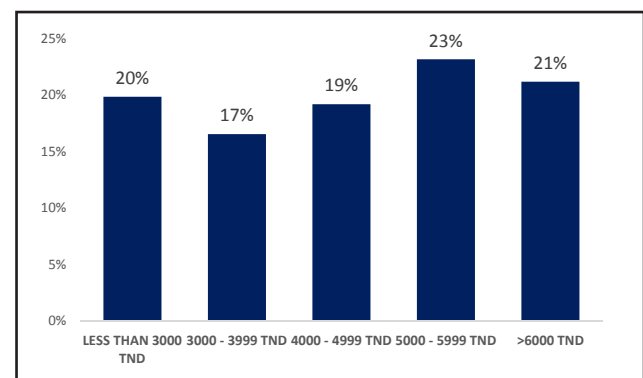
The time period of kilns shows the age of the kilns in the region.

FIGURE 6: AGE OF KILNS AS A PERCENTAGE OF TOTAL NUMBER OF KILNS



Size of kilns shows the kiln size in TPD (tonnes per day).

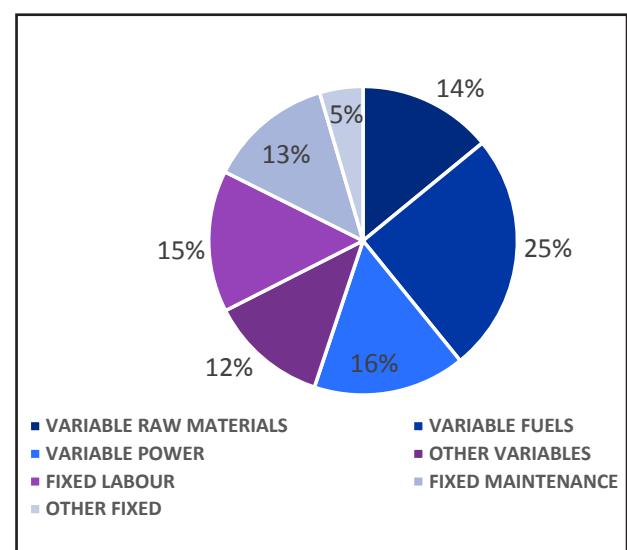
FIGURE 7: SIZE OF KILNS IN TND AS A PERCENTAGE OF TOTAL NUMBER OF KILNS



We have found that the region, in the main, boasts new kilns (employing recent technology) and kilns of larger size (offering economies of scale).

We have found that on average, the region has the following production cost breakdown:

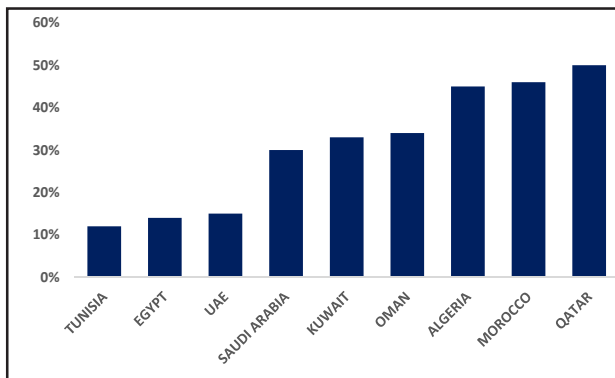
FIGURE 8: REGIONAL PRODUCTION COSTS BREAKDOWN



Again, the individual industries have different production cost profiles. For example, in Kuwait where limestone is scarce the variable cost for raw materials is relatively high. We estimated that in Kuwait the raw materials cost account for around 30% of total production costs whereas the region average for raw materials is around 14%. In Algeria, where the industry benefits from high levels of energy subsidies, the energy costs account for around 12% of production costs against a regional average of around 40%.

When we examined the industry profitability we found that there is significant variation in the region as follows:

FIGURE 9: INDUSTRY PROFITABILITY



NB: This is a CBR defined metric which estimates the profitability of a cement producer (approximating an EBITDA margin) with the following characteristics: average industry cost structure, single product portfolio (only cement), no exports (all production sold domestically).

We have also found that the varying profitability profiles depend on various aspects that drive them; pricing, which we have found correlates with the industry consolidation, the supply – demand balance and in some cases government intervention. Also, costs vary significantly from country to country, particularly energy costs which are often subject to government subsidies.

Our conclusions are encapsulated in the CBR Ranking Tool (CBRRT™). We synthesized all the data, insights and analysis findings and came up with a quantitative approach to market attractiveness. Our assessment was carried out by examining and grading each market on six forward looking criteria. These were:

- Attractive supply-demand balance
- Attractive industry structure and dynamics
- Capability to export/import
- Industry projected profitability
- License to operate
- Potential M&A activity

We then ranked each market in the region. For Gulf and North Africa, the CBRRT™ results are shown below:

FIGURE 10: CBRRT™ - REGIONAL INDUSTRY ATTRACTIVENESS PROFILE



The CBRRT™ rankings for this region vary from a score of nineteen (least attractive) to a score of thirty-two (most attractive). As a comparison, in our recent assessment of European markets, we have found that Belgium has a CBRRT™ score of 33, France 35 and the UK 37.

THE CBR RESEARCH TEAM
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Vertical Mills Ensuring Reliability

By: Osama Aly Ahmed, Egypt

Introduction

As ever – higher efficiencies have become a prerequisite for grinding equipment; cement plants now require a new benchmark for grinding component performance.

Addressing wear through regular maintenance and repair is one strategy with sustainable supply of grinding parts and management of mill wear as key factors in keeping mills running

Wear is an implicit phenomenon during grinding. It has accumulative effect over time and results in significant changes in the shape of rollers and tables of milling equipment, ultimately determining their replacement. The degradation in efficiency is progressive,

reducing throughput and increasing power consumption; thus, a new benchmark is required to meet the challenges of efficient grinding in distributed locations, in a world of ever increasing mill sizes and capacities.

This article will explore the best methods from Loesche & FLSmidth to enhance vertical mill reliability.

Understanding the operational period of rollers and tables due to wear (Loesche Method)

In the present context, the operational period of the component refers to an arbitrary time or throughput mass after which it is taken out of operation for replacement or refurbishment.

The critical decision to replace or

remove may depend e.g., on the throughput being unacceptably low, or the specific power consumption or the vibration being too high, or due to planned maintenance schedules. In raw mills, operation becomes normally difficult when the maximum wear is deeper than 50 mm whereas in slag mills this may occur after 30 mm depth only. Naturally the operation time and /or throughput to the end of operation may vary according to the abrasivity of the media.

Assuming reproducible and stable mill operation, it is possible to distinguish a trend in milling throughput or specific power consumption relative to the end of their operation. It is interesting to observe that similar trends appear to occur with all mill designs and grinding component material. Your recorded trend is consistent with 3 stages

Stage 1:

Refers to the bedding in period from the original design dimensions.

Stage 2:

Corresponds to the optimum operation (it is intermediate stage that optimum = actual on the same line).

Stage 3:

Corresponds to a gradual loss in efficiency due to wear.

The model is useful because it distinguishes between modes of plant operation as first step towards optimization.

The following figures indicate electric consumption and mill production the trend (A) between electric consumption and running time and trend (B) between mill production and running time.

They can be divided into 3 stages:

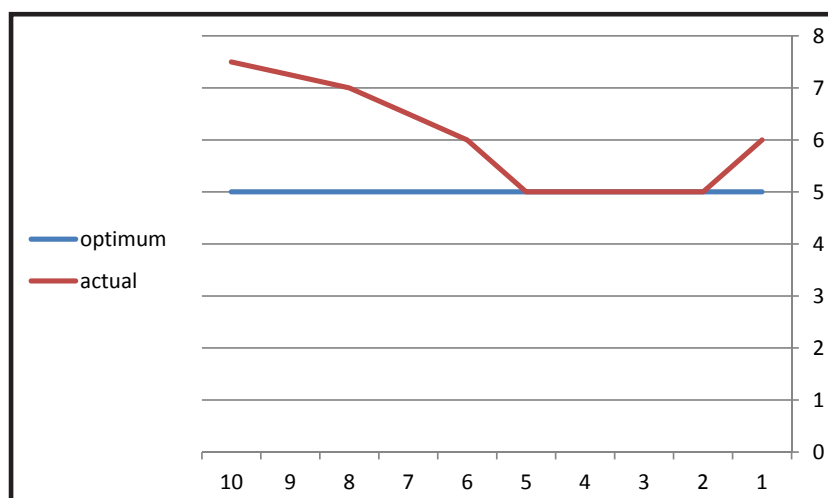


Fig A: Specific Electric consumption Kwh/t

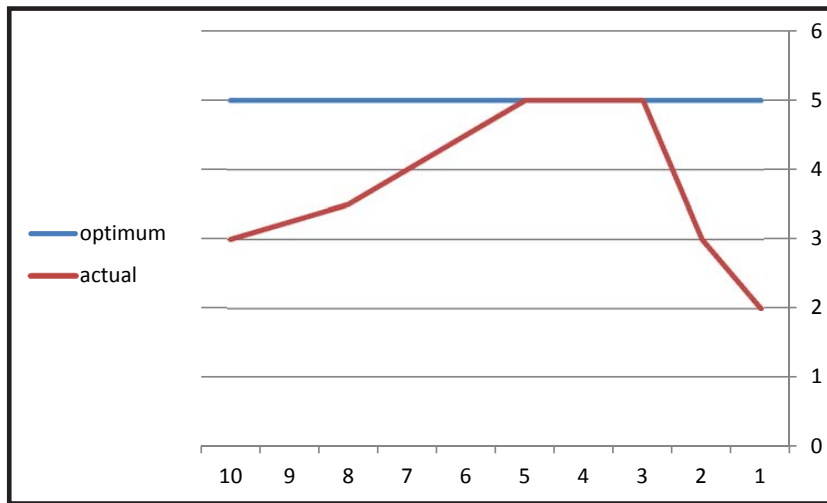


Fig B: mill throughput t/h

Throughput Model:

The case of a plant aiming at maximum production irrespective of electrical consumption for example, a favorable market when all production is entirely sold out. The operator would be trying to maintain throughput as close to normal production as possible however the actual throughput would be dependent on wear.

Specific electrical consumption Model:

The case of plant trying to minimize cost through energy savings; for example, a competitive market with depressed prices, requiring a fixed cement quota at minimum production cost. In this case the plant would be trying to keep consumption as close to stage 2 as possible.

However, the actual consumption would be also dependent on wear. Most plants would expect to operate in between these two extremes in practice.

Stage 2 corresponds to the maximum efficiency under operating conditions.

Stage 1 .3 are wasteful and have higher vibrations, higher energy consumption, lower throughput and higher vibrations, higher energy

consumption, lower throughput and higher emissions.

The models can assist plant operators in estimating the direct economic impact of wear or how to mitigate it. For example, a simple regression using throughput model indicates a deficit in throughput.

It should be possible to assess the cost implications e.g., assuming recovery from limestone to clinker and knowing the plant's profit margin. It is possible to carry out a similar analysis using the specific electrical consumption model and calculating the cost to departure from normal electric consumption using local energy cost.

From another point of view (FLSmith Method)

Erosive wear test procedure helps vertical roller mill operators to reduce maintenance costs and increase equipment lifetime.

Erosive testing of vertical rollers mills is an important area in cement production. Together with traditional testing procedures it can provide vital insight into the expected lifetime of mill equipment and help operating staff prepare effective maintenance plans.

Abrasive testing insufficient The problem associated with

abrasive wear is well known and abrasion testing is widespread. Abrasion is often the most damaging mechanism occurring in VRMs, contributing to the loss of wear parts material on table and roller segments. In contrast to abrasion is a high wear mechanisms, erosion is a low pressure airborne mechanism occurring primarily on the mill housing and separator.

It is difficult to predict effects of erosive wear due to determining factors of wear part material including abrasive hardness, particle size distributions, speed, angle of attack and mineralogy.

Determining the erosive wear rate Used in conjunction with FLSmith laboratory VRM, erosive test rig allows research engineers to simulate to a high degree of accuracy the effects of erosive wear within a full size operational VRM. Testing based on two-step process. First, the laboratory VRM is fed with a raw mix with very similar properties to that used in industrial production. A unique ability to store and remove a large amount of separator return feed from separator cone.

The return feed is a good fingerprint of the material that causes erosive wear within a VRM. Secondly, the return feed is removed from the cone and put through an accelerated erosive test in the erosive test rig.

Quartz is the most erosive type of particle occurring in raw material VRMs. Wear is often correlated to the fraction of quartz in raw mix, which can be measured by means of, for instance X-ray diffraction or microscopy. But these methods require a sample preparation that destroys the original particle size distributions that is known to be extremely important in erosive wear situations. The erosive wear tester operates with non-destroyed, original particle size distributions, while also considering both speed and angle of attack – two properties

VERTICAL MILLS

that are impossible to mimic in X-ray and microscopy.

Lab team determining the erosive wear rate by experimental method. Almost any material can be used in the testing rig. Different wear part materials can be tested to compare their erosive properties. This means wear parts can be replaced with material less susceptible to erosion, thus improving the VRMs expectancy – and allowing better long-term maintenance planning.

By photos hardfacing steps

Before hardfacing



Figures 1, 2

During hardfacing



Figures 3,4

After hardfacing



Figures 5, 6



Figures 7, 8

The evolution of grinding components

For many years the standard material of choice to produce grinding components was high-chromium white iron. Carbon is present in

these materials to increase hardness and abrasion resistance, but it markedly decreases toughness and, therefore, is limited to around 3.5 weight percent.

Even with controlled chemistry, these irons are notoriously brittle. Any pre-existing defects may propagate catastrophically when mechanically or thermally stressed (e.g., metal to metal contact or thermal chock).

Around 20 years ago the development of hardfacing of hardfacing equipment and procedures made it possible to reconstitute the worn components to their design shape, or to manufacturer new, enhanced components in comparison to the white irons.

Hardfacing by welding is efficient and requires a fraction of electric power needed to cast a new component. It is possible to hardface with a wider variety of alloys than previously possible with the castings, with carbon contents even higher than five weight percent due to the enhanced chemistry and nobler alloys the abrasion resistance is comparatively higher.

The welding stresses can be relieved via formation of stresses relief (check cracks). Since around 2000, the development of a ceramic / metal composite was successfully carried out, which was patented in the following years.

This technology is now well established in the market and is associated with good operational periods.

The new benchmark for grinding components

Hardfacing high chromium white iron by means of welding is a successful technique when properly applied:

- 1- Conical tire with accurate geometry after successful operation.
- 2- Close-up of hardface edge after dye-penetrant testing with the correct welding conditions. The check of cracks are formed in the hardface metal, but they do not propagate into the base.

Conclusion:**From Loesche Side**

The need to tune the geometry of the dam ring to avoid excessive vibration in addition, when it comes to retaining the correct shape of the tyres, the gap with table is of paramount importance as it also affects the efficiency and departure from the optimum ranges in this sense continuous refurbishment and other initiatives to retain geometrical to avoid the wastefulness of stage 3.

The accurate control of the mill geometry demands the intrinsic participation of the mill designer for the supply of adequate replacement parts and the proper refurbishment in situ.

From FLSmidth Side

All parameters are integrated into a single number, called the erosive wear rate.

Improved VRM life expectancy and better long term maintenance planning.

Now one can accurately compare the lifespan of wear parts depending on specific material they are made of and process materials they are exposed to help developing the right wear solutions and developing optimal wear resistance solutions for roller tires and separator in VRMs.

The unique wear resistance properties mean it requires significantly less intermittent repair than other wear solutions.

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Osama Aly Ahmed has been working in cement manufacturing industry, including equipment installation, operation and maintenance for 18 years. Currently Osama does consultation helping his clients with energy management and cost reduction. He has also written more than 10 articles for cement industry publications and magazines.

Osama is a big advocate of utilizing energy sources for cost reduction and achieving high organization profit.

Mobile: 00201064170712

Unlocking hidden production capacity in high temperature processing industries



How advanced modeling guided a coal-fired lime kiln to increase capacity by 20%.



By: FCT Combustion, Australia

Customer: An emerging global leader in the supply of lime products **Lime types produced:** Quicklime **Kiln type:** Long dry lime kiln **Fuel:** 100% direct fired coal burner

Most plant operators will appreciate that the burner is the heart of their process. The burner influences kiln output, product quality, NOx emissions, the creation of rings and cycles, and many other process factors

High temperature (energy intensive) processing industries – and the cement industry in particular – focus on fuel savings, enhancing material quality and production rates, and complying with stringent emission regulations.

Until recently, burners were designed from experience, trial and error, and empirical rules. It was only possible to study the combustion reactions in the kiln tube, as current commercial CFD packages

cannot predict the material bed temperature, bed temperature profile, or the reactions occurring in the bed.

FCT Combustion's advanced modeling capability combines CFD combustion reactions with numerical bed modeling, resulting in a greater understanding of how the burner design is interacting with the material bed in the kiln.

Using these two techniques together provides spatial insight and detailed information about the fluids, flame and product within the kiln. It also provides the flexibility to assess kiln performance under various operating conditions and devise optimal performance settings. Also, unlike most measurement methods, where a single parameter (eg temperature, species concentration) at a single location is recorded, numerical solutions provide 3D mapping of all relevant parameters and material properties in each simulation.



By changing burner parameters, and understanding where and when critical material reactions are occurring in the bed, it is possible to unlock hidden production capacity.

Modeling and optimizing a lime kiln

A coal-fired lime kiln, processing calcium carbonate (CaCO_3), is the subject of this case study. The calculations were performed using

a commercial general-purpose CFD package, coupled with a specialized bed modeling code. A visual onsite observation of the flame showed a long black plume of unburnt coal particles. This indicates an ignition delay, which is one of the challenges addressed in this study.

A major challenge in the CFD modeling of rotary kilns stems from the lack of accurate information about the material bed temperature distribution along the kiln. It is a common practice for process and material engineers

to estimate the bed temperature profile based on their knowledge and experience of a specific kiln.

This approach, however, makes it difficult to generalize or extrapolate temperature profiles for other kilns with different dimensions, burners, materials, production rates etc.

To demonstrate the significance of obtaining a reasonably accurate bed temperature profile on the performance of the kiln, modeling was performed for the existing burner with specific operating conditions using an assumed bed temperature profile, before modeling the kiln using a computed bed temperature profile that was obtained through a two-way CFD-material bed coupling.

The results, shown in Figure 1, clearly show that accurate representation of the material bed temperature has a notable effect on the peak magnitude of the wall heat flux (WHF) profile, its location and on the ignition distance.

To improve the performance of the kiln, the existing burner was redesigned to shorten the ignition-delay distance and enhance the utilisation of the latent

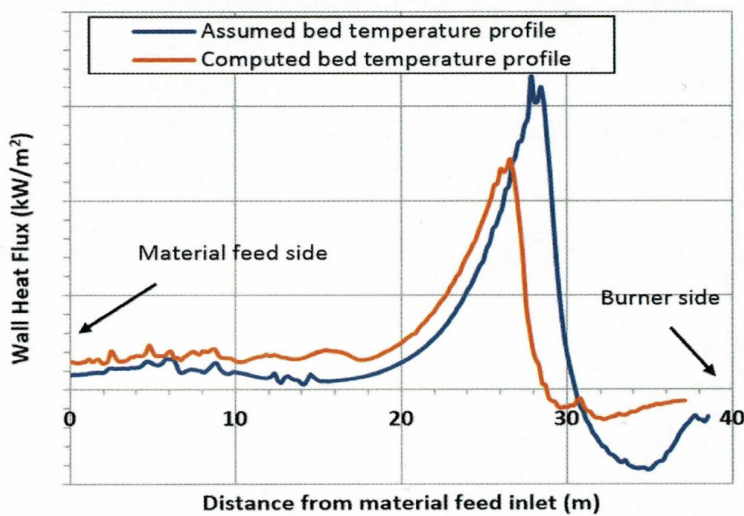


Figure 1. Bed heat flux profile as predicted using an assumed and computed temperature profile of the material bed for the existing burner design.

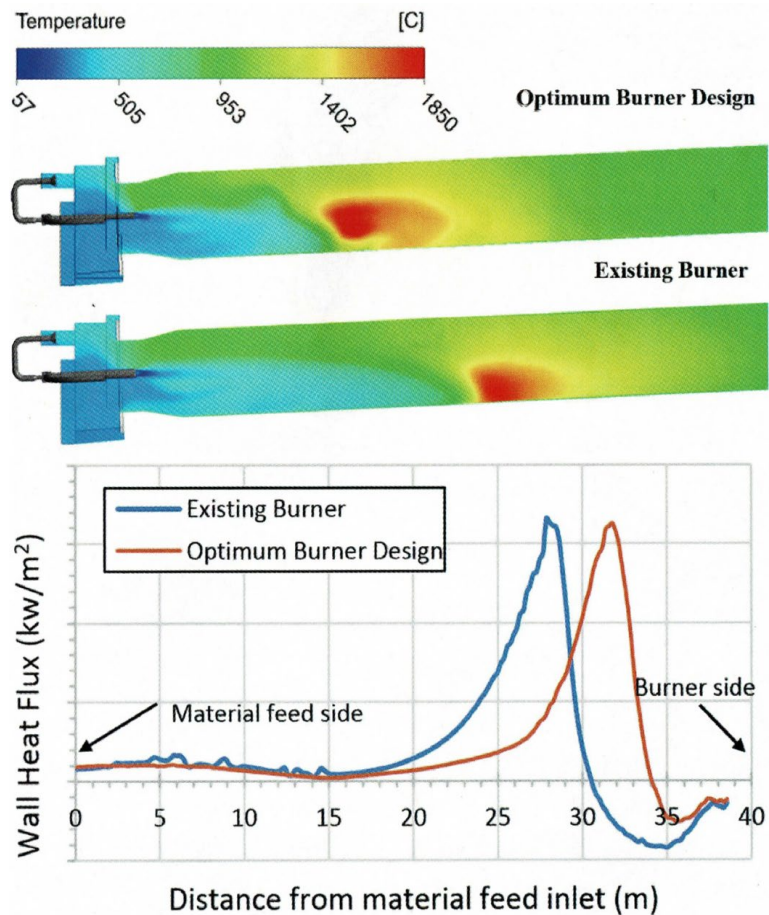


Figure 2. (a - top) Temperature contour map showing the earlier ignition in the optimum burner design as compared to the existing burner. (b - bottom) Wall heat flux profile of the flame produced by the optimum burner design and that with the existing burner.

capacity in the bed to increase the production rate. The positive effects of the modification on the ignition-delay distance and on the wall heat flux profile are shown in Figure 2. It reduced the ignition-delay distance by approximately 5m, which consequently reduced the heat transfer from the inner refractory and the material bed to the secondary air, without affecting the shape of the WHF profile.

The flow pattern in the kiln indicated the formation of two large vortices (on the opposite sides of the kiln) immediately downstream of the nose-ring. This flow recirculation is effectively transferring heat from

the flame region to the incoming air streams, and hence preheating the incoming secondary and conveying air streams.

Preheating the air to raise the bed temperature and production levels

The preheating effect showed the incoming secondary air temperature at 300°C, rising to approximately 570°C within less than 1m. Typically, preheating the air reduces ignition delay distance and enhances flame stability. In this kiln, however, the high velocity injection coal particles and the low secondary temperature counter the benefits of the preheating and cause a delay in ignition distance to about 3.6m from the burner.

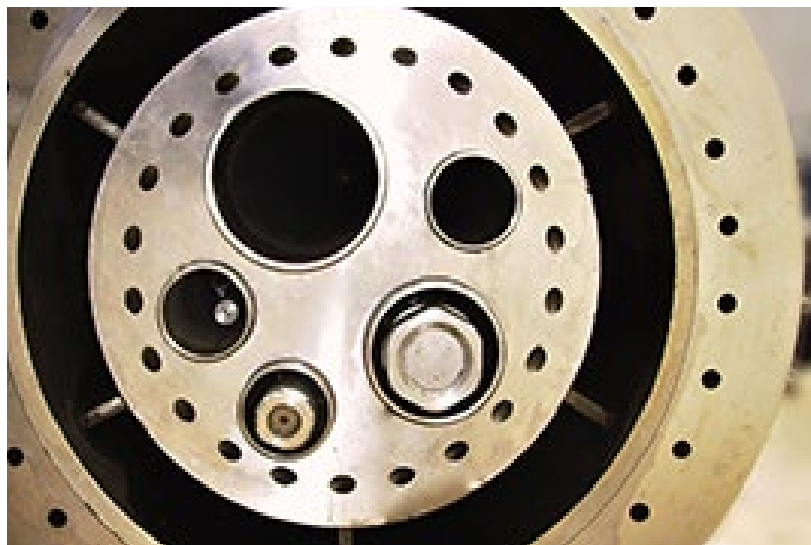
The flame temperature, however, reaches its peak value further downstream, approximately 6.5m from the tip of the burner. The flame is touching the material bed, which is mainly due to the burner pipe being oriented towards the material bed. The predicted delay in ignition is consistent with the site observation.

The predicted gas, refractory and bed mean temperature profiles indicated that the inner refractory and the material bed temperatures reach thermal equilibrium approximately 15m downstream of the burner's tip. They remain in equilibrium all the way to the back end of the kiln. A positive WHF value indicates the transfer of heat from the gas/flame to the walls (ie the inner refractory and the material bed). However, a negative value indicates the heat is being transferred from the walls to the gas.

This occurs when the temperature of the refractory or the material bed is higher than the gas temperature. In this kiln, a negative WHF region extends from the nose-ring to approximately 5m from the tip of the burner, as shown in Figure 2. It is worth noting however that although

combustion commences about 3.6m from the burner, high rates of heat-release occur approximately 5m - 6m from the burner.

cooler chute (Figure 3-a). This sharp rise in bed temperature, however, offers an opportunity to increase the production rate



This sharp temperature rise is an indication of the completion of the endothermic calcination process in the bed. That is, the heat transfer from the gas is being converted into sensible energy in the material bed, rather than being used for material calcination. The bed temperature then starts to decrease closer to the burner, as this sensible heat is transferred back from the bed to the secondary air.

The prediction of the material bed modeling for the existing burner showed that calcination is completed approximately 6m before the material reaches the

by utilising the embedded sensible bed energy. Accordingly, the feed rate is increased to 120% and later to 130%, as shown in Figure 3-b and Figure 3-c respectively.

A complete calcination is achieved when the feed rate increased to 120% of its existing feed rate (Figure 3-b). This implies that the current firing capacity (using the redesigned burner) is sufficient to handle the additional feed. The figure also shows that the embedded sensible heat in the bed is no longer wasted, which

indicated improved process heat utilization. The production of CaO is increased by 20%. The efficiency of the actual-to-theoretical CaCO₃/CaO conversion is also increased from 81% to 90%. Further increase in the feed rate to 130% of the existing rate, however, (without increasing the firing rate) has resulted in an incomplete calcination of 5.5% of the feed material (Figure 3-c).

Overview of project benefits

Combining advanced CFD modeling capabilities with a bed modeling code provides new knowledge that can be used to analyze and optimize burners, kilns and materials processing plants.

These capabilities are used regularly at FCT Combustion for problem-solving, burner design and optimization in high-temperature processes such as lime, cement, pulp & paper, alumina, nickel and iron pellet.



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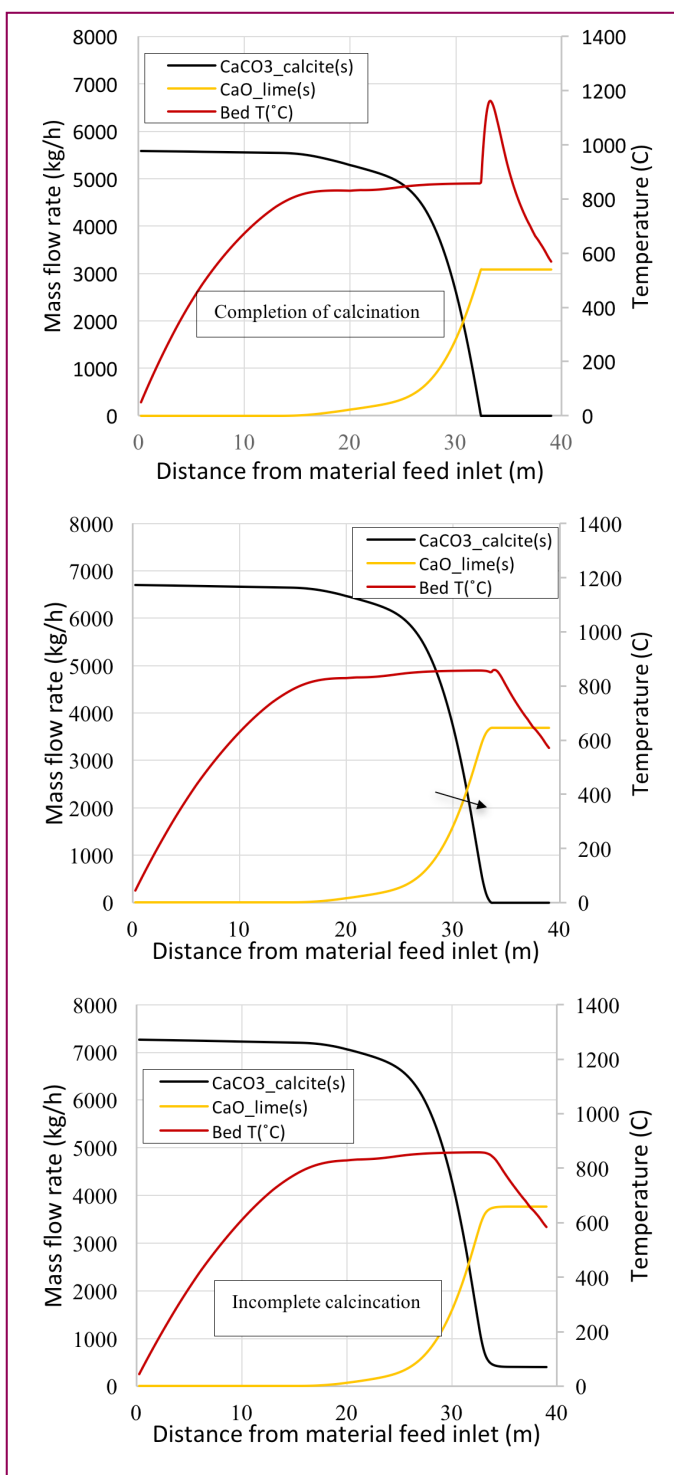


Figure 3. Material bed calcination profiles for: (a - top) 100%, (b - middle) 120%, and (c -bottom) 130% of the original feed rate. The red line is bed temperature, the black and yellow lines are % of CaCO₃ and CaO.

Magnesia-Spinel Castable. An Innovative Solution for Clinker Kilns

By: M. Alvarez, V. Alvarez, O. Burgos-Montes, I. Recio
Refractarios Alfran, SPAIN

INTRODUCTION

Nowadays the use of basic bricks in the rotary clinker kiln determines the maintenance shutdowns in terms of frequency and duration. The requirements of refractory materials for the burning zone in clinker rotary kilns are different from the other areas in cement production. The combination of high temperatures, chemical conditions and mechanical stresses leads to the employment of Magnesia based bricks. Disadvantages of shaped to unshaped materials are well-known. Shaped materials have been progressively substituted by unshaped materials in other areas such as kiln hood or cooler.

A promising alternative to overcome these disadvantages is the use of unshaped magnesia materials. ALFRAN innovative solution involves an important cost and time saving. Moreover the substitution of the bricks leads to environmental, health and safety advantages [1- 3].

However, the major challenge for basic castables is the control of the hydration of magnesia, in order to prevent the spalling and cracking during the curing and drying steps. The hydration of MgO to Brucite ($\text{Mg}(\text{OH})_2$) implies a well know important volume expansion due to different densities, from 3.5 g/cm^3 of the oxide to 2.4 g/cm^3 of the corresponding hydroxide. If the hydroxide structure cannot be accommodated in the porosity of the castable, cracking phenomenon takes place. In the last decades, MgO castables have received a great attention and different routes have been investigated in order to minimize hydration, such as the addition of microsilica, the control of the pH, the nature of the magnesia and the use of anti-hydration additives [1- 6].

The aim of this paper is the development of the Magnesia-Spinel castables. ALFRANMAG 85 HG is a basic castable, and gives an innovative alternative and/or complement to MgO bricks in rotary clinker kilns. The application of this castable can be performed by

gunning or casting, in order to have a versatile product range that satisfies all the needs of the clinker producers.

DEVELOPMENT

As first stage, in lab scale, the study was focus on the control of the Brucite formation and therefore the cracks formation.

The control of the Magnesia hydration in water based castables was carried out by two different ways, the selection of raw materials (magnesia source, microsilica and the addition of additives) and the design of the microstructure.

Through the design of Magnesia- Spinel castable has been achieved:

-The control of the Brucite formation.

The formation of Brucite without control increases the risk of cracks formation or explosions during the curing time and during the dried out (dehydration of Brucite).

Hydration of basic castable was studied by macro-thermogravimetric analysis (TGA) system. In figure 1 can be seen the behavior of the designed castable with the selected Magnesia source and the proper additives. The evolution of weight loss versus temperature shows an important loss of 4% at temperatures lower than 200°C . From 200°C to 600°C a progressive reduction of weight loss takes place. No significant weight loss is detected around 400°C where dehydration of Brucite occurs [5]. Taking that into account the formation of Brucite takes place in low quantities, so the microstructure developed is able to accommodate the Brucite in the structure and eliminate dehydration vapors without any damage in the castable.

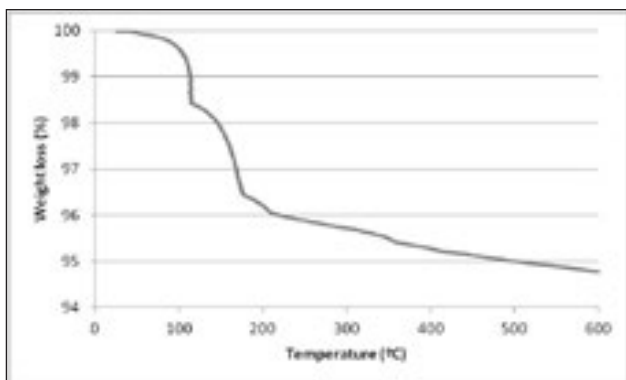


Fig. 1: Evolution of weight loss versus temperature measured by macro TGA.

- Compatibility with the substrate (Magnesia-Spinel bricks)

Other critical point that determines the viability of basic castable as solution is the compatibility between the substrate, old-bricks, and the new material, Magnesia-Spinel castable. Compatibility has to be adequate in all the temperature range to assure the success of basic coating solution.

A Magnesia-Spinel castable was sprayed over some commercial bricks that were recovered after being used. Then, the interface has been studied by different techniques after different temperatures treatments. In the following figure 2, the microstructure of interface, brick and castable contact area, can be seen. As it can be observed, there is a very good integration and adherence, without thermomechanical stresses. No hydration of Magnesia bricks is observable as confirmed by X-ray powder diffraction (XRD).

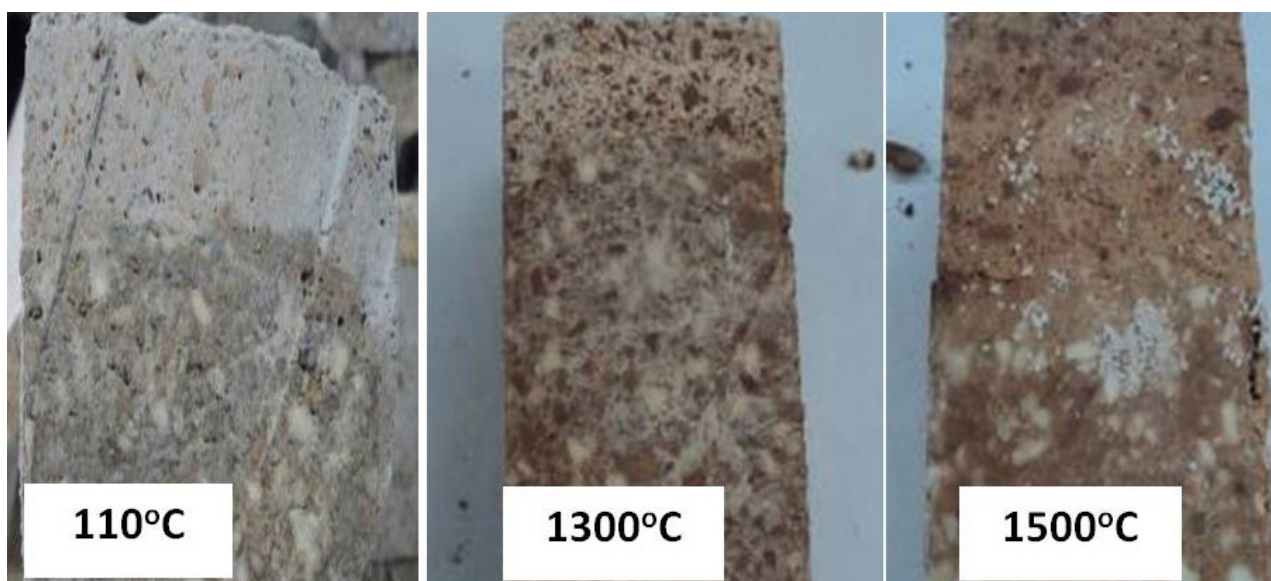


Fig. 2: Pictures of the interface area between basic castable and brick treated at 110°C, 1300°C and 1500°C/5h.

FIELD TRIALS

To date, several field trials have been carried out in different cement plants in Europe and America. In all cases, complete rings were made by gunning in order to assure the self-supporting of the basic castable. The area coated was the stable coating area. No metallic anchors were needed (Fig.3) and an important reduction in shutdown time was obtained (Fig.4).

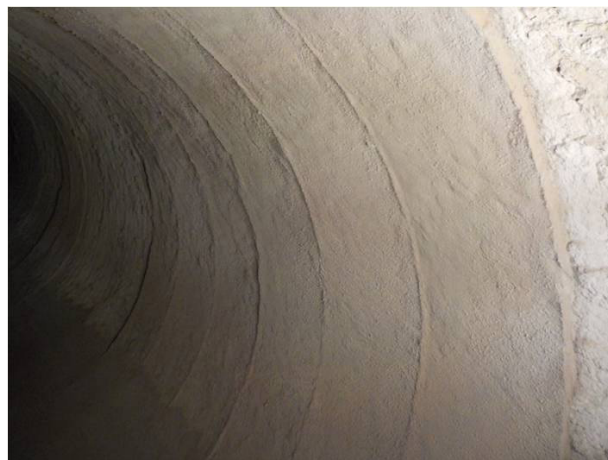


Fig. 3: Aspect of the ALFRAN castable installed.

The main challengers that castable have to overcome are:

- Standard heating up curve should be secure for castable dry-out.
- Castable must have enough mechanical strength during initial kiln rotation throughout start-up, when temperatures are lower and bonding

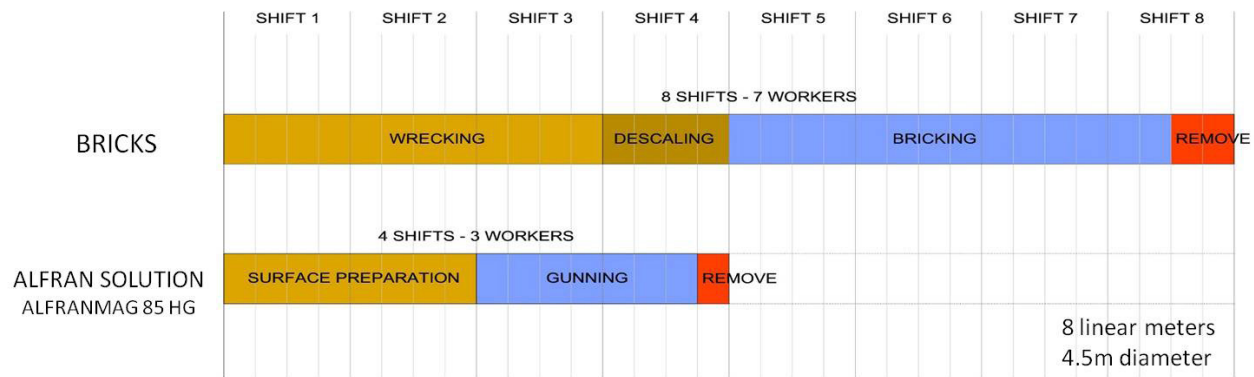


Fig. 4: Schedule of comparative shutdown (Bricks or Castable installation)

between particles is feeble because reaction sintering has not started yet.

- Castable must resist initial feeding impact, when stable coating is not protecting the lining.
- Castable must develop good adherence with residual bricks, from ambient to process temperature.
- Castable must be capable to form stable clinker coating.
- Castable must have refractoriness as high as regular bricks.
- And have good enough resistance against corrosion.

The behaviour of the basic castable during resume was appropriate. Neither peel-off has been detected

in the first stages nor during clinker feeding, where the material has to support rotational stresses at low temperatures. No magnesia increment in the chemical analysis performed by the cement plants was detected on these first stages.

As it is well known, one of thermo-mechanical lining parameter of huge importance for durable lining is the formation of stable coating on the refractory surface. Formation of the clinker coating was validated by thermal scanning in all the cases. No differences were detected between coated areas and new bricks areas. At process conditions, the external temperature registered in the coated zone was lower than adjacent similar areas (Fig.5 and Fig.6).

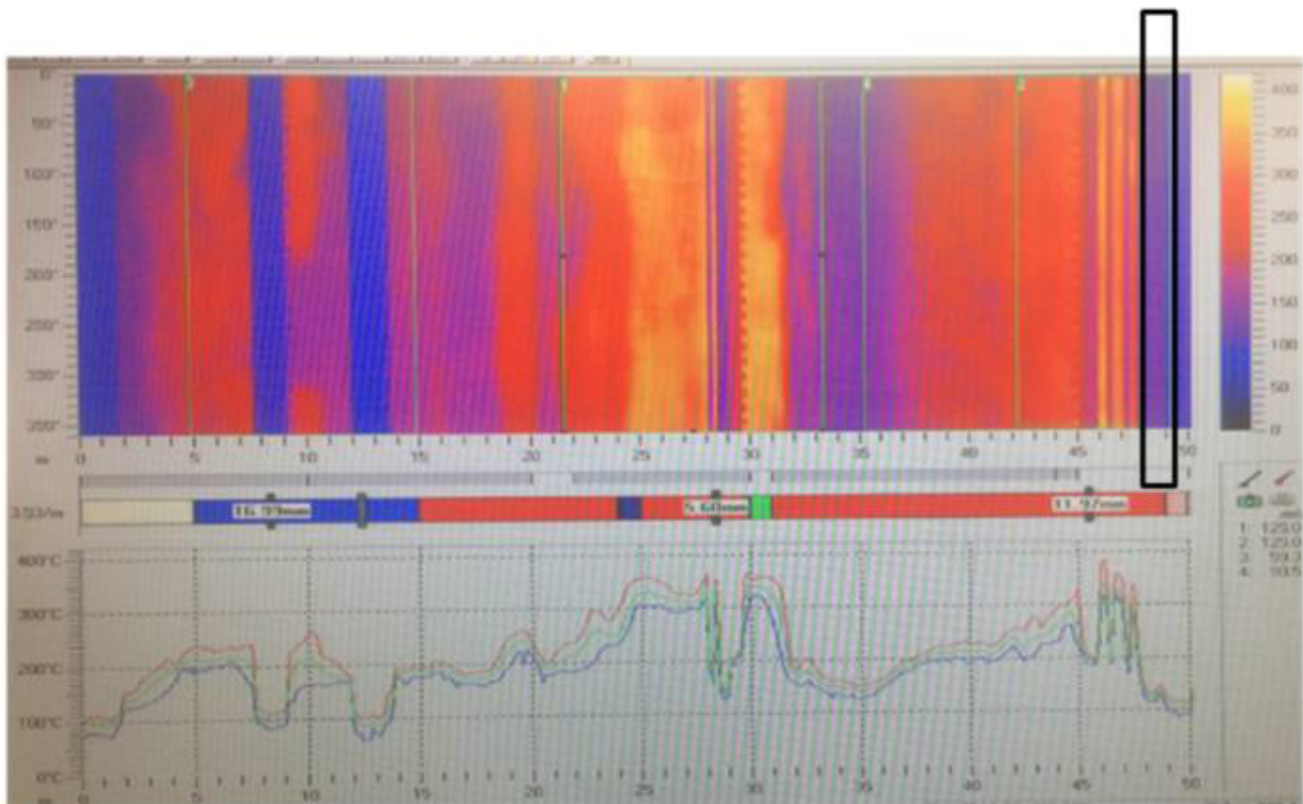


Fig. 5: Thermal scanning at 15 days. Castable lining area is pointed.

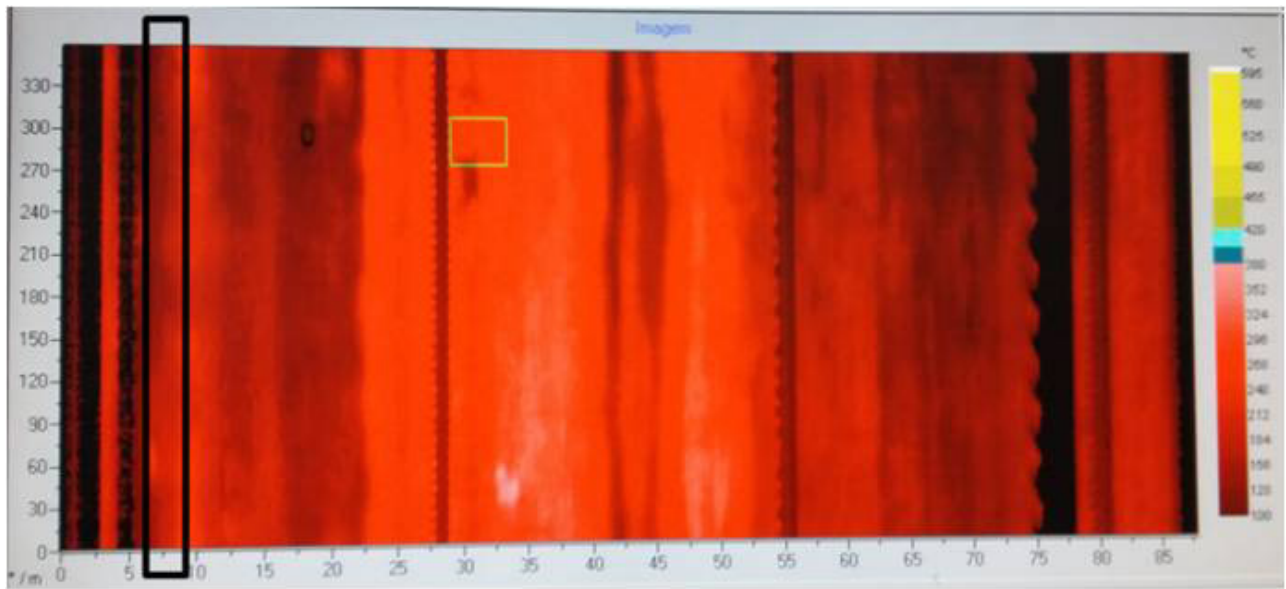


Fig. 6: Thermal scanning at 145 days. Castable area is pointed.

After the service, during the shutdown the clinker layer was demolished. Basic castable layer was removed with the clinker coating. It is important to stand out that brick's substrate does not have any wearing while adjacent bricks have suffered a habitual wear. So the presence of the castable has avoided the wearing of the bricks.

The post-mortem analysis of the castable shows good properties, good refractoriness and the expected corrosion by clinker layer (Fig. 7). The clinker corrosion on the castable layer was similar to the regular Magnesia-Spinel bricks.

CONCLUSIONS

An innovative alternative for rotary Clinker kilns lining was developed with promising results.

The first trials demonstrate the proper behavior of the Magnesia-Spinel castable developed, ALFRANMAG 85 HG.

Rebuilt of the used bricks with the Magnesia-Spinel castables offers an excellent solution, as no-ending concept, promoting reductions in time and costs on maintenance shutdown together with significant environmental, health and safety advantages.

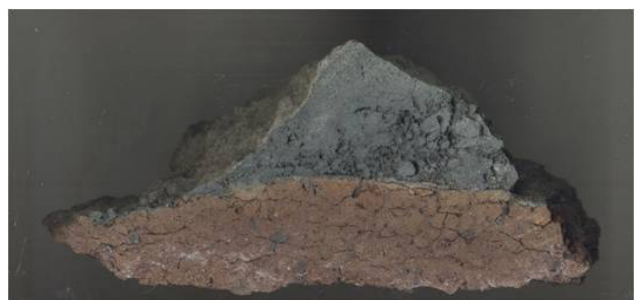


Fig. 7: Cross section of Magnesia-Spinel castable after the service.

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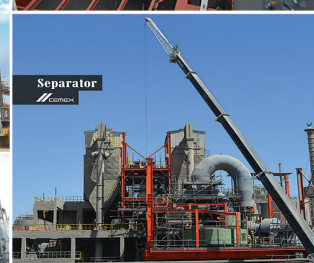
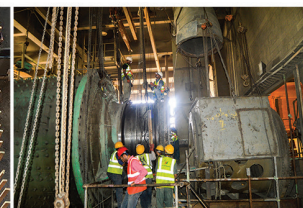
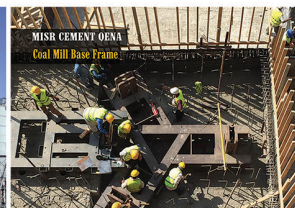
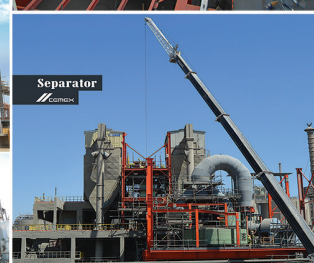
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Picture 1: The BEUMER bag tester enables users to exactly determine the venting capacity of any type of valve bag.



Picture 2: The BEUMER bag tester can be easily operated with the digital display unit.

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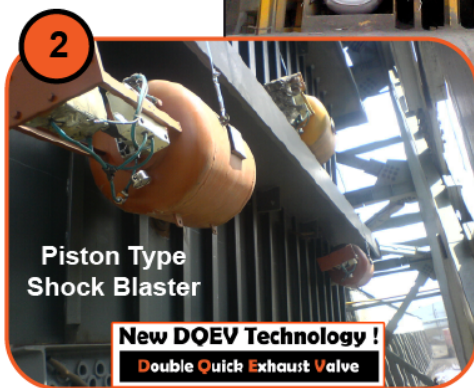
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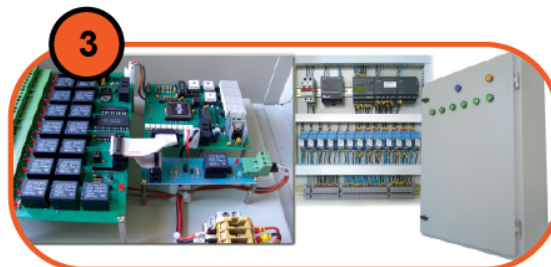
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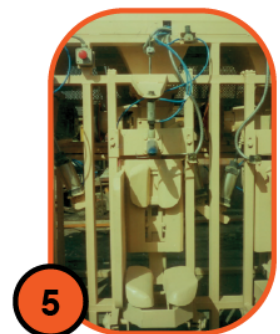
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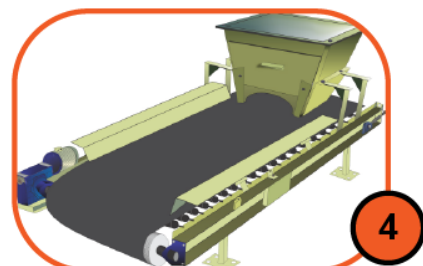
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- **Booth slogan: “Digital Enterprise – Implement now”**
- **The time for implementation has arrived: Focus on industry solutions**
- **Practical examples and applications demonstrate competitive advantages gained by merging the virtual and real worlds**
- **MindSphere-Version 3.0 on Amazon Web Services (AWS)**

At the Hannover Messe 2018, Siemens will be showcasing a comprehensive series of examples which demonstrate how users can harness the potential of Industrie 4.0 by implementing Digital Enterprise solutions. The focus of the 3,500-square meter booth in Hall 9 is on industry-specific implementation of Digital Enterprise solutions over the whole life cycle. Examples from aerospace, automotive, food and beverage, electronics and machine building as well as the chemical, fiber and oil and gas industries illustrate how companies of any size and from any industry can increase their competitiveness with individual digital solutions – through greater flexibility, efficiency and quality as well as shorter times to market. MindSphere Version 3, concrete use cases and references from Siemens and partners such as OEMs as well as the new global user organization MindSphere World will all be presented in the 700-square meter MindSphere Lounge. Siemens will also be demonstrating how producers can already benefit now from industrialized additive manufacturing, and showcasing Sidrive IQ, the new digital platform for the MindSphere-based evaluation of drive data. Also featured on the Siemens booth will be integrated solutions for industrial enterprises and infrastructure projects in the power utility sector,

with the focus on smart energy management using MindApps.

At the booth, Siemens will be showing how today’s companies can increase their competitiveness through digitalization – with solutions for digital twinning throughout

the value chain, the open cloud-based IoT operating system MindSphere, and the world leading automation portfolio from Siemens. Integration and digitalization of the value chain provide sustainable competitive benefits through greater flexibility, efficiency and quality in nearly every industry. It provides new opportunities in terms of added value, innovative business models, and future-oriented methods of cooperation.

Siemens will be presenting MindSphere Version 3.0 at the exhibition, which is now available on Amazon Web Services (AWS). Version 3.0 offers a more powerful development environment with open programming interfaces (API/Application Programming Interface) as well as additional analytical features and extended connectivity. The show will also be used to introduce the new international user organization MindSphere World, which has 18 founder members. The aim of this group is to extend the ecosystem surrounding MindSphere throughout the world.

Harnessing the potential of digitalization in the discrete industries

“With the Digital Enterprise Suite we support both product manufacturers and machine builders from the discrete industries in achieving their digital transformation,” says Jan Mrosik, CEO of the Digital Factory Division. “It allows us to create a holistic virtual representation, the so-called Digital Twin, of

products, production and performance. Through the knowledge gained from MindSphere, we are also able to continuously optimize the entire value chain of our customers. This applies not only to different industries and traditional producing methods, but also to new technologies such as Additive Manufacturing.” Additive manufacturing will also form a focus of this year’s trade fair presentation. Siemens is the world’s only supplier of integrated software and hardware solutions covering every phase of the additive manufacturing value chain. For users, this means that the entire digital process chain is depicted in a single integrated software environment. The tools required for engineering, simulation, product preparation and 3D printing are merged in an integrated system and can be accessed by means of a standardized user interface. This eliminates the need for data conversion and the associated possible loss of information content. This already offers users the possibility to achieve a rapid transition when scaling up from prototyping and small-series production on single machines to fully industrialized series production.

Siemens will also be showcasing a series of new apps surrounding the field of automation with Simatic systems. The new Simatic MindApps Machine Monitor, Notifier and Performance Monitor are special applications designed for MindSphere which allow users to tap into the benefits of cloud-based services and generate added value. The Simatic MindApps export the relevant data from producing machines or plants for analysis, process it to generate meaningful information and display it on dashboards, or use it as the basis for smart warning systems and message presentation. To ensure that this data is just as secure as the plants and infrastructure it serves, the "Defense in Depth" concept according to IEC 62443 protects against current and future cyber threats.

Siemens is launching a new soft starter generation for everything from the simplest to the most complex drive requirements in the form of Sirius 3RW5. This seamless range of devices designed to ensure a gentle startup for three-phase asynchronous motors from 5.5 to 1,200 kW can be used to implement efficient, future-proof machine concepts with the utmost simplicity and economy.

Individual entry into digitalization for verticals of the process industry

It’s time to leverage the potential and benefit from the advantages of digitalization in order to optimize the entire value chain in the process industries,”

emphasizes Jürgen Brandes, CEO of the Process Industries and Drives Division. This applies just as much to new (greenfield) plants as to long-standing legacy (brownfield) plants. An important first step is to make consistent use of static and dynamic data already existing in the company to create transparency across the complete life cycle as the basis for optimization. “Thanks to our profound electrification and automation expertise, we support companies in implementing their individual digital transformation. Our offering is tailored in each case to the added value and the business models of our customers.” This is where the new Siemens “Digitalization Consulting” concept comes into its own. This entails working together with customers to sound out the digital scope of the company over the entire value chain and draw up a digitalization roadmap including a calculation of the investment needed.

The digital twin of a process production plant plays an instrumental role here. Digital twinning takes place during the engineering phase and continues to be updated and enriched by additional data over the complete life cycle of the plant. The ongoing analysis of process data and additional smart sensor data from the field level of a

production plant creates a whole new dimension in terms of transparency, enabling a significant improvement in terms of maintenance and servicing. The digital twin also offers decisive benefits when it comes to commissioning. This is where Version 9.1 of the simulation software Simit enables even simpler combination of virtual plant commissioning and operator training, speeding up actual commissioning by as much as 60 percent and reducing unwanted downtime periods to a minimum, particularly during plant conversion and migration processes.

Another innovation featured at the Hannover Messe is Sidrive IQ, a new digital platform for the evaluation of drive data using MindSphere. It provides plant and machine operators with a whole new dimension in data transparency for installed drive systems, simplifying fleet management and optimizing servicing activity. The continuous analysis of data saves time and enhances plant availability, for instance by the early identification and remedy of possible error sources. These benefits make Sidrive IQ the basis for greater drive technology efficiency and productivity across the entire life cycle.

Time-Sensitive Networking or TSN is another theme

featured on the booth. This permits even more robust, reliable and standardized Ethernet communication between automation devices, even under extreme network loads. Profinet network infrastructures will be gradually upgraded in future to integrate basic TSN technology. As a first step towards this goal, Siemens will be demonstrating how TSN-based OPC UA PubSub (Publisher/Subscriber) is used on the control level using the example of a robotic trade fair model.

Smart energy management

Frictionless production runs and continuous processes are impossible to imagine without a constant energy supply. The ever-increasing demand for energy from industry requires new solutions to reduce energy costs by improving efficiency, resulting in increased competitiveness. One focus of the Siemens booth in Hanover will be on the benefits of seamless interaction between reliable and safe power supply solutions, communication-capable measuring devices and sophisticated analytics. This produces the required energy transparency vital to optimum energy management. “This also includes finding smart ways of dealing with the rising flood of data which already exists in the power distribution sector today,” says Ralf Christian, CEO of the Energy Management Division. “Using Digital apps, we can offer our customers smart analytical tools for more efficient operation.” Using the Spanish automotive manufacturer Gestamp as an example, Siemens will be demonstrating how improved transparency has led to energy savings of 15 percent and to a significant reduction in CO₂ emissions. The data captured is then fed to MindSphere. The MindApp Energy Efficiency Analytics calculates the energy requirement, suggests measures to reduce the load where appropriate, and uses real-time rendering of consumption data from several locations to help to optimize the plants and manufacturing processes in order to reduce the overall energy consumption of the business. “In industry’s search for new ways to reduce production costs, in-house production of electricity is becoming more and more attractive in addition to optimized energy efficiency,” explains Ralf Christian. At Hanover, Siemens will be showing how companies can flatten their demand peaks, exploit fluctuating electricity prices, and generate additional revenue, for instance by participating in the energy balancing market. Issues such as demand response, battery storage systems and control of microgrids are part of the solution.

In addition to the main booth in Hall 9, Siemens is also collaborating closely with its partners in Hall 6 to

showcase its PLM software portfolio. Visitors to the “Integrated Energy Plaza” in Hall 27 will be able to find out how the whole integrated system works - from energy production, through distribution and storage to energy demand. In this context, Siemens will be showing its electromobility highlights: Visitors will be able to discover complete solutions for the charging infrastructure and find information on components, charging management systems and complete end-to-end solutions.

For further information on Siemens at the Hannover Messe 2018, please see www.siemens.com/press/hm18 and www.siemens.com/hannovermesse

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Siemens AG (Berlin and Munich) is a global technology powerhouse that has stood for engineering excellence, innovation, quality, reliability and internationality for 170 years. The company is active around the globe, focusing on the areas of electrification, automation and digitalization. One of the world’s largest producers of energy-efficient, resource-saving technologies, Siemens is a leading supplier of efficient power generation and power transmission solutions and a pioneer in infrastructure solutions as well as automation, drive and software solutions for industry. The company is also a leading provider of medical imaging equipment – such as computed tomography and magnetic resonance imaging systems – and a leader in laboratory diagnostics as well as clinical IT. In fiscal 2017, which ended on September 30, 2017, Siemens generated revenue of €83.0 billion and net income of €6.2 billion. At the end of September 2017, the company had around 377,000 employees worldwide. Further information is available on the Internet at www.siemens.com

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Multifunctional controller platform for automation

- **Multifunctional platform as a new type of device for Simatic Advanced Controllers – combines conventional control tasks with typical PC tasks**
- **Reusable high-level language applications are easily created with Eclipse or, model-based, with Matlab Simulink**
- **With just one item of hardware for less programming effort and a smaller space requirement**
- **The Advanced Controller portfolio has two new technology CPUs and handling functions for Motion Control tasks**

Siemens has expanded its Simatic S7- 1500 Advanced Controller portfolio for more challenging applications to include a new type of multifunctional platform that combines control and PC functions in a single device. Two new technology CPUs also widen the portfolio for midrange Motion Control tasks.

The CPU 1518(F)-4 PN/DP MFP multifunctional platform is a new type of device for Advanced Controllers that enables high-level language functions to be integrated and stand-alone applications to be easily created and reused. The multifunctional platform combines a typical controller with tasks that had previously been outsourced to a PC

– such as model-based and high-level language programming and solutions with databases. Existing technological C/C++ algorithms can continue to be used, and the data exchange between PC and controller, which previously had to be programmed, has been simplified. Furthermore, the configuration has been standardized and the space requirement reduced, while at the same time the overall solution has been

made more resilient on one item of hardware with a stable Simatic embedded operating system. The user programs controller-independent C/C++ applications, such as protocol converters and database applications, with standard commercial

programming tools, such as Eclipse. These now run as stand-alone C/C++ applications in parallel to the control program on the multifunctional platform. The additional PC hardware previously required has been eliminated. Users can now also use model-based development tools, such as Matlab Simulink, and transfer their complex functions into the new Simatic Advanced Controller CPU 1518(F)-4 PN/DP MFP. The new multifunctional platform can be used with TIA Portal V15 or higher.

The new technology CPU 1516T-3 PN/DP and fail-safe technology CPU 1516TF-3 PN/DP combine standard, safety, and Motion Control functionalities, such as gearing and camming, in one device. The new CPUs complement the already available range of Advanced Controllers. Midrange Motion Control tasks can be easily implemented in conjunction with the Sinamics V90 PN and S210 servo drive systems. The Motion Control functionalities of all Simatic S7- 1500 technology CPUs have also been extended to include the control of 2D to 4D kinematics. This now makes additional handling applications possible, such as Pick & Place, Cartesian Portal, Delta-Picker and Scara robots.

Background information:

Siemens offers the right controller for an extremely wide range of automation requirements. The scalable Simatic range of controllers, comprising Basic,

Advanced, Distributed and Software Controllers, all have the same range of functions. The S7- 1200 Basic Controllers are used for compact automation solutions, and the S71500- Advanced Controllers for complex tasks, while the ET 200SP Distributed Controllers are suitable for distributed applications, and the Software Controllers for PC-based applications.

Siemens has expanded its Simatic S7- 1500 Advanced Controller portfolio for more challenging applications to include a new type of multifunctional platform. The CPU 1518(F)-4 PN/DP MFP multifunctional platform enables high-level language functions to be integrated and stand-alone applications to be easily created and reused. The multifunctional platform combines a typical controller with tasks that had previously been outsourced to a PC.



The new technology CPU 1516T-3 PN/DP and fail-safe technology CPU 1516TF-3 PN/DP from Siemens combine standard, safety, and Motion Control functionalities, such as gearing and camming, in one device. Midrange Motion Control tasks can be easily implemented in conjunction with the Sinamics V90 PN and S210 servo drive systems. The Motion Control functionalities of all Simatic S7- 1500 technology CPUs have also been extended to include the control of 2D to 4D kinematics.



For further information, refer to [www.siemens.com/s7- 1500](http://www.siemens.com/s7-1500)

Further information about Siemens at the SPS IPC Drives 2017 at www.siemens.com/sps-ipc-drives and www.siemens.com/press/sps2017

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- Cement plant visit



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19 – 23 November 2018

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- Inalienability of non-destructive testing (NDT) and analysis
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10 – 14 December 2018

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CEMENT

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[Email: sales@gmiforum.com](mailto:sales@gmiforum.com)

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ASHTRADE Europe 2018

Date : 17 - 18 April 2018

Venue: Poznan, Poland

[Email: aga@gmiforum.com](mailto:aga@gmiforum.com) or

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10th Africa CemenTrade Summit

Date : 18 - 19 April 2018

Venue: Dakar, Senegal

Tel: +65 6346 9147

[Email: grace@cmtsp.com.sg](mailto:grace@cmtsp.com.sg)

PetroCem – 10th International Cement Conference

Date : 22 - 24 April 2018

Venue: Astoria Hotel, St.

Petersburg, Russia

For more information please contact:

Ms. Mila German, General

Director

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13th Global Slag

Date : 24 - 25 April 2018

Venue: Prague, Czech Republic

For more information please visit:

www.globalslag.com

Argus Asian Solid Fuels 2018

Date : 25 - 26 April 2018

Venue: ITC Maratha, Mumbai, India

For more information please contact:

Ms. Josephine Pulvera

[Tel.: +65 6496 9932](tel:+6564969932)

[Fax: +65 6533 4181](tel:+6565334181)

[Email: asiaconferences@](mailto:asiaconferences@argusmedia.com)

[argusmedia.com](http://www.argusmedia.com)

www.argusmedia.com

24th Coaltrans Asia

Date : 06 - 08 May 2018

Venue: Bali International

Convention Center, The Westin

Resort, Nusa Dua, Indonesia

For more information please

contact:

yan.hristov@metalbulletin.com

[http:// www.coaltrans.com/asia](http://www.coaltrans.com/asia)

60th IEEE-IAS/PCA Cement

Industry Technical Conference

Date : 06 - 10 May 2018

Venue: Nashville, USA

For more information please visit:

www.cementconference.org

INTERCEM Shipping Americas

Date : 21 - 22 May 2018

Venue: Royal Sonesta Hotel,

Boston, USA

[Email: info@intercem.co.uk](mailto:info@intercem.co.uk)

2nd Global CemProcess

Date : 23 - 24 May 2018

Venue: London, UK

For more information please visit:

www.cemprocess.com

European Adhesives & Sealants Summit 2018

Date : 23 - 24 May 2018

Venue: Warsaw, Poland

For more information please

contact:

Mr. Rafael Krupa

[Tel: +48 0 61 646 7040](tel:+480616467040)

[Email: rafael@acieu.net](mailto:rafael@acieu.net)

Argus Mediterranean Solid Fuels 2018

Date : 20 - 22 June 2018

Venue: Lisbon, Portugal

For more information please

contact:

Ms. Sarah Rayment, Conference Producer

[Direct: +44 207 199 4800](tel:+442071994800)

[Mobile: +44 77 1100 4430](tel:+447711004430)

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8th International VDZ Congress

Date : 26 - 28 September 2018

Venue: Maritim Hotel, Duesseldorf, Germany

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4th Global Cempower

Date : 22 - 23 January 2019

Venue: London, UK

For more information please visit:

www.cempower.com

13th Global CemFuels

Date : 20 - 21 February 2019

Venue: Amsterdam, Netherlands

For more information please visit:

www.cemfuels.com

White Nights: V International Cement Business Conference

Date : 29 - 31 May 2019

Venue: Grand Hotel Europe, St.

Petersburg, Russia

For more information please visit:

www.white-nights.info

15th International Congress on the Chemistry of Cement (ICCC 2019)

Date : 16 - 20 September 2019

Venue: Prague, Czech Republic

For more information please visit:

<http://www.iccc2019.org>

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For more information please visit:
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VDZ Process operator training

Date : 03 - 21 September 2018

Venue: Training centre near
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For more information please visit:
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2018

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Email: Training@CemNet.com

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www.training.cemnet.com

Cement Kiln Process Chemistry (six-week online training)

Starting Date : 08 October 2018

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For more information please visit:
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Cement Factory Maintenance (six-week online training)

Starting Date : 15 October 2018

Email: Training@CemNet.com

For more information please visit:
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Starting Date : 05 November
2018

Email: Training@CemNet.com

For more information please visit:
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VDZ Plant maintenance and refractories course

Date : 19 - 23 November 2018

Venue: Cement plant in Germany

For more information please visit:
www.vdz-online.de/en/training

18th Global Gypsum

Date : 22 - 23 October 2018

Venue: Vancouver, Canada

For more information please visit:
www.globalgypsum.com

VDZ Crash course for young engineers

Date : 10 - 14 December 2018

Venue: VDZ's premises in
Duesseldorf, Germany

For more information please visit:
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Global Cement & Gypsum Events 2018-2019

For details, please visit each event's web site.

13th global slag

24-25 April 2018,
Prague, Czechia
globalslag.com

The 13th Global Slag Conference and Exhibition will take place in Prague, in the heart of Europe and central to many iron-, steel- and slag-producing areas. Slag producers and users are expected to attend from throughout Europe and from the rest of the world: Slag products have the potential to be profitable for both the iron and steel industry and also for the cement, concrete and construction products industries. *If your business is in slag, then you should attend!*



2nd global cemprocess

23-24 May 2018,
London, UK
cemprocess.com

The second Global CemProcess Conference and Exhibition on process optimisation, debottlenecking, production maximisation and troubleshooting in the cement industry will once again take place in London, including a confirmed full-day field trip to the Hope cement plant in Derbyshire, and a stunning Conference Dinner at a local stately home. *If you would like to maximise cement production while decreasing costs, then you should attend!*



18th global gypsum

22-23 October 2018
Vancouver, Canada
globalgypsum.com

The 18th Global Gypsum Conference and Exhibition will bring together leading professionals from the gypsum industry around the world, at the largest dedicated gypsum conference and exhibition in the world, covering gypsum, plaster, wallboard, gypsum applications, market trends, technical developments, networking and business. *If you have a professional interest in gypsum, then you should attend!*



4th global cempower

22-23 January 2019,
London, UK
cempower.com

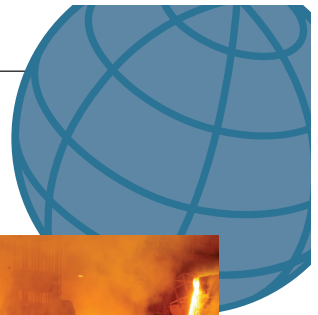
The 4th Global CemPower Conference and Exhibition will take place in London once again, and will cover waste heat recovery, captive power generation (including solar and wind, and energy storage), grinding optimisation and electrical energy efficiency. *If you want to reduce your cement plant's electrical energy bills, or can help companies in the cement industry to save electrical energy, then you should attend!*



13th global cemfuels

20-21 February 2019,
Amsterdam, Netherlands
cemfuels.com

The popular Global CemFuels Conference and Exhibition will visit Amsterdam for the first time in 2019 and is expected to attract one of its largest-ever audiences from around the world. The event will showcase the state-of-the-art in handling, processing and firing all types of conventional and alternative fuels for cement (and lime) production. *If you produce or use fuels and alternative fuels in the cement and lime industry, then you should attend!*





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DIARY DATES

GENERAL

Intranet Strategies for Corporate Communication

Date : 16 - 20 April 2018
Venue: Johannesburg, South Africa
Email: kelvin@forumis.org
For more information, please visit:
www.forumis.org

Digital Marketing in Customer Experience Conference

Date : 18 - 19 April 2018
Venue: Hotel Fort Canning, Singapore
For more information please contact:
Trueventus
Mr. John Karras
Tel.: +603 2775 0001
Email: johnk@trueventus.com

AI in Financial Services

Date : 18 - 19 April 2018
Venue: Hotel Fort Canning, Singapore
For more information please contact:
Trueventus
Casey Lee
Tel: +603 2775 0067
Email: caseyl@trueventus.com

Ukrainian Infrastructure Forum '18

Date : 19 April 2018
Venue: Kyiv, Ukraine
For more information please contact:
Mr. Igor Kostik, Project Manager,
A7 CONFERENCES
Tel: +38 44 227 27 77
Mobile: +38 63 39 99 007
Email: igor@a7conf.com.ua

Hannover Messe 2018

Date : 23 - 27 April 2018

Venue: Hanover, Germany
For more information please visit:
www.hannovermesse.de

Middle East Static Equipment Engineering & Maintenance

Conference
Date : 24 - 26 April 2018
Venue: Dubai, UAE
For more information please visit:
<http://www.staticmiddleeast.com/>

Quarries Alive 2018

Date : 02 - 04 May 2018
Venue: University of Évora, Portugal
Email : quarriesalive2018@uevora.pt
www.quarriesalive2018.uevora.pt

4th Egypt CSR Forum

Date : 07 - 08 May 2018
Venue: Cairo, Egypt
Tel: (+20 2) 37480489
Fax: (+20 2) 37480489
Email: info@egyptcsrforum.com
For more information please visit:
www.egyptcsrforum.com

Digital & Smart Factory 4.0

Date : 09 - 10 May 2018
Venue: Kuala Lumpur, Malaysia
For more information please contact:
Trueventus
Mr. John Karras
Tel: +603 2775 0001
Email: johnk@trueventus.com

BUILDINT 2018 Tanzania Trade Show International Building & Construction Exhibition

Date : 10 - 12 May 2018
Venue: Mlimani Conference Center

- Dar Es Salaam, Tanzania
Email: Melanie@tradetalk.info
For more information please visit:
www.buildinttanzania.com

4th Iraq Building Fair

Date : 10 - 13 May 2018
Venue: Baghdad, Iraq
Tel: +90 216 575 28 28
Email: info@pyramidsfair.com

Analytica 2018

Date : 10 - 13 May 2018
Venue: Munich, Germany
For more information please visit:
www.eventegg.com

IFAT 2018

Date : 14 - 18 May 2018
Venue: Munich, Germany
For more information please visit:
www.ifat.de

AQUASTOP Exhibition

Date : 14 - 18 May 2018
Venue: Moscow, Russia
For more information please contact:
Mr. Anatoly Klyushov
Tel: +7 812 380 65 72 (ext. 218)
Email: events@alitinform.ru
http://: http://aquastop.ru/en/

Oleofuels 2018

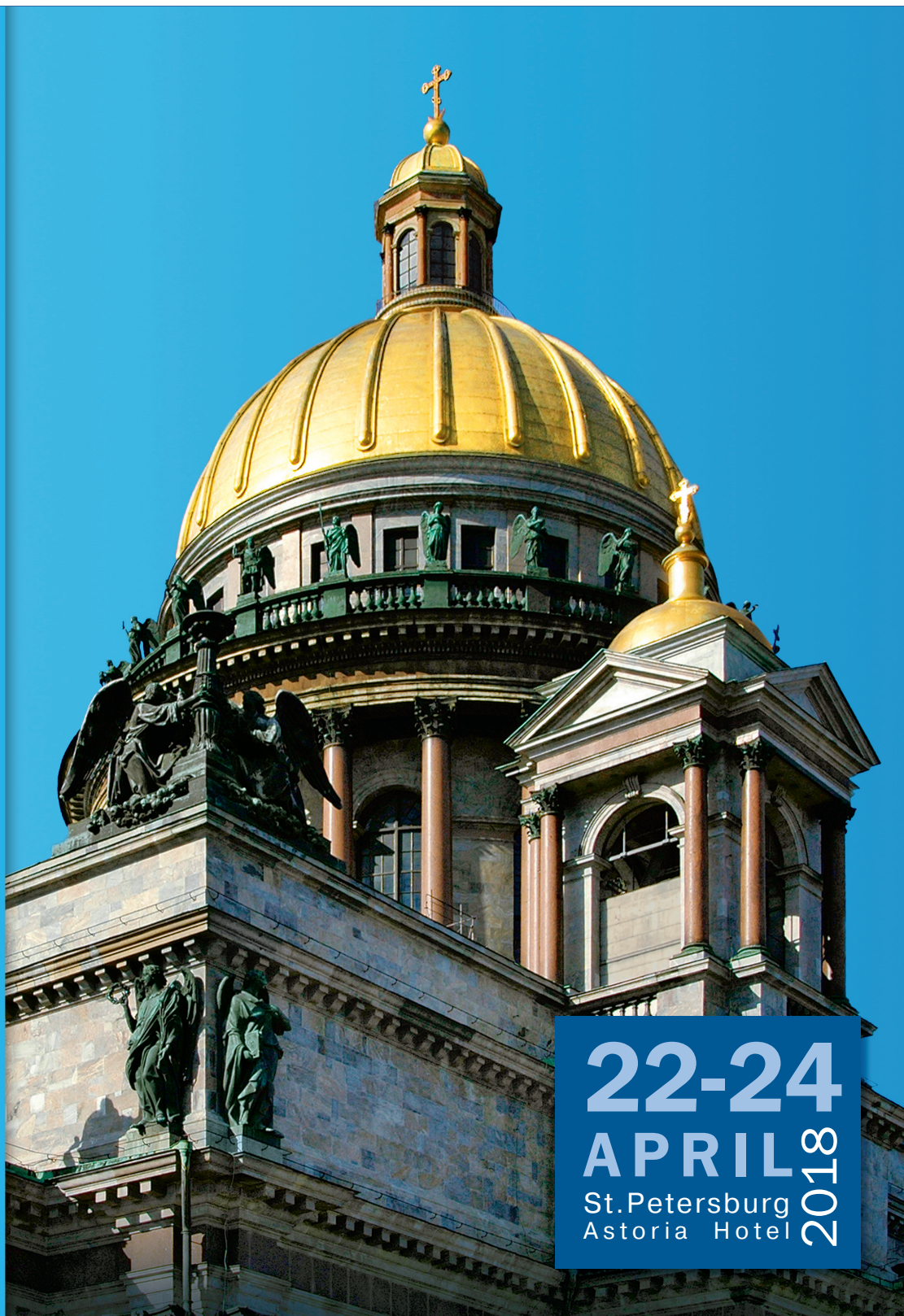
Date : 06 - 07 June 2018
Venue: Helsinki, Finland
For more information visit:
www.agrisoma.com

European Electric Vehicle Batteries Summit

Date : 20 - 21 June 2018
Venue: Munich, Germany
For more information please

PetroCem

TENTH INTERNATIONAL CEMENT CONFERENCE



22-24
APRIL 2018
St. Petersburg
Astoria Hotel

PetroCem 2000 – over 170 participants from 21 countries • 2002 • 2004 • 2006 • 2008 • 2010 • 2012 • 2014 • 2016 – about 500 participants from 38 countries

It is for the tenth time that the International PETROCEM Conference will take place in St. Petersburg. Yet again journal Cement and its Applications is to gather leading cement industry experts, suppliers of equipment and services, consultants, analysts and financiers.

■ About 500 delegates representing over 320 companies from 38 countries, with more than 90 cement producing companies among them, took part in the previous Petrocem Conference.

■ The forthcoming new meeting will be held in the best Petrocem traditions: a high level of organisation of the event, presentations addressing vital industry topics supported by simultaneous translation, comfortable working conditions and a representative exhibition.

■ That forum's special atmosphere will be conducive to information interchange, generation of new ideas and your business development.

■ Participants and accompanying persons will be offered a memorable cultural programme and the splendid Petrocem Gala Dinner.

See you at Petrocem-2018!

Organiser:

journal
ЦЕМЕНТ
и его применение

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+7 812 764 5612
+7 812 712 3683
info@jcement.ru
www.jcement.ru

www.petrocem.ru

GENERAL

contact:

Mr. Mohammad Ahsan

Tel: +44 0 203 141 0606

Email: mahsan@acieu.net

Biobased Coatings Europe 2018

Date : 20 - 21 June 2018

Venue: Antwerp, Belgium

For more information please

contact:

Mr. Dimitri Pavlyk

Tel : +44 0 203 141 0627

Email: dpavlyk@acieu.net

Green Finance Conference

Date : 18 - 19 July 2018

Venue: Goodwood Park Hotel,
Singapore

For more information please

contact:

Trueventus

Mr. John Karras

Tel: +603 2775 0001

Email: johnk@trueventus.com

Modern Method of Construction 2018

7th Annual Modular and Precast Summit

Date : 24 - 26 July 2018

Venue: Kuala Lumpur, Malaysia

Tel: +603- 2775 0067

Email: markw@willbeattending.com

12th fib International PhD

Symposium in Civil Engineering

Date : 28 - 31 August 2018

Venue: Technical University,
Prague, the Czech Republic

Tel: +90 216 575 28 28

Email: cbsbebtan@cbsbeton.eu

(Czech Concrete Society)

[http://: http://www.phdsymp2018.eu](http://www.phdsymp2018.eu)

20. ibausil

Date : 12 - 14 September 2018

Venue: Weimar, Germany

For more information, please visit:

www.uni-weimar.de

8th International VDZ Congress 2018

Date : 26 - 28 September 2018

Venue: Duesseldorf, Germany

For more information, please visit:

www.vdz-congress.org

Ukrainian Energy Week '18

Date : 02 - 04 October 2018

Venue: Kyiv, Ukraine

For more information please visit:

www.a7conf.com

The 2nd International Symposium ISYGE 2018

“Mineral Resources and
Environment”

Date : 12 - 14 October 2018

Language: English and French

Venue: Hammamet, Tunisia

For more information please

contact:

Dr. Wissem Gallala

Email: wissem.gallala@fsg.rnu.tn

[tn](http://www.sciencesconf.org)

Website: www.sciencesconf.org

8th European Biomass to Power

Date : 07 - 08 November 2018

Venue: Stockholm, Sweden

Email: dpavlyk@acieu.net

Solids Dortmund 2018

Date : 07 - 08 November 2018

Venue: Dortmund, Germany

For more information, please visit:

www.solids-dortmund.com

Bauma China 2018

Date : 27 - 30 November 2018

Venue: Shanghai, China

For more information, please visit:

www.bauma-china.com

III Ukrainian Defense & Security Forum '19

Date : 21 February 2019

Venue: Kyiv, Ukraine

Email: contact@a7-group.com

For more information please visit:

www.a7conf.com

Invest & Trade in Ukraine'19

Date : 07 - 13 March 2019

Venue: Transatlantic Tour,
Ukraine

Email: contact@a7-group.com

For more information please visit:

www.a7conf.com

Bauma 2019

Date : 08 - 14 April 2019

Venue: Munich, Germany

For more information, please visit:

www.bauma.de

Ukrainian Infrastructure Forum '19

Date : 18 April 2019

Venue: Kyiv, Ukraine

For more information please visit:

www.a7conf.com

CEMTECH ASIA 2018

VIETNAM

24-27 JUNE 2018

Market insights &
production expertise

INTERNATIONAL CEMENT CONFERENCE

Cemtech

PRODUCTION EXPERTISE - MANAGEMENT SKILLS

Cemtech Asia 2018
24-27 June, Meliá Hanoi, Vietnam



Cemtech Asia 2018, the leading cement industry conference and exhibition, will be held at the Meliá Hotel in Hanoi, Vietnam, on 24-27 June 2018. Organised with the support of the Vietnam National Cement Association (VNCA), this event will see over 250 cement professionals from 30 nations gather for a three-day meeting to explore the markets and technical advances of Asia's cement industry.

Cemtech Asia 2018 will offer delegates a unique forum to explore production technologies and market developments, while interacting with many of the industry's top experts. At this meeting you will:

- Gain a deeper knowledge of regional markets and export trends
- Learn about new technologies to improve plant performance
- Hear directly from the cement producers that have achieved operational excellence
- Make your business more competitive
- Prepare for the future.

Programme and exhibition

Cemtech Asia 2018 will feature a cutting-edge speaker programme and the chance to learn from a multitude of leading cement industry experts, producers and equipment suppliers. A large, international exhibition will offer participants the opportunity to meet a range of world-class equipment and technology suppliers.

Register early to benefit from generous discounts!

For more information:

www.Cemtech.com/Asia2018

International conference and
exhibition organised by

International
Cementreview

Supported
by the
VNCA



www.Cemtech.com/Asia2018



عالم الإسمنت ومواد البناء

تصدر عن : الاتحاد العربي للإسمنت ومواد البناء العدد 71 مارس / آذار 2018

- أخبار شركات عربية
- أخبار عالمية
- موضوعات تقنية
- منتجات جديدة
- مؤتمرات ومعارض

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مؤتمرات ومعارض

منتجات جديدة

موضوعات تقنية

أخبار عالمية

الملف العربي

رئيس التحرير الأمين العام / المهندس أحمد محمود الروسان
مدير التحرير سها منير كنعان

المساهمات

- ترحب هيئة تحرير المجلة بمساهمة السادة المهتمين والمتخصصين بهدف إثراء المادة التحريرية .
- لا تلتزم المجلة برد الموضوعات إلى أصحابها .
- الآراء الموجودة بالمجلة لاتعبر بالضرورة عن رأي الاتحاد أو المجلة وإنما عن الرأي الخاص بكتابها ولا يتحمل الاتحاد أية مسؤولية قانونية تجاه ذلك .

توجه كافة طلبات الإعلان باسم رئيس التحرير

الإعلان

الاشتراكات السنوية

150 دولار أمريكي

65 دولار أمريكي

الشركات والمؤسسات

الجامعات ومراكز البحوث

Email: aucbm@scs-net.org / aucbm1977@gmail.com

Website : www.aucbm.org

المحتويات

أخبار عربية
أخبار عالمية
منتجات جديدة

الموضوعات:

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- العوامل المؤثرة على البطانة الحرارية للأفران الدوارة في معامل الإسمنت إعداد: م شركة Veitscher المختصة في إنتاج البطانة الحرارية – مترجم إلى العربية من قبل الشركة العامة للإسمنت العراقية
- مصبوبات سبينل المغنيسيا – حل مبتكر لأفران الكلنكر إعداد: M. Alvarez, V. Alvarez, O. Burgos-Montes, I. Recio / Refractorios ALFRAN – إسبانيا إعداد: FCT Combustion – أستراليا
- منطقة الخليج وشمال أفريقيا – دراسة سوق إقليمية من قبل Cement Business Research إعداد: Terry Pavlopoulos / Cement Business Research – المملكة المتحدة
- أنظمة الطحن الرأسية ضمان للموثوقية إعداد: م. أسامة علي أحمد – جمهورية مصر العربية

مؤتمرات ومعارض

المراسلات

توجه كافة المراسلات بإسم رئيس التحرير / الاتحاد العربي للإسمنت ومواد البناء

الجمهورية العربية السورية - دمشق - ص.ب 9015

هاتف : 611 85 98 - 611 54 12 (11 963 +)

فاكس : 612 17 31 (11 963 +)

Email: aucbm@scs-net.org / aucbm1977@gmail.com



مجلة عالم الإسمنت ومواد البناء

جدول موضوعات المجلة لعام 2018

المناسبات	الموضوعات	العدد
	<ul style="list-style-type: none"> * أنواع جديدة من الإسمنت * الإسمنت ذو النسبة المنخفضة من الكربون * الإسمنت الأبيض * الخرسانة * التحليل بتألق الأشعة السينية (XRF) وبحيود الأشعة السينية (XRD) * كمياء الإسمنت * مضافات الإسمنت * انسداد الصوامع وتنظيفها * النقاط التي تؤخذ بعين الاعتبار عند تصميم الصوامع * منظومات التحريك * تكنولوجيا الوزن * تقنيات وأنظمة الاعتيان (أخذ العينات) 	يونيو/حزيران 2018
<p>المؤتمر والمعرض العربي الدولي الثالث والعشرون لصناعة الإسمنت: عمان / المملكة الأردنية الهاشمية</p> <p>20-22 نوفمبر / تشرين الثاني 2018</p>	<ul style="list-style-type: none"> * التنمية المستدامة * حماية البيئة * الوقود البديلة * الوقود المستمد من النفايات الصلبة / الوقود المستمد من النفايات * الإنتاج الأنظف في صناعة الإسمنت * المرشحات ، أنظمة الترشيح القماشية ومعدات إزالة الغبار * مراقبة الانبعاثات وأنظمة تحليل الغاز * توفير الطاقة * دراسات حالة 	* سبتمبر/أيلول 2018
	<ul style="list-style-type: none"> * التعبئة والتغليف والتسليم * معدات التحميل والتفريغ من السفن * تكنولوجيا التغذية * تخزين ومناولة المواد السائبة * تخزين الوقود * أنظمة النقل والرافعات الدولية * تفجير الصخور * الاستخراج من المقالع وإدارة المقالع * الصحة والسلامة المهنية * حلقات ضبط الجودة 	ديسمبر/كانون الأول 2018

● سيتم توزيع عدد سبتمبر / أيلول إلى المشاركين في المؤتمر

- آخر موعد لاستلام المقالات أو النصوص الصحفية أو الإعلانات للأعداد المتبقية لعام 2018 هو على النحو التالي :
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 2. عدد سبتمبر / أيلول (عدد خاص) : 30 أغسطس / آب
 3. عدد ديسمبر / كانون الأول : 5 ديسمبر / كانون أول

الإعلانات

(بالدولار الأمريكي)

الإعلان في أربعة أعداد	الإعلان في ثلاثة أعداد	الإعلان في عددين	الإعلان في عدد واحد	
*	*	*	1,200	غلاف خارجي ملون (يمين أو يسار) A4
*	*	*	900	غلاف داخلي ملون (يمين أو يسار) A4
1,300	1,200	900	700	صفحة داخلية ملونة A4
700	600	500	400	نصف صفحة داخلية ملونة A4
400	350	300	250	ربع صفحة داخلية ملونة A4
400	350	300	250	صفحة أسود وأبيض

أبعاد الإعلان : A4 مع مسافة على الأطراف الأربعة
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المف العربي

الإمارات العربية المتحدة

الجزائر

شركة Shree Cement الهندية تستحوذ على 93 % من إسمنت الاتحاد

أعلنت شركة «شري للإسمنت المحدودة» الهندية أنها تقدمت بعرض للاستحواذ على حصة بنسبة 92.83 % في شركة إسمنت الاتحاد في صفقة من المتوقع أن تبلغ قيمتها 305.24 مليون دولار (1.12 مليار درهم). كما أن الشركة لديها خيار للاستحواذ الكامل على أسهم الشركة.

وتأسست شركة إسمنت الاتحاد ، التي تتخذ من رأس الخيمة مقراً لها ، في العام 1972 ، وتبلغ طاقتها الإنتاجية السنوية 4 ملايين طن . ومن المتوقع أن تتم الصفقة خلال الأشهر التسعة المقبلة ، وتبقى رهناً لموافقة الهيئات التنظيمية .

وعقد مجلس إدارة الشركة اجتماعاً لمناقشة تحولها لشركة مساهمة خاصة وشطب إدراج أسهمها من سوق أبوظبي المالي .

المصدر: www.alkhaleej.ae

تونس

إسمنت قرطاج تنجح في تصدير منتوجها لأسواق أفريقيا جنوب الصحراء

قامت شركة إسمنت قرطاج بإبرام عقد تصدير 350 ألف طن من الكلنكر خلال 2018 نحو أسواق افريقية جنوب الصحراء. وبيّن السيد ابراهيم الصانع ، مدير عام الشركة ، أنّ الشحنة الأولى وهي بجمولة 38 ألف طن تم انجازها بنجاح .

وأكد بالمناسبة أن إسمنت قرطاج مثلما تحرص على تزويد السوق المحلية ستمضي قدماً على درب التصدير .

مجمع (ETHRB) يطلب مصنع إسمنت بـ100 مليون يورو من مجموعة FLSmidth

تقدم مجمع (ETHRB) بطلب شراء مصنع مدمج للإسمنت لتجهيز مصنع إسمنت بولاية غليزان . وبلغت قيمة المصنع المدمج 100 مليون يورو ، ويشمل الهندسة والتجهيزات والمراقبة والإشراف على أشغال الإنجاز والإشراف على عملية إطلاق المصنع والتدريب . وسيتم إنجاز المصنع بولاية غليزان بالتعاون بين المجموعة الدنمركية FLSmidth & Co وشركة فرعية للشركة الوطنية الصينية لتجهيزات الإنشاءات (CNBMGC) المسؤولتين على إنجاز المصنع .

وتشير المعطيات التي أعلنتها المجموعة الدنمركية أن إنتاج مصنع غليزان سيوجه لتلبية الطلب على الإسمنت من أسواق شمال أفريقيا ، وحيث سينتج المصنع بعد دخوله الخدمة 12,000 طن يومياً (4.3 مليون طن في السنة) ويتوقع دخول المصنع الخدمة في 2020 .

وبعد بدء الإنتاج سيرتفع فائض إنتاج الجزائر من الإسمنت ما يناهز 18 مليون طن سنوياً ، وهو ما يطرح عدة تساؤلات حول وجهة هذا الإنتاج في دولة كانت إلى وقت قريب تستورد سنوياً 5 مليون طن من الإسمنت لتلبية الطلب على المادة الذي انفجر مع شروع البلاد في بناء ملايين الوحدات السكنية والعديد من المنشآت في مجال البنية التحتية .

<http://aljazairalyoum.com>

السعودية

رئيس «اللجنة الوطنية للإسمنت» : السماح بتصدير الإسمنت من

دون رسوم

قال جهاد بن عبدالعزيز الرشيد رئيس اللجنة الوطنية لشركات الإسمنت بمجلس الغرف السعودية إنه قد تم السماح بتصدير الإسمنت

الإنتاج رقم 2 وبطاقة إنتاجية 3,000 طن يومياً من مادة الكلنكر وذلك بصفة مؤقتة ، بسبب ظروف سوق الإسمنت وانخفاض الطلب والتي أدت بدورها إلى ارتفاع مخزون الكلنكر لدى الشركة .

المصدر : أرقام

إسمنت تبوك تجدد رخصة تصدير الإسمنت

أعلنت شركة إسمنت تبوك عن تجديد رخصة تصدير الإسمنت والكلنكر ، ومدة صلاحية الرخصة هي سنة من تاريخ صدورها .

وكشف رئيس اللجنة الوطنية لشركات الإسمنت بمجلس الغرف السعودية جهاد الرشيد ، في تصريحات سابقة ، أنه تم السماح بتصدير الإسمنت بدون رسوم اعتباراً من مطلع فبراير / شباط 2018 .

المصدر : مباشر

استقالة «بدر جوهر» الرئيس التنفيذي لـ «إسمنت نجران»..

وتعيينه رئيساً تنفيذياً لـ «إسمنت العربية»

أعلنت شركة إسمنت نجران عن استقالة الرئيس التنفيذي للشركة الدكتور بدر بن أسامة جوهر ، على أن يبدأ سريان الاستقالة اعتباراً من 1 أبريل / نيسان 2018 .

من جانبها أعلنت شركة «إسمنت العربية» ، أن مجلس إدارتها قرر الموافقة على تعيين الدكتور بدر بن أسامة جوهر في منصب الرئيس التنفيذي للشركة اعتباراً من 1 أبريل / نيسان 2018 .

المصدر : أرقام

مصنع بطاقة 6,000 طن في اليوم لإسمنت الباحة

تعززت شركة إسمنت الباحة بناء مصنع بطاقة إنتاجية 6,000 طن في اليوم ، وسينتج الإسمنت البورتلاندي المقاوم للكبريتات (SRPC) . وطلبت الشركة عطاءات للاستشارات المالية الخاصة بالمصنع الجديد . ومن المتوقع أن تبلغ تكلفة المشروع 100 مليون دولار سيتم الحصول عليها من خلال قروض مصرفية . وقد وافق وزير التجارة والصناعة على الترخيص لإنشاء الشركة . أما مناقصات الهندسة والشراء والإنشاء فمن المتوقع أن تصدر في النصف الثاني من عام 2018 .

المصدر : Global Cement

السودان

وزير الصناعة يجتمع بمديري مصانع الإسمنت بالبلاد

أكد وزير الصناعة في السودان أن خطة وزارته تركز على النهوض بقطاع صناعة الإسمنت لأنها من القطاعات الاستراتيجية بالبلاد ، وأضاف لدى لقائه بمديري مصانع الإسمنت الخمسة بولاية نهر النيل ومدير مصنع إسمنت ربك بولاية النيل الأبيض أن هدف وزارة الصناعة الوصول بالطاقة الإنتاجية لمصانع الإسمنت إلى الطاقة القصوى والتي تبلغ (9) ملايين طن إسمنت في العام لأغراض الاكتفاء الذاتي من سلعة الإسمنت والبيع بأسعار معقولة للمستهلكين المحليين وتصدير الفائض إلى دول الجوار الأفريقي مثل تشاد وأفريقيا الوسطى وجنوب السودان وما وراءهم .

وبحث الاجتماع المشاكل والتحديات التي تواجه صناعة الإسمنت بالبلاد مثل مشكلة الوقود والغاز والكهرباء وتعدد الرسوم والضرائب والجبايات ، ودعا مصانع الإسمنت إلى استنباط أفكار وتقنيات جديدة وإعداد دراسات علمية لتقليل تكلفة صناعة الإسمنت ، مشيراً إلى أن

دون رسوم اعتباراً من بداية فبراير / شباط 2018 ، حيث كانت رسوم التصدير السابقة تمثل عائقاً أمام الشركات في عمليات تصدير الإسمنت ، وبإلغائها سيصبح الإسمنت السعودي منافساً في الأسواق .

وأوضح أن قرار إلغاء رسوم التصدير سيشجع أسواقاً جديدة لتصدير الإسمنت كسوق الكويت والعراق وأسواق شرق أفريقيا ، الأمر الذي سيخفف من الضغط على السوق المحلية ، والتي تشهد تخمة مخزونات بكميات كبيرة للإسمنت بلغت 40 مليون طن .

وقال إن أحد شروط التصدير هو وجود مخزون يلبي احتياجات السوق بالمملكة بما يعادل إنتاج شهرين أو 10 % من مخزون كل شركة والمقدر بنحو 10 ملايين طن إسمنت ، وهذا الشرط محقق ، حيث يبلغ المخزون للشركات حالياً نحو 40 مليون طن ، وهي كمية تلي احتياجات الطلب في المملكة لمدة 11 شهراً .

المصدر : أرقام

إسمنت الجوف تجدد رخصة تصدير الإسمنت سنة أخرى

تسلمت شركة «إسمنت الجوف» رخصة تجديد لتصدير الإسمنت يوم الخميس 15 فبراير / شباط ، وتصلح الرخصة سنة واحدة تبدأ من تاريخ صدورها .

و«إسمنت الجوف» شركة مساهمة عامة، يتمثل نشاطها الرئيسي في إنتاج الإسمنت البورتلاندي العادي والمقاوم للكبريتات ، حيث تملك أحدث المصانع التي جرى إنشاؤها في المملكة بالشمال الغربي ، قرب الحدود السعودية الأردنية والعراقية .

المصدر : www.aliqtisadi.com

صفقة إسمنت أردنية سعودية

قالت شركة الصادرات الصناعية إنها وقعت عقد بيع وتسويق مع شركة إسمنت الجوف لتوريد 72 ألف طن من الإسمنت سنوياً إلى الأردن .

وكانت شركات الإسمنت السعودية تضررت بفعل تباطؤ قطاع الإنشاءات المحلي. وصفقة الأردن هي أول نجاح تصديري كبير للصناعة بعد أن قالت الحكومة السعودية في يوليو / تموز الماضي إنها ستقلص رسوم تصدير الإسمنت بنسبة 50 % ..

المصدر : www.youm7.com

إسمنت نجران تحصل على تجديد رخصة التصدير

حصلت شركة إسمنت نجران على تجديد لرخصة تصدير الإسمنت ، مدة صلاحيتها سنة من تاريخ صدورها . وكانت الشركة قد أعلنت في فبراير / شباط 2017 ، عن استلام رخصة تصدير الإسمنت من وزارة التجارة والاستثمار .

المصدر : مباشر

«إسمنت نجران» توقف خط إنتاجها الثالث مؤقتاً وتعيد تشغيل الخط

الثاني لارتفاع مخزون الكلنكر

وافق مجلس إدارة شركة «إسمنت نجران» على إيقاف تشغيل خط الإنتاج الثالث بطاقة إنتاجية 6,500 طن يومياً وإعادة تشغيل خط الإنتاج الثاني بطاقة إنتاجية 3000 طن يومياً ابتداءً من 1 يناير / كانون الثاني 2018 ، وذلك بصفة مؤقتة نظراً لارتفاع مخزون الكلنكر لدى الشركة .

وكانت شركة إسمنت نجران قد أوقفت في مارس / آذار 2017 خط

والمقاوم حوالي 3.5 مليون طن في 2017 ، وزاد إنتاج الرمل المغسول إلى حوالي 9.1 مليون طن ، وارتفع إنتاج كربونات الكالسيوم إلى حوالي 40 ألف طن . وأعلنت الشركة أنها ستواصل دورها الفاعل في دعم النهضة العمرانية في البلاد وتلبية احتياجات السوق من منتجاتها عالية الجودة وأسعارها التنافسية وتشغيل مصنع الإسمنت رقم «5» خلال النصف الأول من هذا العام ، مما سيزيد الطاقة الإنتاجية للشركة بحوالي 5,511 طن إسمنت في اليوم .

المصدر: www.al-sharq.com

مصر

أكبر مصنع في مصر يتم بناؤه دفعة واحدة بتكلفة 1.1 مليار دولار..
ستبدأ مصر قريباً بتشغيل مصنع جديد للإسمنت بلغت تكلفته 1.1 مليار دولار في مدينة بني سويف ، ويتضمن المصنع 6 خطوط إنتاج سينتج كل منها 6,000 طن من الإسمنت يومياً ، بإجمالي 13 مليون طن سنوياً .
ويبدأ المصنع العمل بينما لدى مصر طاقة إنتاجية فائضة في صناعة الإسمنت ، علماً بأن البلاد كان لديها في 2017 طاقة إنتاجية قدرها 79 مليون طن سنوياً ، بينما بلغ الاستهلاك 53 مليون طن فقط ، ولدى مصر الآن مخزون قدره خمسة ملايين طن .
والمصنع الجديد ، الذي يبعد 120 كيلومتراً جنوبي القاهرة ، مملوك لشركة العريش للإسمنت وهي بدورها مملوكة للقوات المسلحة المصرية . وقال نائب الرئيس للإدارة الهندسية بشركة سينوما الصينية المسؤولة عن الأعمال الميكانيكية ، إن المصنع تكلف 900 مليون يورو (1.12 مليار دولار) .

المصدر: www.huffpostarabi.com

تردد الشركات في الاستثمار في صناعة الإسمنت المصرية

لم تتلق الهيئة العامة للتنمية الصناعية في مصر أي طلبات للحصول على 11 ترخيصاً لمصانع إسمنت تم عرضها منذ أوائل عام 2017 . وبالرغم من قيام ثماني شركات محلية وأجنبية بشراء بيانات العمل في نهاية عام 2017 ، إلا أنه لم يكن هناك اهتمام كبير بالتراخيص .

وكانت الهيئة العامة للتنمية الصناعية قد عرضت 14 ترخيصاً في عام 2016 لإنشاء أو توسعة مصانع للإسمنت في تسع محافظات ، تم بيع ثلاثة تراخيص منها لشركة إسمنت جنوب الوادي وشركة إسمنت السويدي والشركة المصرية للإسمنت مقابل 28 مليون دولار أمريكي في عام 2016 .
أما الرخص المتبقية في المنيا وسوهاج وقنا وأسوان والوادي الجديد ومطروح والسويس وجنوب سيناء فتم إعادة عرضها في عام 2017 .

جامعة سوهاج توقع بروتوكول تعاون مع «إسمنت أسيوط»

وقع الدكتور أحمد عزيز عبد المنعم ، رئيس جامعة سوهاج ، بروتوكول تعاون بين الجامعة «كلية الهندسة» وشركة إسمنت أسيوط CEMEX . ويأتي البروتوكول في إطار التعاون مع المؤسسات الصناعية في المجالات العلمية والعملية من أجل بناء المجتمع وتطويره .

وبموجب البروتوكول تقدم الشركة دعماً مالياً للكلية قدره 50 ألف جنيه لمدة 5 أعوام على أن يزيد المبلغ بنسبة 10 % سنوياً ، بالإضافة

هنالك اتفاقاً مع منظمة اليونيدو في مجال الإنتاج الأنظف في عددٍ من القطاعات الصناعية كصناعة السكر والجلود والإسمنت .

المصدر : السودان اليوم

سورية

نتائج الشركة السورية لصنع الإسمنت ومواد البناء بحماة خلال عام 2017

بلغ إنتاج الكلنكر 773,441 طن والإسمنت 541,947 طن وسجلت التسليمات 534,492 طن خلال العام . وبلغ مخزون الكلنكر لغاية 2017/12/31 1,474,529 طن ، أما مخزون الإسمنت فقد سجل 40,988 طن لغاية نهاية عام 2017 . وتقدر أرباح الشركة مع فروقات تغير المخزون ما يقارب 7 مليار ليرة سورية .
أما أهم الإنجازات التي حققتها الشركة من الناحية الإنتاجية خلال عام 2017 فهي :

- 1 - الاستفادة من الطاقة الحرارية المنبعثة من مبرد الكلنكر في تسخين الفيول عبر المبادلات الحرارية .
- 2 - تصنيع الإسمنت المقاوم للكبريتات بالطريقة الجافة مما أدى إلى وفورات مالية كبيرة تقدر بمئات الملايين .
- 3 - تغيير نظام التحكم بمسئف المواد (مجمع المواد) من سلكي إلى لا سلكي مما أدى إلى الاستغناء عن معدات تقدر قيمتها بعشرات الملايين .
- 4 - تصنيع جكات هيدروليكية لمبرد الكلنكر بخبرات الشركة المحلية وبكلفة زهيدة جداً .

العراق

إسمنت الشمالية تستحوذ على شركة إسمنت بدبي مقابل 6 ملايين ريال

أعلنت شركة إسمنت المنطقة الشمالية ، العربية السعودية ، عن تملكها كامل أسهم شركة «أم قصر نورثرن سمنت لمتد» المسجلة في المنطقة الحرة لجبل علي في دبي برأس مال 10 آلاف درهم إماراتي . وذكرت «إسمنت الشمالية» أن قيمة التملك ستكون 6.064 مليون ريال ، ممولة عن طريق التمويل ذاتي من الشركة .
يذكر أن شركة «أم قصر نورثرن سمنت لمتد» تمتلك 70 % من أسهم شركة «أم قصر الشمالية لصناعة الإسمنت المحدودة» ، وهي شركة عراقية محدودة المسؤولية تمتلك حق تنفيذ عقد تأهيل وتشغيل والمشاركة في الإنتاج لمعمل إسمنت البصرة في جمهورية العراق .

وكانت الشركة قد أعلنت ، في فبراير/ شباط 2017 ، عن شراكة جديدة لتأسيس شركة عراقية محدودة المسؤولية مهمتها تنفيذ عقد تأهيل وتشغيل والمشاركة في الإنتاج لـ (معمل إسمنت البصرة) ، وذلك بنسبة 20 % من رأس مال الشركة المزمع تأسيسها .

هذا وتمتلك الشركة التابعة «إسمنت الشمالية - الأردن» 25 % من أسهم شركة أم قصر الشمالية لصناعة الإسمنت المحدودة .

المصدر: www.fxnewstoday.ae

قطر

تشغيل «المصنع 5» لشركة قطر للإسمنت هذا العام
بلغ إنتاج شركة قطر الوطنية لصناعة الإسمنت من الإسمنت العادي

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إلى تقديم الشركة لعدد من الدورات والفعاليات العملية . كما ستقدم الشركة أيضاً دعماً مالياً في مجال البحث العلمي بمبلغ 10 آلاف جنيه ، ودعم حفلة الخريجين بذات المبلغ سنوياً ولمدة زمن العقد .

المصدر : www.elwatannews.com

«فيكا الفرنسية» تعزم ضخ 50 مليون يورو بـ«إسمنت سيناء»

قال العضو المنتدب لشركة إسمنت سيناء إن مجموعة «فيكا» الفرنسية المساهم الرئيسي بالشركة ، تخطط لضخ 50 مليون يورو لسداد المديونيات ، وتطوير خطوط الإنتاج بمصنع إسمنت سيناء المتوقع عن العمل حالياً . وأضاف إن «فيكا» ، والتي استحوذت على 40 % من «إسمنت سيناء» في عام 2003 ، تسعى إلى زيادة حصتها بالشركة من خلال سداد المديونيات . وتابع: «نتنظر حالياً الحصول على موافقة مجلس الوزراء على طلب باستثنائها من حدود ملكية الأجانب بالشركات العاملة في سيناء البالغة 45 % من رأسمال الشركة » . وبمجرد الحصول على موافقة مجلس الوزراء على الاستثناء ، ستقدم «فيكا» عرضاً لشراء حصص المساهمين في الشركة لاستكمال خططها التوسعية داخل السوق المصرية

المصدر: مباشر

المغرب

خط إنتاج جديد لشركة لافارج هولسيم المغرب بطاقة 3,500 طن في اليوم

أرست شركة لافارج هولسيم المغرب عقداً على شركة thyssenkrupp Industrial Solutions الألمانية لتوريد مصنع جديد لإنتاج الكلنكر بطاقة 3,500 طن في اليوم في المملكة المغربية .

وسيتم بناء خط الإنتاج في منطقة سوس ماسة بالقرب من تيديسي ، على بعد 65 كم جنوب شرق العاصمة أغادير ، ومن المقرر بدء تشغيل المصنع في النصف الأول من عام 2020 .

وستقدم thyssenkrupp الهندسة والشراء والبناء لخط إنتاج الكلنكر بأكمله ، بدءاً من تجهيز المواد الخام إلى تخزين الكلنكر ، ومنشأة طحن للوقود الصلب .

وتشمل المكونات الرئيسية الكسارة الأولية بطاقة 1000 طن / ساعة ، ومنشأة طولية لتخزين المواد المضافة ، وصومعة دائرية بسعة تخزين تبلغ 12,000 طن ، ومطحنة مدلفنة QUADROPOL QMR² بطاقة إنتاج 290 طناً / ساعة ، وصومعة مزج سعة 4,600 طن .



□ الشركة الوطنية للإسمنت (Cement Company National)

تتجه لرفع الإنتاج لتلبية الطلب في اليمن والقرن الأفريقي

تتجه الشركة الوطنية للإسمنت التابعة لمجموعة شركات هائل سعيد أنعم الى زيادة طاقتها الإنتاجية بنسبة 70% في الفترة المقبلة .



المدير العام

المهندس عبد الجليل عبدالله المقرعي

وأكد المهندس عبد الجليل عبدالله المقرعي مدير عام الشركة إن الوطنية للإسمنت التي تعمل في اليمن قامت بإدخال تقنية جديدة **High Pressure Grinding (HPGR or Roller Press)** لتوسعة طاقة الطحن من 1,600,000 إلى 2,700,000 طن في السنة .

موضحاً أن الإنتاج سيرتفع بهذه التقنية التي تم تحديث المصنع بها من 240 إلى 420 طناً في الساعة بتشغيل مطحنتين ، أما في حال تشغيل مطحنة واحدة فسيرتفع الإنتاج الى 290 طناً في الساعة بزيادة 20 % .

وقال لمجلة «الإسمنت ومواد البناء» إن إدخال هذه التقنية يأتي إستجابة لتلبية طلب عملاء الشركة وتوجهها الإستراتيجي نحو الأسواق المجاورة في القرن الأفريقي وكذلك لمواكبة التطورات الصناعية بهذا المجال وتوفير إستهلاك الطاقة بنسبة (10-) وحدات .

ونوه المهندس المقرعي إلى أن الشركة الوطنية للإسمنت تأسست في 2003 بطاقة إنتاجية 1,600,000 طن في السنة ، وهي إحدى شركات مجموعة هائل سعيد أنعم باليمن أعرق مجموعة إقتصادية وصناعية وتجارية في اليمن وساهمت ومازالت تساهم بفاعلية في التنمية المستدامة في الجمهورية اليمنية .



وفي 2008 بدأت الشركة الوطنية أول إنتاجها تحت العلامة التجارية (إسمنت الوطنية) بإنتاج أول صنف إسمنت بورتلاندي عادي (OPC) طبقاً للمواصفات الأوروبية والأمريكية ASTM-C150 TYPE1 EN 197 CEM والمعدات والأجهزة في عملياتها الإنتاجية والفنية ذات تقنية ألمانية متقدمة في صناعة الإسمنت وتوليد الطاقة وعمليات التحكم .

وقد أوضح رئيس قسم التسويق بالشركة علي الأهدل أن الشركة الوطنية للإسمنت قامت بتصدير أول طلبية لمنتج إسمنت الوطنية للإسمنت في يناير 2008 إلى السوق الأفريقية .

وفي 2010 منحت الشركة الوطنية للإسمنت جائزة الإستثمار لعام 2009 كأفضل 20 شركة إستثمارية في اليمن والشركة رقم واحد في صناعة وتسويق الإسمنت في اليمن .

وفي 2010 بدأت الشركة بإنتاج وتسويق صنف إسمنت الوطنية المقاوم لأملح الكبريتات (SRC) إلى جانب إسمنت الوطنية العادي OPC .

موضحاً أنه وفي يناير 2013 أضافت إلى مزيج أصناف منتجاتها إسمنت الوطنية صنفاً جديداً هو إسمنت الوطنية البورتلاندي البوزلاني (PPC) كأول شركة إسمنت في اليمن تنتج هذا الصنف من الإسمنت بالمواصفات الأوروبية والأمريكية .

وفي يوليو 2014 حصلت الشركة الوطنية

للإسمنت على شهادة الجودة 2008:9001 كأول شركة إسمنت في اليمن تحصل على شهادة الأيزو ونحن الآن في مرحلة المراجعات للمواصفة الجديدة 9001 : 2015 .

وحصلت بنفس العام 2014 للمرة الثانية على جائزة الإستثمار التي تنظمها مجلة الإستثمار بإشراف الهيئة العامة للإستثمار والإتحاد العام للغرف التجارية اليمنية .



رئيس قسم التسويق

علي الأهدل

العوامل المؤثرة على البطانة الحرارية للأفران

الدورة في معامل السمنت

إعداد شركة Veitscher المختصة في إنتاج البطانة الحرارية

الأسباب المؤثرة على سلامة البطانة الحرارية للأفران الدورة :

أولاً : تأثير نوعية المواد الأولية الرديئة :

- 3 - اهتزاز البطانة
- 4 - انهيار البطانة .
- 5 - الصدمات الحرارية : نتيجة التغير الفجائي في درجات الحرارة بسبب سقوط قطع من طبقة حماية البطانة الحرارية (coating) خلال عملية التشغيل أو خلال توقف فجائي للفرن يحدث إجهادات حرارية في البطانة والتي تؤدي إلى انهيارها عندما تتغلب قوى الإجهادات على قوى متانة البنية الهيكلية للبطانة .

6 - الكلال الحراري : يحدث هذا بسبب التغيرات الدورية البسيطة لدرجة حرارة البطانة نتيجة دوران الفرن ، حيث أنه تكون حرارة البطانة معرضة لحو الفرن في الجزء العلوي بينما عندما تكون في الوضع السفلي وخلال دوران الفرن ملامسة للمواد الأولية الأقل درجة حرارة .

7 - الإجهادات الميكانيكية : التصدعات الصغيرة الموجودة في البطانة الحرارية تتحول تدريجياً إلى كسور كبيرة نتيجة الإجهادات الميكانيكية (وهي قوى الانضغاط ، الشد ، الانحناء ، القص) والتي تحدث من :

1. القوى الديناميكية : نتيجة
 - دوران الفرن .
 - البيضوية .
 - سقوط طبقة حماية البطانة (coating) .
2. القوى الستاتيكية : نتيجة
 - وزن الفرن .
 - التمدد الحراري للبطانة والمفيد ضمن جسم الفرن .

8 - التآكل (التفتيت) : يحدث هذا بسبب تكون حبيبات الكانكر الصلبة وغياب طبقة حماية البطانة الحرارية (coating) قرب النهاية الحارة للفرن (discharge zone) .

من المؤثرات المذكورة أعلاه مجتمعة يمكن تقسيم أسباب تضرر البطانة الحرارية إلى العوامل الرئيسية الثلاثة التالية :

1. سوء التشغيل الذي يسبب تغير البنية الهيكلية للبطانة والذي يعتبر عاملاً مهماً لبدء حدوث تضرر البطانة لأنه يقلل من قابلية البطانة على امتصاص الإجهادات .
2. الإجهادات الميكانيكية تتسبب أيضاً في حدوث فشل في البنية الهيكلية للبطانة .
3. النوعية الرديئة للمواد الأولية والتي تسبب قشط (سوفان) البطانة المعرضة للحرارة .

1 - تكون الكانكر الصلب .

2 - تكسر طبقة حماية البطانة (coating)

3 - تكسر وتآكل البطانة نتيجة الكانكر المنصهر

4 - التكتيف لأملاح الفلويات .

ثانياً : تأثير عدم انتظام الشعلة :

- 1 - التسرب والتآكل والتكتيف نتيجة مركبات الوقود المختلفة
- 2 - الاختزال بسبب الاحتراق غير التام .
- 3 - الزيادة غير الطبيعية في درجات الحرارة .
- 4 - التغير غير المنتظم في درجات الحرارة .

ثالثاً : تأثير تشوهات جسم الفرن : وتشمل قوى

- 1 - الانضغاط . 2 - الشد . 3 - الانحناء . 4 - القص .

محصلة التأثيرات الكيميائية ، الحرارية والميكانيكية هي :

1 - تغلغل المنصهر : يتضمن سيطرة عملية انتشار منصهر السيليكا الناتج من اصطدامه بمواد الأطوار غير المتجانسة من المواد الأولية والوقود ، ويشمل أيضاً انصهار مواد البطانة نفسها نتيجة الذوبان عند ارتفاع درجة الحرارة ، محصلة التأثيرات أعلاه تسبب تآكل المواد الرابطة لوجه البطانة الملامس للمواد الأولية والأكثر تعرضاً للحرارة .

2 - تكاتف أملاح الفلويات : نتيجة تكاتف رواسب الفلويات الموجودة في الكبريتات والكلوريدات من الطور الغازي إلى الطور المنصهر واختراقها للبطانة الحرارية حتى تتصلب مسببة قوة انضغاطية على بنية البطانة والتي تزيد من خطورة تكسرها عند التذبذب غير المنتظم في درجات الحرارة .

3 - الاختزال : تغير تكافؤ الحديد من (+ 3) إلى (+ 2) بسبب عدم السيطرة على الشعلة أو حدوث احتراق غير تام إلى عملية انكماش حسب قانون كيرشوف للإشعاع الحراري والتي تسبب حدوث فراغات بين بلورات المنغنيسيا وهكذا يحدث تقليل من متانة البنية الهيكلية للبطانة .

4 - فرط التسخين : استمرار التشغيل من دون تكون طبقة الحماية (coating) للبطانة نتيجة فرط التسخين يسبب انصهار مكونات البطانة واستطالة بلورات المنغنيسيا وهذا يؤدي إلى الأضرار التالية :

1 - وجه البطانة المواجه للحرارة يكون اسفنجياً وهشاً

2 - البطانة تكون أكثر قابلية للقشط وفقدان السمك



UAE Cement

United Arab Emirates Cement Portal Web Site

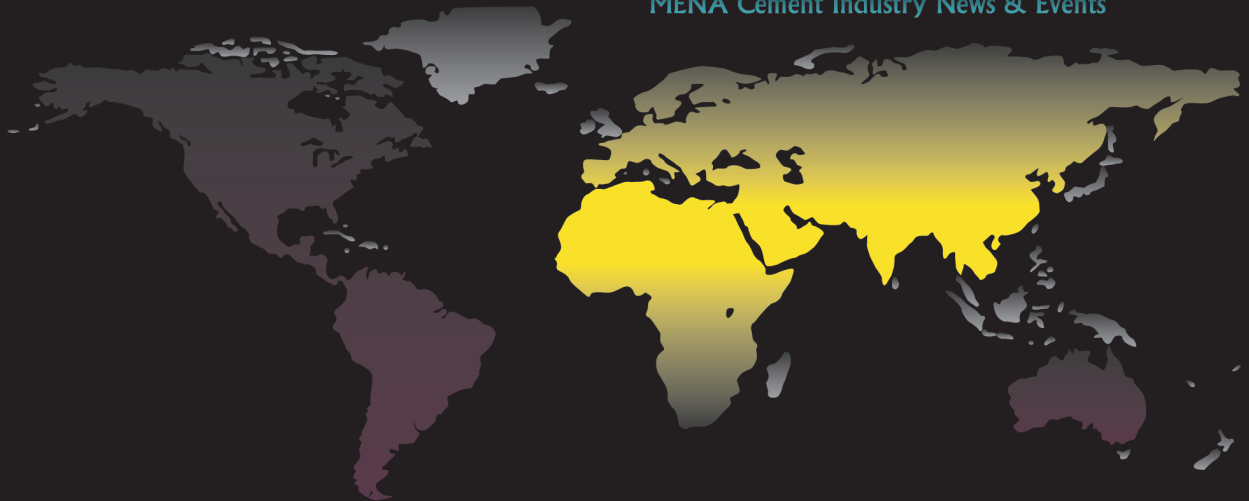
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