



CEMENT & BUILDING MATERIALS REVIEW

Published by : Arab Union for Cement and Building Materials No.70 December 2017



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Cement and Building Materials Review

Arab Album

International News

New Products

Technical Articles

Diary Dates

Editor-in-Chief
Managing Editor

Eng. Ahmad Al-Rousan
Suha M. Canaan

CONTRIBUTIONS

- *The Magazine editorial staff welcome the contribution of experts to enrich the contents of the magazine .*
- *Articles are not to be returned to authors .*
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Email: aucbm@scs-net.org / aucbm1977@gmail.com

Website : www.aucbm.org

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CORRESPONDENCE

Correspondence are to be addressed to the Editor-in-chief at the following address:

Syria, Damascus - P. O. Box 9015

Tel : (+963 11) 611 5412 - 6118598

Fax : (+963 11) 612 1731

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

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AUCBM's *Quarterly Cement and Building Materials Review (CBMR)*

EDITORIAL SCHEDULE FOR 2018

ISSUE	THEMES	EVENTS
March 2018	<ul style="list-style-type: none"> - Lubrication Systems - Maintenance in Cement Plants <ul style="list-style-type: none"> - RCM (Reliability Centered Maintenance) - Computerized Maintenance System CMS - Repair and welding techniques - Spare-parts Management - Vertical Mills - Crushers - Coolers - Burner Technology - Refractories & testing of refractories - RDF management 	
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 style="text-align: center;">AUCBM's 23rd Arab International Cement Conference and Exhibition (AICCE23)</p> <p style="text-align: center;">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 	
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* September is a bonus issue that will be distributed to the Conference participants

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

March issue: **1st March 2018**

June issue: **28th May 2018**

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

December issue: **5th December 2018**

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ALGERIA

GICA reports nearly 14Mt of cement production in 2017

Groupe des Ciments d'Algérie's (GICA) cement production rose by 11% year-on-year to 14Mt in 2017 from 12.6Mt in 2016. The cement producer beat its own forecast of 13.2Mt for the year, according to the L'Expression newspaper. Production rose in 2017 due to the opening of its Aïn El Kebira, Sétif cement plant in the first quarter. Local production capacity is forecast to reach 40.6Mt/yr by 2020 with 20Mt/yr supplied by GICA, 11.1Mt/yr supplied by LafargeHolcim and the remainder from other companies.

Global Cement

Algeria to start exporting cement

Trade Minister said that Algeria will commence cement exports. An export of Ordinary Portland Cement will be made to Gambia via the port of Arzew. In a separate statement LafargeHolcim Algeria said that it was exporting 16,000t of cement to West Africa from its plant at Oggaz.

Global Cement

LafargeHolcim inaugurates state-of-the-art CILAS cement plant in Biskra

LafargeHolcim inaugurated a 2.7 Mtpa new cement plant equipped with cutting-edge machinery on October 17 in Biskra.

With an investment of 35 billion Algerian dinars, this is the most recent of new LafargeHolcim plants,

which boasts a 2.7 Mtpa capacity and the latest and best machinery available in the cement industry, including the tallest vertical grinder in the world.

CILAS plant to export cement

CILAS cement plant braces for exports in 2018 and will soon be exporting part of its production to the African and European markets, as the Algerian domestic market approaches overcapacity.

The cement plant was launched in 2016 and is part of a building construction complex in the Biskra wilaya, which also includes 22 units of red bricks, 10 quarries, and five limestone production sites.

The cement plant is the result of a partnership between Algerian group Souakri Frères and Lafarge. It has the installed capacity to produce 2.7 million tons of cement per annum.

CemWeek

Two more Algerian plants

Already an exporter of cement, Algeria is set to gain two further cement plants by 2020. GICA Group has already begun construction of a 1Mt/yr plant in Béchar and a 2Mt/yr plant at Sigus, Oum El Bouaghi.

By 2020 the group will reach a cement production capacity of around 20Mt/yr. Regarding exports, GICA noted that with the satisfaction of domestic demand, the surplus will be exported to other African countries, in accordance with the guidelines of the public authorities. The Group is in discussion with international operators to form

possible partnerships to place our products internationally.

Global Cement

New Sahara Desert CBM Cement Plant

In the Sahara Desert in Algeria, there is a cement plant under construction and management by Chinese enterprises.

Daily Cement

New cement plant inaugurated in Timkatan, Algeria

Factory is a partnership between Sidi Moussa STG and Cte-O-C

CemWeek

China State Construction Engineering Corp acquires 49% stake in ASEC Cement

China State Construction Engineering Corporation (CSCEC) acquired 49% of the shares of ASEC Algeria Cement.

Daily Cement

Safas Tunis to supply grinding balls to SCIMAT cement plant in Ain-Touta

Tunisian company Safas Tunis SA has won a tender to supply 148 tonnes of grinding balls to SCIMAT (Cement Company of Ain-Touta), a subsidiary of GICA.

Daily Cement

EGYPT

Egypt aims at doubling cement exports

The Export Development Authority

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Contact Information

Headquarter

Address : 28 Tut Ankh Amoun St., Smouha, Alexandria, Egypt
Telephone : +(203)425-7843, +(203)425-7223
Fax. : +(203)425-7151 Mobile: +(012)781-6404
Email : imc@intermaint.net Web site : www.intermaint.net

INTERMAINT FABRICATION LTD.

Address : Kilo 35 Alex- Cairo Desert Road, Al-Nassereyah, - Alex. Egypt
Telephone : (203) 4492192 - (203) 4491913 - (203) 5931441 - (203) 5931442

Saudi Intermaint Co. Ltd.

P.O. Box : 325591 Riyadh 11371 Saudi Arabia
Phone : +966 11 4762230
Fax. : +966 11 2916798
Mobile : +966 505194064
E-mail : hesham@intermaint.net

Fax. : (203) 4492199 Email: ifc@intermaint.net

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Brief

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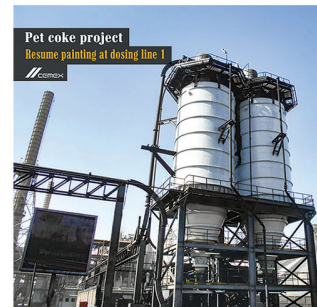
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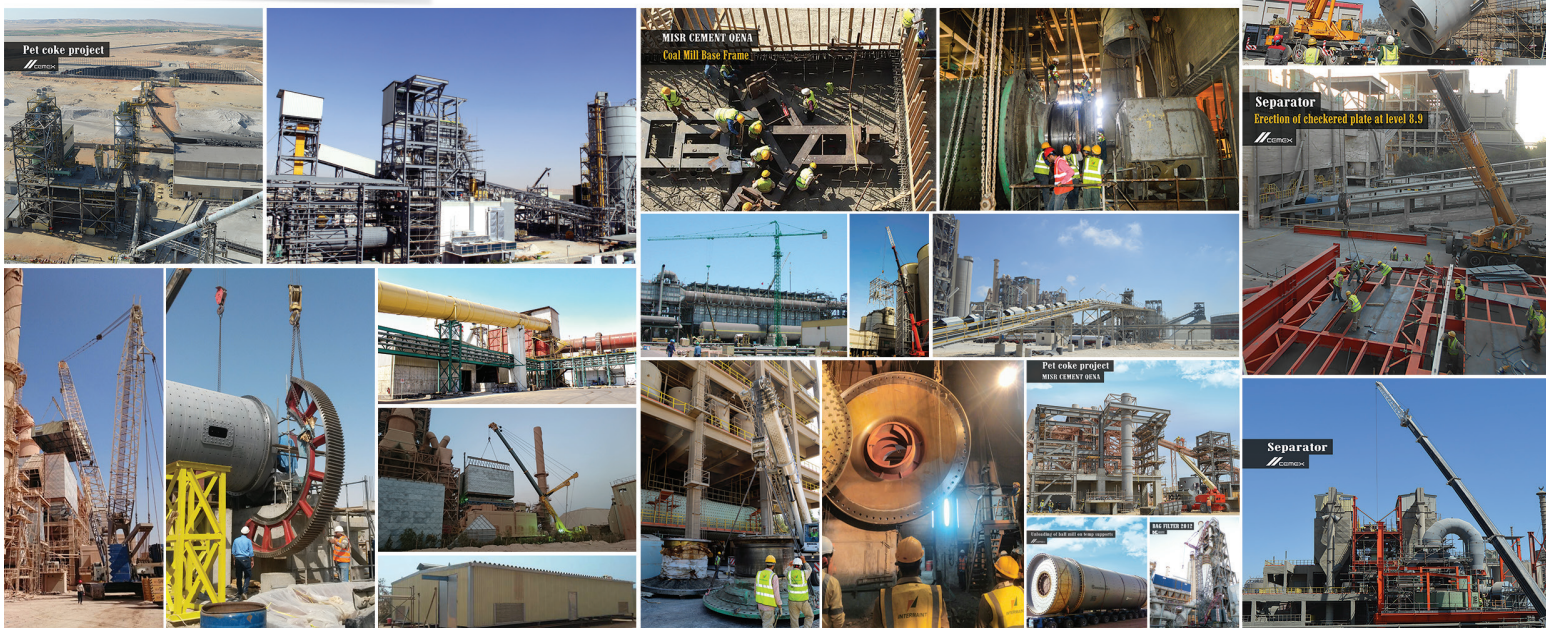
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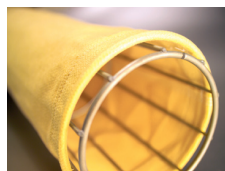
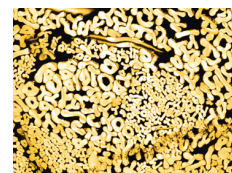
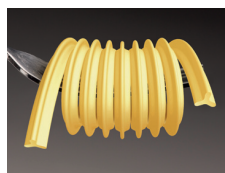
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 **EVONIK**
POWER TO CREATE



of the Ministry of Industry and Trade, together with the Export Councils, are drafting a plan that aims at doubling the amount of cement exported by the country within five years.

Among the solutions under review are the creation of logistics centers and trade representation offices across potential markets in East, Central, and West Africa.

Also on the plan is the inclusion of small and medium enterprises in the export market and a shift towards high value-added exports.

Cemweek

Aswan Cement cuts output to reduce costs

Company is focus on expanding export market

Cemweek

Suez Cement to merge with Helwan Cement

The board of directors of Suez Cement has agreed to merge with Helwan Cement. It also agreed to sell a 5% stake in Tura Cement. Both Suez Cement and Helwan Cement are owned by HeidelbergCement. Suez Cement operates two plants at Suez and Kattameya. Helwan Cement runs a single plant at Helwan.

Global Cement

Suez Cement, Tora Cement to sell stake at Suez Bags Company

Stake will be acquired by Mondi, deal pends approval

CemWeek

Schneider Electric supplies electrical equipment to Assiut

Cement plant in Beni Suef

Schneider Electric has been awarded a contract to supply and install all electrical works for Assiut Cement factory (CEMEX) in Beni Suef.

Daily Cement

Egyptian government recognises Suez Cement plants for environmental drive

The Egyptian Minister of Environment has recognised the work by subsidiaries of Suez Cement to reduce air pollution and so called 'black cloud' periods. The minister presented certificates of appreciation to the manager of Helwan cement plant, Ahmad Ragae, the manager of Tourah cement plant, Omar Khorshid, the manager of the Environment Department at Helwan cement plant, Ragheb Hammouda and the manager of Environment Department at the Tourah cement plant, Badry Ibrahim.

Global Cement

IRAQ

Hamam Al-Alil cement plant reactivated

Cement plant was damaged during combats against Daesh

Cemweek

JORDAN

ACWCI to install new incinerator
Arab Company for White Cement Industry (ACWCI) will have a new incinerator.

The company will install a new incinerator on its Al-Zhelil cement plant in order to improve the

efficiency of its burner.

The Petra 1 incinerator will be shipped from Sweden to the factory in the next few days.

The new incinerator is part of an effort to improve the quality of white cement produced in the plant while reducing the cost of electricity

Cemweek

LIBYA

Hawari cement factories in Benghazi unlikely to start production before 2019

Further to news that a delegation of foreign experts working for the Libyan Cement Company, owners of Hawari cement factory in Benghazi, had visited the factory site and met with the city's mayor last week with a view to restarting work to reopen the factory, LCC announced that an opening date is unlikely before the end of 2018.

Bob Solomon, LCC Chairman and CEO, expressed his appreciation for Benghazi's mayor meeting with the LCC delegation last week and congratulated him on reopening the city's port. LCC will be importing large quantities of supplies, parts and materials for the re-building and a fully functioning port will be a great benefit.

Solomon clarified the scale of the task of reopening the cement plant in view of the extensive damage it suffered as a result of fighting in its surrounding area, stressing that restoring the plant is a huge job and will take all of 2018 before production will re-start.'

A meeting not to be missed!

White Nights

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Grand Hotel Europe, St. Petersburg, Russia

Organizers:



Russian
Union
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white-nights.info



In addition, there are two critical elements that need to be handled by others. First is the gas supply. Crucial parts of the gas distribution pipeline outside of the factory premises are totally missing. These must be restored because without gas the factory cannot operate”.

“Secondly, electricity supply must be able to handle the demand. When the factory restarts at least 15 MW of power will be needed in the beginning, increasing up to 24 MW at full capacity”.

On another note, Solomon was very keen to pay tribute to the company’s employees working at their Fataiah cement factory in Derna.

OMAN

Duqm economic zone signs usufruct agreement with Al Wusta Cement

The Special Economic Zone Authority of Duqm (SEZAD) has signed a usufruct agreement with the Al Wusta Cement Company to establish a cement plant in Duqm. As per the terms of the deal the Al Wusta Cement has received a 500,000m² plot in the zone for 50 years. The new cement producer is a joint venture between Oman Cement and Raysut Cement.

Al Wusta Cement plans to start building the plant in 2018 with production scheduled for 2020. The unit will start with a production capacity of 5000t/day before raising this to 10,000t/day, subject to market demand.



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Global Cement

Oman Cement seeks investors in Brazil

Oman Cement Company wants to attract Brazilian investors in the project of setting up a new cement plant in Duqm Special Economic Zone.

Daily Cement

SAUDI ARABIA

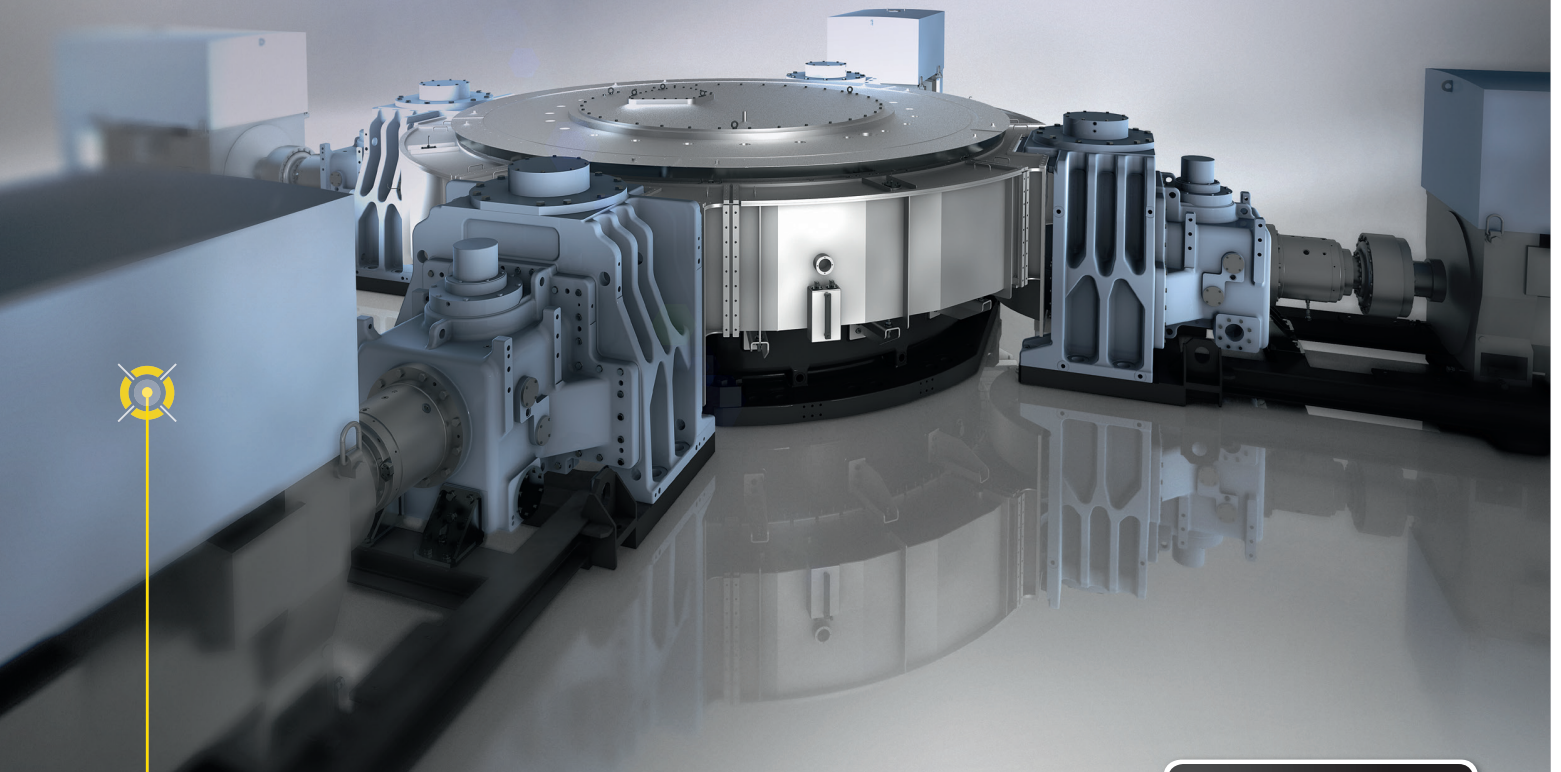
Saudi cement sector to benefit from new state budget

Investors interest on Saudi cement cools down after release of state budget. After years of low state investment on infrastructure



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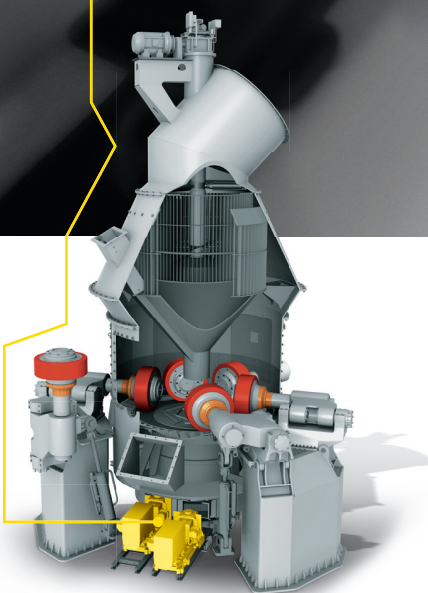
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caused by a decrease in the revenue obtained from oil, the new state budget was expected to be an expansionary one.

Indeed, measures have been taken to increase the expenditure on construction, confirming investors' expectations. However, there are still doubts regarding the effectiveness of some stimulus measures such as soft loans extended by state funds.

CemWeek

Cement market expected to reach 78,25 million tonnes by 2020

Despite the harsh conditions the domestic cement industry is currently going through, a new report from Transparency Market Research titled "Cement Market – Kingdom of Saudi Arabia Industry Analysis, Size, Share, Growth, Trends and Forecast 2014 – 2020" forecasts that the Saudi cement market will develop at a moderate 5.4% CAGR between 2014 and 2020.

Daily Cement

Delays announced to new mills at Arabian Cement Company

The Arabian Cement Company (ACC) says that the construction of new cement mills at its Rabigh plant has been delayed to the third quarter of 2018 from the fourth quarter of 2017. The delay has been blamed on the contractor's failure

to comply with the timetable. The second-phase of the project, to build a new clinker production line, is under review. The cement mill order was placed with China National Building Material (CNBM) in 2015.

Global Cement

City Cement halts one production line

City Cement Co. (Al-Madina) announced the temporary suspension of one of its clinker production lines. Company cited excessive clinker inventory has the reason for the stoppage.

Umm Al-Qura Cement secures Islamic financing deal

Umm Al-Qura Cement Company has signed an Islamic financing agreement with Riyadh Bank for a SAR 50 million (US \$13.3 million) loan.

Daily Cement

Saudi Arabia exports cement to Jordan

Saudi Arabia reaches agreement to export cement to Jordan. Al Jouf Cement, in cooperation with the Saudi Industrial Export Corporation, reached an agreement with Jordanian buyers to export 72,000 tons of cement to the country.

Al Jouf Cement will benefit from the Saudi government's decision to cut the cement export tariffs by 50%, announced last July.

Cemweek

SYRIA

Syrian cement maker installs waste-heat recovery unit

General Organization for Cement and Building Materials wants to save diesel for times of fuel scarcity.

Cemweek

TUNISIA

Carthage Cement wins clinker export contract

Carthage Cement has secured a contract to export 350,000t of clinker to sub-Saharan Africa in 2018. The deal will enable the cement producer to enter this market for the first time.

Global Cement

Carthage Cement goes on sale

The government and Bina, the controlling shareholders of Carthage Cement, are selling a majority stake in the cement producer via public tender. The two investors own a 50.52% stake of the company. The cement producer operates a 2.2Mt/yr plant at Djebel Ressas. Expressions of interest are being accepted until 16 February 2018.

Global Cement

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Arab Swiss Engineering Company "ASEC" Partners with TAIHEIYO ENGINEERING CORPORATION and PROMAC India to Provide End-to-end Solutions for Process Optimization and Energy Conversion

ASEC, Egypt joins forces with TEC, Japan and its Joint Venture partner Promac, India to roll out end-to-end solutions for the optimization of cement manufacturing process and energy conservation.

Arab Swiss Engineering Company "ASEC", a leading regional provider of O&M and consultancy services to cement plants, TAIHEIYO Engineering Corporation, the renowned Japanese pioneer in cement technology and energy conservation solutions, and PROMAC India, the leading EPC contractor for cement and heavy industries, have jointly announced that they have joined forces together to provide cement manufacturers in Egypt and other parts of the world with comprehensive solutions for process optimization and fuel conversion for the purpose of reducing cost and increasing manufacturing efficiency.

On the 19th of November, Cairo hosted the signing ceremony of a memorandum of understanding by TAIHEIYO, PROMAC and ASEC to set the framework for their collaboration with the objective of introducing TEC's cutting-edge technologies in the field of utilization of waste material as alternative fuel and latest advancements in cement manufacturing process to producers in Egypt and other countries. PROMAC, the EPC partner, has a proven record in the implementation of the new solutions capitalizing on its state-of-the-art manufacturing facility based in Bangalore, India. ASEC, the leading consultant and O&M provider, shall capitalize on its profound expertise to identify and integrate solutions appropriate to technical and business needs specific to each cement facility.

Commenting on the collaboration of the three partners, Mr. Haruo Tsuyuki, the Managing Director of Taiheiyo Engineering Corporation said, "We shall combine the technological capabilities of the three companies and roll out new solutions in Egypt and other parts of the world. We have already constructed cement plants and energy conversion solutions based on our engineering technology in India and in the Middle East and we look forward to introducing our groundbreaking technologies in Egypt and its neighboring countries capitalizing on ASEC's marketing capabilities and O&M experiences.

From his side, Mr. J. Surendra Reddy, Chairman & Managing Director of Promac Engineering Industries Limited, India, announced that "this cooperation will synergize the unique strengths of all three entities to give prospective customers in the cement space access to World Class Technologies, State-of-the-art Manufacturing and unmatched Project Engineering, Consultancy and O&M Services under a single umbrella"

“The era of cheap energy and high quality fuel has elapsed and conversion to alternative energy is inevitable for cement manufacturers” said Mr. Khaled El-Sebaei, the Managing Director of ASEC, “Teaming up with Taiheiyo, the Japanese technology hub in fuel conversion and Promac, the Indian world-class EPC contractor and manufacturer shall guarantee an efficient and reliable conversion process for our clients. ASEC has formerly played a pivotal role in the modernization of the cement industry in Egypt and the Middle East transforming the production lines from the wet to the dry technology, and now, it is just about time for ASEC to guide and smoothly integrate the conversion to alternative fuel into the cement facilities of current and prospective clients, bringing their cost of production into a perfectly competitive position”.

About TAIHEIYO Engineering Corporation



Taiheiyo Engineering Corporation, Tokyo, Japan, a subsidiary of Taiheiyo Cement Corporation the 7th largest cement manufacturer, is a world leading engineering company in the field of cement & cement-related industries providing engineering services including design, equipment supply, construction and currently provides system engineering services on environmental measures toward energy conservation and waste recycling. Through its outstanding R&D activities, Taiheiyo offers latest technologies in the fields of process optimization and alternative fuel.

About PROMAC Engineering Industries Ltd.



Established in the early 70s, Promac Engineering Industries Limited, India, is an ISO 9001-2008 certified company and one of the leading designers and manufacturers of Cement Plants, Bulk Material Handling Systems including CHPs/AHPs for Thermal Power Plants, Coal Handling Plants and other process plants on EPC/ turnkey basis within India and overseas. Promac’s state-of-the-art manufacturing facility spreads over 80,000 m² in Bangalore, India and equipped with heavy machine shop, heavy fabrication facilities together with its engineering department, all under one roof.

About Arab Swiss Engineering Company “ASEC”



ASEC is the leading provider of operation and maintenance solutions in addition to consultancy, commissioning and technical training services to cement manufacturers in its homeland Egypt, Middle East and Africa. Backed with track record exceeding 42 years, ASEC has consulted for more than 500 projects between greenfield and existing plants and is proudly entrusted for the O&M of 16 production lines. ASEC Academy is indeed the house of cement technology, providing engineers and technicians with the latest in cement manufacturing technologies

LOESCHE involved in new construction project with three vertical roller mills for large cement plant in Egypt



COPE Drive for the LOESCHE Vertical Roller Mills Sohag – LOESCHE is involved in the new construction of a large cement plant in Egypt with three vertical roller mills. The end customer is the Egyptian Cement for Cement Projects Management S.A.E. The planned new plant is located nearly 500 km south of Cairo in Sohag.

The LOESCHE scope of delivery includes a raw material mill with a capacity of 540 t/h of cement raw meal, a cement mill with an output of 350 t/h of clinker as well as a coal mill with an output of 45 t/h.

The cement mill for this order is equipped with the COPE drive (COmpact Planetary Electric Drive). The COPE drive concept was developed especially for powerful vertical roller mills with over 6 MW of power by LOESCHE together with the Renk company. Six or eight water-cooled cage rotor induction engines drive the grinding table of the mill through a planetary gear. The motor pinion can be engaged or disengaged.

The motors are also individually replaceable, which makes the COPE drive very maintenance-friendly. Moreover the mills can be further operated in case of a breakdown of one or several motors until the operation of a replacement is permissible. This results in a higher plant availability.

Last but not least, the energy efficiency convinced the general contractor as well as the end customer, that with the LOESCHE mills, cement of the highest quality could be produced.

The Chinese Chengdu Design & Research Institute (CDI) functions as the general contractor for the project and belongs to the renowned Sinoma Group, which is specialized in the planning and construction of cement plants. CDI has not only successfully worked together with LOESCHE in Egypt, but on many occasions worldwide, such as for the cement producer El Arish, the lines 3 & 4 as well as the Beni Suef Cement Plant, where before the end of 2017, six new production lines for cement clinker will be formed, each with a daily capacity of 6,000 tons, for which LOESCHE will soon provide 18 new vertical roller mills.

CONTACT
LOESCHE GmbH
Karin Boeker-Mahr
Hansaallee 243
D-40549 Düsseldorf, Germany
Tel.: +49.211.53 53417-
Fax: +49.211.53 535417-
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TEAM DAY 2018 – Symposium and Platform for Advanced Ceramics Technology

Location: Paulaner am Nockherberg

Date: April 9th, 2018

For the third time in a row the organizing committee succeeded to present an exciting program covering a broad range of themes regarding advanced ceramics and related technologies. The program includes high quality lectures focused on ceramic manufacturing 4.0, state-of-art production technologies (also 3D printing), modern raw-material synthesis and many more very interesting topics, all presented and discussed by national and international top speakers from the industry. During the event generous time for information exchange, discussion and networking is also provided. Talks and discussions will be held in English and questions from the audience are encouraged!

It is TEAM by Sacmi, an alliance of the Sacmi group companies LAEIS (LUX), RIEDHAMMER, SAMA, ALPHA CERAMICS (D) and SACMI Imola (I) which offers cutting-edge technology for all steps of advanced ceramics production, a great pleasure to invite you to participate TEAM Day 2018.

TEAM Day 2018 will take place in direct connection with the CERAMITEC 2018 Fair in Munich, Germany on April 9th 2018 (the day before CERAMITEC 2018 opens) at the famous “Paulaner am Nockherberg”. Attendance of the symposium will be free of charge; however, a registration will be required. Participants will additionally receive a voucher for free access to the CERAMITEC fair.

Invitation, the final program and registration forms are, on short term, available for download from the TEAM by Sacmi website or the websites of the organizing companies (www.sacmi-team.com, www.laeis.eu, www.sama-online.com, www.riedhammer.de, www.alpha-ceramics.de, www.sacmi.it).

We hope that you will take this opportunity and join us at this event and we look forward to welcoming you. See you in Munich!!

Note:

Since the number of participants is limited, the registrations will be handled on a first come, first serve basis. It is recommended to apply soon.

Further information: Hartmut Weber, Marketing director / Team sales executive coordinator hartmut.weber@riedhammer.de



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

Delegates from all over the world will come together to discuss the latest developments and challenges in state-of-the-art cement manufacturing with international scientists and experts from cement plants at the forefront of technology.



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World ceramic leader, RAK, focuses on Ancora finishing technology

Ancora, a SITI B&T Group Company, as well as leader in the design and production of complete lines for ceramic product finishing, once again gains the trust of one of the most well-known brands in the field of world ceramics, RAK Ceramics, headquartered in the United Arab Emirates.

For the finishing of large-format ceramic slabs, nowadays particularly sought after by the market, RAK Ceramics chose the "Made in Italy" solutions by Ancora. A Speed-Dry dry squaring and chamfering line was installed in the Tehran, Iran factory.

A green technology that, in addition to avoiding the use of primary resources such as water - with all that follows regarding healthiness of the working environment - brings a great many economic and productive benefits: from the system's durability and maintenance, energy consumption, up to the consumption of diamond tipped tools. Thanks to the SITI B&T Group's extreme attention to Total Cost of Operation, these technological solutions therefore result in a clear and obvious savings in operating costs for the customer (significant for this type of machine).

Still at the RAK Iran plant, Ancora has also installed a grinding, squaring and chamfering line, including HiCoat surface treatment, for formats up to 1200x1200 mm.

"This prestigious partnership," says Franco Ponsone, Managing Director of Ancora, "attests to the unmatched value of our specific know-how on large formats, for which we are leaders, offering higher performance solutions than any other competing company, thanks to our patents. In general, the finishing market is growing, and all of our customers want to improve the quality of their products to better take on the international competition".

RAK Ceramics annually produces over 110 million square metres of ceramic and porcelain stoneware flooring and wall coverings and 5 million bathroom fixtures in its 16 factories distributed between United Arab Emirates, India, Bangladesh and Iran, with annual turnover of approximately \$ 1 billion. The company is listed on the Abu Dhabi Securities Exchange in the United Arab Emirates and on the Dhaka Stock Exchange in Bangladesh.

SITI-B&T Group

SITI-B&T Group, listed on the AIM Italia stock market since March 2016, is a manufacturer of complete plants for the world ceramic industry with a strong presence in all global markets. It delivers outstanding technological solutions and innovative services with a special focus on energy efficiency and production cost reduction.

It offers customers a complete personalised service including technical assistance with installation, maintenance and modernisation of production lines.

SITI-B&T Group operates through the following business units: Tile (complete plants for tile production), Projecta Engineering and Digital Design (digital decorating machines and digital graphic design projects), Ancora (surface finishing systems for ceramic products) and B&T White (complete plants for sanitaryware).

The Group in 2016 has a turnover of 187 million euros and an export share of more than 85 percent.

www.sitibt.com

Rebuilding of SYRIAN Cement & Buildings Materials Industries, Post Crisis

By: Eng. Hussein R. Ibrahim Pascha.

* Presented at: 22nd Arab International Conference and Exhibition (AICCE22), International Congress Center-Maritim Jolie Ville, Sharm el Sheikh, Egypt 14 - 16 November 2017

Introduction

Since March 2011, Syria has been suffering from unprecedented devastative war that has led to heavily destroyed economy, power networks, utilities, infrastructure, buildings and human capital.

The reconstruction of Syria after the war and stability may need a period of 25 years and an international project for finance. A reconstruction plan, somewhat similar to the Marshall Plan implemented in the wake of the Second World War to rebuild Europe, could be required.

Outline of Syrian Cement Industry:

The Syrian Cement industry timeline:

The Syrian cement and building materials industry is an old industry.

- In 1933, the first semi-dry process cement factory was built at Dummar / near Damascus by the Polysius.
- Between 1945 and 1951, Polysius constructed three wet process clinker manufacturing lines at Al-Shahba Cement Company / Aleppo.
- In 1957, the Nationalized Polysius Company VEB (ZAB) had set-up wet-process rotary kiln in Al Ahylia Cement Company in Aleppo, of a daily production capacity 350 tons of OPC clinker / day.
- During the social transformation era, all the private-owned cement companies were nationalized and associated to the newly (1975) established General Organization for Cement and Building Materials GOCBM .
- During this new phase, the Syrian government signed contracts with German Democratic Republic (GDR) for setting-up Greenfield dry-process cement plants . Their rated production capacities ranged between 1000 and 1600 tons/day.
- In 1980, UZINEXPORTIMPORT/Romania set-up Greenfield Cement Plant (Cyclone preheater with dry process rotary kilns of rated capacity 2×1500 tons / day in Aleppo/ North of Syria.
- In 1980, Military Housing Establishment set-up a greenfield 1000 tons / day (from Boehler Miag) , which was the first cement factory imported from a western competitive company, so it was the first time to step into the Syrian Cement plant Market which was predominated by Eastern Block companies.
- Between 1993 and 1995, Iranian Cement Plant supplier, Ehdath Co., in co-operation with FLS Co., set-up at Syrian Cement Company / Hama a Greenfield Cement Plant of clinker production capacity 3000 TPD. The combined annual production achieved 5.00 million tons

Currently, the General Organization for Cement and Building Materials has six affiliated companies spread over the Syrian geography close to the consumption areas:

- Adra Cement and Building Materials Company (Combined production capacity 1000 000 TPA / actual capacity 700 000 TPA) of clinker.
- Syrian Company for Cement Industry and Building Materials (Combined production capacity 1500 000 TPA / Actual capacity 1300 000 TPA) of clinker.
- Tartous Company for Cement and Building Materials (Combined production capacity 2000 000TPA / Actual capacity 1300 00 TPA) of clinker.
- Arabian Company for Cement and Building Materials (Combined production capacity 1000 000 TPA / Actual Capacity 860 000 TPA) of Clinker.
- Al Rastan Company for Cement and Building

¹ Based on the data presented in " Prefeasibility study for setting-up Greenfield Portland cement plant of capacity 10000 TPD of OPC Clinker in Syria" Project Code : HRIP-10000 TPD/2010.

²Al-Watanieh Co. for Cement Manufacturing (pvt.): First line 100 TPD (1933), 2nd line 150 TPD (1936), 3rd line 300 TPD(1950), 4th Line 350 TPD(1955), then 1st line has been upgraded to 350 TPD (1955) , and 2nd line has been upgraded to 250 TPD (1962), the total clinker production capacity 900 TPD. In 1988 all the production lines have been shut-down, due to economic and environmental causes.

Materials (Rated production capacity 1400000 TPA / Actual Power 950 000 TPA) of Clinker.

- Al Shahba Company for Cement and Building Materials (Rated production capacity 1100 000 TPA / Actual capacity 850 000 TPA) of clinker.
- General Organization for Cement and Building Materials (Total Combined capacity 6 700 000 TPA / Actual Power 5 500 000 TPA) of OPC Clinker.
- Arab Company for the Manufacture of Porcelain & Sanitary Ware, design capacity: 5,000 TPA / actual capacity 5 000 TPA.

During the 1990's – the period of open economic era in Syria, there were strong trends toward applying investment promoting policies and to allow a larger room for private sectors & foreign investors to take a bigger stake in the economic development of the country, also to enhance the flow of foreign direct investments into the country , this trend has been translated into issuing Investment Law No. 10 of 1991 and its amendments (as a successful example of this trend , one may mention the successful event " ALEPPOINVEST 95 Investment Promotion Conference which were held

in Aleppo City, the Economic Capital of Syria, under the auspices of the Aleppo Chamber of Industry and Aleppo Chamber of Commerce. One of its positive outputs is the involvement of Pharoan Commercial Investment Group Ltd./ KSA in many Rehabilitation and Upgrading cement plants Projects.

In 2007 another positive impulse was given to the policy by issuing number of legislations decrees, laws and regulations which were tactically and professionally designed and aimed at promoting investments, also the Syrian government had issued Legislative Decree No. 9, of 27.01.2007 & Legislative Decree No. 8 of 01.01.2007.

In order to close the persisting gap of OPC unsaturated demand, the Syrian Government decided to put an end to the 46 years of state monopoly of the Syrian Cement plants m markets. This approach motivated the local private sector and the foreigner investors to step-in. As a result the competent Syrian Investment Promotion Authority issued more than 6 permits/licenses for setting-up Greenfield Cement Plants of combined clinker production capacities (approximately 30,000

Syrian Cement Production Profile during the Black Days March 2011 - 2017

Cement Plant	Before the Conflict period	During the Conflict period
Al-Jalabiya Cement Factory/Lafarge	7500 TPD	Out-of-service
Al-Badia	5400 TPD	Low-profile Production (Intermittent production plan)
Gurosh Cement Grinding Plant	500 TPD	Out-of-service
Military Housing /Aleppo	1000 TPD	Out-of-service
AL-Shahba Cement Co.		
1-Musulmieh Cement factory	2300 TPD	Out of Service
2- Sheikh-Saiid Cement factory	900 TPD	Out of Service
3- Burj-Islam Cement factory	320 TPD	Shut-down
Arabian Cement and Building Materials Co./Syria	2x1500 TPD	Out of Service
ADRA Co, for Cements and Building Materials/ Damascus	3x1000 TPD	Low-profile production regime
Syrian Company for Manufacturing Cement and building Materials	4000TPD	

³ Founded on 5.07.1975

⁴ In 16.08.1975 , General Organization for Executing Industrial projects (GOEIP) had signed contract with TECHNOINVEST of GDR for supplying 10 dry process cement plants of combined total clinker production 12000 TPD, later GOEIP had signed with (UZIN)EXPORTIMPORT/Romania a turnkey Project contract for setting-up a Greenfield Cement Plant 2x1500 TPD

⁵ The contact was signed on 15.07.1979 and the Cement Plant was commissioned on 11.06.1982

⁶ The General Organization for Execution of Industrial Projects (GOEIP) signed on 1971 contract with SKET/ DDR for setting-up Greenfield dry-process cement plants (2x1000 TPD at Musulmieh Cement Plant/ Aleppo Province which were commissioned 1976 and 1979 respectively, 1x1000 TPD at Kafer Behem / Hama Province, which was commissioned in 1967, 3x1000 TPD at ADRA site /Damascus Province, which were commissioned on 1978/1983- and 4x1600 TPD at Tartous Province, which were commissioned on 1982/1984- respectively



TPD), also the Chinese Sino Hydro-construction Co, signed MoM with the Syrian Investing Co. to set-up Greenfield Cement Plant of 1.8 TPA). To-date, this governmental tactic resulted in setting up three Greenfield Cement factories: Lafarge-Syria 1x7500 TPD, Al-Badia 2x5400 TPD and United Cement Company 2x6500 TPD supplied by SINOMA, also one Clinker Grinding Plant of capacity 500 TPD OPC based on Imported Clinker from Turkey.

Syrian Building Materials Sector:

Before the Syrian crisis, the profile of building materials industrial sector, was different for the cement industry. The building and construction business, such as service providers, contractors, construction companies, etc. was promising. Military Housing Establishment, headquartered in Damascus, a well-organized and well managed Syrian comprehensive construction organization, was the major player. It was able to fulfill all of its requirements and was able to operate as self-sufficient company, and eventually earned a big share of the Syrian Building Materials markets. MH establishment introduced, for the first time in Syria, into the Syrian Markets many building and construction materials, the following points are the MH Profile:

- OPC cement Plant 1000 TPD supplied by Buehler-

Miag GmbH / Aleppo

- Heavy-clay Manufacturing industry (based on Italian technology provided by UNIMORANDO IMPIANTI Consortium / ASTI:
 - o roofing- tiles factories,
 - o clay hollow blocks and
- concrete floor tiles
- Marble cutting and shaping plants
- Concrete pipe manufacturing plants
- Pre-stressed concrete items
- (CIMPROGETTI/ Bergamo/Italy)
 - o Quick & Hydrated Lime production Lines 2x150 TPD(CIMPROGETTI/ Bergamo/Italy)
 - o Building Gypsum 125 TPD factory /in Raqqa city
- Wood & Furniture Manufacture plant
- Paint manufacture plants
- Ready Mixed Batching Plans
- Ceramic tiles manufacturing plant (Italian technology and knowhow)
- Others

Also, the private sector and government companies heavily contributed to manufacturing and supplying of pre-mixed concrete, and many modern facilities have been established.

GOCBM: Roles and policies

The Syrian Ministry of Industry has the upper-hand on the state-owned cement companies, exercising its responsibility through an administrative arm, namely "General organization for Cements & Building Materials (GOCBM)".

GOCBM is sponsoring all the state-owned cement & Building Materials companies' projects, except Milihouse cement plant.

As a part of its role to keep in pace with present situations of its affiliated state-owned companies (6 cement manufacturing companies with a combined clinker production rated capacity of 5,8 MTA /2010, which collapsed to 1 700 000 TPA/ after the onset of the crisis in 2011).

Rehabilitation & Upgrading Projects:

During 2000, GOCBM floated Invitations to tender documents (ITD) for Rehabilitation and Upgrading its already aged cement plants:

- ADRA Cement Plant 3x1000 TPD ,
- Muslmieh Cement Plant 2x1000 TPD,
- Hama Cement Plant 1x1000 TPD.
- Rastan Cement Plants 220 TPD,
- Tartous Cement Plant 4x1600 TPD .

These tendering processes ended with nothing but one contract (ADRA Cement Company for upgrading one line, signed with Austroplan Consulting Company). However in 2008 **Pharaon Commercial Investment Group Ltd. (PCIGL)**, headed by its Chairman the late Dr. Gaith R. Pharaon, succeeded to sign a contract with GOCBM, for Rehabilitation and Upgrading Tartous Cement & Building Materials Co. 4x1600 TPD, SKET/ZAB TECHNOLOGY / GDR. However the implementation of this pioneer contract was challenging due to various reasons, and in particular the security environment during the conflict time and the imposed economic sanctions on Syria which have seriously affected the flow stream of the project. It was a hard time to fulfill the contractual obligations but it wasn't impossible.

PCIGL Pharaon Group Ltd. was also able in 2016 to sign a contract with GOCBM for Rehabilitation & Upgrading dry process rotary kilns with SKET Shaft-

preheater 3x1000 TPD at ADRA Cement Company / Damascus.

Before 2012 PCIGL provided the technical supports and management through its Pakistani arm ATTOCK, later and due to the security reasons PCIGL contracted with Arab-Swiss-Engineering Company (ASEC) to provide and cover the technical assistance services.

PCIGL has extended its scope of investment plans in Syria to set-up a Greenfield cement factory of 6000 TPD OPC clinker, on BOT bases, at ADRA, Damascus.

Raw Materials Needed for Cement Production:

Government Policies & Programs

- Law No. 26 of 2009 grants the state ownership for all surface and subsurface mineral resources within the country's borders and territorial waters
- Law No. 91 of January 24,2010 designated the General Establishment of Geology and Mineral Resources (GEGMR) as government Agency in charge of all mining and quarrying activities in the country
- GEGMR carries out virtually all mining activities in Syria either directly or through contractors, including development, exploration, production activities, field laboratory analyses, and geologic and geo-physical studies.
- In 2012 (the latest year for which comprehensive data were available) the GEGMR issued 420 mining permits, and 92 explosive permits and fulfilled 13 contracts with private and state owned cement and construction companies to supply them with such industrial minerals as gypsum, silica, sand and volcanic tuff and zeolites,
- GEGMR promoted investment opportunities in developing such industrial commodities as Bentonites, silica sand, volcanic tuff, and Zeolite.
- The GEGMR employed 2,076 people in 2012.

Quality of Syrian Cement Raw Materials:

- GEGMR had contracted with GOCBM to carry out a full scale geotechnical exploration studies to identify the eventual deposits of Cement Raw Materials all over the Syrian territories. Fortunately these studies were successful and the related data are available.

Availability of Cement Raw materials:

Generally speaking, SYRIA has many deposits of raw materials which are suitable for manufacturing Quality Portland Cements conforming to the most up-to-date

⁷ GOCBM was founded, in according to Legislative decree No. 1300 of 5.07.1975

⁸ The affiliated cement companies are: Al-Shahba/ Aleppo , Syrian Cement/Hama, Al-Rastan/Homs, ADRA /Damascus and Tartous/ Tartous.

⁹ In 2013 GOCBM reported an average decrease in cement production of 62% at its plant during the first half of 2013. (U.S. Geological Survey Minerals Yearbook 2013)

¹⁰ Call by International Working Group on Sanctions (IWGS) which held in Ottawa, Ontario , Canada in June 2013

of reputed international / National Cement Standard Specifications EN, ISO, ASTM. Based on our experience, in the field of Syrian cement manufacturing industry, we can say that the most Syrian Cement Raw Materials are Cement Production Friendly Materials, NO-Alkali problems, No By-pass then improved specific heat consumption.

- The two main components, namely Limestone and Basalt/clay, are found in the same deposits
- The Quarrying operations are simple and not complicated. In the most cases the natural humidity of the limestones are acceptable (ranging from 58%-, particularly in the desert areas).
- Most of these deposits are located near cement markets. However, the applicable environment protection regulations & governmental policies have dictated to setup Greenfield cement plants in the deserts areas which characterized with low-population density and dry areas (AL-Badia Cement J.S.C. Factory, United Cement Factory and Lafarge-Syria cement factory.
- Syria has proper & developed highway and railway networks, which ensure cost-effective cement transportation to the consumption zones.

Types of Cements produced in Syria:

Syrian cements are manufactured in conformity with Syrian National Standard Specifications, which have been issued by Syrian standards Organization SASMO, which has been established by the Legislative Decree 248/ 1969.

This Standard Specification is continuously updated by the SASMO. The current standard specifications are bearing the symbol of SNS. As a matter of fact, the Syrian standards are structured and formulated in accordance with the rules of structuring and drafting documents for Standardization based on ISO / IEC, Part 2: 2004, Rules for Structuring and Drafting Standards to International Guidelines.

- Most of the Cement factories in Syria produce Ordinary Portland Cement OPC - 32.5 in accordance with the Syrian standard SNS 3800/ 2015 which is equivalent to ISO 1971-
- Ordinary Portland Cement OPC- 42.5
- Blended cement (Pozzolanic Cement PZ) manufactured in accordance to the applicable Syrian standard SNS 1676/ 1996.
- Sulfate Resistant Cement is produced in accordance with Syrian Standard specifications SNS3800 / 2015 and corresponding to the Sulfate Resistant Cement specified by the American standard ASTM C150-TYPE V
- Oil Well Cement is standard API-10A

Environmental Considerations & Regulations

Syria established set of environment protection regulations which are basically based on the latest issues of the related international regulations and rules,

such as environmental quality assurance system ISO 14000

The Main Problems Confronting the State-owned Syrian Cement Industry before and During the Crisis Times:

In practice, the Syrian cement manufacturing Business is shared between two major players namely:

- Public sector cement manufacturing companies
- Private sector cement manufacturing companies

There are distinguished salient features between the two sectors:

1. The applied Cement Manufacturing Technologies : Almost all the state-owned cement factories are old-fashioned plants and applying inefficient production technologies which were common standards in 1960-1970-'s period. It is specific heat consumption is rather very high (4200 kJ/kg Clinker), and the specific consumption of electrical energy is about 120140- kWh/ton)
2. Measuring, Control & Automation systems (BMSR) : are very old and obsolete.
3. Spare Parts, Equipment & Technology Providers: All equipment and Machineries are aged, and most of them do not have OEM spare parts, in particular those equipment, machineries and instrument which were supplied by then East German Equipment Manufacturers. Most of them have been resolved or no longer existed and were merged into other companies as a result of the reunification of the German Union on 3.Oct.1990. As material example of such a case, one may mention that VEB SKET was acquired by KHD and later KHD was acquired by AVIC – China.
4. Manpower: The heavy eroding of local labour system due to aging, poor salaries, lack of renewal, lack of vocational training and LOM (Lack of Management).
5. Heavy Leakage of skilled experts, engineers and technical labours to the neighbouring countries, in particular, to the Gulf Emirates and other oil-economy states.
6. Lack of formal training programmes.
7. Traditional Bureaucracy, ineffective decision-making processes.
8. Unqualified managers and shift of authorities from the decision points (Managers are heavily loaded by full responsibilities accompanied with limited authorization)
9. Financing problems due to shortage of hard currency.
10. Marketing the cements is done exclusively by Omran Co., which is a state-owned cement and Building Materials distribution establishment.
11. Price levels are imposed and dictated by government authorities, but not in response to the market dynamics.

12. Lack of fuel and electric power supplies due to the destruction of the national power networks and the disruption of hydroelectric power from the dams on the Euphrates River.
13. The raw materials deposits of existing cement plants are close to depletion.

Private sector companies, Lafarge Cement Syria, AlBadia and United Cement Company have the following advantages:

1. They are running modern cement plants supplied from China, while the main production equipment such as vertical mills, clinker coolers, instrumentation and controls were supplied by reputable third party subcontractors of European origin; however, some of equipment was made in China but under the name/license of European OEM companies.
2. These cement projects are managed by experienced reputed and qualified managers and directors, and exercising on spot dynamics decision making techniques (Process Centred Management).
3. They have their own power generation plants, i.e. Captive Power Plant CPP. For example, Al Badia Cement Company has its own CPP of 48 MW using four heavy fuel oil diesel engines.
4. They use cheap fuels such as Pulverized coal (PC) and Petcock in burning clinker, thus achieving economical merits over the Public sector cement plants.

Rebuilding Scheme(s) & Prediction the Size of Cement Markets Post-Crisis

Prediction / Forecasting procedures:

- In stable environment with little or predictable rate of change the need for a forecast is non-existent, as the environment become more complex and dynamic, however, a forecast future conditions becomes indispensable.
- Presently, there is no accurate database in Syria, since most of the available information is unreal.
- Some reputed international institutions have used remote sensing techniques, satellites to elaborate acceptable prediction of rebuilding plans costs.
- After the crisis there will be better chance to elaborate more accurate evaluation.
- Since true evaluation is not possible now, one can start from the already published figures/ estimations of the Rebuilding Costs (say \$ 1.8 T).
- Usually the cost of Civil Engineering Works

represents 3545%- of any industrial project. Therefore, one can use such assumption in predicting the demand of the cement required for the Rebuilding Scheme.

- Many predictions stated that the expected recovery time will last for a period (from 20 years to 40 years) to recover the GDP from the consequences of the devastation of war .
- Well-known financing organizations have already worked out and published various Rebuilding Plans / Schemes, most of the researchers have taken Marshal Rebuilding Scheme (also called European Recovery Program "ERP") as an example. This famous Rebuilding plan have been designed, financed and implemented by USA government after the end of WW II, to rebuild Germany & and the Western European Countries.
- Others had tried to make use of the experiences which have been gathered from rebuilding Beirut City, Lebanon or from civil war in Bosnia .
- In any case, Syrian situation after the Crisis will be different from others in many aspects and deserves specific and careful analysis.
- The actual and real demand figures for cement and Building Materials will be elaborated as soon as

the following information is available:

- o After cannons and guns stop smoking and putting-off the arms and arriving to political settlements all over the Syrian territories.
- o Having a well-defined REBUILDING PLAN(S), identifying the financing countries/institutes and the interested major players.
- o Based on today's available information one can assume that there will be major Rebuilding financing partners are Iran, Russia, and China who already offered the "safeguard" to Syria in the international arena. Logically their support could be expected to extend to the Post-Conflict rebuilding period as well. However, the sharing of the cake is not clear.
- o China is actively spreading its OBOR (One Belt One Road) initiative, and China has foreign currency reserves more than \$4 trillion, and it is policy to exercise global economic expansion by investing overseas, so China has established several international organizations, such as Asian Infrastructure Investment Bank (AIIB), so taking a leading role in Syria's Rebuilding Schemes seems like a golden opportunity
- o China has proven potentials to construct Mega Cement plants (say 10 000 TPD) within very

¹¹ BMSR stands for (Betriebsmessung, Steuerung und Regelung Technik)

¹² <http://www.albadiacement.com/ar>

¹³ <http://www.publicfinanceinternational.org/news/201607/twenty-years-syrias-economy-recover-devastation-war>

¹⁴ February 1948, Marshall Plan had been approved. The ERP addressed each of the obstacles to post-war recovery. The plan looked to the future, and did not focus on the destruction caused by the war. Much more important were efforts to modernize European industrial and business practices using high-efficiency

short-period of time (sometimes 22 months or less), with very competitive capital investment costs.

- o
- o
- o China's interests in Syria do not necessarily translate into a major role in reconstruction post conflict, although China harbours economic interests, especially in Syria's natural resources.
- o Other potential source for cement equipment manufacturers , skilled engineers, qualified manpower, and know-how is India . It has very potential technical capacities and low-cost manpower.

Some Considerations about the Prediction Quality & Validity

It is true that specialized literatures offer proven techniques for demand forecasting. Normally the prediction process is made-up of six stages. However the forecasting process is based on the hypothesis that the expected demand is linked to indicators accompanied by demand (GDP, power consumption kWh / CAP, cement consumption rate) per capita (kg / cement / cap), and the factors that led to the generation of studied demand in the past are continuing today. In the Syrian case, the demand pattern for cement has no precedent in Syrian history and some analysts may try to simulate what had happened in the past from countries that have suffered wars of the people of such as Bosnia, Sudan and others, and, in spite that this solution seems logical, but not enough necessary to give accurate results and to many factors such as social culture and local conditions.

World Bank predicted that 20- 40 years are needed to recover the country economy back the 2010 GDP Level. The following factors (however some of them are not clear at present) are influencing elaboration of the Rebuilding Plan:

- The main objective of the project to restore the business (outline)
- Table of preferences (who will start the reconstruction and what)
- Funding plans and funding agencies
- Resources required
- Starting Nodes in the implementation of major projects are the destroyed cities of Aleppo, Homs, Idlib, Damascus, Daraa, Hama(

The Proposed Post-Crisis Rebuilding Scenario:

The proposed Post-Crisis scenario for Syrian Cement and Building Materials industries and the markets will be as follows:

1. The implementation of the adopted Rebuilding Plan(s), will create heavy demands on cements and

other various building and construction materials and, in addition to Portland Cement.

2. The immediate demand will be saturated by permitting cement importation from certain countries or resources.
3. The existing cement will push up its production capacities to higher levels as much as possible.
4. Private sectors Cement Companies will try to extend their production capacities, e.g. Al-Badia Co. already has permit for Greenfield production line 1.6 MTPA .
5. Priority will be given to rehabilitation of partially / slightly destroyed factories.
6. New types of cements and building materials will emerge and step into the markets. New Building material and components such as gypsum boards, sand-lime bricks, quick & hydrated lime, pre-stressed concrete, etc.
7. There will be heavy demand on electrical materials in especially LV & MV copper cables and Bus-bars (the favourable materials for looters).
8. For technical and economic ground the rehabilitation of severely damaged and looted cement factories (in such cases the rehabilitation costs will be far beyond capital cost needed for setting-up Greenfield cement factory (eg. the Muslimieh Cement Factory).
9. Cement industry manpower and personnel should be trained and should develop; new labour generation should recruited, also one can give high attention to have only qualified managers. In short, Syrian cement companies are in serious need for modern management and open minded General Managers.
10. Construct Greenfield cement manufacturing factories, and prepare, provide enough manpower to cover a reasonable share of demand.
11. Dependence on imported cement and this requires:
 - a. Rehabilitation of roadways.
 - b. Development of Tartous Port and Lattakia Port, in order to be able to harbour the expected shipments traffics and vessel-weights
 - c. Port of Beirut and Northern Port of Lebanon (Tripoli-port) will be the challenging competitor of Syrian Ports.

Eng. Hussein r. Ibrahim pasha
 HRIP CONSULTING ENGINEERS
 SYRIA
 Since 1982
 hripinternation@gmail.com

Abbreviations & Acronyms		
1.	AIIB	Asian Infrastructure Investment Bank
2.	API	American Petroleum Institute
3.	ASTM	American Society for Testing and Materials
4.	AUCBM	Arab Union for Cement and Building Materials
5.	BMSR	Betriebsmess-, Steuerungs- und Regelungstechnik
6.	CAP	Capita
7.	CIMPRO	CIMPROGETTI s.r.l. /Italy
8.	CPP	Captive Power Plant
9.	DDR/GDR	Deutsche Demokratische Republik (DDR)German
10.	ERP	European Recovery Program (Marshall Rebuilding Plan)
11.	GDP	Gross Domestic Product
12.	GDP/CAP	Gross Domestic Product/ Capita
13.	GDR	German Democratic Republic (GDR)
14.	GEGMR	General Establishment for Geology and Mineral Resources
15.	GOCBM	General Organization for Cement and Building Materials
16.	GOEIP	General Organization for Executing Industrial Projects
17.	IMF	International Monetary Fund
18.	ITD	Invitation To Tender
19.	IWGS	International Working Group o Sanction
20.	KJ/ kg Cli.	Kilo Joule per kilogram of clinker
21.	kWh	Kilo-Watt-Hour
22.	MENA	Middle East and North Africa
23.	MHE	Military Housing Establishment
24.	OBOR	One Belt One Road
25.	OCHA	United Nations Office for Coordination of Humanitarian Affairs
26.	OPC	Ordinary Portland Cement
27.	PC	Pulverized Coal
28.	PCIGL	Pharaon Commercial Investment Group Limited
29.	SCPR	Syrian Center for Policy Research
30.	SKET	Schwermaschinenbau-Kombinat "Ernst Thälmann"
31.	SNS	Syrian Standardization Organization
32.	SNS	Syrian National Specification
33.	SR	Sulfate Resistant Cement
34.	TPA	Ton/ Year
35.	TPD	Ton / Day
36.	UMI	UNI MORANDO IMPIANTI CONSORTIUM/A STI
37.	UNHCR	United Nations High Commission for Refugees
38.	USGSM	U.S. Geological Survey Minerals
39.	UZIN	UZINEXPORT SA Bucuresti
40.	ZAB(Dessau)	VEB Zementanlagenbau (Dessau)

Egypt Cement Industry

By: Eng. Essam Zahran, Chairman Assistant// Sinai Cement Co., Egypt

Since January 2011 Egypt is passing a very critical time of its modern history. By mid of 2013 we started to rebuild the state after complete destruction of the previous regime. The state stability is strongly back.

The economy is paying back the impact of destruction. War against terrorism, High devaluation of Egyptian Pound, Inflation and rate of population increase are the main threats. Egyptians are very determinant to make it through.

Egypt Cement Industry is suffering decreasing demand against high installed capacity. 2007 we had 9 Cement Producers with 12 integrated Plants of 42.1 million tons installed capacity. By 2018 we are going to have 18 Cement Producers with 21 integrated Plants of 83.7 million tons installed capacity. The excess capacity will be 48% of the expected cement consumption.

Surplus of the Mediterranean rim and Gulf countries in addition to very high increase of Egyptian cement production cost due to subsidies removals will hinder Egyptian cement exports. Meanwhile the very low local cement prices will block imports. Egyptian Cement Producers are crossing the bottom of industry sign curve cycle through 2017 & 2018. It is foreseen to be a medium-term cycle. Rate of Population increase and serious reforming plans applied in Egypt insures that cement consumption will go back to high rates of increase.



Egypt Cement Industry



Economic Indicators

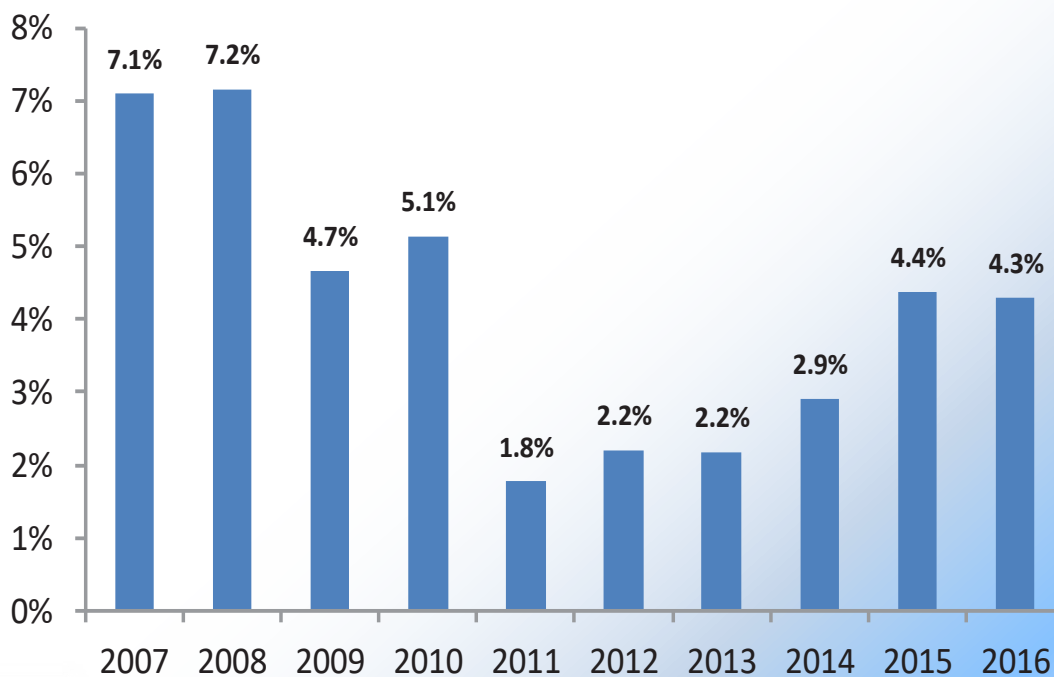
- *GDP Growth*
- *Inflation*
- *Population*



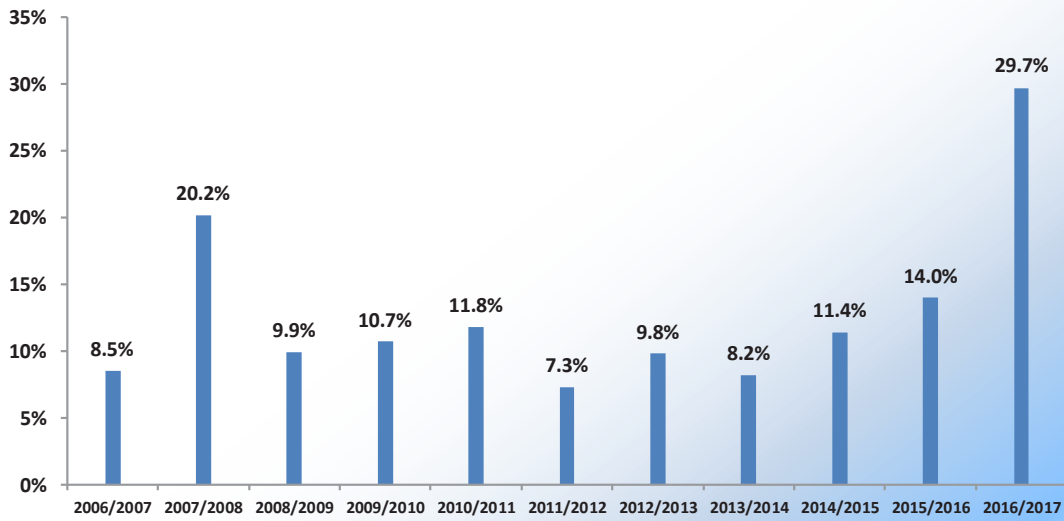
Economic Indicators	13/14	14/15	15/16	16/17
GDP (LEG milliards)	2.130	2.444	2.708	2.880
Annual GDP Growth	2.2	4.4	4.3	3.5
Population (million capita)	86.7	89.0	91.1	93.0
Population Growth Rate	2.4	2.6	2.4	2.08
Annual Inflation Rate	8.2	11.4	14.0	29.7
US\$/LEG Average Exchange Rate	7.16	7.61	8.87	18.10



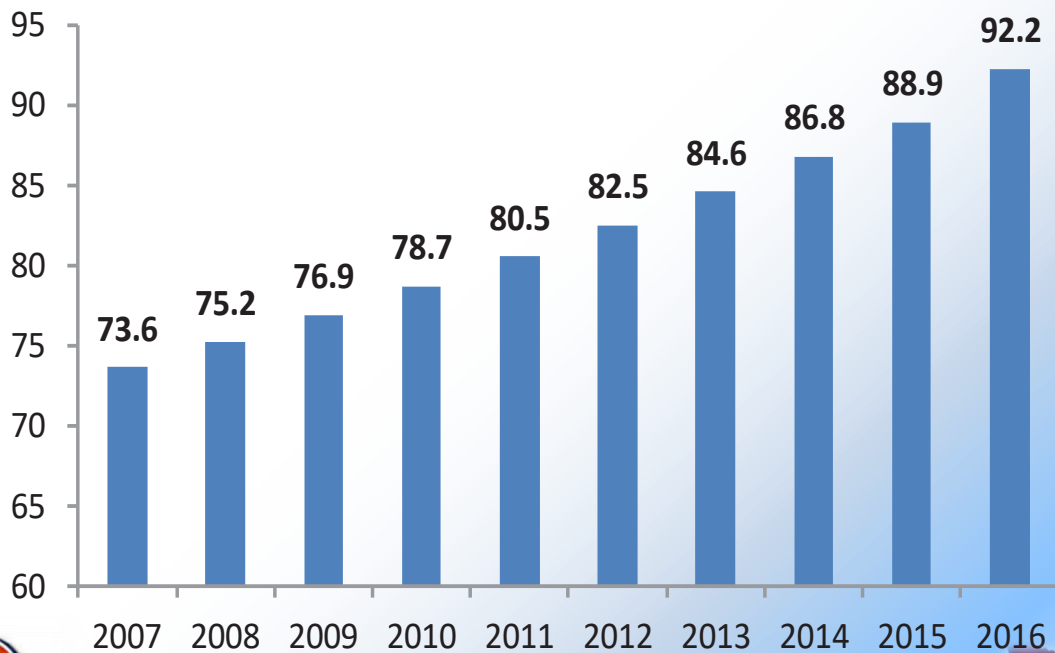
GDP Growth (%)



Inflation



Population





Egyptian Cement Industry

- Cement producers
- Clinker & Cement Production
- Consumption Growth
- Export & Import
- Industry Cycle



2007

9 Cement Producers with 12 integrated Plant



- Suez Cement CO.
- Tourah Cement CO.
- Helwan Cement CO.

- Egyptian Cement Co.

- Assiut Cement Co.



- Amreyah Cement Co

- Misr Beni-Suef Cement Co.

- Beni Suef Cement Co.
- Alexandria Cement Co.



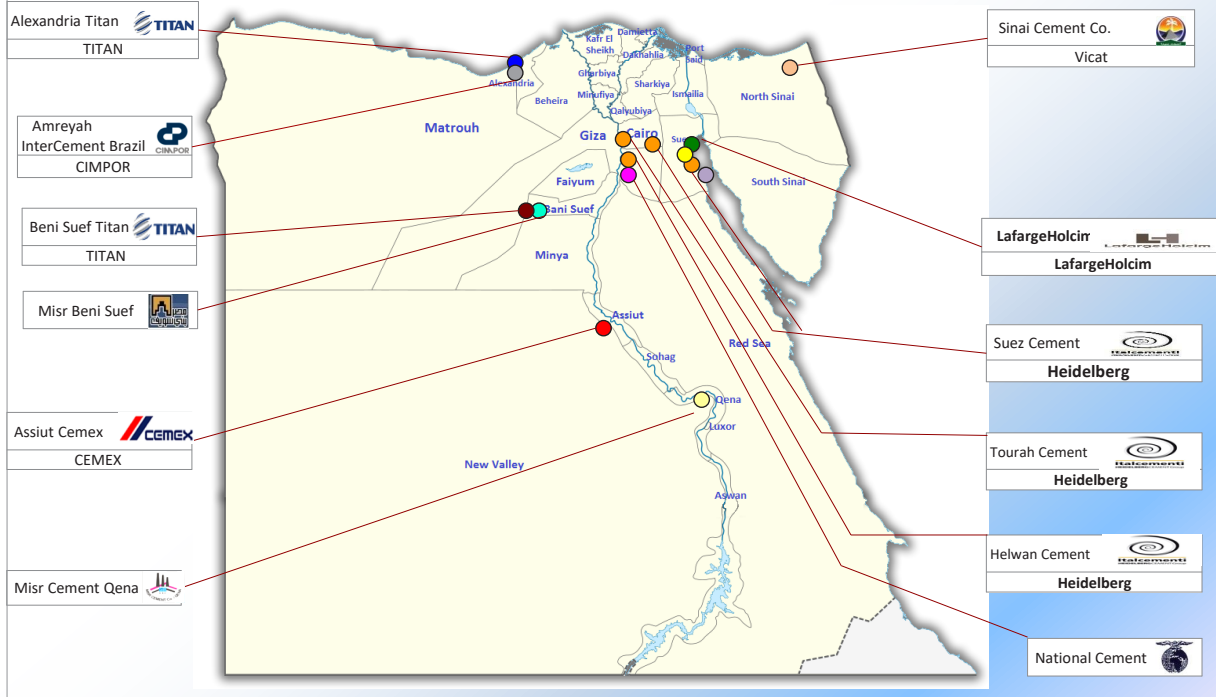
- Sinai Cement Co.

- National Cement Co.

- Misr Qena Cement Co.

2007

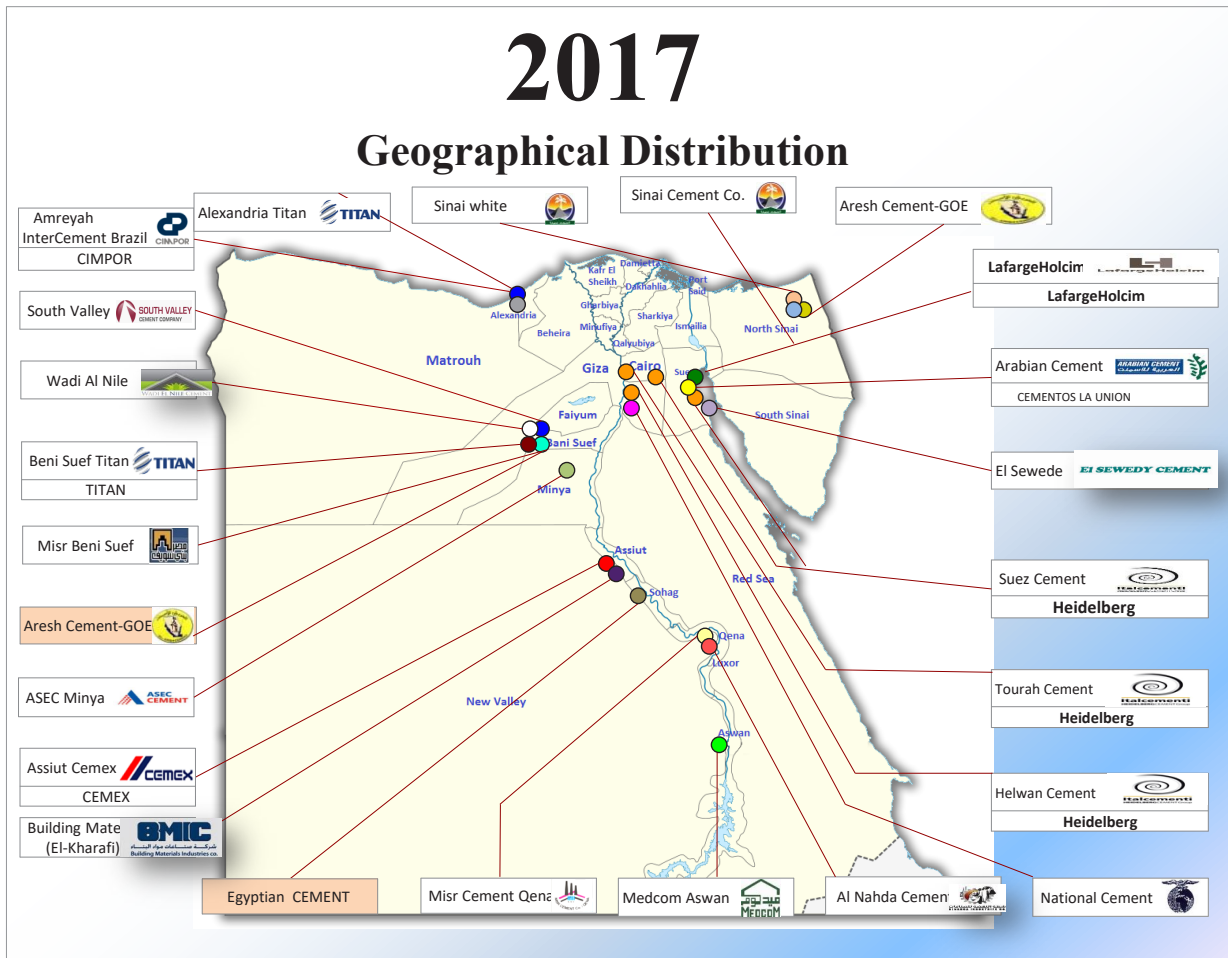
Geographical Distribution



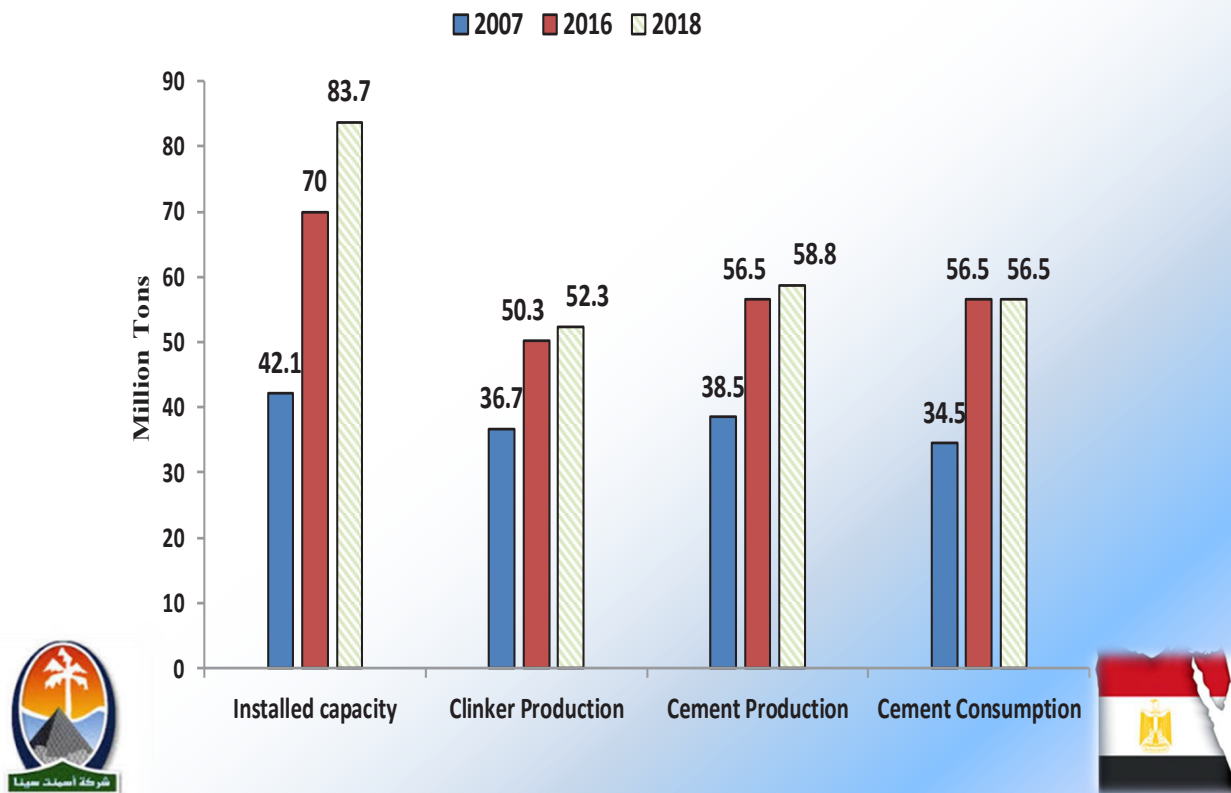
2017

18 Cement Producers with 21 integrated Plant

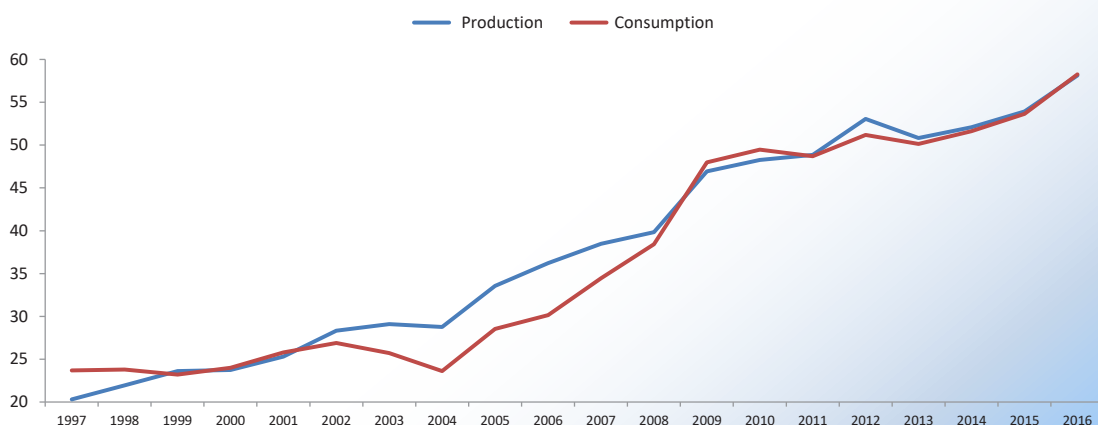




2007 VS. 2016 + 2018 Forecast



Production & Consumption



Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Production	20.31	21.94	23.61	23.75	25.29	28.33	29.1	28.76	33.56	36.21	38.47	39.84	46.94	48.27	48.85	53.05	50.83	52.08	53.94	56.54
Consumption	23.7	23.8	23.2	24	25.8	26.9	25.7	23.6	28.52	30.14	34.46	38.43	47.99	49.48	48.69	51.18	50.14	51.63	53.66	56.47



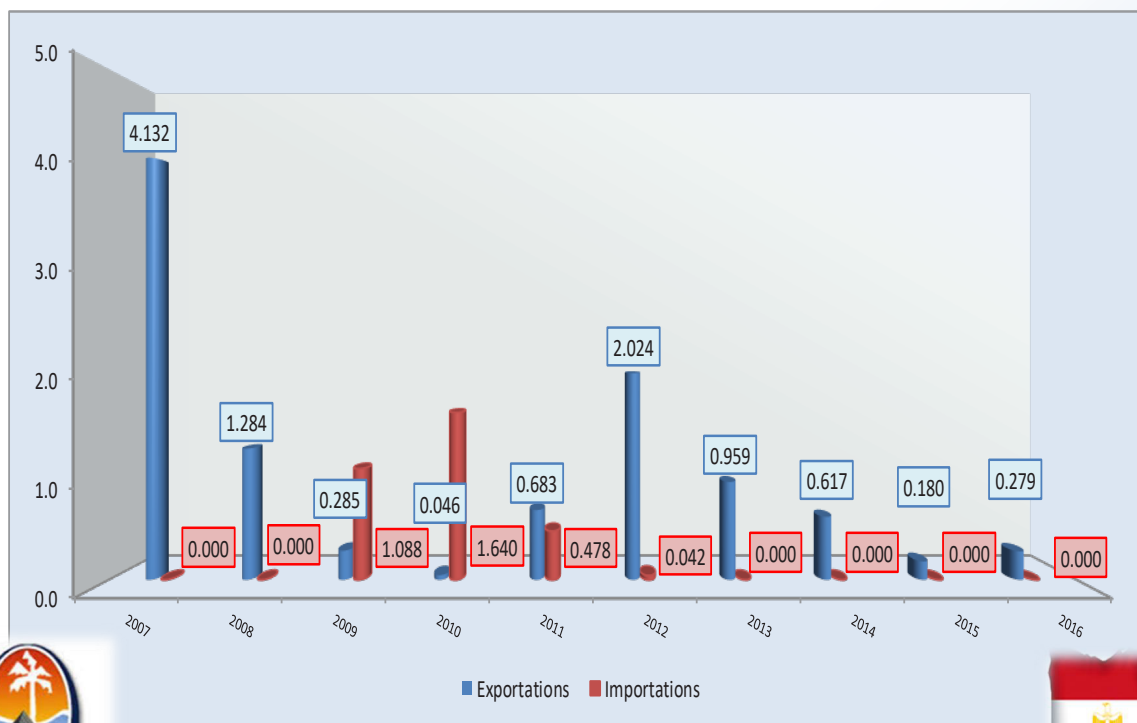
Consumption



Consumption Growth



Export & Import



Industry Cycle



**The good sign is that
Egyptian Cement Industry Cycle Intervals
are usually short**



Prerequisites and conditions of alternative fuel utilisation in the cement industry

By: Nijat Orujov // VDZ, Germany

Cement production is an energy and resource intensive process. Introduction of modern and innovative technologies has decreased the demand on energy and resources over the last decades. A further reduction could be achieved by utilisation of alternative fuels and materials. Therefore, cement producers take advantage of alternative waste fuels and clinker substitutes such as lime stone, slag and fly-ash. Recovery processes such as cement kilns are highly suitable for waste co-processing and they can utilise up to 100 % of alternative fuels. Typical alternative fuels in the cement industry are pre-treated industrial and municipal solid wastes (domestic waste), plastics, textiles and paper residues, discarded tyres, waste oil and solvents and biomass (animal meal, sewage sludge, recycled wood and paper). However, the use of alternative fuels is only possible where the infrastructure for the collection and processing of such wastes and fuels is available.



Figure 1: Industrial and municipal solid wastes as alternative fuel

At the same time, the utilisation of alternative fuels and raw materials (AFR) offers a proven waste management option for modern societies in which the cement industry can play an important role. Experience in Germany has shown that the use of waste in cement production is compatible with environmental considerations. The use of alternative fuels started in the nineteen-eighties. Today waste materials of different origins substitute in average 65 % of fossil fuels. The major licences to operate with alternative fuels were granted after public hearings, which have significantly contributed to a broad public acceptance. It is publicly accepted that society has to deal with wastes in some way and that the cement industry can positively contribute to a sound waste management, together with dedicated waste incinerators or landfilling.

as the calorific value and concentration of trace elements or chlorine in wastes. In most of the cases the availability of waste is limited, or available wastes cannot be used for environmental reasons unless they are pre-treated. This is especially the case for untreated municipal wastes, which besides unfavourable combustion parameters can contain high trace elements. Therefore, requirements for a sound utilisation of alternative fuels in cement kilns should be described in the cement plant's licence, which also contains quality parameters for individual wastes. The definition of these parameters must ensure that, when using alternative fuels, no detrimental change in the emission situation occurs and that the product quality does not suffer. The monitoring activity is not only limited to the cement plants but also involves pre-treatment process. Whenever such wastes are not suitable to be burned in cement kilns, they have to either be landfilled or combusted in dedicated incinerators.

However, the utilisation of alternative fuels involves certain technical and environmental limitations such

The use of alternative fuels and raw materials has the potential to reduce emissions compared to the use of conventional fossil fuels, and conserves non-renewable resources. Moreover, CO₂ emissions can be reduced significantly, especially when burning fuels with high biomass content.

Global Cement & Gypsum Events 2018

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

3rd global boards

22-23 January 2018,
London, UK
global-boards.com

The 3rd Global Boards Conference and Exhibition will take place in January 2018, looking at global market trends in cement-based boards, at advances in production technology and at how producers can add value to their products worldwide. In addition to equipping delegates with the latest information, news and developments, the networking opportunities will once again be excellent. *If you are interested in cement-based boards, then you should attend!*



12th global cemfuels

20-21 February 2018,
Berlin, Germany
cemfuels.com

The popular Global CemFuels Conference and Exhibition will visit Berlin for the first time in 2018 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!*



1st global gypsupply

13-14 March 2018,
Brussels, Belgium
gyp-supply.com

The inaugural Global Gypsupply Conference and Exhibition will look at the different supply sources of gypsum worldwide, including natural gypsum, synthetic gypsum and recycled gypsum, will examine transport and shipping options, and will match up miners, syngyp producers and recyclers with buyers and users of gypsum including cement producers, wallboard and plaster manufacturers, and agricultural users. *If you use gypsum in your process, then you should attend!*



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!*

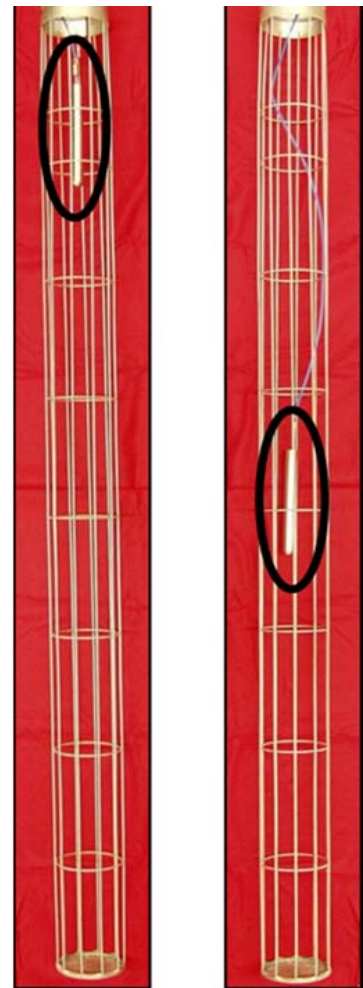


2nd global cemprocess

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

The second Global CemProcess Conference and Exhibition on process optimisation, de-bottlenecking, 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!*





Does Your Pulse Jet Dust Collector Have What It Takes?

By: Matt Devitt, BWF Envirotec - www.bwf-envirotec.com - info@bwf-envirotec.de

In the commissioning of a baghouse, many parameters can be measured to determine if “Design” matches “Reality”. Some parameters measured would be ACFM to determine air to cloth and can velocity or the flange-to-flange differential pressure, but one parameter that cannot be measured is the pulse jet cleaning system’s generated pressure at the bottom of the filter element. Without this parameter, answering the following becomes a matter of trial and error.

- Is the Pulse Valve’s Pressure too high or too low?
- Is the Pulse Valve open the correct duration of time?
- Is each filter on a common blowpipe seeing the same cleaning pressure?

The Pulse Flow Analysis (PFA) System from BWF Envirotec allows for the pulse pressure peak at the bottom of the filter element to be measured, for negative pressure pulse jet baghouses. The PFA system can also measure the Up Gas Flow Velocity inside the filter element near the tubesheet, when the probe is repositioned in the filter Element.

What is the Pulse Flow Analysis System?

The Pulse Flow Analysis (PFA) System is composed of four instruments that allow for the measurement and data collection of the pulse pressure and up gas flow velocity.

- Black Box (Highspeed Data Recorder)
- Pressure Probe (Multi-Purpose Prandtl Tube) with Guide Vanes
- Thermocouple (Gas Density Compensation for Up Gas Flow Velocity)
- Differential Pressure (dP) Transducer (Tubesheet or System Measurement)
- Laptop to compile and display the test results in real time

System Specifications:

- Black Box Max Temperature: 100oF (~40oC)
- Probe Max Temperature: 400oF (~204oC)
- Probe Cable Length: Up to ~65-Feet (20-meters)
- dP Tubing Length: Up to ~65-Feet (20-meters)

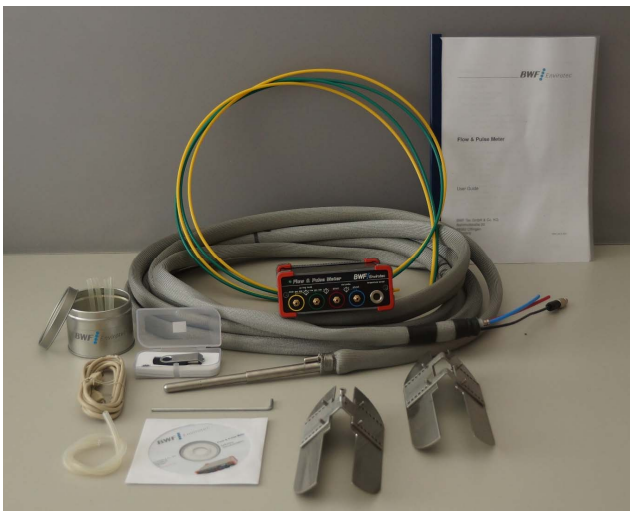


Figure 1: Pulse Flow Analysis System Components

The Black Box has a sample rate of 200Hz, as well as a buffer to hold a few seconds of data to record the pressure increase when the pulse pressure trigger value is reached. This allows for the system to determine when to record and not the operator timing the pulse to start recording data. The Prandtl Tube can be used to measure gas velocity, the same as used on airplanes to measure air speed, as well as the static pressure generated from the pulse cleaning system. The thermocouple allows for local temperature determination, as well as it is used in the gas density adjustment calculation. Lastly, the dP transducer is used to record the actual dP at the compartment's tubesheet, or the overall system dP, and be logged with the pulse pressure, up gas flow velocity, and temperature. The scenarios this system is used to test are pulse pressure offline, pulse pressure online, and up gas flow velocity.



Figure 2: Probe with Guide Vanes Disconnected (Pulse Pressure Peak Scenario)



Figure 3: Probe with Guide Vanes Connected (Up Gas Flow Velocity Scenario)

Scenario#1- Pulse Pressure Peak, Compartment Offline with No Gas Flow

Data Gathered: Pulse Pressure Peak at the bottom of the filter without gas flow through the filter.

Benefits: The measured pulse pressure at the bottom of the filter element is compared to the system's "current" and/or "normal" compartment differential pressure. This measurement will determine the potential for effective cleaning. Adjustments can be made to the cleaning system (pulse pressure, pulse duration, blowpipe design) to see the impact to cleaning the filter. It is a quick test with respect to the online tests and the probe can be changed between filters easily.



Figure 4: Pulse Flow System Setup in the Field

Scenario #2 - Pulse Pressure Peak, Compartment Online with Gas Flow

Data Gathered: Pulse Pressure Peak at the bottom of the filter with gas flow through the filter.

Benefits: The measured pulse pressure at the bottom of the filter element is compared to the system's "actual" compartment differential pressure. This will determine if effective cleaning is taking place. The measurement of a positive static pressure at the bottom of the filter element, denotes flow reversal along the whole length of the filter element. Adjustments can be made to the cleaning system (pulse pressure, pulse duration, blowpipe design) to see the impact to cleaning the filter. This test can only occur in one filter element, and requires a port into the clean air plenum for the probe's cabling.

Scenario #3 – Up Gas Flow Velocity, Compartment Online with Gas Flow

Data Gathered: The up gas flow velocity inside the filter just below the tubesheet, and the change in static

pressure from the cleaning pulse to denote when a pulse valve has fired to clean.

Benefits: The impact of cleaning other rows on the test filter’s up gas flow velocity (Is more distance required between elements in the cleaning sequence? Is dust migrating horizontally and not down into the hopper?). The rate of change in the filter’s velocity after cleaning, shows the rate of dust cake formation. Adjustments can be made to the cleaning system (pulse pressure, pulse duration, time between pulses, pulse valve firing sequence) to see the impact to up gas flow velocity.

Baghouse Optimization Example with Pulse Pressure Peak Measurements

Optimization of the pulse jet cleaning system can be done in real time, as the results are displayed in the field. An optimization example would be adjusting the pulse pressure, or pulse duration, in a Scenario #1 test setup. The first step would be to get a baseline pulse pressure peak measurement from all of the filters on at least one blowpipe, to determine the pressure distribution is even and the blowpipe is properly designed. The pulse pressure peak, measured in inches of water gauge, should be greater than the tubesheet dP. The higher the pulse pressure compared to the tubesheet dP the more effective the cleaning, though too much can decrease bag life from fabric stress. The approximate range the pulse pressure should be greater than the tubesheet dP is by 100% - 200%. Thus if a baghouse’s “normal” tubesheet dP is 4.0”WG (~10,0-mmBar) the measured pulse pressure should be between 8”WG (~19.9-mmBar) and 12”WG (~29.9-mmBar) to provide sufficient cleaning. Where should a baghouse operate within this range. Our suggestion is if the system has small deviations from the target dP (e.g. 4”WG in our example), than the lower end of the range will be

sufficient. If the baghouse has a larger deviation from the target dP, than the higher end of the range should be used as this will provide adequate over pressure up to a tubesheet dP of ~6”WG (~14,9-mmBar). These ranges are meant to be used a guidance and not a hard rule, as other items impact baghouse performance beyond the pulse pressure (e.g. dust cake release, gas distribution, hopper level management, etc...).

The other item to confirm when taking the baseline pulse pressure peak measurement across multiple filter elements, is the measured pressure should be close to the same at each filter element on the same blowpipe and amongst other blowpipe rows. The pulse pressure peak and duration of the full pulse pressure wave should be close to the same, representing even cleaning pressure delivered throughout the baghouse.

Case Study: Cement Coal Mill Baghouse Pulse Valve Evaluation

The issue with the baghouse, for each of the three coal milling systems, was it could not effectively clean down when the tubesheet dP was above 3”WG (~7,46-mmBar). When above 3”WG (~7,46-mmBar) the system would have to be cleaned offline, impacting fuel production, fuel quality, and at time the kilns production rate. The plant was interested in knowing if the pulse valves where functioning properly and/or undersized. Offline pulse pressure peak measurements, Scenario #1, where performed and the following results were gathered.

The table shows the average pulse pressure was within the suggested pulse pressure range, thus the system was

Coal Mill	Average Max Pulse Pressure (“WG)	Average Max Pulse Pressure (mmBar)	Actual dP Limit (“WG / mmBar)	%Over Pressure from dP
#1	4.23	10,53	3.0 / 7,47	141%
#2	4.39	10,92	3.0 / 7,47	146%
#3	4.29	10,68	3.0 / 7,47	143%

starting from a good point but operator feedback denoted the system's ability to clean down reduced dramatically when above 3" WG (~7,46-mmBar). Also working with the plant team, it was determined this problem became worst when the fuel was wetter than "normal" coming into the ball milling system. When investigating the cleaning system it was found the system was pulsing at 85-PSI (~5.86-Bar), and would have an issue running at higher pressures due to limitations on the compressed air system and the increased time between pulses needed to regain the header pressure. The pulse controller was also found to be different on one of the three units which was keeping the valve open longer than the other two, which was wasting air for no gain in cleaning efficiency, and it's pulse pressure was lower than the other two DCs to allow for the header to regain pressure (This was quickly adjusted while onsite and the pulse pressure rechecked to ensure it was in line with the other systems). Our suggestion was to do one, or both, of the following:

1. Implement a PID Loop controller to reduce the fuel feed to the ball mill when the baghouse's dP was above 3" WG (~7,46-mmBar). This will allow for faster adjustments to the fuel feed, as the current control scheme is manual operator intervention.
2. Increase the pulse valves from 12/1-" double diaphragm valves to 2" double diaphragm valves, and the header.

The plant team opted to start with option #1 as it is the fastest to implement and most cost effective of the two options to try first. The result has been a pronounced decrease in the need for offline cleaning of the baghouse. The operators now adjust this new feed control dP setpoint based on experience with different fuel moistures (e.g Higher the fuel's moisture, the dP setpoint is lower than with drier fuels).

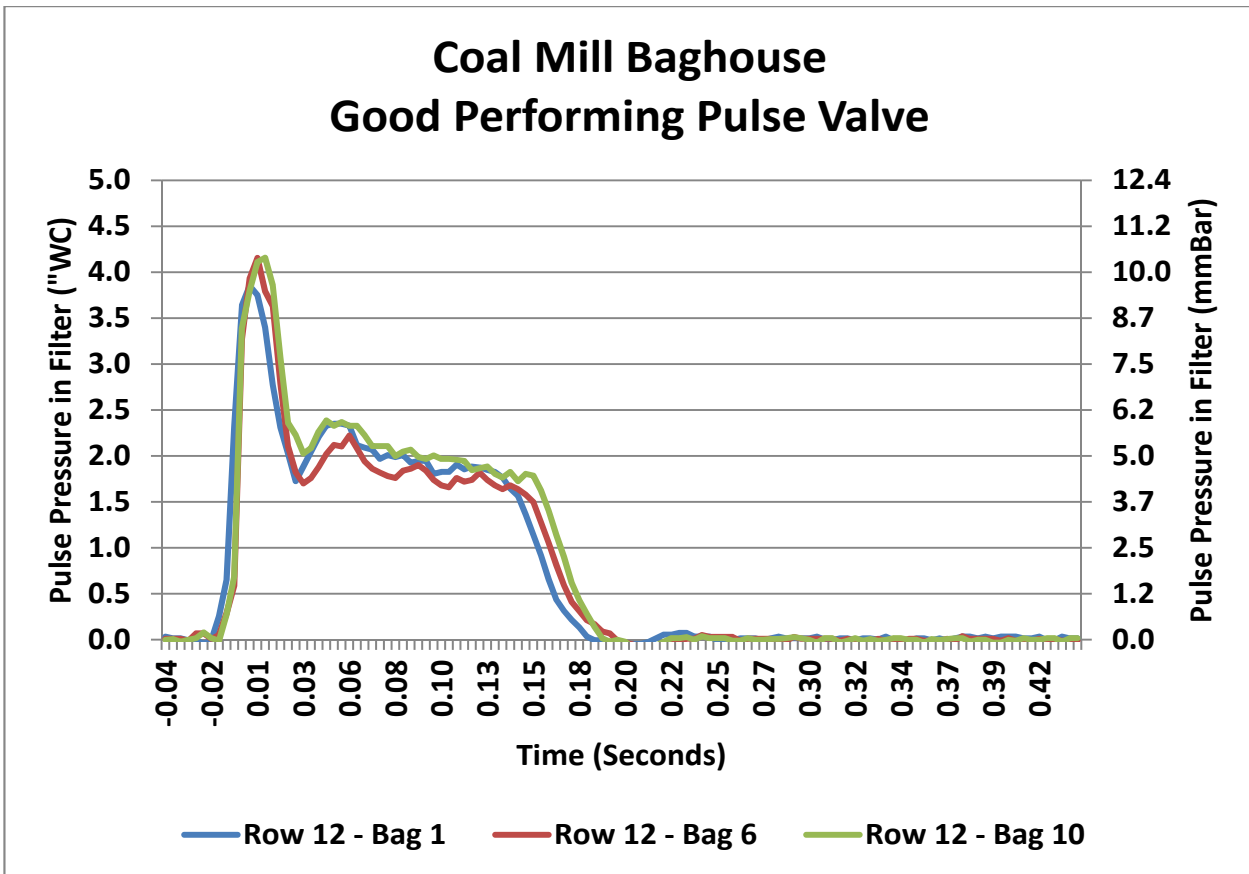


Figure 5: This is a properly operating pulse valve at multiple points on the blowpipe. The pulse pressure peak is sharp, and the trailing pressure tail is short

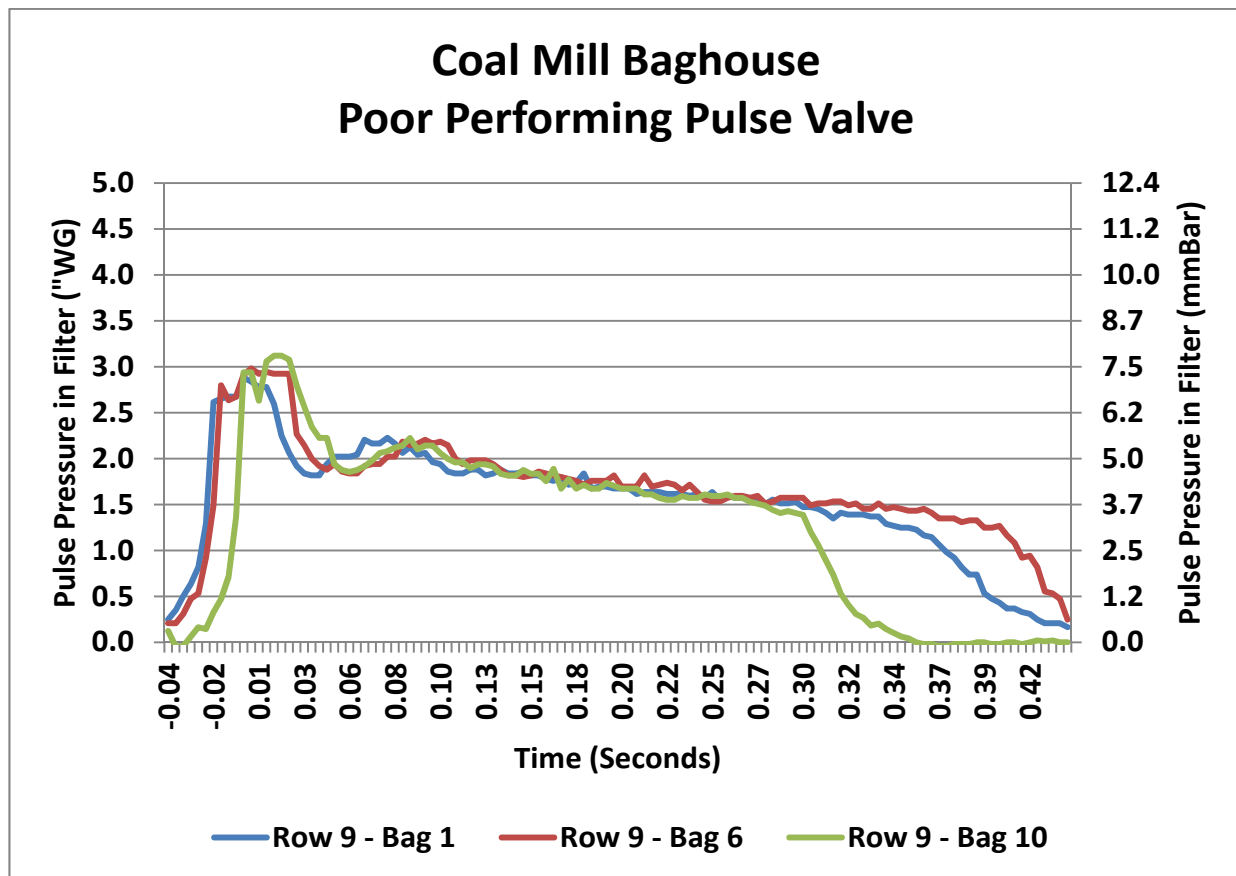


Figure 6: This is a poorly operating pulse valve at multiple points on the blowpipe. The pulse pressure peak has a sharp raise but a short drop to the tail, and the trailing pressure tail is long. This was corrected by shortening the pulse valves open/on time and increasing the header pressure.

Baghouse Optimization Example with Up Gas Flow Velocity

When measuring the up gas flow velocity, the baghouse must be online and operating at its “normal” conditions. The velocity is instantaneously measured when there is gas flowing into the baghouse compartment, making changes to the system’s operation quickly seen. The velocity will be highest on a clean element and will decrease as the dust cake forms on the filter element. An optimization example would be adjusting the number of skipped rows when cleaning the next row to reduce horizontal dust migration to the previously cleaned filter element.

The up gas flow velocity will show how quickly the dust cake builds up, as velocity is inversely correlated with dust cake formation. If the example baghouse has Rows 1 thru 5, and are cleaned in numerical order with the velocity probe in Row 1. Upon cleaning row 1, the velocity would increase quickly and then slowly decrease, but when row 2 is cleaned the velocity in row 1 will decrease quickly indicating a rapid formation of dust cake. This rapid dust cake formation is from row 2 being adjacent to row 1, resulting in the dust cake

cleaned off row 2 is moving over to the filter element with the highest velocity (e.g. a clean filter element) on row 1. The next test would involve cleaning row 1, and then cleaning row 3 to monitor the rate of velocity decrease in row 1. The following tests would clean row 1 and then row 4, and then finally row 1 and row 5 are cleaned. There will be a point where the rate of decreasing velocity does not change, likely when cleaning is separated by 2 or more rows. The testing determined what the minimum number of skipped rows in the cleaning sequence to prevent horizontal dust migration to the previously cleaned filter element row. Case Study: Utility Boiler Baghouse Up Gas Flow Velocity Evaluation

The utility customer was interested in seeing the rate of dust cake formation as well as impact on changes in the boilers fuel load. The up gas flow velocity was chosen to study as the reduction in velocity in the filter element would provide insight into dust cake formation’s impact on the system’s dP. The probe was installed 1-foot below the tubesheet, and installed for 1-hour & 45-minutes, with the cleaning system off to the compartment for approximately 1-hour & 30-minutes. The last 15-minutes of data show the

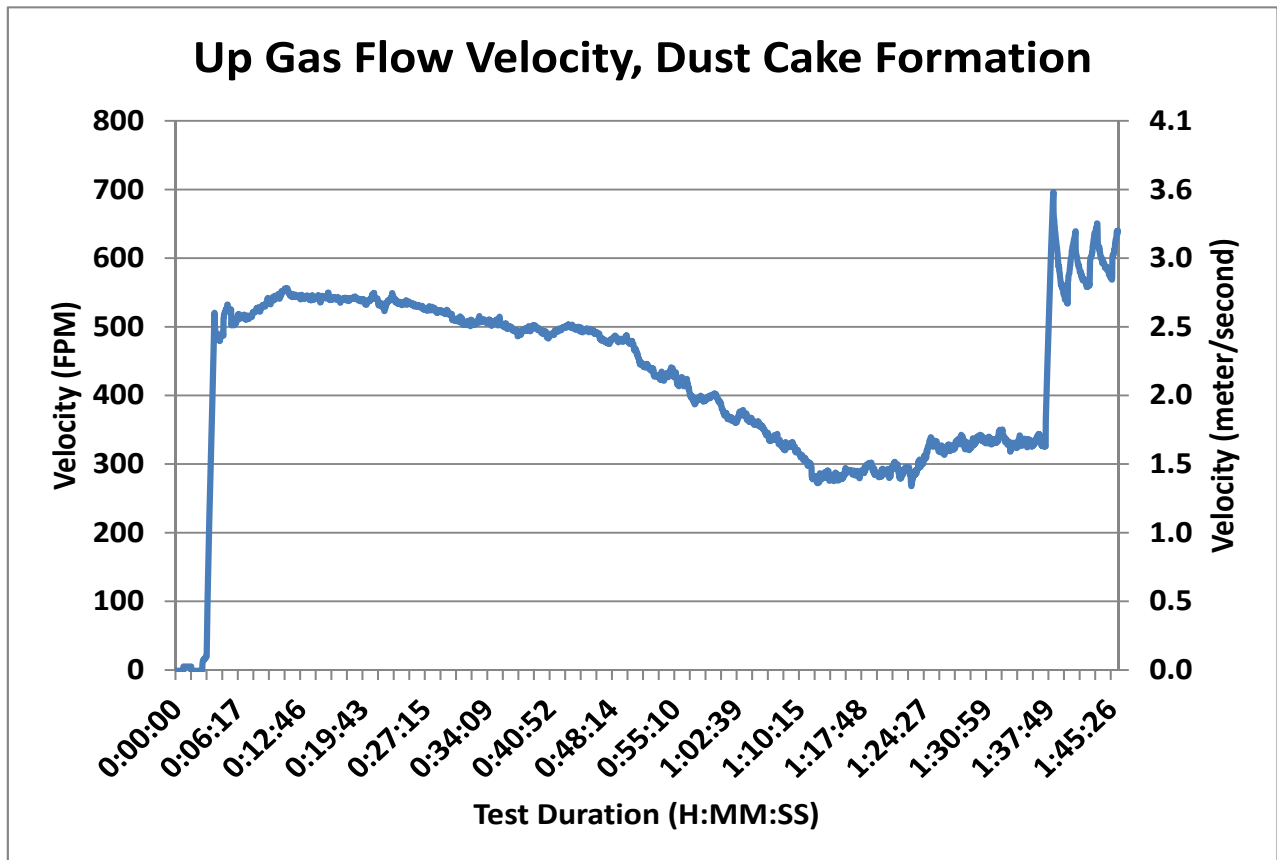


Figure 7: The Pulse Flow System can record data of long duration, allowing for a system to be evaluated over multiple operating conditions.

normal cleaning mode. The boiler load was reduced at approximately 1-hour & 15-minutes, thus the velocity leveled out and increased from some loss of dust cake, from the decrease in total air flow through the baghouse. The data collection system is robust enough to record for hours, up to 24-hours, without constant monitoring for the Pulse Flow system operator.

The cleaning system was brought online and cleaned multiple times, of which we recorded four cleaning cycles of the test row. The first cleaning at 1-hour & 37-minutes shows an immense raise in the up gas flow velocity from the removal of a large amount of dust cake. After the cleaning, the velocity starts to drop from dust cake formation before going into the next cleaning. The second cleaning shows an increase in velocity, but the drop in velocity is faster and levels out. This is also repeated when looking at the third cleaning cycle. This could be from removing dust cake too quickly, and not keeping some dust cake on the element for enhanced filtration of ultra-fine particulate as well as increased sorbent reaction time with the gas stream. BWF's suggestion was to increase the time between pulses, or use a high level logic controller to automatically adjust the time between pulses based on the rate of change in the system's dP.

Summary:

Pulse Follow Analysis is a way to measure the cleaning pressure or up flow gas velocity from inside the filter element. These measurements quickly see the impact of changes to a pulse jet cleaning system with the baghouse online or offline. Along with the impact from cleaning adjacent filter elements. The goal is to optimize the cleaning system for the baghouse's real-world application. We can now measure the impact of the pulse cleaning system, providing more Science and less Art to heighten your baghouse's cleaning efficiency.

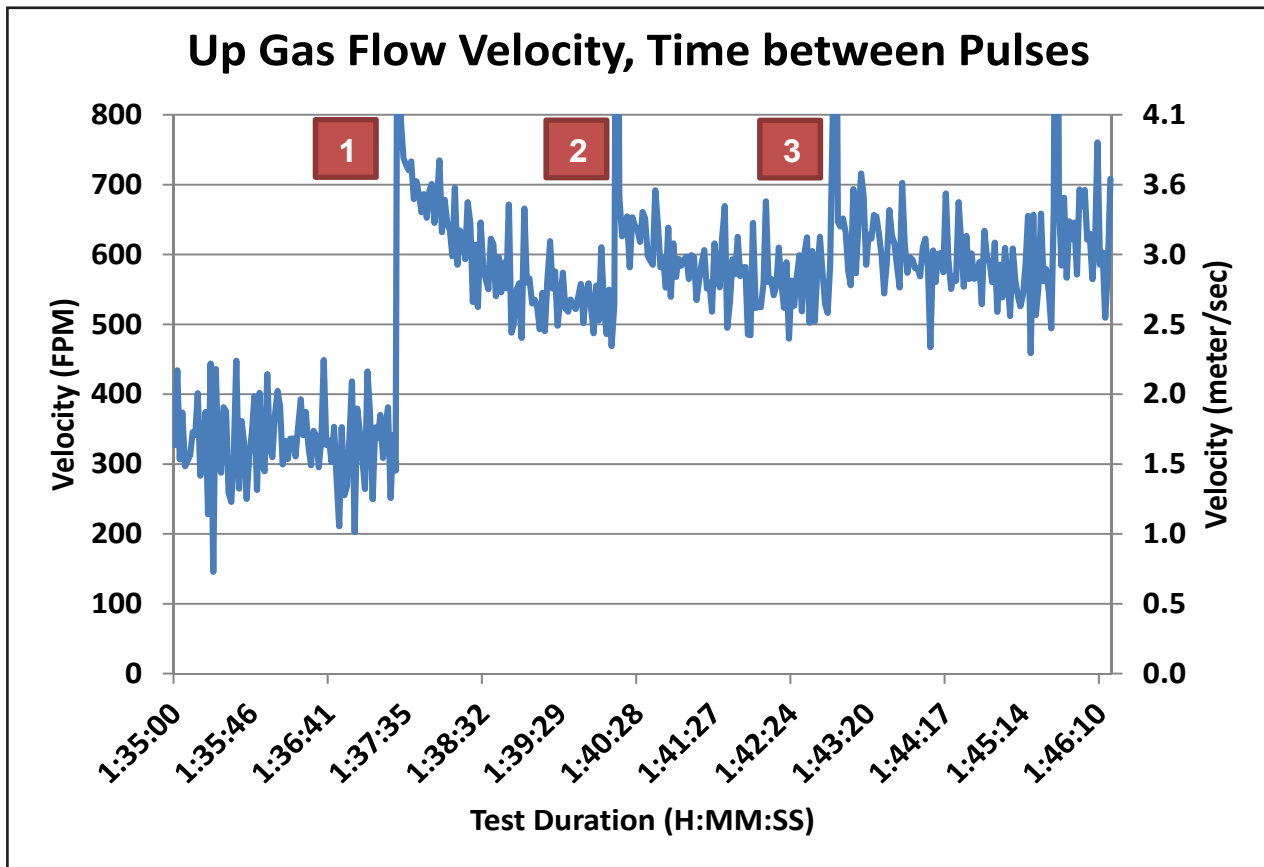


Figure 8: The duration between cleaning pulses impact on dust cake formation.

About BWF Envirotec:

BWF Envirotec is the international market leader in the field of filter media for industrial filtration. The product portfolio ranges from needlona® brand filter, including the PM-Tec® membrane product line and Pyrotex® KE ceramic filter elements to services for bag houses. BWF Envirotec filter find applications in the aluminium, cement and steel industry, in power plants and waste incineration plants, among others, or also in the food industry.

BWF Envirotec was the first manufacturer in the world to introduce needle felts as a filter medium in 1968. With its head office in Offingen/Bavaria and production plants in Germany, China, the USA, Italy, Turkey, Russia, India South Africa and Austria, in addition to a sales network in more than 50 other countries, BWF Envirotec guarantees economically viable solution concepts and technical services in line with the market.

BWF Envirotec is part of the BWF Group. With more than 1400 employees throughout the world, the company operates in the field of industrial dedusting, production of technical felt materials, wool felts and in plastics technology.

Fabric filtration comes of age

By: Henrik Vittrup Pedersen, General Manager FF Business Unit, FLSmidth Airtech
and

Pietro Aresta, Global Product Manager – Catalytic Filtration, FLSmidth Airtech

For cement grinding applications, cement producers have traditionally used either fabric filters or electrostatic filters (ESPs). As environmental regulations became tighter, the use of ESPs became more challenging. Producers turned increasingly to fabric filters, which were effective in smaller cement mills. But as larger cement mills are becoming more prevalent, shorter bag filters are adding further complexities to cement producers' productivity challenges.

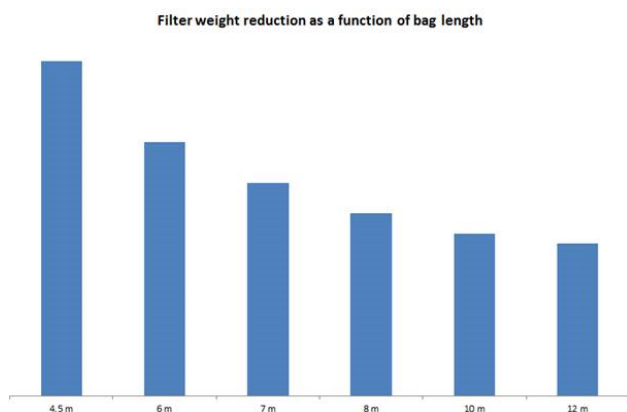
The dilemma facing cement producers emerged in the late 1990s, when environmental regulations influenced the choice of equipment for kiln filters. Cement producers with ESPs faced major start-up difficulties caused by excessive carbon monoxide levels. Full or partial deenergisation was needed to prevent explosions and reduce potential equipment damage. It became clear that a better technology was needed to ensure cement producers could meet their environmental obligations. Fabric filtration was increasingly seen as the best available technology to help producers meet their goals, and with good reason.

There were several aspects unique to the short bag filters (maximum 4.5 metres) that were commonly deployed in the 1990s. The cell plate was positioned at the top of the filter and the bags were hung, supported internally by a steel cage, to prevent collapse. Gas and dust would enter from below and move up between the bags leaving a filter cake on the outside of the bags. When the bags required cleaning, the dust would settle down between the bags. Skilled as they were, filter designers needed to design the filters to maintain full control over the can velocity and interstitial velocity. The risk was well-known: the high value of these parameters could easily lead to performance loss (mainly the differential pressure). The system had found a technical limit to bag length.

Meanwhile, as grinding technology transformed over the years from horizontal ball mill to vertical mill, grinding capacity grew along with clinker kiln capacity. Filters with longer bags were needed to handle the greater capacity requirements.

Innovation to meet changing needs

A core element of FLSmidth's business involves investing in developing and implementing new, innovative technology to improve productivity and reduce environmental impact. At Dania, the cement industry's largest research centre, new technology is constantly being tested and refined using techniques such as computational fluid dynamics (CFD), validated through field research and R&D pilot-scale modelling.



As an example of developments required for cement producers' changing needs, FLSmidth Airtech introduced two important innovations at a Norwegian cement plant. The first was installing extralong filter bags, which at six metres (a 33 percent increase) were the longest filter bags in the industry at the time. But perhaps more significant was the novel approach of a side inlet for gas and dust, instead of the conventional bottom inlet.

FLSmidth Airtech was the first in the industry to introduce this side inlet on fabric filters, which effectively prevented the formation of a filter cake on the outside of the bags. This extended the filter bag lifetime to eight years and significantly reduced the need for maintenance, process control and troubleshooting, allowing more focus and resources on the main goal: operating the plant and producing cement.

Long bag experience

Since 1998, FLSmidth Airtech has implemented more than 500 filter systems with long filter bags – those of more than six metres in length. These bags are used

within all cement applications: cement mills, coal mills, bypass, cooler and kiln/raw mills. The company also has a solid track record in supplying ESPs, also to industries such as pulp and paper, and has always invested significant resources into research in gas and dust distribution. When introducing a new long bag standard, careful attention is paid to design parameters such as gas distribution and bag cleanability to ensure stable, excellent performance.

Today, many cement producers choose 10 or 12-metre bags due to their impressive cost effectiveness. Several important cost drivers for capital expenditure (CAPEX) and operating expenditure (OPEX) are reduced when implementing side inlet and long filter bags. Due to the increased bag length, the amount of steel required to enclose the filter bags is significantly reduced. Similarly, as the bag size is increased, the footprint is decreased resulting in lower civil construction costs.

Flow and dust control

Some alternative fabric filter solutions offered by other suppliers do not recognise the importance of gas and dust distribution. However, this often leads to shorter bag life, more emissions, and higher differential pressure. FLSmidth Airtech's extensive research and product development has resulted in several fabric filtration design benefits.

Among these is the introduction of the FLSmidth DuoClean™ flow distribution system, which allows filters to be kept compact and provides full velocity to be kept below two metres per second (compared with 15 metres per second without flow control devices).

Today, the default specification of bag filters is at least six metres, often 10 metres, and increasingly 12 metres. FLSmidth Airtech's DuoClean is ideal for all such applications, handling flows from 100,000 to more than 1.5 million m³/h – in the same filter. This supports cement production capacities of more than 700 tonnes per hour.

The flow/dust control arrangement of the filters can handle very high velocities and dust loads, which will be evenly distributed inside the baghouse. High velocities would cause negative effects such as high pressure drop, mechanical wear and dust entrainment in the system, making it impossible to efficiently control the flow distribution. This would increase the volume required and push up CAPEX costs unnecessarily.

Furthermore, the resulting velocity of the gas between bags is directed downwards. This means filters can be cleaned while in online mode, instead of recollecting

on the bag as required in standard vertical systems. This is a significant benefit, as most other comparable designs rely on offline cleaning, involving dampers being opened and closed and a generally more unstable operation mode.

The long bags technology requires side entry dominant flow to the bags area and challenges the design of the gas distribution internals. This challenge has been solved by FLSmidth Airtech's newest DuoClean update including:

- Optimal flow distribution by introducing an optimal screen design
- Section-to-section flow balance clearly within general specifications by introducing inlet manifold restriction profiles
- Full control of the ratio between hopper and side flow by introducing adjustable hopper flow restriction profiles
- Minimum pressure loss by carefully distribution the flow

The FLSmidth DuoClean DC2 features an even more compact, modular filter design providing powerful emission-reduction capabilities at reduced CAPEX. The optimised casing and hoppers reduce the weight and complexity of steel construction and workshop assembly.

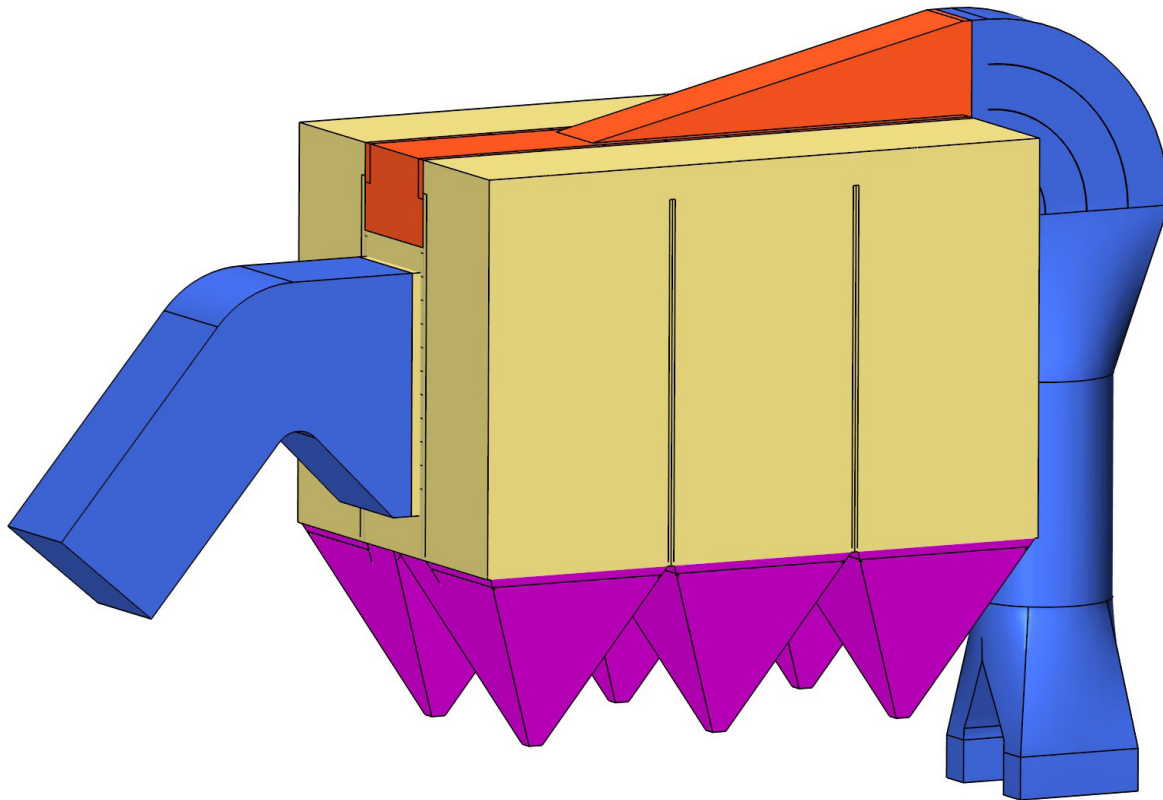
Experience and research combined

The FLSmidth DuoClean single compartment filter type is a low pressure loss filter, which is also favourable in high dust load applications, such as cement mill filters. Parameters of high interest for optimal performance are, besides the pressure loss, pre-separation efficiency of dust (mechanical separation of dust) and dust distribution approaching the bags. For high dust load applications the compromise between flow distribution, pressure loss and dust distribution has been carefully considered.

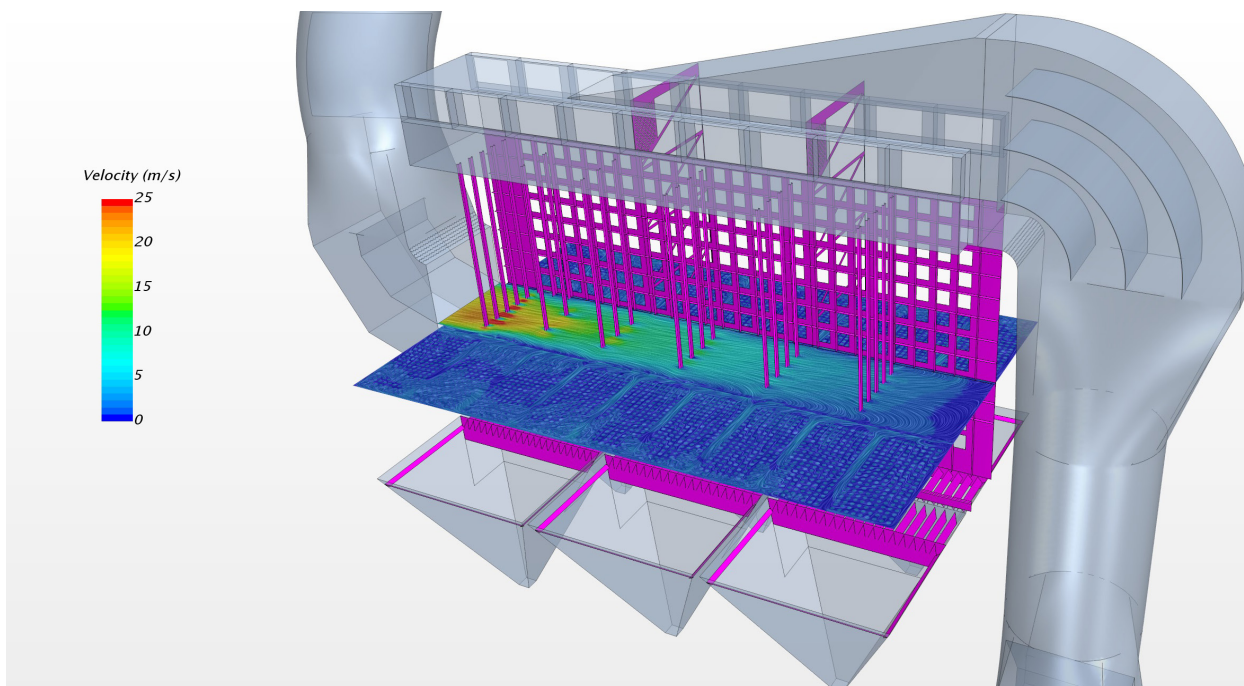
In designing the FLSmidth DuoClean, considerable field experience has been combined with intensive investigations of flow and dust distribution and pressure loss. Flow distribution optimisation and dust simulations are carried out by experienced inhouse CFD specialists, who apply models based on 30 to 100 million computational cells, resulting in very high resolution of the filter areas.

Reducing OPEX costs

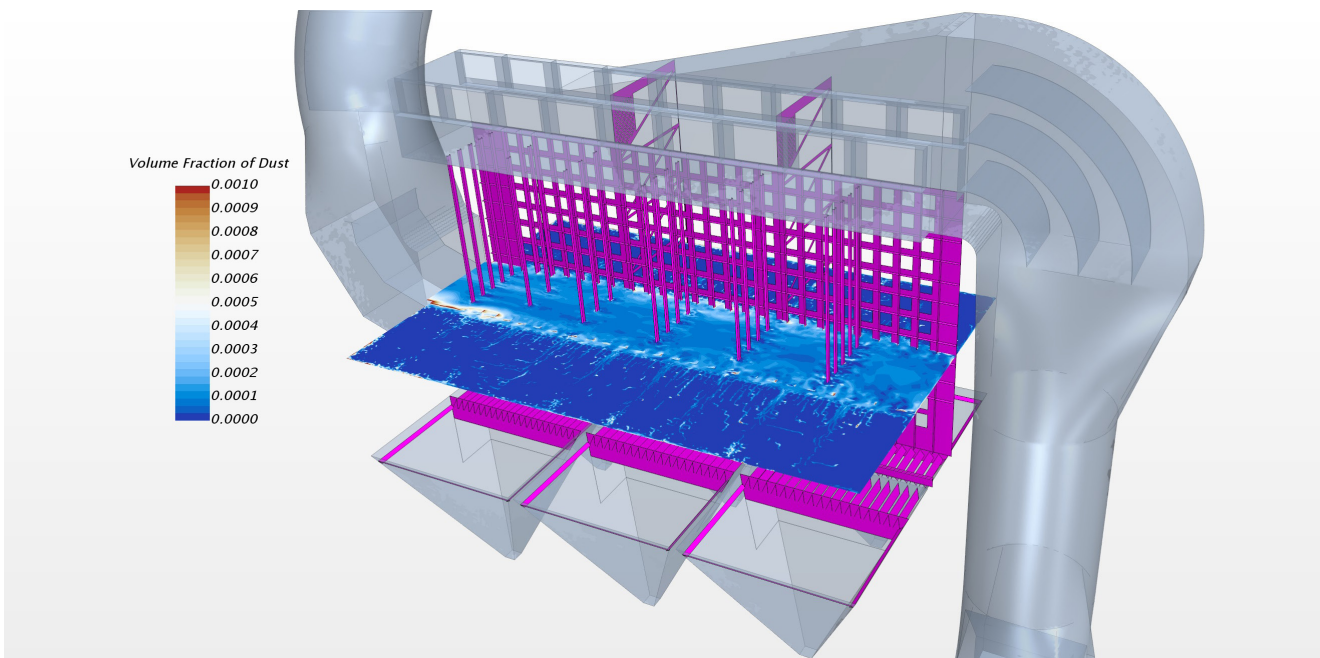
With today's high energy prices, controlling OPEX costs is vital to cement producers' commercial performance. Inevitably, the focus is on reducing power consumption



The illustration above shows the full DCF model.



The illustration above shows a CFD screenshot of gas speed illustrating the flow in the inlet manifold and between the bags after the flow control system. The control of velocity is extremely accurate, and no harmful peaks will reach the bags



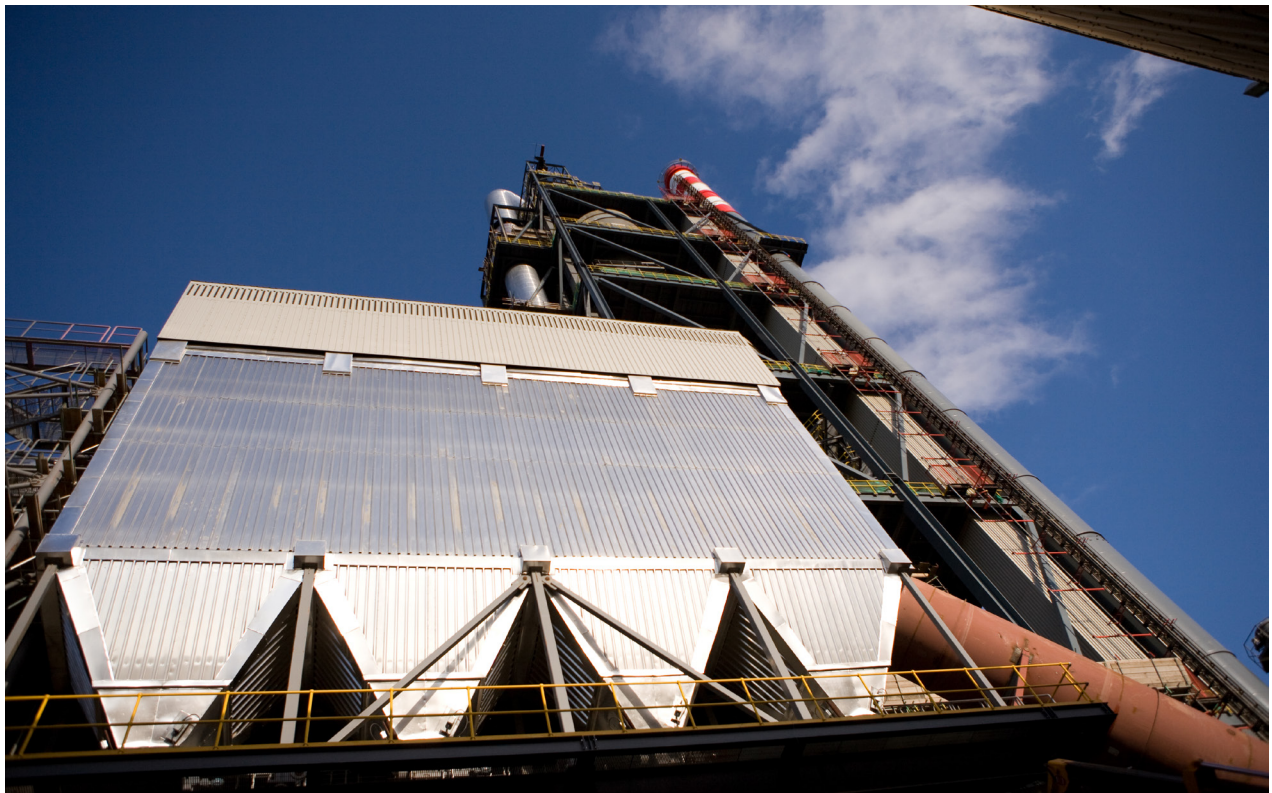
The illustration above shows a CFD screenshot of Dust concentration the inlet manifold and between the bags after the flow control system. The control of the dust concentration is extremely accurate, and no harmful peaks will reach the bags

and optimising the pulse-jet cleaning system can help achieve this. While compressed air is needed as part of the fabric filter's normal operations, the aim is to reduce the amount consumed, specifically by reducing the pressure loss across the bags.

About FLSmidth Airtech

FLSmidth Airtech not only sells fabric filters but delivers a full service to cement plant operators together with its sister company FLSmidth Inc – AFT Operations (Advanced Filter Technologies), ensuring integration with other cement units and full cement plant optimisation. Since 1998, the company has implemented more than 500 filter systems with filter bags longer than six metres in all cement applications, including cement and coal mills, bypass, cooler and kiln/raw mills.

Combining industry expertise with a long track record of supplying ESPs, FLSmidth Airtech has always focused on research within gas and dust distribution, with innovation high on the agenda. As just one example, FLSmidth Airtech was the first to introduce long-bag filtration using a side inlet. With the ever-increasing focus on climate change and environmental legislation, fabric filtration is a crucial step towards reducing the costs of operating cement plants as well as minimising environmental impact.



Many cement producers choose 10 or 12-metre bags due to their impressive cost effectiveness.



Fabric filters with long bags are increasingly seen as the best available technology to help producers meet their goals.

Engineering the process for the 21st Century

By: Mark Mutter and Lawrie Evans – JAMCEM Consulting

Introduction

For a Process Engineer working within the cement industry, the challenges are becoming ever greater. The demands for higher profitability from the plant are ever increasing and these demands are expected to be delivered with less and less resources. CAPEX is often limited to projects that will deliver a payback of less than two to three years, both maintenance and sustaining expenditure are squeezed to minimal levels and many of the easier opportunities for improving profitability - the so called “low hanging fruit” – have already been implemented.

For managers of the cement plants, getting the right people to undertake these engineering roles has also become difficult. In many countries, there are less and less young people seeing engineering as an attractive career path, preferring to take degrees in areas such as finance and IT. This has led to a reduced pool of available engineers, with many of these seeing the cement industry as unglamorous, dirty and hot and therefore opting for less challenging roles in other industries.

In addition, the drive for profitability and the implementation of “synergy savings” when companies merge has resulted in a reduction in engineering resources both on the plants and in the corporate centre. Unfortunately, those that leave are often those with the most experience, taking with them years and years of knowledge of the plant. For those that are left behind, the learning curve is steep and little guidance or mentoring is available to develop the capabilities of younger engineers. To compound this problem for plant managers, any engineers that do come into the company that show promise for the future are frequently fast tracked into corporate roles. This interrupts the engineers’ development at too early a stage for the learning process to be sufficiently completed.

Standardisation of process evaluation

One way in which many cement companies have tried to address the reduction in the engineering resources on the plants - as well as the lack of experienced engineers to mentor and train the new intake of engineers - is by the standardisation of engineering practices and procedures. Whilst it is common practice to develop standardisation within a company – especially as it

grows – it is essential that this standardisation does not result in a lack of thinking on the cement plant by the engineers, such that all the engineer is doing is comparing the data in their own plant with that which is found in the in-house reference manual.

At no time is this practice more wasteful and unproductive when performing plant test work. Much effort goes into organising the team to complete a mill audit or pyro-processing heat balance, taking the measurements, having the plant analyse the samples that are taken and completing the calculations from pitot traverses and other measurements. Engineers need to remember that plant test work is not just a tick box exercise to produce a series of numbers, but a way of identifying opportunities to improve performance on the plant.

With all this effort being applied, it is essential that the test work is completed in a manner such that the all the measurements are accurately taken and that correct conclusions are drawn from the measurements. As each plant is different both in design and raw materials, the required test work on each plant will differ and the standardised methods of plant testing will not always take into consideration the differences in cement plants. As an example, when completing a pyro-processing audit, some areas that can be missed when following the standard procedures are as follows:

- Not correctly calculating the heat losses from the volatiles by-pass, which is made up of three components - the heat value in the hot gases leaving the system, the heat in the meal leaving in the system and the energy that has been input into the meal leaving the system to partially decarbonate it.
- Not taking into consideration the losses from carbon monoxide emission or the heat value lost in unburnt fuel – especially important in the case of using natural gas as a fuel – which can be obvious areas for process optimisation.
- Not measuring the power consumption of the main fans to allow a cross-check to be made on the measured airflows.
- Failing to take oxygen measurements all the way from the kiln exit to the final fan to understand both where inleak is occurring in the gas handling

system and the impact that this may have on the pyro-processing system.

Before any audit, the process engineer needs to consider their own specific plant and what needs to be measured, whilst taking reference from the standard examples given in the company reference manual.

Following completion of the audit and the calculation of the results, further thought is required to how these results are going to be used for process improvement. For all this effort to end up in a report which simply compares the results of the work with the standards in the reference manual adds minimal value to the engineering effort, apart from indicating whether the numbers are in the correct range or not. Proper engineering though needs to be applied to the results of any process test work with one of the following considerations applied:

- If the results of the testwork show that the equipment is operating within the expected range, is there any way in which the equipment could be further optimised to reduce costs or improve performance and how does this result affect the overall performance of the system.
- If the result falls outside of the expected range, why is this happening? What needs to be further investigated to bring the equipment back into the ideal operating range? Who needs to take actions to correct the situation?

Process engineers also need to consider the readership of the reports that are produced in this manner. For example, for a Process Engineer presenting the results of the audit by simply comparing their results with a set of standards will not assist the production manager in knowing that he needs to plan to install new refractory in the annual repair due to high shell losses or the mechanical engineer to identify areas of high inleaking air which are costing the plant additional fuel and power consumption as well as lost production on the kiln. It is a key role for the process engineer to not only take the measurements and understand what these plant measurements mean but to translate them into a form that the other disciplines on the plant can understand and from which action plans can be developed.

Standardisation of targets

In standardising the process engineering function down to the level where the process has defined operating parameters, it is necessary to take into account that there are a number of variants for a particular process type as well as different process configurations for the same description. Examples of this are as follows:

- When considering a 4 stage calciner, we could be talking about a single string or twin string calciner; even within the twin string calciner we could be considering a an in-line calciner or a separate line calciner.
- When considering a closed-circuit ball mill, there are a number of different ways the mill could be vented and the configuration of the separator can be different in terms of how the final product is collected.

All the subtle differences in the equipment type and configuration mean that instead of a specific target for each plant being developed – for example for fuel consumption or power consumption, ranges of values are supplied as acceptable results. Whilst this may be satisfying for the Process Engineer to find out that they are within the acceptable range, it does not provide a great deal of motivation to find the true target of the individual piece of equipment and then identify the potential performance improvement gap.

For example, when considering a pyro-processing system, the following factors need to be considered:

- The chemical and physical composition of the kiln feed to the system – in particular the LSF of the feed to the system. In countries where lower LSF clinker is produced, there will be lower kiln fuel consumption and therefore this should be considered in the definition of the target. Without taking this into consideration, other process inefficiencies may be masked by the contribution that the lower LSF has for the whole system.
- Carbon in the raw meal, which will normally result in a lower fuel consumption target compared to a plant without fuel in the raw materials. In plants that have carbon in the raw materials, consideration of the burn-out characteristics of the carbon is also required to determine the contribution to the fuel consumption reduction.
- The use of a volatiles by-pass, with the target being defined as the level at which is only necessary for the removal of the necessary amount of chloride or sulphate, not the level at which the plant feels comfortable.
- A reasonable number of stoppages for the line so that the monthly/annual average fuel consumption can be compared to the actual results as opposed to the monthly/annual average being compared to the company standard, which is normally a steady state fuel consumption.

Similar comments can be made when considering the power consumption of the plant. There is little value in having a standard figure for each process stage defined in a reference manual when a plant specific target can be developed. This should be a bottom up approach taking each process stage and breaking it down into the elemental parts. Examples of this approach are as follows:

- For raw milling on a vertical mill, the mill motor power consumption should be calculated based on the target raw meal residue and mill throughput, and then the mill fan power calculated based on the necessary airflow for the mill throughput. The separator power and auxiliaries can then be added in to give a power consumption for that plant section.
- For cement milling, the mill motor power target should be at the maximum addition rate of secondary cementitious materials (SCM) that are allowed under the local standard for the cement type, not the level which is currently produced. This then gives impetus to improve the quality of clinker used in the cement, the separator performance and develop any necessary capital investment plans to increase the level of SCM addition. The power required for the separator and ancillaries can then be added to this target.

Even when targets for process stages have been developed in this way, it is still necessary to monitor the main drives consumption level compared to the target to identify any drift in performance. For example, a steady upwards drift in the power consumption in the cooler exhaust fan could be a sign of either increasing in-leaking air across the cooler exhaust system which would merit further investigation. Using a well configured power monitoring system can greatly improve the overall control of power consumption of the plant.

Global standards for local plants

One of the most illogical issues that arises with the implementation of global targets which do not make either financial or business sense. An example of this would be the implementation of a global alternative fuels substitution rate, where all plants within a company must reach a certain substitution rate. Whilst this may be done for the right reasons to satisfy internal targets and external commitments to long term sustainability, it does not make sense in the following situations:

- When the local source of fuel is subsidised, making it so cheap that the implementation of the alternative fuel project will not give a return on the investment.
- When alternative fuels are scarcely or not reliably

available due to there being no adequate collection structure or tax on the fuels disposal meaning that the cost of the alternative fuel is higher than the cost of the conventional fuel in use.

- When alternative fuel suppliers increase the price of the fuel over time which results in the cost of the fuel mix increasing to similar levels as the conventional fuel.
- When the use of alternative fuels reduces the kiln output to a point where the market demand cannot be satisfied.

In each of these cases, it does not make sense in either implementing or continuing with certain alternative fuels simply for the sake of maintaining the company target.

A similar case also exists with a global cement to clinker ratio. Reducing the quantity of clinker in cement brings financial benefits as well as reductions in CO2 emissions. It is also an effective method of increasing the cement production capacity for a fixed clinker output. However, the materials must be consistently available at a reasonable price and the plant must be capable of producing cement that is competitive and appropriate for the local market.

The way forward

The use of standardisation itself is not a bad thing and is required as companies get larger; however, this standardisation cannot be allowed to lead to a lack of analysis and implementation of engineering solutions. It is not surprising that some of the most innovative engineering solutions that are seen by JAMCEM Consulting are in small companies with less sites, that have minimal standardisation and less engineering resources at the Head Office. In these plants, engineers must be truly innovative and use the limited resources that they have. This does not mean to say that where the opportunity exists within a large company, thought should not be given to how younger engineers should be trained – exposure to several plants with different processes and operational issues will give the engineers a much broader starting point to considering how their own plant can be optimised.

Just as many companies change their strategies to improve their performance, it is perhaps time that some of this standardisation is blended with a certain degree of localisation. Adapting the targets to the local conditions, raw materials and cement that is required in the market should bring back some real Engineering thinking into an industry that is already struggling to find the next generations of good process engineers.



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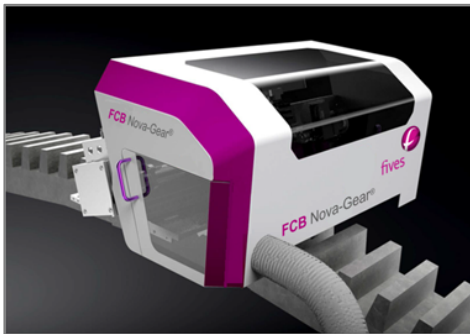
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FCB Nova-Gear®, on site machining solution for girth-gear

Fives FCB has developed a unique and patented industrial on-site machining solution for teeth re-profiling. Implemented without disassembling the girth-gear, it allows for extending the lifetime of kilns and tube mills girth gear within a shortened production shutdown. This service is provided for any large, straight cut girth-gear installed on rotating tubes such as kiln, mill, dryer, calciner, etc. It applies for tooth width from 400 to 850 mm and external diameter from 3.6 to 12 m. Associated with the FCB Scan-Gear™ diagnosis tool, the FCB Nova-Gear® makes possible the refurbishment of teeth active flank at the lowest intervention costs and under optimum safety conditions.



The FCB Scan-Gear™ preliminary diagnosis supplies:

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MAIN ADVANTAGES

- Girth gear extended lifetime
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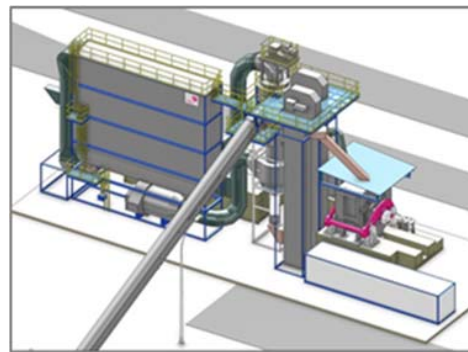
Contacts:

Fives FCB
50 rue de Ticléni - 59666 Villeneuve d'Ascq - France
+33 (0)3 20 43 77 77 - fivesfcb@fivesgroup.com

Mr. Loïc POTTIER – loic.pottier@fivesgroup.com
Mr. Christophe PRINGUET- christophe.pringuet@fivesgroup.com

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 - FCB FLAG™ Station 2200 from 20 to 25 tph
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MAIN ADVANTAGES

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- Minimized CAPEX and OPEX
- Fast on the market

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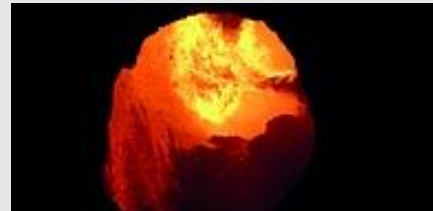
- Raw materials extraction and homogenisation
- Grinding technology
- Impact of grinding systems on cement properties
- Optimisation of grinding equipment



Module 2 “Clinker production and material technology”
12 – 16 March 2018

Topics:

- Clinker production and burning technology
- Alternative fuels and effects on burning process
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- Clinker properties and effects on product qualities



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BEUMER bag-in-bag: film packaging protects paper bags from the environment Like a second skin

The new BEUMER bag-in-bag system quickly and reliably packs filled paper bags individually or in groups with a weather-resistant plastic film. This protects the contents against moisture, dust, insects and other environmental influences during storage and transport. The BEUMER bag-in-bag is easy to integrate into existing filling and packaging systems.

The impermeable film keeps dust from escaping from the filled bags, and it prevents product losses. The films have thicknesses of 30 to 100 microns, so material costs are low. The outer packaging in the paper bags does not require an intermediate layer made of PE, a fact which also cuts costs and increases filling performance. The highly efficient system is so reliable that ultrasonic welding of the bags is usually not necessary.

The BEUMER bag-in-bag, offered to customers in cooperation with Tentoma, has a wide range of uses. For the BEUMER Group the focus is on packaging of bags, but the technology is also suitable for goods with lengths of up to eight metres and product circumferences of 600 to approximately 5,600 millimetres. Thus the system can also be used for bar stock, insulation materials or consumer goods. Users can integrate it seamlessly into their work processes by simply installing it in existing feeding line. Thus the BEUMER bag-in-bag supplements the BEUMER fillpac inline packer and the BEUMER palletpac high-performance palletiser.

Bagging, film packaging and palletising can be easily and seamlessly combined in a continuous production line. Expensive modification and system changes are unnecessary. The BEUMER bag-in-bag is designed for inline packers with a capacity of up to 800 bags per hour. The flexible BEUMER system can be configured for three different applications: a semiautomatic insular solution, a fully automatic depalletising, packaging and palletising line, or an integrated solution in which machines can be switched on individually. Thus the system can be adapted to specific customer requirements.

BEUMER Group GmbH & Co. KG
Verena Breuer: Tel. +49 2521 24317,
Verena.Breuer@beumergroup.com.
www.beumergroup.com

The new BEUMER bag-in-bag system quickly and reliably packs filled paper bags individually or in groups with a weather-resistant plastic film.



Photo credits: BEUMER Group GmbH & Co. KG



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Mondi's new SPLASHBAG now resists rain for up to six hours

Since its launch in 2015, Mondri's SPLASHBAG has celebrated international success – and it does not stop here: its rain resistance has tripled to up to six hours and it now prevents moisture ingress for up to five days.

“We have introduced a new industry standard here for paper bags to benefit our customers,” says Claudio Fedalto, Sales & Marketing Director, Mondri Industrial Bags. “Workers can now store their cement sacks in damp environments for a whole working week without worrying about the materials getting wet.”

The new SPLASHBAG with the outer ply of Mondri Advantage Protect sack kraft paper, keeps up with the needs of advanced customers and end users around the world. Already millions of SPLASHBAGS are sold in three continents.

Extensive testing at Mondri's Bag Application Centre has resulted in the performance upgrade. A series of Cobb60 tests was conducted to measure water absorption and the results show a 30% reduction compared to standard sack kraft paper. These improvements offer even lower breakage rates and help logistics and site managers save time and costs thanks to reduced wastage and shorter clean-ups.

“The improved SPLASHBAG provides customers with the necessary tools for market success. Mondri's Industrial Bags customers and suppliers alike can rely upon the company's long-standing expertise in – and passion for – innovative, sustainable and customer-focused paper packaging solutions that guarantee a high



level of reliability and quality,” says Claudio Fedalto, Sales & Marketing Director, Mondri Industrial Bags.

For more information, visit: www.mondigroup.com/splash-bag or watch the video: https://youtu.be/_yaRQRWvc-w



and services network, the specialised filling equipment department Natro Tech, as well as its Bag Application Centre, where researchers develop and test innovative packaging solutions.

We are Mondy: IN TOUCH EVERY DAY

Mondy is a global packaging and paper Group, employing around 25,000 people in more than 30 countries. Our key operations are located in Central Europe, Russia, North America and South Africa. In 2016, Mondy had revenues of €6.7 billion and a return on capital employed of 20.3%.

We are fully integrated across the packaging and paper value chain – from managing forests and producing pulp, paper and compound plastics, to developing effective and innovative industrial and consumer packaging solutions. With over 100 products customised into more than 100,000 solutions, we offer more than you might expect. Leading brands around the world rely on our innovative technologies and products across a variety of industries, such as agriculture; automotive; building and construction; chemicals and dangerous goods; food and beverages; graphic and photographic; home and personal care; medical and pharmaceutical; office and professional printing; packaging and paper converting; pet care; retail and e-commerce; and shipping and transport.

We believe sustainable development makes good business sense. It is integral to our responsible and profitable growth, and embedded in everything we do – every day. We continue to look for ways to do more with less, promote the responsible management of ecosystems, develop and inspire our people, and enhance the value created by our sustainable product solutions.

Mondy has a dual listed company structure, with a primary listing on the JSE Limited for Mondy Limited under the ticker code MND and a premium listing on the London Stock Exchange for Mondy plc, under the ticker code MNDI. We have been included in the FTSE4Good Index Series since 2008 and the JSE Socially Responsible Investment (SRI) Index since 2007.

1 Based on sales volume. Source: Eurosac, Freedonia World Industrial Bags 2016 study prepared for Mondy and management estimates

Contact:

Presveia Sourla, Marketing & Communications
Industrial Bags
Tel: +43 1 7901 34742, Fax: +43 1 79013 945
Email: presveia.sourla@mondigroup.com
Mondy Industrial Bags GmbH, Marxergasse 4A, A-1030,
Vienna
www.mondigroup.com/industrialbags

About Mondy Industrial Bags

Mondy Industrial Bags, a business segment of Mondy Group, is the leading international producer of industrial paper bags¹, selling around 5 billion bags per year. Thanks to its broad range of bag specifications, Mondy Industrial Bags serves major industries, including cement and building materials, chemicals, food, feed and seed. The business segment operates a dense sales

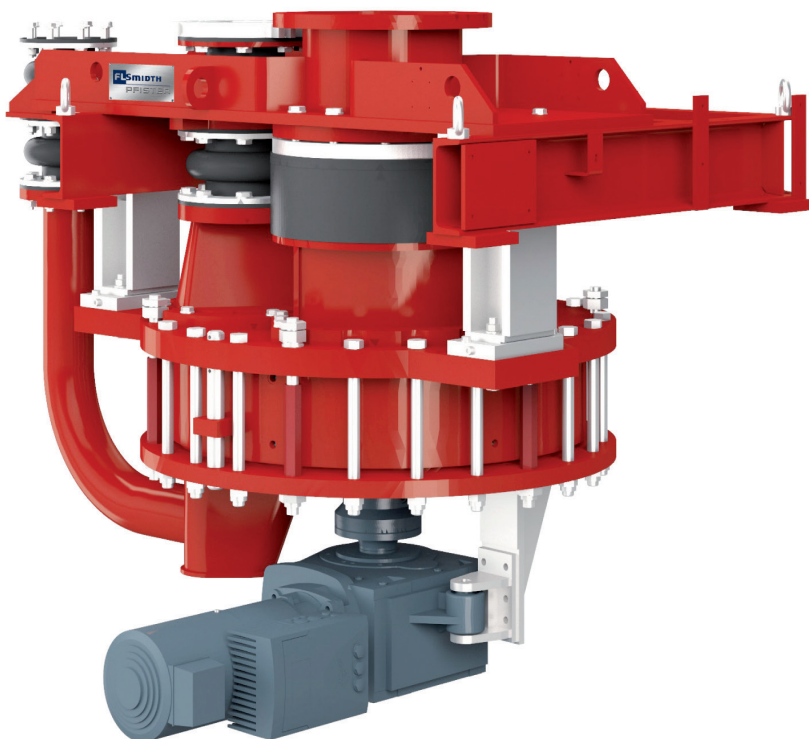
FLSmidth Pfister® launches new rotor weighfeeder model for hot gas generators

Smaller in size but just as capable and accurate as its big brothers is the latest rotor weighfeeder model German FLSmidth Pfister, specialist for weighing and dosing technology in cement, launched lately. Rotor weighfeeder Pfister® DRW 4.08 was especially designed for dosing pulverized fuels to hot gas generators (HGG).

The system is typically employed with hot gas generators (HGG) operating with solid fuels like coal dust. Considering fuel costs, coal-fired hot gas generators (HGG) are an interesting alternative to oil- and gas-fired HGGs and employed by more and more cement manufacturers. These HGGs are typically heated with coal dust, lignite dust or petcoke, all materials which rotor weighfeeder Pfister DRW 4.08 is laid out for.

Rotor weighfeeder Pfister® DRW 4.08 is based on the industry-wide proven Pfister® gravimetric rotor weighfeeder technology which supports stable, reliable and accurate fuel dosing to the burners. Sturdy design and integration of material extraction, weighing, dosing and material transfer into a pneumatic conveying line make it a compact system. The dosing capacity of one system ranges from 0.2 - 5.0 t/h. State-of-the-art electronics realize not only high short- and longterm accuracy and dosing stability but also contribute to low levels of CO.

Rotor weighfeeder Pfister® DRW 4.08 was especially designed for dosing pulverized material to hot gas generators (HGG)



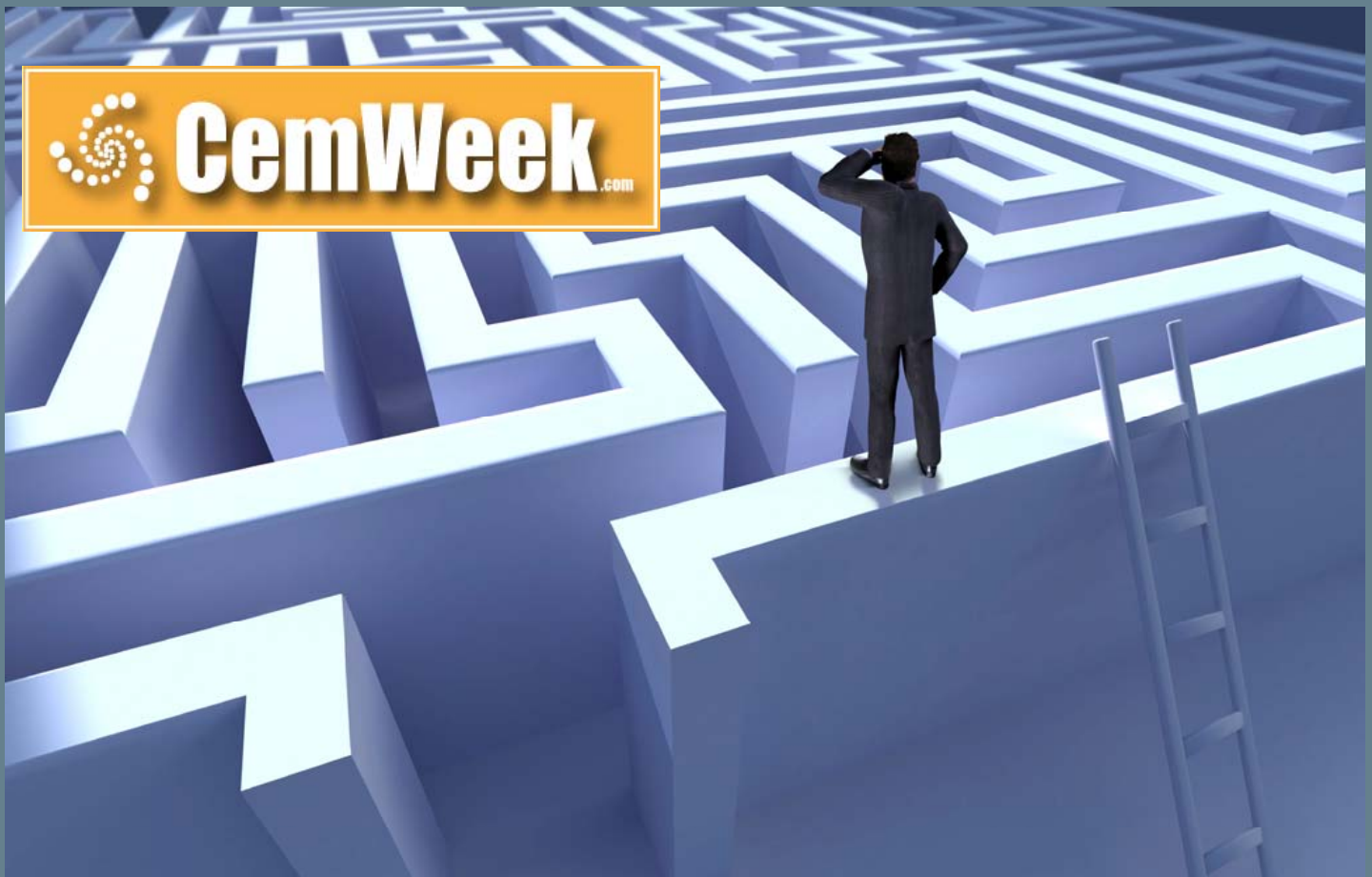
About FLSmidth Pfister GmbH:

Stable and accurate dosing of fuels and materials are key elements required to produce clinker profitably and efficiently. With its state-of-the-art Pfister® rotor weighfeeder concept, FLSmidth Pfister is offering a future oriented technology that is able to dose small to huge numbers of tons per hour. With almost 3,000 installations worldwide, customers of FLSmidth Pfister are feeding millions of tons each and every year.

FLSmidth Pfister GmbH
Staezlinger Strasse 70
86165 Augsburg / Germany
Tel: +49 (0) 821 79 49 280
sales@pfister.de
flsmidthpfister.com



CemWeek.com



cement industry knowledge: news, interviews, data & research

You need to know what is happening in the global cement industry. Right now. Your competitive advantage demands it.

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CemWeek's online news and knowledge platform for the global cement industry identifies and researches key industry events and uncover hard-to-find news from around the world. CemWeek regularly speaks to cement sector experts to provide a continuous flow of insights and analysis.

- Daily news:** The cement industry's leading news service, offering detailed and insightful articles put together by our global team of writers covering more markets and more news than any other industry source.
- Proprietary intelligence:** Interviews with cement industry thought-leaders and experts, including CEOs, executives, analysts and consultants through the *CemExec* feature series.
- Market research:** High-quality research reports, including detailed market studies, competitive assessments, cement trade flows, and export opportunity assessments, among many others. Custom research available upon request.
- Data services:** Statistical and data research tools offering industry practitioners a wealth of cement supply and demand data.

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www.cemweek.com | inquiries@cemweek.com | t: +1-702-430-1748

Biofuel - Energy supplier of the future?



PULVERISETTE 19 with cyclone



Cutting Mill PULVERISETTE 19

However, in the past months and years bio fuels had the reputation to generate a social- und environmental dilemma. For example, in developing countries large areas were cleared and used for sugar cane bio fuel monocultures or similar and therefore were at the same time unintentionally in competition with the production of food. Inevitably, this well known problem leads to the development of more climate friendly and socially acceptable uses of second generation bio fuels.

For the production of the second generation bio fuels not the starch respectively oil containing plant parts are used, but rather only the cellulose-containing parts of the plant. This means the starch containing plant parts, like for example the maize kernels, can still be used for the production of food.

Bio ethanol is produced and obtained via bio catalysis (fermentation) and bio process technology. In order to run such well-engineered bio process technology plants, as a rule, a preparation of the lignocellulose containing residual material is required. Not only the degree of the comminution (particle size) due to the installed technical components of the plant and the built-in measurement instrumentation and control systems play a part, but rather what seems even more important is the produced by the comminution high surface and the associated residence time and fermentation period in the bio-fermenter. Hereby the used micro organisms and enzymes are given the opportunity in a time- and resource saving approach to achieve the highest possible plant effectiveness.

For the comminution of the residual plant matter in many pilot plant stations and pilot installations **FRITSCH Cutting Mills** are utilized. Here especially the Universal **Cutting Mill PULVERISETTE 19** in combination with the sample exhauster the cyclone separator.

Advantages of this system are: easiest handling during cleaning and the exchange of the cutting tools. Due to the patented FRITSCH sample exhauster it is possible to produce sufficiently large amounts of bio mass with a particle size distribution from up to smaller than 250 μm , which then can be transferred to the fermentation plants without any problems. The directed high volume air current of the FRITSCH patented sample exhauster of 2800 l/min minimises thermal load during the grinding process and is a secure protection against clogging of the sieve cassettes und enables therefore a high sample throughput.

contact: FRITSCH GmbH • Milling and Sizing

Selina Krieger

Industriestrasse 8 • 55743 Idar-Oberstein • Germany

Phone +49 67 84 70 155 • Fax 0 67 84 70 11

E-Mail: Krieger@fritsch.de • Internet: www.fritsch.de

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

+7 812 242 1124
+7 812 764 5612
+7 812 712 3683
info@jcement.ru
www.jcement.ru

www.petrocem.ru

VORTEX'S PIVOTING CHUTE DIVERTER OFFERS LONG LIFE HANDLING ABRASIVES

Vortex established its Titan Series product line in 2011 to address several abrasion concerns expressed across bulk material handling industries. Such applications include handling materials that pose excessive abrasion or wear issues, situations that call for extremely large valves or diverters, conditions that require a valve to be successful in especially harsh environments, or other more specialized heavy-duty applications. Among those Titan Series products is a diverter that has recently garnered much attention across industries: the Pivoting Chute Diverter.

Per the demands of companies handling especially abrasive materials – such as alumina, bauxite, cement, clinker, coal, fly ash, gravel and rock, glass, industrial sand, lime, limestone, metals and ores, potash, sands, wood, and others – Vortex designed the Pivoting Chute Diverter to improve processing speeds and provide a valve with longevity when operating in particularly wearing environments.

Since its release, the Pivoting Chute Diverter has improved operations for cement, grain, mining, power generation, and many other industries worldwide. In recognition, the Pivoting Chute Diverter was awarded the 2016 Breakthrough Product of the Year from Processing Magazine.

Innovative features of the Pivoting Chute Diverter include:

- A body constructed from carbon steel.
- An independent, internal pivoting chute.
- Chute's wetted parts (ie: material contact areas) are lined with choice of abrasion-resistant metal.
- Optional abrasion-resistant liners, installed internally on the chute's inlet and outlet legs. The purpose of abrasion-resistant liners is to provide additional durability for the diverter's internal. As a standard, abrasion-resistant liners are constructed from various gauges of steel. In extreme applications, liners may instead be constructed from chromium carbide.
- Dust-tight to atmosphere.
- The Pivoting Chute Diverter may be shifted "on the fly" while materials continue to flow, allowing a non-interrupted material flow. This is an improvement upon traditional flapper-style diverters, which recommend material flow be shut off prior to shifting the blade.
- Inspection, maintenance or repairs may be quickly and easily performed while the diverter remains in-line, from an access panel on the front of the diverter.
- Removable chute, in case it must be inspected, repaired or replaced. Removal is done using lifting lugs and chute-assist rods. (Note: Chute removal can only be performed on 10 in. – 24 in. (254 mm – 610 mm) valve sizes.)
- A replaceable flow control bar is mounted between the outlet legs, to prevent material from migrating to the opposite leg.

- Material flow may be directed partially toward two different destinations at once. However, because material flow will be shared through one chute toward two destinations, flow rates toward each leg will be diminished, in comparison to typical one-to-one flow rates. (Warning: This method should not be practiced regularly, as it will accelerate abrasion and wear between the outlet legs.)
- Available in either a two-way or three-way configuration.

A Pivoting Chute Diverter is customizable to ensure its success in application-specific environments. The Pivoting Chute Diverter has many construction material options, including:

- Type of abrasion-resistant metal.
- Brinell Hardness Number (BHN) of construction materials.
- Gauge of steel thickness.
- Grinding & Polishing.
- etc.

When considering the Pivoting Chute Diverter for use in your application, please also be mindful of:

- Stack-up height: In order to install a Pivoting Chute Diverter, the space needed between flanges is slightly more than that of a traditional flapper-style diverter.
- Material dusting to the opposite leg is possible.

However, in most applications, these considerations are not of major concern.

For more information on how the Pivoting Chute Diverter can improve your system operations, visit <http://vortexglobal.us15.list-manage.com/track/click?u=cb7a8e1f2291912d764b395c5&id=a04190b190&e=061ffb2545>.

About Vortex:

For 40 years, Vortex has provided quality slide gates, diverters, iris valves and loading spouts designed specifically for handling dry bulk solids in gravity, vacuum, dilute, or dense phase applications. Vortex valves and spouts are engineered for dependability, durability, easy maintenance, and offer proven solutions to material handling and process efficiency problems. With an in-house team of engineers, Vortex products can be completely customized for individual applications or special installations.

Vortex
1725 Vortex Ave.
Salina, KS 67401 USA
Tel: +1 785 825 7177
Email: vortex@vortexglobal.com
Web: www.vortexglobal.com



SIMAN NEWS

Iran Cement News Site

www.simankhabar.ir

پایگاه خبری تحلیلی صنعت سیمان ایران



www.cementgroup.ir

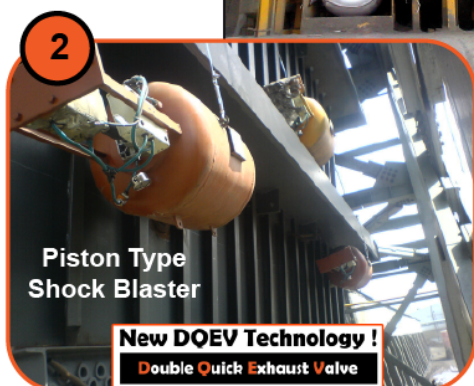
Complete Directory Of Iran Cement Factories & Engineering Companies

IRAN Cement Industry Capabilities and Equipments Production in SimanKhabar.ir

SK Automatic Big Bag Filling Station With Lifting System



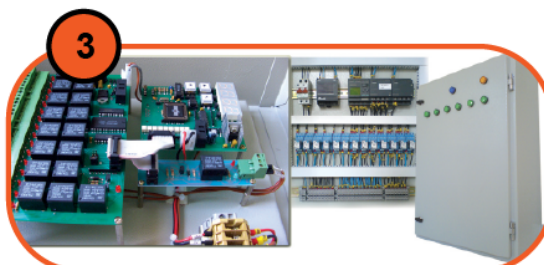
SK Cement Packer



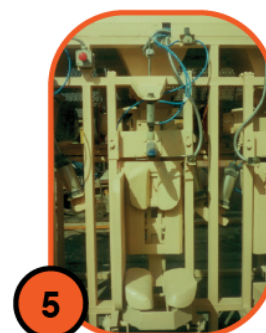
Piston Type Shock Blaster

New DQEV Technology!
Double Quick Exhaust Valve

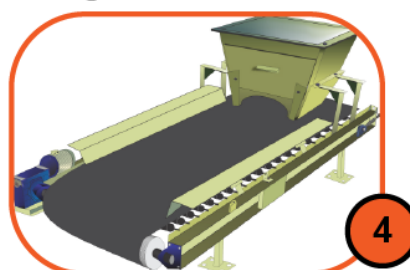
SK Shock Blaster



SK Bag Filter Jet Pulse Controller



SK Weigh Feeder & Belt Scale



For more information please contact us :

Tel : +98 21 6642 89 14

Fax: +98 21 6691 53 29

info@simankhabar.ir

Cemtech MEA 2018

DUBAI, UAE

17-20 FEBRUARY 2018



Cemtech is proud to invite you to the latest edition of its Middle East & Africa conference and exhibition, taking place at the JW Marriott Marquis, Dubai, UAE, on 17-20 February 2018.

Organised by *International Cement Review* and with the kind support of the Arab Union for Cement & Building Materials (AUCBM), Cemtech MEA18 will bring together 250 cement professionals from 40 nations for this unmissable annual industry event.

Cemtech's agenda brings together technical and market specialists who will provide invaluable insights and essential know-how to support your commercial operations.

World experts in cement manufacturing technologies will gather to present and discuss 25 topical presentations covering the latest technologies and best practice in cement manufacturing. At this meeting, you will:

- Review the skills and technologies your business needs to remain competitive
- Learn new ways to operate your plants at maximum efficiency
- Discover new opportunities in the new technical forum on alternative fuels.

The technical programme will be supported by an international equipment exhibition featuring equipment suppliers alongside break-out sessions. Workshops will focus on sustainability topics and the full cement production process.

Exceptional hospitality includes lunches, evening receptions and the renowned Gala Dinner, as well as complimentary sightseeing tours for accompanying partners.

For more details, programme updates and registration, see:

www.Cemtech.com/MEA2018

INTERNATIONAL CEMENT CONFERENCE

Cemtech

PRODUCTION EXPERTISE - MANAGEMENT SKILLS

Join us for a three-day meeting in Dubai where you will be one of 250 cement sector professionals to:

- Review both global and regional cement market trends and forecasts
- Access world-class technologies at our international equipment exhibition
- Meet industry experts and explore ways to optimise your plant
- Network with industry leaders and cement sector professionals from over 40 countries.

Seminar: Enhancing the visual impact of cement plants

Cemtech MEA18 will include a special parallel session dedicated to the concept of industrial architecture and the role it can play in enhancing the visual impact of cement plants. Led by experienced architect Thierry Bogaert (France), the seminar will provide a framework for cement plant owners and operators to implement on-site measures to improve public image, working environment and practices.

Free to registered delegates



©Bogaert Architecture

Focus on alternative fuels

New to Cemtech, this forum for alternative fuels will guide participants through the practical process of introducing alternative fuels to their plants, maximising utilisation rates and evaluating the range of technology options required for this increasingly important issue.

See the outline programme for more details



Cement manufacturing technology

Cemtech will also host a three-day technical workshop alongside the main conference at the JW Marriott Marquis, Dubai, UAE, on 18-20 February 2018. Participants of this classroom-based training course will advance their knowledge of the cement manufacturing process and learn practical techniques to increase plant efficiency according to best practice. Please note that this popular workshop is a separate fee-paying event. For more information and course contents please visit:

www.Cemtech.com/MEA2018/Workshop



JW Marriott Marquis

17-20 February 2018

VENUE & ACCOMMODATION

Cemtech MEA 2018 will be held at the superb JW Marriott Marquis in Dubai, one of the city's newest five-star hotels, conveniently situated just 20 minutes from Dubai International Airport.

Located in two iconic towers in Business Bay on the Sheikh Zayed Road, the hotel offers exceptional amenities, an array of five bars and nine restaurants, as well as a world-class business conference centre.



DELEGATE FEES*

- Super early-bird delegate registration payment by 14 December 2017
EUR 900 / USD 1045 / GBP 785
- Early-bird delegate registration payment by 17 January 2018
EUR 1025 / USD 1195 / GBP 900
- Full rate from 18 January 2018
EUR 1285 / USD 1495 / GBP 1125
- Book three or more delegates and save 10%. A further 5% can be saved by paying online via credit card:
www.Cemtech.com/MEA2018

*Delegate fee includes all conference documentation, meals, receptions and Gala Dinner. Plant tour is included but subject to availability.

REGISTRATION DETAILS

- www.Cemtech.com/MEA2018
- Tel: +44 (0) 1306 740 363
- Fax: +44 (0) 1306 740 660
- email: info@Cemtech.com

Further details can be found on the website where you can book online and receive a generous discount.

EARLY-BIRD OFFER!

To qualify for the **Super early-bird** offer, register by 14 December 2017 and save **US\$450 – book now!**

Conference organised by

International
Cementreview

Supported by
the AUCBM



SIEMENS

All-round IP65-protected Panel and Panel PC for user-friendly operator control and monitoring

- **New, all-round IP65-protected Panel and Panel PC for machine-related, cabinet-free visualization and automation**
- **Simatic HMI TP1200 Comfort Panel PRO and Simatic IPC477E PRO Panel PC: high performance and functionality, many interfaces**
- **Used in high-end applications and for high-performance visualization tasks**
- **Extended individual operation through extension units: standard components for tailor-made system solutions**

Siemens has extended its system family based on IP65-protected HMI (Human Machine Interface) devices for machine-related, cabinet-free visualization and automation. The Simatic HMI TP1200 Comfort Panel PRO (PROtected) with 12-inch display diagonal and the Simatic IPC477E PRO industrial Panel PC with 15, 19 and 22-inch displays are characterized by high performance and functionality as well as a large number of integrated interfaces. The new operator control and monitoring devices are especially suitable for high-end applications and powerful visualization tasks. Flexible mounting types allow the user easy operation of the machine and an optimal view of the visualization and process.

For powerful, PC-based HMI applications, the technology of the improved E generation of industrial Panel PCs is installed in the Simatic IPC477E PRO Panel PC – with 6th generation Intel Core i processor and modern Celeron and Xeon processors. The new Panel PC has a wide range of interfaces, such as 3x Gigabit Ethernet, 4x USB 3.0 and optional 2x COM to facilitate flexible use. Extension units –mountable components – extend the operation of the all-round IP65-protected PRO devices. The 12 to 22-inch extension units, which consist of standard components such as basic device, extension components, mounting adapters, keyboard tray and an optional keyboard also available in IP65 stainless steel versions, allow tailor-made system solutions. They are characterized by easy mounting and commissioning, as well as user-friendly engineering, and can be easily adapted to meet individual customer requests. A large selection of control elements is also available: from indicator lights, selector and key switches, Emergency OFF mushroom pushbuttons, USB interface and RFID reader, all the way to a stainless-steel keyboard. The control elements are easily and quickly labeled with label holders and inscription plates, or inscription plates and lens assemblies. The extension unit is now also available in a fail-safe Profisafe version, in addition to

the conventionally hard-wired and bus-capable Profinet version.



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Further information about Siemens at the SPS IPC Drives 2017 at

www.siemens.com/sps-ipc-drives and
www.siemens.com/press/sps2017

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 372,000 employees worldwide. Further information is available on the Internet at www.siemens.com.

SIEMENS

Simit V9.1 - simulation for faster commissioning and operator training

- **Simit Unit Administration integrated into the Simit user interface**
- **Simplified configuration of PLCSIM advanced coupling**
- **Bulk engineering using Chem Basic Library spreadsheet calculation – for chemical and pharmaceutical plant simulation**
- **Data transmission now also via OPC UA client coupling**

Siemens has upgraded its Simit simulation platform for virtual commissioning and operator training with a new release. Version 9.1 enables Simit to also be used for virtual commissioning and operator training in modular plants, speeding up actual commissioning by as much as 60 percent and reducing unwanted standstill periods to a minimum, particularly during plant conversion and migration processes. Simit can also be used to implement a realistic operator training system. Version 9.1 comes with an array of innovations designed to improve operating convenience, support simulation modeling and contribute towards improved efficiency, openness and flexibility.

Simit enables real-time simulation and emulation for the comprehensive evaluation of automation solutions. Testing and optimization can be carried out either using a real or a virtual automation system, the so-called virtual controller. Connection to Comos enables an end-to-end data flow between engineering and simulation, and provides the basis for creating a plant's digital twin.

For improved convenience, in the current version 9.1 the Simit Unit Administration has now been integrated into the Simit user interface. Another benefit for users: A mouse click is all it takes to change quickly and easily between software- and hardware-in-the-loop at any time. Configuration of PLCSIM Advanced coupling has also been simplified. The data required for interface configuration is imported from the engineering data of existing Simatic projects. Using PLCSIM Advanced, virtual controllers can be generated to simulate Simatic S71500- and ET 200SP controllers and used to perform extensive function simulation.

Simit offers various automatic modeling functions for simple, rapid simulation modeling. Simulation models and components can be automatically generated, for instance with the aid of template-based imported data. As a result of automatic modeling, practically fault-free simulations can quickly be generated. At the same time, the models and components are automatically parameterized, substantially reducing the outlay of time and costs. A new feature of Simit 9.1 is the ability to perform bulk engineering using spreadsheet calculation. Depending on the selected hierarchy level, it is possible to export the data to Excel. The Simit import wizard enables automatic simulation modeling based on the respective templates.

The new Chem Basic Library is another new addition to Simit. It enables a rapid entry into project engineering using Simit by making available component types to the user, in particular for the simulation of pipeline networks in the chemical and pharmaceutical industry. Simit Simulation Platform supports different communication interfaces and standards for extended data exchange between simulation and automation environments. Simit can use these to interact with other software applications or programs such as simulation software, or to exchange data with hardware controllers from different manufacturers. Version 9.1 of Simit now also supports the open communication standard OPC UA Client.

SIEMENS

To improve efficiency, openness and flexibility, Simit 9.1 supports the current Simatic PCS 7 V9.0, Route Control for engineering, control and diagnostics of material transport, and Safety Matrix, the management tool for every phase of the safety lifecycle. The virtual controller now also simulates the new CPU 410E, the entry CPU for small applications.

The Simit Unit also supports the distributed I/O system Simatic ET 200SP HA, Simatic Compact Field Unit (CFU), R1 Redundancy and PROFINET Process Alarm. Simit Unit documentation is available in XML format and can be simply and rapidly imported from 3rd party engineering tools. From Version Simit 9.1 onwards, Windows Server 2016 is also supported.



Siemens has upgraded its Simit simulation platform for virtual commissioning and operator training with a new release. Version 9.1 enables Simit to also be used for virtual commissioning and operator training in modular plants, speeding up actual commissioning by as much as 60 percent and reducing unwanted standstill periods to a minimum, particularly during plant conversion and migration processes.

News - 2017

Publication of the CSI GNR 2015 data

The "Getting The Numbers Right" (GNR) 2015 dataset has been launched officially. This year's report demonstrate trends supporting continuous efforts of the cement sector in further mitigating its CO₂ emissions. Full details including historical information, is available online at www.wbcscement.org/GNR.

The GNR has been publishing annual report about energy efficiency and CO₂ emissions from the worldwide cement industry for the eleventh (11th) year in a row. The 2015 dataset consolidating information from 939 cement manufacturing facilities (such as integrated plants and grinding centres) around the world. These facilities produce approximately 22% of global cement production. 81% of the data provided is independently assured.

The cement industry continues to lead in transparency on emissions reporting and continues to act on mitigation using the 4 main levers:

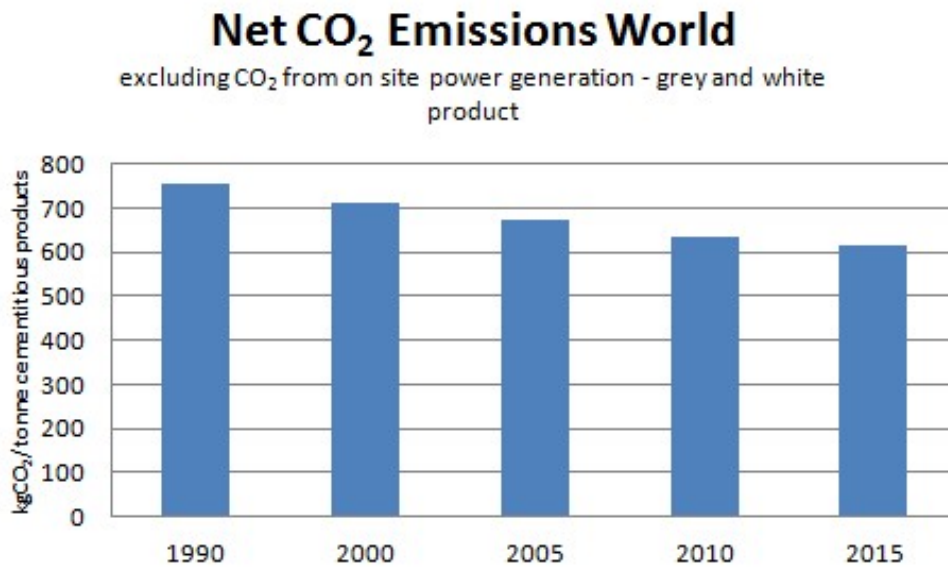


This year we have reworked the report format in line with many user recommendations. Importantly, the identifier of each parameter now refers to the relevant line in the CSI's "CO₂ and Energy Accounting and Reporting Standard for the Cement Industry". This allows users to see clearly the definition of each parameter

The 2015 results show the cement industry is maintaining performance levels of recent years .

Global data		1990	2013	2014	2015
Clinker (grey) volume	Million tonnes	423	643	671	680
Cementitious volume	Million tonnes	512	867	905	916
Gross specific emissions (cementitious)	kg/tonne	761	636	637	634
Net specific emissions (cementitious)	kg/tonne	755	616	615	617
Kiln fuel use	MJ/tonne clinker	4254	3502	3499	3511
Specific electricity use (cement)	kWhrs/tonne	119	102	101	100
Specific electricity use (clinker)	kWhrs/tonne		74	74	73
% clinker in cement	%	83	74.9	74.6	74.9
% alternative fuel use	%	2.0	15.3	15.7	15.9

- Net CO₂ per tonne cementitious **reduced by 18.3%** from 1990 baseline
- Progress made in replacing less efficient wet and semi wet kiln technologies with more efficient **dry preheater and precalciner kiln designs**
- Specific **electricity** use in clinker is on a **modest downwards trend**
- Update of the Technology Papers in 2017 describing state-of-the-art and anticipated technological developments that can further enhance mitigation of CO₂ emissions in cement production
- **Innovations in the development of CCS/U and new binder materials** are contributing to the potential for long-term improvement



GNR participants use the CSI CO₂ and Energy Accounting and Reporting Standard for the Cement Industry to provide the information. The GNR team welcomes comments and queries from all stakeholders which can be submitted to gnrpmc@wbcsd.org.

DIARY DATES

CEMENT

Cemtech Middle East & Africa
2018

Date: 17 - 20 February 2018
Venue: JW Marriott Marquis,
Dubai, UAE

Tel.: +44 1306 740 363

Fax: +44 1306 740 660

Email: info@cemtech.com

www.Cemtech.com/MEA2018

12th Global CemFuels Conference
& Exhibition on alternative fuels
for cement and lime 2018

Date : 20 - 21 February 2018

Venue: Berlin, Germany

For more information please visit:

http://www.cemfuels.com

INTERCEM Dubai 2018

Date : 12 - 14 March 2018

Venue: Jumeirah Emirates Tower,
Dubai, UAE

Email: info@intercem.co.uk

www.intercem.com

1st Global Gypsupply

Date : 13 - 14 March 2018

Venue: Brussels, Belgium

For more information please visit:

www.globalcement.com

5th International Cement Industry
& Technologies Conference

Date : 22 March 2018

Venue: İstanbul, Turkey

For more information please
contact:

Ms. Miray Gözen YAZICI,

Executive Assistant

IMC Organization

Tel: +90 216 641 20 76 -77

Fax: +90 216 641 20 75

Email: sales@imcorganization.com

www.imcorganization.com

The 25th Asean Federation of
Cement Manufactures (AFCM)
Technical Symposium and

Exhibition

Date : 04 - 06 April 2018

Venue: Trans Luxury Hotel,
Bandung, Indonesia

For more information please
contact:

Ms. Nurmala Sari

Indonesia Cement Association
(ICA)

Tel.: +62 21 5705800 ext 555

Fax: +62 21 5705798

Mobile: +62815 1772 2465

Email: afcm2018@asi.or.id

http://www.afcm2018indonesia.com

10th Africa CemenTrade Summit

Date : 18 - 19 April 2018

Venue: Dakar, Senegal

Tel: +65 6346 9147

Email: grace@cmtsp.com.sg

10th International Cement
Conference

Date : 22 - 24 April 2018

Venue: St. Petersburg, Russia

For more information please
contact:

Ms. Mila German, General

Director

Journal Cement Ltd.

Tel: +7(812) 242 1124, 7645612-

Fax: +7(812) 712 3683

E-mail: info@jcement.ru

www.petrocem.ru

www.jcement.ru

13th Global Slag

Date : 24 - 25 April 2018

Venue: Prague, Czech Republic

For more information please visit:

http://www.globalslag.com/

conferences/global-slag/

introduction

60th IEEE-IAS/PCA Cement

Industry Technical Conference

Date : 06 - 10 May 2018

Venue: Nashville, USA

For more information please visit:

www.cementconference.org

2nd Global CemProcess

Date : 23 - 24 May 2018

Venue: London, UK

For more information please visit:

www.globalcement.com

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

Mobile: +44 77 1100 4430

Email: sarah.rayment@

argusmedia.com

www.argusmedia.com

8th International VDZ Congress

Date : 26 - 28 September 2018

Venue: Maritim Hotel, Duesseldorf,
Germany

For more information please

contact:

Tel.: +49 211 4578 342

Email: info@vdz-congress.org

www.vdz-congress.org

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

CERAMIC

CERAMITEC 2018

Date: 10 - 13 April 2018

Venue: Munich, Germany

For more information please contact:

Exhibitor service

Tel.: +49 89 949- 11378

E-mail: exhibiting@ceramitec.com

Visitor service

Tel.: +49 89 949- 11378

E-mail: info@ceramitec.com

http:// www.ceramitec.com

TEAM DAY 2018

Date: 09th April 2018

Venue: Munich, Germany

For more information please contact:

Mr. Hartmut Weber, Marketing

Director / Team Sales Executive

Coordinator

Email: hartmut.weber@riedhammer.de

Tecnargilla 2018

Date: 24 - 28 September 2018

Venue: Rimini, Italy

For more information please contact:

ITALIAN EXHIBITION GROUP SpA

Via Emilia, 155 - 47921 - Rimini - (RN) Italy

Tel. +39 0541 744111

Fax +39 0541 744200

E-mail: segreteria@tecnargilla.it

http://www.en.tecnargilla.it

GENERAL

The Big 5 Saudi

Date : 05 - 08 March 2018

Venue: Jeddah, Kingdom of Saudi Arabia

Email: info@dweik.net

https://www.thebig5saudi.com

HR Digital Transformation

Date : 07 - 08 March 2018

Venue: Kuala Lumpur, Malaysia

For more information please contact:

Trueventus

Mr. John Karras

Tel: +603 2775 0001

Email: johnk@trueventus.com

FILTECH 2018

Date : 13 - 15 March 2018

Venue: Cologne, Germany

For more information please visit:

www.filtech.de

BAUMA Conexpo Africa

Date : 13 - 16 March 2018

Venue: Johannesburg, South Africa

For more information please visit:

www.bcafrica.com

14th CIS Coal International Conference

Date : 15 - 16 March 2018

Venue: Minsk, Belarus

Email: e.pryazhnikova@metalexpert.com

metalexpert.com

For more information please visit:

www.metalexpert.com

Strategy & Performance

Excellence Conference

Date : 20 - 22 March 2018

Venue: Dubai, UAE

For more information please contact:

Kelly Wong, Business

Development Manager

The KPI Institute

Tel: +603 2742 1357

Email: kelly.wong@kpiinstitute.net

Financial Modelling for Urban

Master Planning

Merging economic and city

layouts for beneficial expansion

Date : 21 - 22 March 2018

Venue: Kuala Lumpur, Malaysia

For more information please contact:

Trueventus

Casey Lee

Tel: +603 2775 0067

Email: caseyl@trueventus.com

ACI's 3rd Clean Energy Finance Europe Conference

Date : 21 - 22 March 2018

Venue: Frankfurt, Germany

For more information please contact:

Mr. Rohan Baryah

Tel: +48 61 646 7022

Email: rbaryah@acieu.net

9th Arab-German Energy Forum

Date : 27 - 28 March 2018

Venue: Cairo, Egypt

Tel.: +49 (0)30 2789070

Fax: +49 (0)30 27890749

For more information please visit:

www.ghorfa.de

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

Ukrainian Infrastructure Forum '18

Date : 19 April 2018

Venue: Kyiv, Ukraine

For more information please visit :

www.a7conf.com

Hannover Messe 2018

Date : 23 - 27 April 2018

Venue: Hanover, Germany

For more information please visit :

www.hannovermesse.de

Quarries Alive 2018

Date : 02 - 04 May 2018

Venue: University of Évora,
Portugal

**Email : quarriesalive2018@
uevora.pt**

**www.quarriesalive2018.uevora.
pt**

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

IFAT 2018

Date : 14 - 18 May 2018

Venue: Munich, Germany

For more information please visit:

www.ifat.de

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: +6030067 2775-

**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: cbsbebtton@cbsbeton.eu

(Czech Concrete Society)

**http://: 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

Bauma China 2018

Date : 27 - 30 November 2018

Venue: Shanghai, China

For more information, please visit:

www.bauma-china.com

Bauma 2019

Date : 08 - 14 April 2019

Venue: Munich, Germany

For more information, please visit:

www.bauma.de

TRAINING

White Cement Manufacturing Technology (six-week online training)
Date : 26 February 2018
Email: Training@CemNet.com
For more information please visit: www.training.cemnet.com

VDZ Training course "Process technology of cement production"
Module 1: Raw material preparation and grinding technology
Date : 05 - 09 March 2018
Module 2: "Clinker production and material technology"
Date : 12 - 16 March 2018
Venue: VDZ's premises in Duesseldorf, Germany
For more information please visit: www.vdz-online.de/en/training

Cement Kiln Refractories Course (six-week online training)
Date : 09 April 2018
Email: Training@CemNet.com
For more information please visit: www.training.cemnet.com

Cement Factory Maintenance (six-week online training)
Date : 09 April 2018
Email: Training@CemNet.com
For more information please visit: www.training.cemnet.com

Cement Factory Quality Control (six-week online training)
Date : 16 April 2018
Email: Training@CemNet.com
For more information please visit: www.training.cemnet.com

Cement Kiln Pyroprocessing (six-week online training)
Date : 16 April 2018
Email: Training@CemNet.com
For more information please visit: www.training.cemnet.com

VDZ Simulator training
Date : 23 - 27 April 2018
Venue: VDZ's premises in Duesseldorf, Germany
For more information please visit: www.vdz-online.de/en/training

Cement Kiln Pyroprocessing (six-week online training)
Date : 09 July 2018
Email: Training@CemNet.com
For more information please visit: www.training.cemnet.com

Cement Kiln Process Chemistry (six-week online training)
Date : 09 July 2018
Email: Training@CemNet.com
For more information please visit: www.training.cemnet.com

Cement Factory Maintenance (six-week online training)
Date : 16 July 2018
Email: Training@CemNet.com
For more information please visit: www.training.cemnet.com

Cement Kiln Refractories Course (six-week online training)
Date : 16 July 2018
Email: Training@CemNet.com
For more information please visit: www.training.cemnet.com

Cement Factory Quality Control (six-week online training)
Date : 06 August 2018
Email: Training@CemNet.com
For more information please visit: www.training.cemnet.com

VDZ Process operator training
Date : 03 - 21 September 2018
Venue: Training centre near Duesseldorf, Germany
For more information please visit: www.vdz-online.de/en/training

White Cement Manufacturing Technology (six-week online training)
Date : 10 September 2018
Email: Training@CemNet.com
For more information please visit: www.training.cemnet.com

Cement Kiln Pyroprocessing (six-week online training)
Date : 08 October 2018
Email: Training@CemNet.com
For more information please visit: www.training.cemnet.com

Cement Kiln Process Chemistry (six-week online training)
Date : 08 October 2018
[Email: Training@CemNet.com](mailto:Training@CemNet.com)
For more information please visit: www.training.cemnet.com

Cement Factory Maintenance (six-week online training)
Date : 15 October 2018
[Email: Training@CemNet.com](mailto:Training@CemNet.com)
For more information please visit: www.training.cemnet.com

Cement Factory Quality Control (six-week online training)
Date : 05 November 2018
[Email: Training@CemNet.com](mailto:Training@CemNet.com)
For more information please visit: www.training.cemnet.com

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

VDZ Crash course for young engineers
Date : 10 - 14 December 2018
Venue: VDZ's premises in Duesseldorf, Germany
For more information please visit: www.vdz-online.de/en/training



THE TECHNICAL JOURNAL FOR THE CEMENT INDUSTRY



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