



CEMENT & BUILDING MATERIALS REVIEW

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Cement and Building Materials Review

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CONTRIBUTIONS

- *The Magazine editorial staff welcome the contribution of experts to enrich the contents of the magazine .*
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ARAB CEMENT NEWS

ARAB CEMENT NEWS



ALGERIA

Lafarge inaugurates sale point in Algeria

New unit to support Lafarge's development in Algeria
Lafarge has inaugurated its third point for sale of building materials in Algeria.

Source: CemWeek.com

OMAN:

Raysut Cement profits hurt by gas price and transportation costs

Raysut Cement's operating profit fell by 26.7% in the first quarter of 2015 on a 100% increase in the price of natural gas supplied by the government and rising transportation costs. Group operating profit fell to US\$15.6m from US\$21.4m in the same period of 2014.

"This is mainly due to the increase in natural gas price by the government to US\$3/MMBtu from US\$1.5/MMBtu effective from 1 January 2015 and increases in other costs," said Raysut Cement.

During the quarter, group revenue fell by 1.6% to US\$63.5m from US\$64.5m in the same period of 2014. Raysut Cement sold 976,019t of cement and 3958t of clinker during the first quarter of 2015 compared to 100,6024t of cement and 7384t of clinker in the corresponding period of 2014. This represents a decrease by 2.98% in cement and 46.4% increase in clinker.

Source: <http://www.globalcement.com>

SAUDI ARABIA

Saudi Arabian Cement gets US\$107m loan

Arabian Cement Company has signed an agreement with Saudi British Bank for US\$107m of Islamic financing. The loan is to be repaid over a period of five years, including a one-year grace period. Arabian Cement said that it will use the loan to finance part of the first phase of an expansion project to install two new cement mills.

Source: <http://www.globalcement.com>

Saudi Cement to post 5% profit drop in Q2

Saudi Cement Company, the kingdom's largest cement producer, is likely to report a 5% profit drop in the second quarter results to SAR 275 million.

Source: www.argaamplus.com

Yanbu Cement profits rise 2% in Q2

Yanbu Cement Co. (YCC) posed SAR 246 million in net earnings for the second quarter of 2015, rising 2.07% compared with SAR 241 million in the same period a year earlier.

The six-month earnings rose 1.57% year-on-year from SAR 446 million to SAR 453 million.

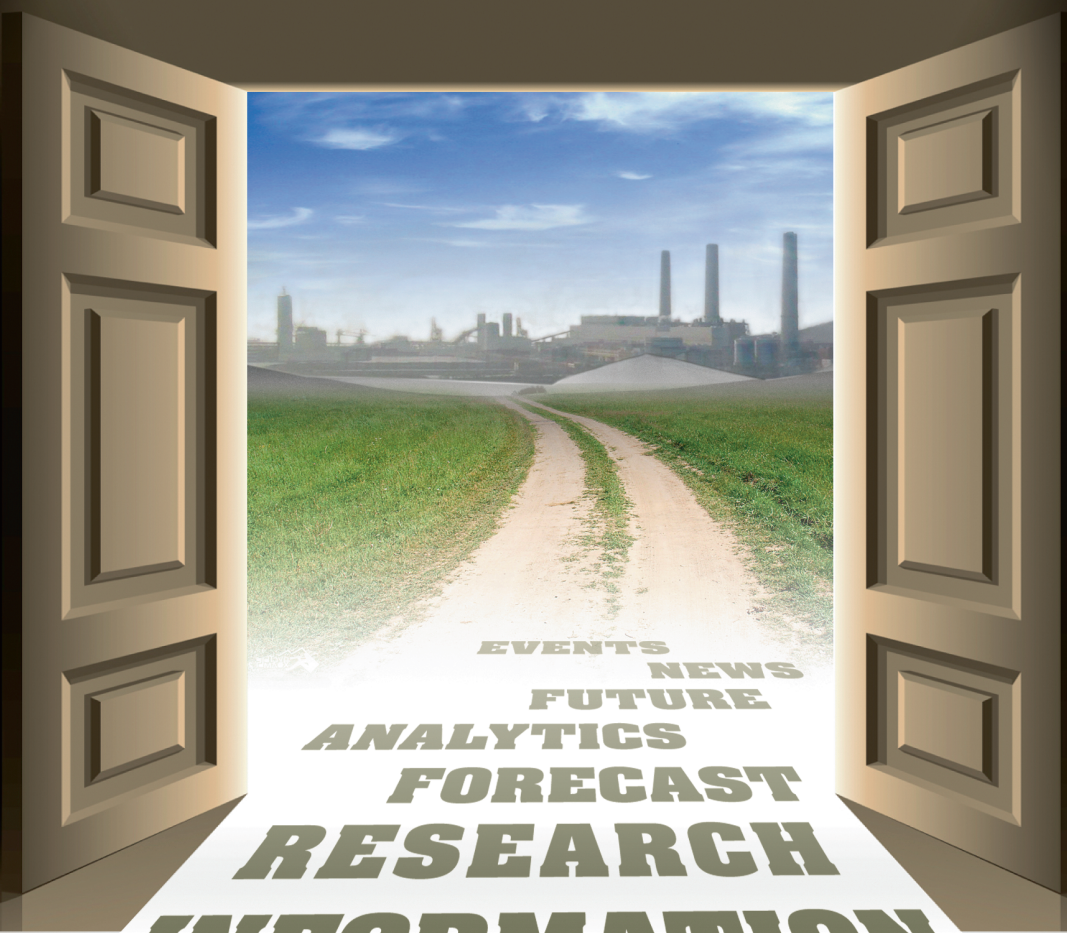
The cement producer attributed the profit increase to low cost of sales and decline in zakah provisions despite the fall in miscellaneous revenues.

Source: <http://english.mubasher.info>



INTERNATIONAL ANALYTICAL REVIEW
CEMENT. CONCRETE. DRY MIXTURES

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EGYPT

Italcementi to upgrade two cement plants in 2015

Italcementi plans to upgrade two of its cement plants in 2015 via its Suez Cement subsidiary, following the two plants that it upgraded in 2014.

The Company said that the expansion plans are targeting renewable energy in Egypt and the Gulf and that 2015 will see the continuation of investments to convert the energy mix and to improve Italcementi's environmental impact to international standards.

It is worth mentioning that Suez Cement closed its Tourah Cement Plant 1 to comply with the government policy to reduce the number of facilities that do not meet environmental standards.

Source: <http://www.globalcement.com>

Misr Beni Suef Cement to build coal mill

Misr Beni Suef Cement announced, it reached an agreement to build a coal mill worth LE200 million in 12 months. The project funding will be through self-financing and loans. The company expects the project to be completed by the end of 2015.

Egypt is currently struggling with blackouts, therefore the government has cut natural gas supplies to factories, which has prompted cement companies to demand coal use.

Egypt's natural gas production has been declining for years. Production in January was down 10% from January 2013, according to the most recent government figures. In September 2014, the Egyptian Government began to allow coal importation despite environmental concerns from the high pollution coal emits.

Source: <http://www.egyptindependent.com>

JORDAN:

Jordan's Northern Cement unit to add new clinker line

Northern Region Cement Co of Saudi Arabia said that Northern Cement-Jordan, in which it holds 99.35%, has decided to install an additional clinker production line. In preparation for the expansion project, it will carry out feasibility and environmental studies. Northern Cement reported a net profit of US\$62.5m in 2014, almost unchanged from US\$62.6m in 2013.

Source: <http://www.globalcement.com>

SAUDI ARABIA:

Saudi City Cement starts trial operations of new production line

Saudi City Cement Company has started trial operations of a second production line. The Company said that the new production line will have a production capacity of 5,500t/day. The trial period will last about four months. The Company also intends to invest SAR25m (US\$6.7m) in an alternative energy project.

The project, to be completed by the end of the first half of 2015, will be carried out by Chinese engineering company SINOMA.

Southern Province Cement starts trial operations of new line at Tuhama plant

Southern Province Cement (SPC) has launched trial operations of a third production line at its plant in Tuhama. The new line has 5000t/day of production capacity. The trial period will last about four months.

Source: <http://www.globalcement.com>

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UZSTROJMATERIALI

Yanbu Cement signs contract with SINOMA for waste heat recovery system UAE

Yanbu Cement Company (YCC) has signed a contract to set up a 34MW waste heat recovery (WHR) system at its 8.5Mt/yr capacity cement plant near Yanbu with China's Sinoma Energy Conservation Ltd for US\$61.8m.

The WHR system will be on stream by the end of 2016 and will be one of the largest of its kind at a cement plant in the world. It will be the largest in Saudi Arabia. Once operational, this WHR system will result in substantial savings in terms of fuel dependence for power generation from the diesel power station. Carbon emissions at the plant will be reduced by more than 100,000t/yr. About 25% of YCC's energy requirement will be met from the WHR system.

Source: <http://www.globalcement.com>

Everest Industries to set up of Fibre Cement Boards Plant in UAE

Everest Industries announced that it has got approval for the setting up of a 72,000 Mta Fibre Cement Boards Plant in UAE through its wholly owned subsidiary company in Mauritius.

Source: <http://www.business-standard.com>

ENVIRONMENT

EGYPT

Arabian Cement to use alternative fuels to increase production capacity

Arabian Cement plans to use alternative energy to increase its capacity to 100%. The Company is currently running at approximately 80% of its installed production capacity, with around 70% of the energy it uses being coal. In the meantime, 10% of its energy is reliant on alternative energy such as waste and biomass.

Arabian Cement is currently working on the completion of another installation that would enable the use of waste as alternative fuel, thus allowing its production capacity to reach 100%.

Source: <http://www.cemfuels.com>

19 Cement firms applied for Coal Usage in Egypt

Egyptian Ministry of Environment received 19 requests from the cement companies to use coal.

Out of the 19, there were 3 companies that had already started experimental usage of coal, namely Arabian Cement Company, Suez Cement Company, and Lafarge.

The Minister assured those standards do not include that the ministry would impose

Source: <http://www.amwalalghad.com>

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Höganäs BjuF serving the Middle East

Höganäs BjuF AB in Sweden has established a subsidiary company in 2008 under the name of Höganäs BjuF Middle East Ltd., in Nicosia, Cyprus. This company is dedicated in providing better and faster service and sales of refractories to the Cement customers in the EMEA region. The aim of creating this company was to meet client's needs through quick response to all correspondence, shorter travelling time and frequent visits to the customers.

Höganäs BjuF Middle East office provides an entire spectrum of refractory products and services:

- detailed consultation with solutions and recommendations
- offer preparation
- preparation of specific dedicated designs
- direct sales
- logistics
- preparation of exhibitions, seminars, and conferences
- customer training
- installation supervision
- after sales service

The office is able to provide high-value refractory solutions that perform better, last longer and make it possible to avoid unexpected production stops.

At present, six people power Höganäs BjuF Middle East office, which make up of five departments:

- sales
- design and estimation
- marketing
- logistics
- supervision

This small office has shown a big positive impact to the market share of the region.

The design and estimation department is there to answer all questions and inquiries regarding the complete range of complications that a plant might encounter; from preheater to cooler and air duct. By selecting the

appropriate quality materials in our competitive offers, we provide efficient solutions to our customers' every day challenges.

The detailed drawings and complete set of technical documentation that are included in our offer bring one step closer to the final solution of the end users' challenge.

All these would not be possible without the sales team headed by Mr. Camil Farhat with over 20 years of experience. The Middle East office has boosted sales for the group and experiences ever better results year after year. The sales team is more than willing to meet and solve our customers' demands, requests, concerns and problems, no matter what would that be. Proximity to the customer is a key factor here. The salespeople are able and ready to travel immediately to the client as soon as the customer requests our assistance. The company's location makes it possible to meet customers in their office or plant, under 24 hours' notice, from the moment we are informed of a need. As a result, the sales team develops good and long-lasting relationships with customers. What makes us stand out from the crowd is that from one sale to the next and everything in between, we consider our customers as partners, especially during after sales service. Our work is to provide smart solutions; problem solving is the key function of the company.

The work of the logistics department starts as early as from the offer stage where it provides the most dependable and reliable service for the prospective freights. It is there to suggest packing methods and alternative economic freights, thus minimizing the freight cost effect for the overall offer. Once the offer becomes an order the paper work comes to life. The department is responsible for

- preparing the purchased material to meet the delivery date
- Packing instructions
- shipment coordination

- invoicing and all relevant shipping and exports documentation.

Direct and open communication with customers is established from the start, once the order is received, so the customer is informed and up to date regarding their order and shipment up until it reaches its destination.

Our supervision team is available all over the EMEA region and although its presence is advisory, it is always willing and happy to assist our customers in selecting, adapting and implementing the optimum installation technique. Our highly qualified supervisor ensures the effective installation process and method in order to take advantage of the highest output of our quality products.

Our marketing department enhances the sales department by promoting customer relationships through the arrangement of

- seminars
- training
- conferences
- meetings
- exhibitions
- visits to our production plant in Bjuv, Sweden.

The marketing department is also committed in reaching out to the customers through several kinds of communication platforms such as advertising campaigns, company publications, our own website, organized workshops abroad and at customer sites.

Finally, we all share the same vision, while teamwork is

what makes us move ahead and achieve our objectives. We are a team and a family as well, which intertwined we work together better than separately. Each member compliments each other and, like a machine, everyone is a strategically placed cogwheel so the work flows better. The whole team goes over and beyond to serve and keep our customers satisfied with our expertise and professionalism.

Our strategy for the future is to expand our market to cover more countries in the EMEA region.

Our vision is for everyone in our current and future market area to get to know our brand name “Höganäs Bjuf” and experience our quality products.

For more information about Höganäs Bjuf Middle East Ltd., contact us at +357 22 662406.

Höganäs Bjuf began producing refractory bricks in 1825. Today the company has an extensive knowledge and experience in refractories, offering industrial customers a complete range of refractory products and turnkey solutions. Höganäs Bjuf is a multinational organization, and member of Borgestad ASA, which is listed on the Oslo Stock Exchange in Norway. The company is headquartered in Bjuv, Sweden, with subsidiaries in France, Germany, Russia, the Middle East, Malaysia and the Philippines, and agents and representatives around the world.



Samson® Feeder from AUMUND in New Operation

By Jason Birnbaum, AUMUND Corporation, Atlanta, USA

The Samson® Feeder has found an additional application as Surface Storage Feeder SSF, thus making operations of a cement mill much less complex and much more cost effective. It adds increased flexibility in handling different materials and in adapting the plant layout to changing production demands.

Quick reaction to changing demand and changing short-term fuel or raw-material costs is the most decisive factor to a profitable plant operation in the modern cement industry. However, a production process involving deep pits, bunkers or bins demands the construction of massive foundations and a geography, where it is possible to dig deep down. A quick relocation of the machinery due to changing production processes or evolving market situations is impossible. Flexibility remains rather limited.

As it turns out however, the cement industry rarely needs the vast buffer storage provided by bunkers and bins. The storage capacity provided by a Surface Storage Feeder (SSF) like the Samson® Feeder has proven to be fully sufficient. It is surface mounted without the need for special foundations and it can be relocated rather easily within the plant or even between sites, should the need arise. Furthermore the SSF can handle materials of different consistency from cohesive and sticky to abrasive and beyond. It can be supplied in virtually any size and length to build a buffer capacity based on the plant's needs.

AUMUND Surface Storage Feeder SSF in Operation

The SSF receives material directly from either rear tipping trucks or front end loaders. The entry section provides a certain storage capacity within the unit

itself for initial material receiving with quick vehicle turnaround times, and the total amount of storage depends upon the application, material density, feed rate and size of the unit. The SSF keeps a constant level of material within its head chute to act as a surge bin which is then extracted at an either constant or variable rate determined by the customer by means of a weigh feeder, weighing belt or a similar device.

A combination of several SSF units can be used when more than one material is to be added. The different materials can be metered at determined percentages based on the plant's needs. Enclosures on the SSF can also be included to prevent environmental impact when handling dusty materials or materials that need to be kept dry. The key element of the feeder's flexibility and performance is the fact that material is stored horizontally. In no case can the material height exceed the width, therefore bridging is impossible. Also due to the large width, high storage capacity is possible. The conveying and discharge function is carried out at very low belt speed. This allows a higher belt angle than would be otherwise considered, resulting in compact elevation rise to allow weight feeder or conveyor belt loading.

Complex Plant Design at Present

Cement plant design for raw mill feed incorporates an additive covered storage area which frequently utilizes front-end loaders to load multiple materials via a hopper and feeder. This feeder, apron or other type, feeds a long conveyor belt system with reversible belts or multi-chute system to distribute the additive to 3 to 5 bins. Such a layout dictates that the additive storage area must be some distance from the feed bins to allow a 15 degree belt to convey material to the top of the raw mill feed bins. The various additives are then metered out of the feed or

buffer bins. Depending upon the material properties these bins will have to be of special construction and inefficient storage shapes in an attempt to resolve anticipated flow problems. Often expensive liners and special feeders, like rotary plough type, have to be used. If hard rock limestone or additives are required, apron feeders combined with belt weigh feeders may be needed. These metering devices and the assortment of feeders then finally feed onto the mill feed belt. All in all this is a very complex and expensive installation. It requires a lot of maintenance and by experience it is a main cause of mill downtime. Not to mention that if the plant wants or needs to use other raw material resources in future, significant modifications or feeding problems might occur.

Simplification by SSF

To avoid all these complications, in the ideal plant layout, the additive storage building could now be placed next to the mill feed belt by using the Samson® Feeder as an SSF. The entire special bins, feeders, belt transfer and distribution systems are to be eliminated. The loader now feeds additive directly to the SSF units. A bank of 3 to 5 of those units can be arranged along the storage building which would feed, via weigh belt feeders, directly onto the mill feed belt. Each feeder receives material by loader. The feeder in turn maintains a level of material in the outlet chute, which feeds the weigh feeder. Due to the SSF's wide profile of ten feet, maintaining such a material level is no problem. Even if time between loading the unit creates gaps on the feeder, the constant material supply to the production process can be maintained by relying upon the buffer function of the SSF. Its variable speed maintains the needs of the weigh feeder and the weigh feeder meters the requirements of the raw meal mix and grinding process. For operation and maintenance, the plant has only 3 or 4 SSF and belt feeders to deal with. All those are located on ground level.

Reference Examples of Use

AUMUND provided two Samson® Feeder Systems to Lehigh Cement at Edmonton in Canada. The task was to feed Synthetic Gypsum into separate finish mill lines. The material is loaded into the Samson® feeders by front end loaders. Through a weigh feeder

and a TKF chain conveyor it is then fed directly onto the finish mill belt conveyor.

To the Lafarge cement mill at Whitehall in Pennsylvania/USA, AUMUND supplied one Samson® Feeder. In conjunction with a weigh feeder and a transfer conveyor belt, it feeds Lime Mud directly onto the finish mill belt. The material is fed into the Samson® Feeder by both, rear tipping truck and front end loader.

Further New Opportunities

Beyond simplifying the material feeding process at a cement plant, the use of the Samson® Feeder opens up many further new opportunities. This type of wide surface storage feeder offers a flexibility far beyond conventional storage/feeder systems with less installed cost and less maintenance. Horizontal storage, although not a new concept, may now be a concept that has come of time, due to equipment development and evolution.

In the Americas installation costs have become by far the greater percentage of the overall total cost of any industrial project. Equipment, such as the SSF, offers an opportunity to reduce installed cost in some critical areas of a plant, while also offering some real operational benefits.

The Samson® Feeder used as a SSF is providing an all-purpose solution for the reception of many types of bulk material cargoes transferred from the port to storage or production facilities by tipping truck or front end loader. For new plant developments the surface mounted SSF solution has offered an economical and flexible alternative to conventional underground unloading systems, storage bins and feeders.

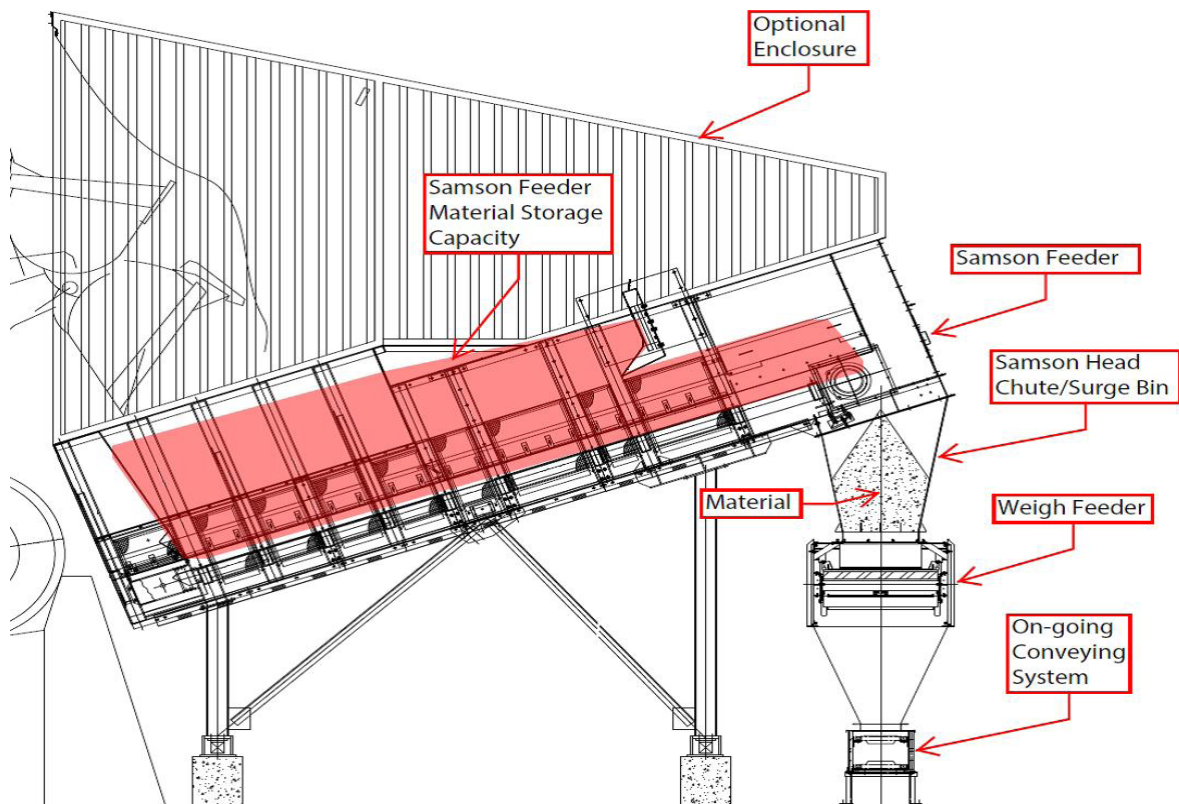
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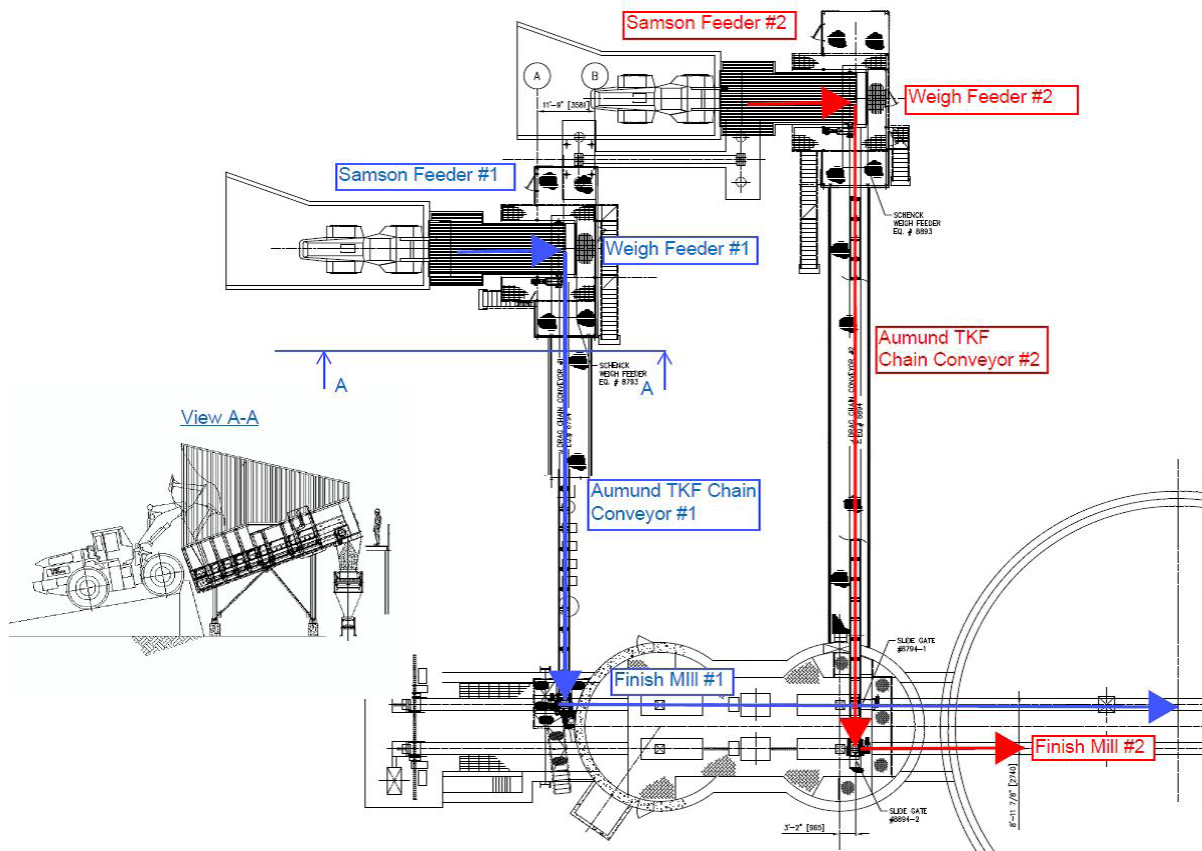
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Cap 1) Samson® Storage Feeder SSF from AUMUND functioning



as storage buffer (©2014 AUMUND)



Cap 2) Multiple Samson® Storage Feeders at Lehigh Cement (©2014 AUMUND)



Cap 3) Samson® Storage Feeder SSF at Lafarge cement mill (Photo AUMUND)

Cap 4) AUMUND Storage Surface Feeder SSF in operation at Lehigh-Edmonton (Photo AUMUND)



Siwertell receives a repeat order for road-mobile unloader in Kuwait

Siwertell, part of Cargotec, will supply a second road-mobile unloader to Acico Construction Co in Kuwait. The company took delivery of its first mobile unit from Siwertell in July 2014, following earlier very positive experiences when operating Siwertell mobile unloaders.

"The growing numbers of satisfied customers placing repeat orders is a great confirmation of the high quality and efficiency of our unloading solutions," says Jörgen Ojeda, Director, Mobile Unloaders, Siwertell. "With its growing experience of operating and owning our mobile unloaders, Acico fully appreciates their flexibility and high capacity. Combined with their low operational and maintenance costs, these factors had a major impact on Acico's decision to buy a second unloader."

The trailer-based, diesel-powered, Siwertell 10000 S road mobile unloader will be used at Shuaiba Port in Kuwait to discharge cement at 300t/h. It will be equipped with a double bellows system to allow continuous unloading operations, and a dust filter to minimise dust creation. Scheduled for delivery by the end of May 2015, the unit is under construction at Siwertell's manufacturing premises in Bjuv, Sweden.

Siwertell mobile unloaders were originally designed for handling cement, and their reliable, eco-friendly and durable qualities make them the natural first choice for the job. As they do not need any local civil engineering works, they feature immediate availability on delivery. Furthermore, Siwertell can offer short lead times, so the period between placing an order and going operational can be remarkably short.

Acico Construction, part of Acico Industries Company, was founded

in 1990. In 2012, it won the Arabian Business Magazine award for 'Green Building Company of the Year', highlighting the company's aim for good environmental credentials.

For further information, please contact:

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Siwertell

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UAE Cement

United Arab Emirates Cement Portal Web Site

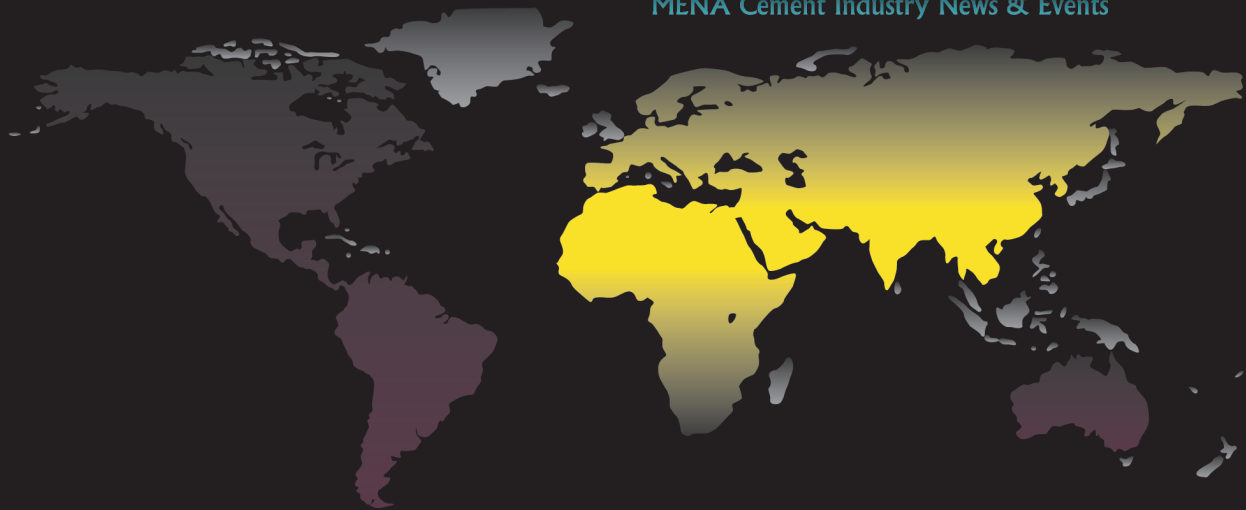
The U.A.E Cement website has established to perform broadcasting services about U.A.E , Middle east and North Africa cement industry and market.

The www.uaecement.com portal website is a place for getting latest cement news, events and worldwide conferences.

We hope the above matters help the improvement of Cement industry in the U.A.E which needs more cement based projects in the future.

We kindly appreciate your comments and suggestions to improve the web site contents and information.

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UAE Cement factories information :

In the www.uaecement.com portal web site you can find list of UAE & other Arabian Cement factories contact details.



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Siwertell receives prestigious road mobile unloader order for cement operations in Saudi Arabia

Siwertell, part of Cargotec, has received an order to supply a road mobile unloader to the cement division of the Rashed Al-Rashed & Sons Group in Saudi Arabia. The unloader has already been built at Siwertell AB's premises in Bjuv, Sweden, and delivery was carried out in March, just over two months after the order was placed.

The Siwertell diesel powered 5 000 S road mobile unloader is equipped with a dust filter and double bellows system to allow seamless, uninterrupted bulk material transfer to trucks or wagons. It will operate in the Port of Dammam, Kingdom of Saudi Arabia, unloading white cement at 250 t/h.

Jörgen Ojeda, Director of Siwertell mobile unloaders, said the customer selected a screw-type road mobile unloader because it best suited the company's needs and chose a Siwertell unit because it is ranked the best among similar products.

"Siwertell's range of mobile unloaders has a number of advantages in addition to the obvious one of mobility," says Mr Ojeda. "They offer high capacity from a small footprint. Extremely clean operations result in an

excellent working environment and no loss of material. Maintenance costs are low, while the continuous nature of screw-type unloading coupled with the double bellows system ensures excellent through-the-ship performance.

"Siwertell is very proud to have secured this order and started our co-operation with the well-known and distinguished company of Rashed Al-Rashed & Sons."

Siwertell has recently also secured an order for a 10 000 S road-mobile unloader to an undisclosed customer, which will be delivered to India at the end of April 2015.

For further information, please contact:

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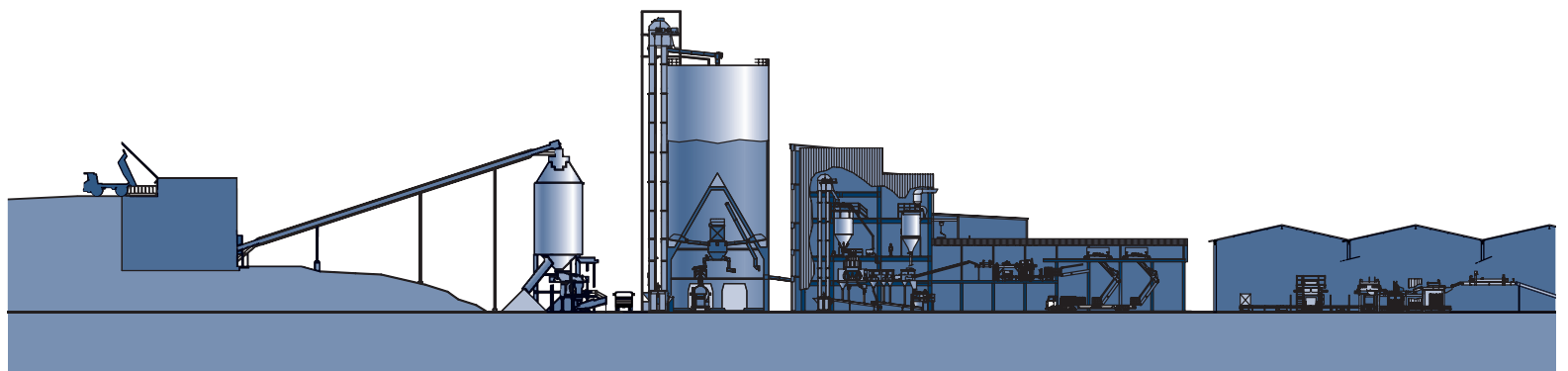
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DOMES OF THE MIDDLE EAST

Photography and projects in the UAE, Turkey and Qatar

March 25, 2015, Houston, TX — Geometrica designs some of the world's largest free span domes, trademarked as Freedomes®, as a solution for challenging architectural and logistical feats across the Middle East. Freedom technology has revolutionized the installation process on any terrain, including sandy deserts, high dunes, salt flats, gravel plains and coastal strips.

Star Cement, UEA

The United Arab Emirates is well known for its cement production, refineries, and other industrial pursuits. One particular area holds a unique distinction. Ras Al Khaimah (or RAK) is a large cement producing region, with output that has helped develop the country and spur the infrastructure of neighboring Dubai and Abu Dhabi. To continue this growth, Star Cement, a company of the ETA group, built a new world-class cement plant in RAK with a capacity of 7000 tons per day of clinker.

The biggest challenge was the enormous nature of the limestone stockpile. A week's worth of limestone – the raw material for cement production – amounts to 34,000 tons and has a diameter of 92 meters. Star Cement's civil and structural consultant, FLSmidth Designs Pvt Ltd, India, drafted a performance specification that included all dimensional and loading requirements for the stockpile cover. It was required to allow ample clearance for the stacker-reclaimer system, provide an opening for the incoming conveyor as well as four entrances for off-road vehicles, and include space for a traffic lane inside the dome around the ring rail of the reclaimer.

Crucial to the schedule was Geometrica's ability to accommodate the stacker-reclaimer and the conveyor gallery while building the structure. Once the structure was complete, the second pour of the concrete edge beam was completed and the cladding installed. The cladding used for this structure consists of simple

rectangular panels of “Star Cement Blue” laid out in a 12-slice arrangement.

Translucent fiber-reinforced plastic panels form chevron-shaped skylights that make interior artificial light unnecessary during daylight hours. Notably, the desert sand added its own hue to the blue cladding.

Ras Al Khaimah Cement, UEA

The Ras Al Khaimah Cement Company is a world class manufacturing plant utilizing prime quality raw materials to supply cement to the people of the United Arab Emirates. Geometrica was hired to provide coal storage and installed a longitudinal dome dedicated to sustainability. The plant is designed to meet the most stringent European standards for environmental protection.

The vault extends an impressive 140m in length and was installed over concrete walls that contain the coal stockpile. The dome design included natural ventilation and lightning protection systems to help control the potential fire and explosion hazards associated with storing coal.

Cimento Sanayi ve Ticaret, Turkey

Cimento Sanayi ve Ticaret added a limestone storage dome spanning 68m to its facilities in Kayseri to further meet the demands of both domestic and overseas customers in several sectors. As a leading producer of cement and ready-mix concrete, sustainability was a concern. Geometrica designed a circular stockpile cover to prevent runoff and particulates from harming the environment.

Geometrica also designed two 68m blending domes for Cimsa's Mersin plant. Cimsa has been a leader in the Turkish cement sector for more than 40 years. The domes helped achieve sustainability and environmental objectives.

Ruwais Refinery, Abu Dhabi

In another GCC project, the Ruwais Refinery dome was built for Takreer, the oil refining company of Abu Dhabi. The company needed to store its sulphur stockpile — a byproduct of its refining process — as well as associated equipment.

Dodsal teamed up with Geometrica for the supply and installation of an eco-friendly 135m super-sized aluminum storage dome to aid in the expansion of the Ruwais refinery. The design had to account for building the dome at the same time as the stacking and reclaiming equipment, as well as the incoming conveyor. Today, it contains a the sulphur bulk and secures the surrounding landscape from environmental hazards and pollutants.

Domestic Solid Waste Management Center, Qatar

After designing and installing the Marchwood solid waste dome in the UK, contractors shared the news in Qatar. This word of mouth brought Geometrica to the attention of Keppels Seghers, who had a similar project in Qatar. Geometrica was honored to manufacture an architecturally unique dome for their Qatar Domestic Solid Waste Management Center.

Spanning a 2000m² rectangular area with seesaw elevations, the waste to energy storage dome supports

the treatment and processing of domestic solid waste for the whole of Qatar — recycling select materials and using organic waste to generate various forms of energy. More than 95% of the waste is reclaimed or converted into energy, with less than 5% of the materials entering the facility diverted to a landfill. The facility is capable of treating up to 2,300 tons of domestic solid waste per day, and incinerates approximately 1,000 tons of other waste.

A Portfolio Around the World

From applications in the Middle East to projects in Asia, Africa, and the Andes, Geometrica is a leading expert in geodesic technology. Regardless of heavy snow loads, brutal slopes, corrosive saltwater or hurricane-force winds, Freedom technology offers all-terrain solutions worldwide. The question is, "What can Geometrica build for you?" To learn more, please inquire at www.geometrica.com.

For more information, please contact:

Melanie Saxton

Communications Liaison

Geometrica World Headquarters

Email: saxton.m@geometrica.com

Tel.: +1- 832- 220- 1200

Gebr. Pfeiffer SE wins order for cement vertical roller mill in Saudi Arabia

The Chinese General Contractor Chengdu Design & Research Institute of Bldg. Materials Industry Co., Ltd. headquartered in Chengdu placed an order with Gebr. Pfeiffer SE for the supply of an MPS 3070 BC cement mill for Readymix in Saudi Arabia. The mill with an installed drive power of 1100 kW will grind

30 t/h of granulated blast-furnace slag and 46 t/h of OPC to a fineness of 4000 cm²/g and 3600 cm²/g, respectively.

Delivery of the equipment is scheduled for 2015.

AUMUND provides Belt Bucket Elevator for Grain Sizes up to 80 mm

Bucket elevators are playing a standard equipment role in the bulk material conveying technology wherever vertical conveying is involved. In more than 30 years, AUMUND continuously refined the bucket elevator technology and offers nowadays strong and most capable solutions worldwide for the vertical transport of bulk material. The standards forged by AUMUND have been proven in practice a thousand times over. AUMUND belt bucket elevators are characterised by large conveying heights of up to 200 m and conveying capacities up to 2,500 t/h. The AUMUND Belt Bucket Elevator BWG-GK for coarse grain makes the transport of material of grain sizes up to 80 mm possible.



Fig. 1) AUMUND Belt Bucket Elevator type BWG-GK for coarse grain: The narrow, overlapping bucket configuration permits the belt to disappear entirely behind the buckets. No coarse material will be thrown behind the backs of the buckets, even after stoppage

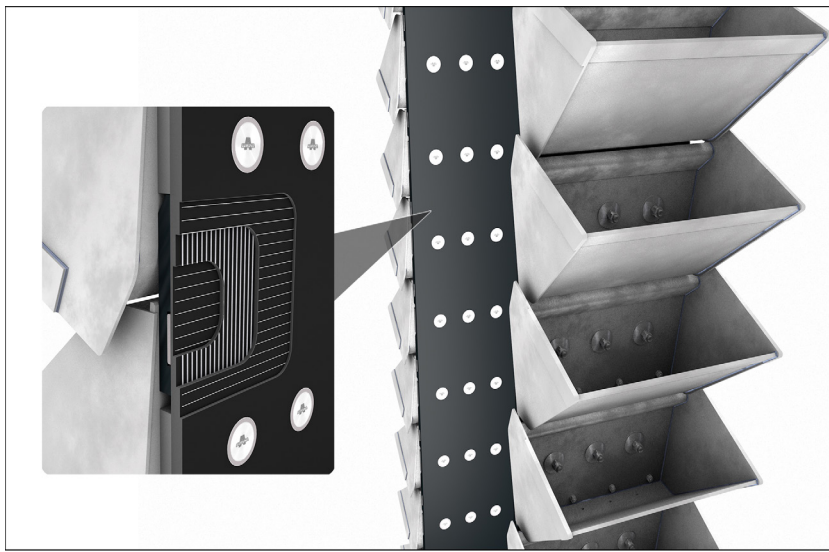


Fig. 2) The AUMUND belt design for reliable bucket attachment

The main task during development of a belt bucket elevator for coarse material is the protection of the belt from damage by the conveyed material. AUMUND therefore follows a new path: the narrow, overlapping bucket configuration permits the belt to disappear entirely behind the buckets. It is thus protected and no coarse material can become jammed between the backs of the buckets and the belt. The outer edges of the belt are simultaneously protected. Even in the case of a stoppage with filled buckets, no coarse material will be thrown behind the backs of the buckets (Fig. 1).

Another task is to ensure a safe bucket attachment and, considering the loading conditions of the buckets, even in case of scooping. Here, the design of the AUMUND steel cord belt with transversal steel cord reinforcement provides high pull-out strength and a reliable fixing for the bucket fastening. These plate screws can be used exclusively for fitting the buckets (Fig. 2).

The plate screws developed by AUMUND differ significantly from conventional DIN plate screws and have been designed for a longer belt service life and higher carrying capacity. Therefore, further attachments to increase the clamping force at the bucket fastening are not necessary. The advantage: the belt runs smoothly and without high abrasion on the drive pulley. Only small dead loads have to be transported.

Furthermore, the belt of a bucket elevator needs to provide a high tensile strength, a low net weight and a low elongation, while simultaneous running in good alignment is demanded. This is achieved by a specialized production process and most of all by a high transversal rigidity. The bucket elevator belt has to be optimally designed for its attachments like buckets, rubber seals and endless splices in order to function as a reliable complete system in daily operation, even after many years. All this is ensured by the carcass construction of the AUMUND Bucket Elevator Belts

in combination with the AUMUND bucket fastening system. Closely spaced high-tensile steel cords act as continuous tensile members.

This allows belt strengths up to 4,200 N/mm for lift heights of more than 200 m. On the front side as well as on the back side of the tensile members steel cord transverse reinforcements strengthen the belt. In contrast to reinforcements with textile fabric inlays, the advantage of steel cord transverse reinforcements is the higher adhesion of the rubber. This higher adhesion ensures a permanent connection of the individual belt layers, even under the influence of temperature.

Newly developed rubber compounds based on ethylene propylene diene monomer (EPDM) allow operational ranges up to a material temperature of 150 °C for AUMUND Belt Bucket Elevators. Even peak temperatures up to 170 °C may be reached. Load tests under industrial daily routines proved that EPDM-belts are much more resistant to aging than belts made of styrene-butadiene rubber (SBR). For more information, please contact:

AUMUND Fördertechnik GmbH
Reiner Furthmann – Technical Director
Saalhoffer Straße 17
47495 Rheinberg
info@aumund.de
www.aumund.com



SITI B&T Group at Ceramics China: energy efficiency and complete solutions for large sizes



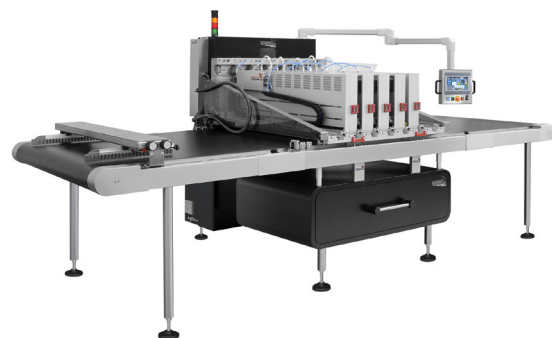
SITI B&T Group's strong presence in the Chinese market reflects its global leadership as a complete plant supplier capable of providing ceramic manufacturers the world over with cutting-edge solutions and specialised machines for all stages of the large format tile production process. The Company recently presented a highly innovative and integrated range that encompasses everything from raw materials preparation through to finishing. In particular, this includes pressing and firing, the core stages of the production process, along with cutting-edge technologies for digital decoration.

In spite of the slowdown in 2014, China remains by far the world's largest ceramic tile producing country. "Faced by these difficulties, all producers should be encouraged to invest with a view to improving their internal organisation, rationalising plant and focusing

on innovation and efficiency to improve the technical and aesthetic quality of their products," argued the Group's CEO Fabio Tarozzi. "Only by doing this will it be possible to maintain a presence in the slightly contracting domestic market and increase average selling prices."

SITI B&T is contributing to this strategy with technologies capable of producing energy savings and delivering excellent manufacturing performance.

SITI B&T products include the Greenfire® XXL kiln for large-format tiles – which delivers unmatched energy efficiency with fuel savings of 30% and a more than a 25% increase in productivity – and the Greenburners range, in particular the Titanium® heat recovery burner. One of the new products unveiled at Tecnargilla 2014 is Supera®, the new frontier of pressing for large-format tiles and panels which combines versatility and flexibility with high energy efficiency.



OUR COAL MILLS. NO. 1 WORLDWIDE.



GEBR. PFEIFFER



Patrick Heyd, Executive Director
Sales and Project Engineering

Pfeiffer MPS - Coal mills supplied by the global market leader

Innovative technologies and excellent quality make Gebr. Pfeiffer the market leader for coal grinding: The troughed grinding track of the Pfeiffer MPS coal mill ensures optimum processing of almost any type of coal and pet coke - even when the feed moisture is very high. Various products can be ground in one mill without having to install a frequency converter on the main drive, making Pfeiffer MPS mills particularly flexible and cost-efficient. We also developed the largest coal mill in the world with a throughput rate of 100 tph.

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more than
2000
Pfeiffer
coal mills
worldwide

Any questions?
Feel free to contact our experts at
coal@gebr-pfeiffer.com

www.gebr-pfeiffer.com



Amongst the solutions for the end-of-line stage, Ancora – a company that recently joined SITI B&T Group – presents the Speed Dry high-speed squaring machine and the innovative Hi-Coat® surface treatment system.

In the field of digital decoration, Projecta Engineering presents the Full Synchro 3D digital line, a combination of various technical processes that exploit dialogue between different machines (EVO7, EVO5 and EVODryfix) to achieve a high degree of flexibility and perfect synchronisation between digital graphic design, texture and dry applications of materials to create rich, complex and innovative products. Add to this, EVO7 133, the digital decoration machine for large sizes, and EVOstore, the mobile system for box colour changing. Digital Design presents its Colour Management system for processing digital images and optimising the decoration process from scanning through to printing, with live demonstrations of chart reading to check colours, create CC colour profiles, hard and soft proof tiles, etc.

In the sanitaryware sector, B&T White presents the revolutionary Circle high-pressure casting machine and the innovative range of porous resin moulds.

Last but not least, work has begun on SITI B&T Group's new Chinese factory in Gaoming, which will extend over an area of 20,000 sq.m and offer the best possible service to manufacturers in China and other major Asian markets. Involving an investment of 6 million euros, this new factory will consolidate the Group's global reach and its strategic presence in all the world's ceramic manufacturing clusters.

SITI B&T Group

SITI B&T Group is a manufacturer of complete plants for the world ceramic industry with an extensive presence in all global markets. It delivers outstanding technological solutions and innovative services with a special focus on energy efficiency and reducing production costs.

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 divisions: Tile (complete plants for tile production), Projecta Engineering and Digital Design (digital decorating machines and digital graphic design projects) and B&T White (complete plants for sanitaryware). The Group has a current turnover of around 180 million euros and an export share of more than 80 percent.

The company Ancora, a leading manufacturer of complete lines for ceramic tile finishing operations, joined SITI B&T Group in February 2015. Ancora has installed more than 800 lines in 40 countries worldwide and has an annual turnover of 23 million euros.

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FLSMIDTH
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What cars and kilns have in common:

Loosening the link to fossil fuels cuts costs, provides new alternatives

Hybrid cars are slowly conquering the streets worldwide. Not focusing on one fossil fuel but keeping the whole range of alternative energies in view is currently paving the way to future mobility. Thus technologically improved machinery will save energy and protect the environment by limiting exhaust emissions.

What is true in small-scale combustible engines has been proven the way to go in industrial production processes. For many years the cement industry appreciates the advantages of combining various fuels for maximum cost control. Locally available low-price materials from biomass to tire chips replace conventional fuels such as oil, natural gas, coal or lignite and keep kilns turning worldwide. The use of alternative fuels liberate enterprises from their dependency on worldwide price developments on the energy market. Waste or otherwise superfluous biomaterials are mostly excess produce and available for low-cost procurement.

Proven and tested concept

When it comes to properly dosing the great variety of materials into a plant's rotary kiln or calciner, the rotor weighfeeder Pfister® TRW-S/D has proven its efficiency in 240 implementations worldwide (Picture 1). Replacing or working side by side with the rotor weighfeeder Pfister® DRW for conventional pulverized fuels, plant management in 44 countries chose the Pfister® multifuel dosing concept for reliable and flexible low-maintenance operations.

The greatest challenge in dosing alternative fuels is their diversity (Picture 2). Particle size, density and water content are never the same. Refuse-derived fuels (RDF) are fluffy, fibrous or compressible, biomass or sewage sludge may contain additional moisture; others, such as bone meal, are powderous, requiring sensible

distribution management.

Locally available materials range from wood dust in Scandinavia to dried sewage sludge and biomass in Egypt or tire chips and landfill-materials in other parts of the world.

Where there is great flexibility in materials available, production machinery must follow suit. The rotor weighfeeder Pfister® TRW-S/D is designed for a broad variety of alternative fuel installations and reliably performs pneumatic material feeding to kiln burners or mechanical material transport into calciner inlets.

The challenge with alternative fuels: they never come in a completely homogenous masses. Like, for example, in an Irish cement plant which fires RDF with wood waste to the calciner. These wood particles vary considerably in size but are still accurately dosed and passed on by rotor weighfeeder Pfister® TRW-S/D. (Picture 4) Experience shows that hardly any alternative bulk material is delivered without any foreign bodies included. Plus, in some cases, the plants pre-preparation of the material might fail. This is why FLSmidth Pfister is elaborately testing all different kinds of alternative fuels as well as different sizes and bulk densities at their own test stands. Those tests showed that the elaborate design of the rotor weighfeeder Pfister® TRW-S/D prevents blockages even when unexpected foreign bodies are included in the material. The biggest foreign body at the test stand was even 300 x 300 x 10 mm in size. Tire-shreddings with steel wiring, long corn straw, even liquid-filled plastic bottles in the material mixes did not effect the weighfeeders performance. Smart design and experience in the field make Pfister® weighfeeders sturdy and reliable additions in the production lines of cement and lime manufacturers around the globe.

So a convincing asset of rotor weighfeeder Pfister®

TRW-S/D is that it is able to dose varying secondary fuels in a wide density range ($70 \text{ kg/m}^3 - 700 \text{ kg/m}^3$) as well as weight range (1:10) with one and the same system. Virtually each and every alternative fuel bulk material can be employed without any rebuilding of the weighfeeder.

The workings

Imagine a circular conveyor. That is the raw concept of how the rotor weighfeeder Pfister® TRW-S/D works (Picture 5). It is a fully enclosed gravimetric dosing system that feeds, weighs and discharges kiln fuels in exactly measured amounts for perfect temperature control in the kiln. The material is transported from the inlet to the outlet, producing a moment around the weighing axis, which is measured by the load cell device. The weighing electronics control the motor speed according to the set point and adjust the rotor speed and thus the actual feed rate with no delay. Additionally, stable fuel dosage is controlled by the patented proactive control strategy ProsCon® for long-term accuracy and outstanding burning conditions (Picture 3). Very light materials such as plastics with their extremely low gravimetric force are measured in material layers of up to 500 mm in the feeder.

In order to ensure optimum feeding control of all fuel materials, the control strategy ProsCon® is preconfigured and adapted by FLSmidth Pfister electronics specialists to customers individual requirements. So no configuration know-how on the client's side is required. But of course all parameters (mass flow, motor speed, current...) will be sent via Profibus to the control room.

Long-term investment

With feed rates of more than 25 tph and great flexibility in material size and density customers integrating a Pfister® rotor weighfeeder into their plant installation are investing in future-oriented technology. With its modular design concept it integrates easily in future plant extensions or relocations. Its stand-alone, low-maintenance system requires no additional support and no special or additional tools. All parts that come in contact with the various fuels are made of steel and there is only one rotating part in the weighfeeder, the rotor wheel itself. The pre hopper is equipped with a

stirrer, which lifts and homogenizes the material by avoiding any compression.

For the processing of potentially flammable alternative fuels such as sawdust or sewage the rotor weighfeeder Pfister® TRW-S/D comes in explosion-proof design and with an ATEX-certificate.

Facts & Figures

A minimum of 3300 kilojoules (in the dry process) up to 5000 kilojoules (in the wet process) of energy are needed for the production of one kilogram of clinker. Cutting energy costs in half smartly using secondary fuels seriously increases overall earnings and makes clinker production both profitable and efficient.

240 latest model rotor weighfeeders Pfister® TRW-S/D sold in 44 countries from Argentina to the United States of America.

Energy derived from refuse (RDF) replaces valuable fossil energy carriers. As a result of continuous technological upgrading, one of the world's large cement manufacturers, Cemex, substituted more than 28 % fossil fuels by secondary fuels in 2013. Picture 6:

More information: www.flsmidthpfister.com

Author: Dr. Martina Klug, Pictures/captions: see below



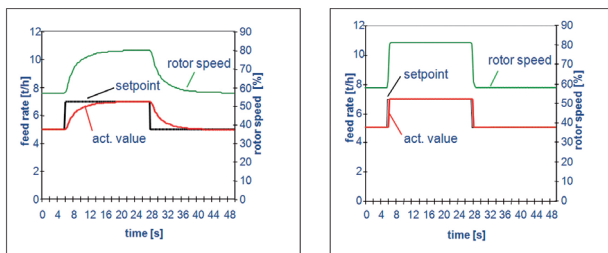
Picture 1:

An into rotor weighfeeder Pfister® TRW-S/D which is designed for dosing of alternative fuels



Picture 2:

Examples of secondary fuels which could be employed for firing in a cement plant



Picture 3:

The prospectively working dosing electronics of the rotor weighfeeders Pfister® TRW-S/D focus on a constant material output and adjust the rotor speed according to the set point while operating (right diagram). In contrast conventional follow-up control systems are swinging (left diagram)



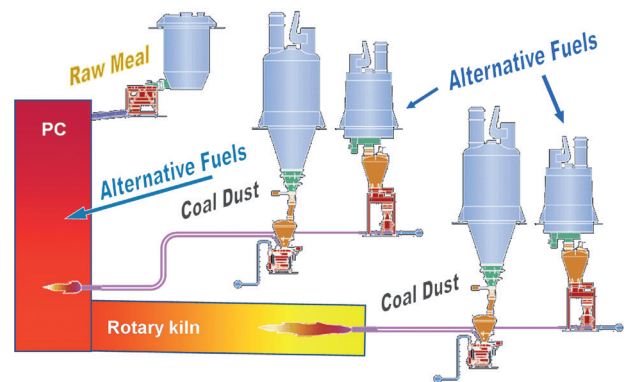
Picture 4:

Inhomogeneous wood waste material of different sizes which passed the rotor weighfeeder Pfister® TRW-S without problems, but created problems in the conveying pipe



Picture 5:

Rotor weighfeeder Pfister® TRW-S/D as it gets employed for dosing of alternative fuels in cement plants



Picture 6:

FLSmith Pfister GmbH:

German based FLSmidth Pfister GmbH, a member of Danish FLSmidth A/S, is specialised on weighing and dosing technology for demanding industrial environments. With in-depth knowledge and inspired technical ideas FLSmidth Pfister has made it to the worldwide market leader for coal feeding applications. FLSmidth Pfister is the inventor of the patented Pfister® rotor weighfeeder – the outstanding gravimetric dosing technology whose properties have proved their excellent reliability and accuracy in more than 2,500 installations worldwide. Company Adress:

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**Flexible Solutions
for Intake, Storage, Import and Export
of Materials and Fuels**

**by Hicham Saouab
AUMUND France S.A.R.L.**

*Submitted at AUCBM's 19th Arab International Cement Conference and Exhibition,
Marrakech, Morocco: 11-13th November 2014

Overview

During recent years the Cement industry has suffered significant increases in operating costs driven in particular by spiralling energy prices plus pressure from environmental lobbies to reduce dependence on fossil fuels and reduce CO₂ emissions overall. Considering the production of a ton of conventional Portland Cement generates almost a ton of CO₂ and in terms of total greenhouse gas emissions for all Industries worldwide places cement second only to power in the scale of global polluters.

These factors have generated an increased awareness of additives material possibilities and substitute raw material options for cement production, reflecting also an increased demand for blended cements particularly including ground granulated blast furnace slag (GGBFS); for every ton of GGBFS included in the final blended cement the total CO₂ production is reduced by around 800 kilos...

In addition, whilst sustainability demands issues such as alternative fuels and substitute raw materials must be addressed to reduce the plant CO₂ footprint there are other environmental obligations such as dust pollution, noise pollution and visual intrusion which must be considered.

Whilst the processes behind the use of additives and substitute raw materials is well understood the range of materials involved is extensive and the varying handling characteristics of these materials, from light dry ground cementitious powders through to heavy iron ores and extremely cohesive co-products such as Synthetic Gypsum..

In general many of these materials are difficult to handle reliably varying from extremely free flowing to very sluggish and prone to bridging and blockage and liable to agglomerate in storage. Granulated blast furnace slag for example is also extremely abrasive with wear rates some five times greater than cement clinker in comparable installations.

The AUMUND Group, including SAMSON and SCHADE, recognise these challenges and have developed innovative solutions for many of these handling problems with special adaptations of existing designs tailored to suit the specific demands of these new applications. Combining the traditional strengths of the AUMUND Group products with new concepts to improve plant design flexibility and reduce project costs AUMUND offer fast track effective solutions allowing clients to capitalise on short term market positions and maximise plant profitability.

Market Conditions

In today's rapidly changing international market the ability to react quickly to market volatility and take advantage of short-term market positions is essential if operators are to maximise profitability and return on capital invested.

This is particularly true for co-products from other industries which are now attracting significant attention for other potential users creating an active market.

The price to the end user of these co-products is substantially governed by the logistical cost of delivery which itself is a function of fuel costs since in the main such materials are shipped almost exclusively by road vehicle.

Under these conditions the cement manufacturer has a difficult calculation to make when evaluating the payback period of any new plant investments dedicated to the handling of additives and/or substitute raw materials and as such reduced installation cost and flexibility are key issues when making these decisions.

Key Plant Design Issues

Within the range of applications we shall discuss herein there are several common themes, dust control to mitigate environmental pollution, availability ensuring the plant runs smoothly without costly unscheduled outages and plant amalgamation ensuring the seamless integration of handling and storage facilities.

In addition to these fundamental design requirements in order to react quickly to changing market circumstances one further element must enter the equation that is flexibility both in operation and location.

To maximise the financial benefits relating to any new plant process clearly the overall economy of the project, including all associated civil and electrical works is generally the overriding factor.

In addition flexibility in location and suitability for other materials and applications is an attractive combination in that should the relative economies of the intended project change significantly it is always useful if the acquired equipment may be reused elsewhere and therefore the investment risk mitigated.

With few exceptions the costs associated with rail car delivery of these alternative materials is prohibitive therefore road delivery is generally the most cost attractive option. Intake by tipping truck is always sensitive to fugitive dust pollution and necessary control measures are generally required to minimise any environmental impact.

A successful and economic new plant installation must address these key issues if the financial rewards, environmental benefits and process demands are to be realised...

The AUMUND Group products such as Clinker Transport and Vertical Bucket Elevators have been synonymous with quality and reliability for many years and now with the integration of the SAMSON products

such as the Samson feeder AUMUND are able to offer improved flexibility also...

Additives and Clinker Intake

In 2002, SAMSON of the UK were acquired by the AUMUND Group adding their range of mobile Stackers and Shiploaders, plus the Samson surface feeder, to the Group portfolio.



Lafarge Morocco Additives Intake

By combining the Samson surface feeder with the AUMUND BWZ central chain vertical bucket elevator additives material such as Limestone, Posolana and Gypsum Rock plus clinker as illustrated in the following example installed at the Tangier plant of Lafarge in Morocco.

Cement clinker is imported to the plant by road truck discharging direct to the Samson® surface feeder thus eliminating the need for a conventional underground hoppers saving both on capital and operating costs. The plant is designed to achieve an average intake rate of 300 tonnes per hour.

STORAGE OF FUELS

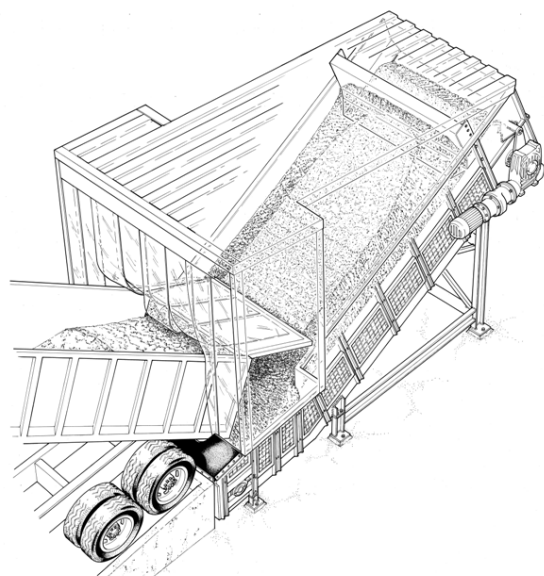
Combining the Samson® with an AUMUND vertical elevator provides a compact solution minimising the total plant footprint and providing maximum flexibility in plant location.

The imported clinker may be transferred by truck from another plant nearby where there may be excess capacity or may be discharged from ships generally using a grab crane combined with a dust controlled Eco-Hopper as described later herein.



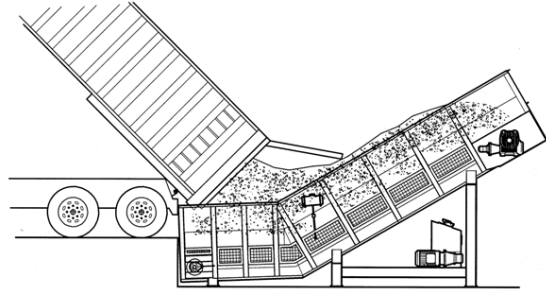
Raw Material and Additions Intake

For the intake of clinker and similar material from road tipping truck the SAMSON (AUMUND Group) "Samson" surface feeder is the ideal solution.



Flexible Surface Installation

Being surface mounted the Samson does not require any deep underground pits or hoppers and may be simply installed on a flat concrete base with a small truck access ramp as illustrated below.

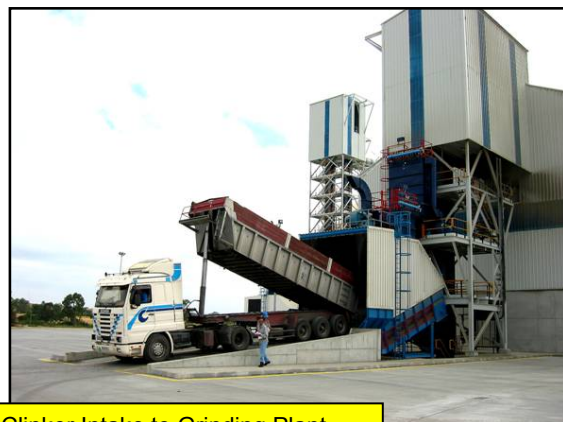


Reduced Dust Pollution

Since the Samson is surface mounted civil works costs are drastically reduced and problems associated with local ground conditions and water ingress linked with deep pits is eliminated offering much improved flexibility in plant layout.

As illustrated above the bulk material is drawn into the Samson body by the forward moving conveyor, sliding from the truck body in a controlled stream with minimum free-fall.

By eliminating material free-fall even the dustiest materials such as Cement-Clinker do not have the opportunity to separate into particles and therefore dust generation is minimised at source. In addition since the material is moving only at the speed of the Samson conveyor the velocity of the displaced air is minimal and there is no tendency for dust particles to be created and swept out of the Samson enclosure.



Clinker Intake to Grinding Plant

With the Samson in many applications no dust control equipment is required saving not only on capital costs but also on ongoing operational costs.

Illustrated below at a completely new green-field site Grinding Plant a total of three Samson surface feeder units were delivered including two "Side-Tip" versions all discharging to either flat or Dome storage via vertical bucket elevators.



Additions Intake to Grinding Plant

A similar installation is illustrated below but in this case the clinker import station is incorporated to an existing plant where space was at a premium and the side tipping design allowed the new Samson feeder to discharge directly to an existing clinker conveyor.



Imported Clinker Intake

Recently the application of the Samson feeder concept has been expanded to import of clinker and other material direct from railcars.

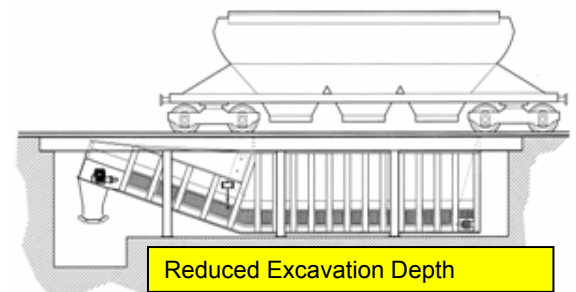
Whilst it is not possible to receive from railcars without underground pits the Samson solution mitigates the pit depth and therefore simplifies the installation with considerably reduced civil works costs.

As illustrated below the Samson 800 Series under-rail feeder provides 80 tons of buffer holding capacity and a controlled rate discharge to the local storage facility.



Samson Rail Intake Facility

As illustrated below the Samson may be installed in a shallow pit requiring an excavation depth of only 3.5 metres. This significantly reduces the associated civil works costs making the whole installation more economical.



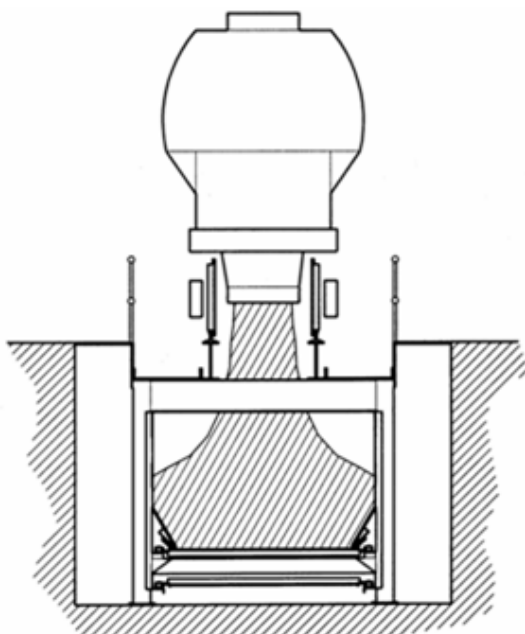
Also, the raised discharge design permits a simplified transfer to the ongoing conveyor system reducing the need for additional pit depth.

With all railcar intake facilities dust control is a major issue. As mentioned previously dust is generated when particulate separation occurs in the free-falling material stream,

The free dust particles may be easily wind blown or carried by displaced air into the surrounding area causing considerable fugitive dust nuisance.

This is particularly true of tapered hoppers where the material falls into the narrowest part of the hopper at the greatest velocity causing the displaced air to be ejected at a correspondingly high speed.

Since the Samson body is wider than the railcar the material flows outward from the hopper gates with the minimum of free-fall thus minimising particulate separation.



Reduced Dust Generation

Since the free-fall distance is minimised the material velocity is similarly minimised therefore further reducing particulate separation. As the material flows outward and at reduced velocity the velocity of the displaced air is also significantly reduced

By reducing the material particulate separation and reducing the velocity of both the material free-fall and displaced air the overall effect is to reduce overall dust creation and associated environmental pollution.

By reducing dust creating at source in this manner in many applications dust control measures are unnecessary or at least significantly reduced thereby reducing both capital and operating costs.

For the Villaluenga plant of Lafarge Asland combines the benefits of the Samson® surface feeder with a MMD size 500 rotary sizer to obtain a regulated material size at the outlet in the range of 0 to 50 mm.



Lafarge Asland additives intake with MMD type 500 rotary crusher

In this application the Samson® will intake a range of materials including Gypsum, Clinker and Limestone all of which will pass through the Sizer and on to a troughed belt conveyor mounted at 90 degrees to the Samson axis.

Both the Limestone and Gypsum are quarried locally and transported to the plant by conventional road style tipping trucks that discharge directly to the Samson® or to a local ground stockpile. The rock is graded at the quarry to a size range from 100 mm to 300 mm with the occasional larger lump up to 500 mm.

Clinker may be imported to the plant similarly using road trucks either from an adjacent cement plant or through the local port complex.

From the intake facility the material may be raised by a vertical central chain elevator to silo storage.

The ability of the Samson® surface feeder to handle multiple material types is a clear and demonstrable benefit in these applications where one set of equipment only is required for multitasking.

Thanks to the “Wide-Apron-Belt” design the Samson® concept is equally suitable for handling free flowing clinker or, at the other extreme very cohesive materials such as Synthetic Gypsum... without modification...

Another example comes from CALCIA of the Italcementi group which operate a large cement production facility at Beaucaire and have recently installed a new Petroleum Coke intake and silo storage facility including a Samson® surface feeder to receive the incoming material by tipping truck imported from a local port.

Beaucaire is a small town and commune in southern France, in the Gard *département* of Languedoc-Roussillon. Steeped in history going back to pre Roman times and an important tourist destination in the South of France and as such any new process plant installed in this area must be extremely sensitive to environmental pollution standards.



CTG Italcementi Pet Coke Intake

Whilst this is a common application for the Samson in this case to respect the rigorous environmental standards imposed by Italcementi a special enclosure was designed with an extended section at the entry of the Samson® such that the discharge from the truck is totally enclosed and any material spilt from the truck is contained within the enclosure to eliminate any risk of wind blown dust pollution.



Samson with Integral Screen

Also unique for this application the Samson® discharges direct to a vibrating screen to take out any over size pieces or tramp material before the Pet-Coke is conveyed to the storage silos by enclosed troughed belt conveyor.

For the intake of limestone rock direct from a local quarry in this application at Salonit Anhovo in Slovenia a Samson® 1600 Series feeder take rock direct from 60 ton capacity mining dump trucks providing a live buffer holding capacity of around 120 tons (two truck loads) and a controlled rate discharge to the ongoing conveyor system and storage facility.

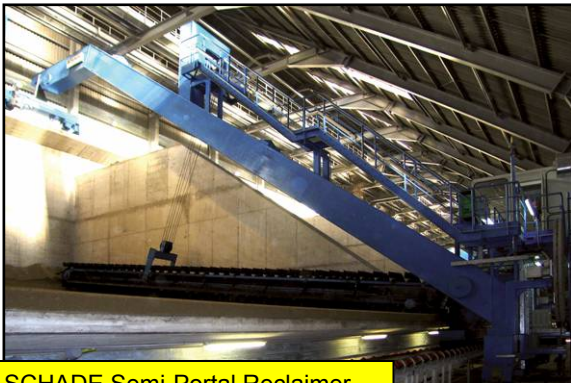


Limestone Intake to Samson 1600

The Samson® 1600 Series feeder is massively constructed to absorb high impact loads and is presently the largest design offered by SAMSON. With the capacity to provide up to 150 tons of live storage and a controlled discharge rate of up to 2,000 tons per hour handling heavier materials such as iron ore.

From the Samson® the limestone is transferred by troughed belt conveyor to an adjacent storage building and distributed into bays using an overhead travelling shuttle conveyor system.

From the individual storage bays the various grades and types of material are recovered automatically using a SCHADE (AUMUND Group) Semi-Portal design chain scraper reclaimer.



SCHADE Semi-Portal Reclaimer

Within the same building bays are also provided for the storage of pet-coke as kiln fuel and a separate semi-portal reclaimer provided for the independent recovery of the fuel, also by SCHADE.

The semi-portal design is a very economical arrangement where multiple material types are to be stored within the same building structure.

This particular application is another good example of combination of AUMUND Group products in an efficient overall package with the option of local manufacture of steel structures for example. Or, supply of engineering only for such as conveyor bridges, towers and the like allowing the client to arrange local fabrication.

Imported Clinker

With spiralling energy costs and continually changing economics within the cement industry worldwide there are geographical areas where clinker production may be economical but demand is slack and therefore the excess clinker capacity may be exported to satellite grinding plants in other countries where clinker capacity is not available or cost prohibitive.

Often the clinker will be exported by road truck and ship to be imported by grab and then transferred to the grinding plant using a fleet of tipping trucks working on a merry-go-round principle.

Clinker imports are generally handled by geared vessels with on-board grab cranes able to discharge without the need for fixed shore-side equipment such as continuous ship unloaders.

Discharge by grab is notoriously dusty and a real environmental hazard if not properly managed using a dust controlled grab hopper by AUMUND as illustrated below.



The SAMSON Eco Hopper

The “Eco-Hopper” comprises an inner and outer hopper with Flex-Baffles between allowing the material to flow freely into the hopper but constraining and back flow to minimise dust generation.

Air displaced by the falling material is evacuated from the hopper inner bowl by reverse jet dust filters mounted around the hopper periphery between the inner and outer garners.



The AUMUND Dust Controlled Chute

Single or multiple Eco-Hoppers may discharge direct to quayside belt conveyors using the AUMUND control gate. However, the hopper may discharge direct to open trucks using the AUMUND dust controlled loading chute as illustrated below.

Clinker Exports

For the export of Cement Clinker the AUMUND Group offer a unique solution based on a fully developed Mobile Shiploader designed to operate on an existing berth without fixed port infrastructure.

Illustrated below a Mobile Shiploader operates at the port of Gizan loading vessels typically to Handymax size (40,000 DWT) receiving material from the inland cement plant of Southern Province Cement.

The clinker is transferred to the port on a fleet of tipping trucks and stored locally until a ship is chartered. The Shiploader will receive material either direct from the tipping trucks or from the local storage using large loading shovels.

As illustrated the integral Samson feeder is equipped with a full enclosure and integrated dust extraction to minimise pollution at the loading point.

However, in any ship loading operation the bulk of the dust generated is always at the transfer from the boom conveyor to the vessel hold where a vertical free fall of around 20 metres may be expected.

To minimise dust pollution from the vessel hold this Shiploader is equipped with a dust controlled loading spout suspended from the boom head as illustrated next page.



Mobile Shiploader Exports Clinker



Dust Controlled Loading Spout

In addition the Shiploader is also supplied with full function powered travel facilities and an on-board diesel gen-set allowing the unit to operate autonomously without shore side electrical supplies.

Many other variations in specification are available with for example Twin Samson feeder units to boost the handling rate where truck only deliveries are required.

Or, as illustrated below, the Shiploader may be combined with fixed local storage and railcar intake facilities offering a combination of fixed and mobile solutions.

In all of these applications the Mobile Shiploader offers the client and the port operator complete flexibility in operation and the option to easily relocate the equipment should conditions demand. Even when combined with fixed machinery the Mobile Shiploader retains the flexibility to move the equipment off the quay when not required thus freeing the berth of other operations.

The use of mobile equipment generally simplifies the negotiations with the port and other local authorities to obtain the necessary permissions.

And, since no fixed civil works are required this is a fast track solution allowing clients to maximise the opportunities offered by short term market positions.



Dome Storage + Mobile Shiploader

Substitute Raw Materials

Cement production is both heavily energy intensive and a major greenhouse gas polluter generating roughly 1 ton of CO₂ for every ton of Ordinary Portland Cement.

Traditional raw materials, limestone, clays and shale incur significant costs for mining, crushing and handling all of which are energy intensive activities often involving significant truck haulage with associated environmental problems.

Materials such as Fly Ash, Flue Gas De-Sulphurised Gypsum and Granulated Blast Furnace Slag are all co-products of other industries and as such their use in Cement manufacture is environmentally positive.

As with Pet-Coke the economics surrounding the use of these materials depends upon the logistics involved in the delivery to the cement plant but where the resource is within reason close by to the consumer the economics are generally favourable.

A co-product of the coal fired power plant is Flue Gas De-Sulphurised Gypsum or Synthetic Gypsum which may be used as a direct replacement for natural gypsum as an additives material.

Synthetic Gypsum is notoriously difficult to handle and will blind, block and bridge with the slightest provocation and is disinclined to flow reliably in chutes or from tapered or coned hoppers.

The material is generally delivered in traditional tipping type trucks and may be handed easily on conventional belt conveyors.

Illustrated below a SAMSON ship loading unit, including a Samson feeder, receives material from tipping trucks and deliver direct to small vessels for coastal shipment.

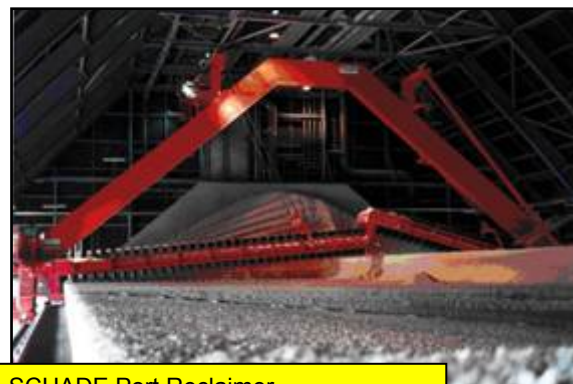


Mobile Shiploader for FDG Gypsum

As can be seen from the material in the vessel hold even when freshly loaded the natural repose angle is very high and after a short period of consolidation is near vertical and can even be undercut when after even short term storage in bulk.

The Samson is the ideal solution to receive the material and provide buffer storage since, thanks to the wide apron-belt construction, bridging and blockage are completely eliminated.

For the large scale storage of Synthetic Gypsum the SCHADE (AUMU/ND Group) Portal Reclaimer based on Chain Scraper technology is the definitive solution.



SCHADE Port Reclaimer – FGD Gypsum

Illustrated above a portal reclaimer is installed within a longitudinal storage building and arranged to recover material from the storage to a collecting conveyor running parallel to the building long axis.

In this installation, to minimise the building height, the reclaimer is supplied with a twin boom chain scraper arrangement as illustrated more clearly in the drawing below.

The two booms are joined with a unique connection arrangement to ensure smooth transfer of material and allowing maximum recovery of the stockpile volume.

Normally, since Synthetic Gypsum is stored within a building the material is loaded to the stockpile by overhead tripper conveyor as illustrated in the drawing above.

The design of the Tripper Car is also critical to the performance of the plant and this equipment may be supplied by SCHADE within the overall package.

The operation of the tripper and reclaimer are generally interlocked such that material may be delivered to storage and reclaimed simultaneously but never in the same section of the building. Generally the equipment operates fully automatically requiring the minimum of operator intervention.

Finally in this section we address the particular requirements of handling, storage and reclaim of Granulated Blast Furnace Slag (GBFS) and Ground Granulated Blast Furnace Slag (GGBFS).

Granulated Blast Furnace Slag is a co-product of the Steel Industry produced by rapid quenching in cold water of the molten slag recovered from the blast furnace; this process produces a granular, glassy, homogeneous, non-crystalline material that has cementitious properties.

GGBFS may replace 35% to 65% Portland cement in concrete with corresponding reductions in CO₂ emissions derived from the cement process resulting in obvious environmental benefits.

Grinding slag for cement replacement requires only about 25 percent of the energy needed to manufacture normal Portland cement.

Generally the material is delivered to the grinding contractor or cement plant by tipping truck either direct from the steel works or where this is not viable then via ship and then from the port to the plant by truck.



Holcim Carboneras Slag Grinding Plant

Illustrated above the GBFS is imported and delivered to this cement plant (Holcim Carboneras) direct from the port by tipping truck and stored in a simple ground stockpile.

Material is recovered from the stockpile by loading shovel to a Samson surface feeder equipped with a reject grill to remove large lumps caused mainly by agglomeration in storage. From the Samson the GBFS is transferred to the mill bunkers by conventional belt conveyor including a magnetic separator to protect the mill...

For the largest installations where high volumes are required the SCHADE stacker and reclaimer equipment is appropriate, as illustrated below at the cement plant of CCB Italcementi in Belgium.



SCHADE Automated Stacker for GBFS

The GBFS is delivered to outside stockpile using a travelling and luffing rail mounted boom stacker with tripper conveyor running parallel to the stockpile, see below.

As illustrated the GBFS is recovered automatically from the stockpile by a single boom portal chain scraper reclaimer which discharges the material to a troughed belt conveyor running parallel to the stockpile on the opposite side to the tripper system supplying the boom stacker.



SCHADE Automated Reclaimer for GBFS

The stacker and reclaimer are controlled automatically to allow simultaneous stacking and reclaim but operating from different sections of the stockpile.

Since GBFS is liable to agglomerate in storage and form large lumps effective stockpile management is required to ensure first in first out wherever possible.

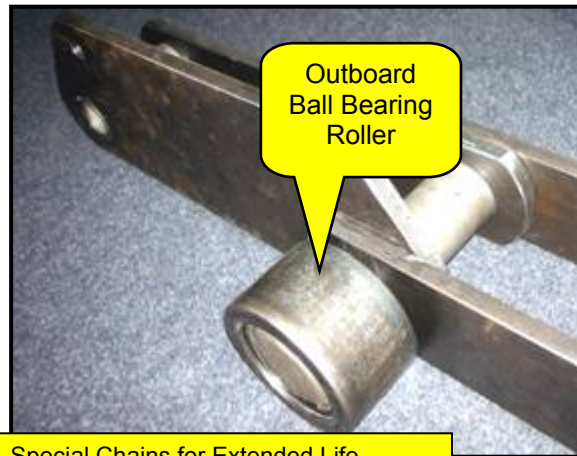
As an alternative to the portal type design the circular storage system may also be applied to GBFS storage and reclaim as illustrated below.

As with any other plant handling this material wear is an issue also with the chain scraper reclaimer and for these applications the outboard bearing chain is a standard requirement.



SCHADE Circular Storage for GBFS

The scraper chain and shovels are carried on the extended chain bolt and roller assembly, outside the material stream, and thus wear is minimised and the equipment operates at a much lower noise level also, as illustrated below.



Special Chains for Extended Life

Large Scale Storage Solutions

For over 125 years the SCHADE Lager-technik Company has developed an enviable reputation for excellence in engineering with the last 50 years specialised in chain scraper reclaimer systems for power plant and coal terminals.

In 2001 SCHADE joined the world renowned AUMUND Group benefiting from the AUMUND international sales and service organisation with strategically located offices in major business centres worldwide.



Cantilevered Boom Reclaimer

SCHADE won their first order for reclaimer equipment in 1952 for a German power plant followed rapidly thereafter with export orders in many different industries.

The early reclaimer machines were based on the cantilevered boom principle as typically illustrated above, although this is a later design and in this case specified for breaking out coal from frozen stockpiles; but the principle remains unchanged.

Even today the cantilevered boom design remains a viable option and is an economical solution for smaller stockpiles.

Notably in 1996 SCHADE supplied their largest Portal Reclaimer to that date with twin booms able to handle 3,200 t.p.h. of coal; similar to that illustrated below.



High Capacity Twin Boom Reclaimer

During the early days of the chain scraper reclaimer development the bulk of the business centred on the power stations of the Ruhr valley handling large volumes of coal, such as illustrated below.



Typical Solutions for Power Plant

A typical plant design such as this includes a high capacity stacking system to two parallel longitudinal strategic stockpiles each with a portal type reclaimer.

In addition two blending beds are provided using a central radial boom stacker with two longitudinal stockpiles and two bridge type reclaimers to deliver a homogenised blend of coals to the steam boiler bunkers.

In parallel with the development of integrated storages and blending systems for power plant SCHADE are also active in major coal terminals. The installation above being typical of the scale of these huge installations designed for handling several millions of tons annually.



The Classical Solution for Bulk Terminals

For this project two portal frame reclaimers are provided serviced by a central radial boom travelling stacker servicing two longitudinal stockpiles.

Blending and homogenisation is an important subject both for the power industry to ensure a controlled mix of various coal grades and similarly in the cement industry to mix and blend various grades of limestone and other materials.

For this purpose the bridge type reclaimer was developed typically as illustrated below in a coal blending bed.



Longitudinal Bridge Reclaimer

There are various solutions for blending depending upon the stockpile strategy which is effectively controlled by the type of stacker. There are fixed boom, luffing boom and luffing plus radial boom options; the latter offering the maximum flexibility.

Illustrated below the radial and luffing boom stacker enables material to be laid down in beds either conically (Cone Shell) or longitudinally in Strata or Chevrons.

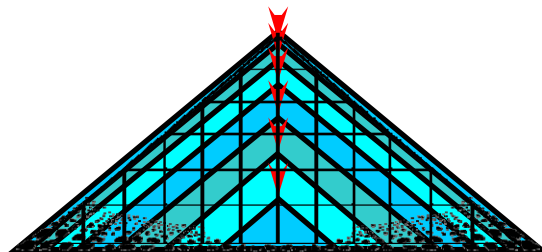


Longitudinal Radial Boom Stacker

For the best blending effect the Chevron stacking pattern is generally preferred built using the travelling and luffing function to generate the stockpile height incrementally with the boom always discharging to the centre of the blending bed.

In this manner the stacker is in almost continuous motion using a combination of level sensors and other detectors linked to a central on-board PLC such that the whole operation is fully automated.

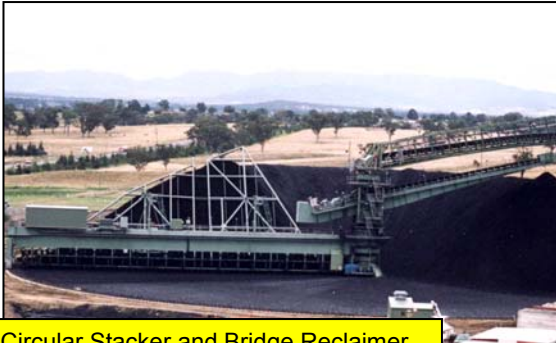
A typical strata section is illustrated below showing a coarse increment to demonstrate how the layers are built.



This system has a further advantage in that as the coarse material always falls to the outside of the stockpile these larger lumps are then effectively spread across the whole stockpile base and not concentrated on the outside.

Since the material is spread evenly from each source along the length of the stockpile no one source is concentrated in one section. Clearly the smaller the height increment for each pass the greater the final blending effect.

Longitudinal bridge reclaimers are based on a horizontal chain scraper mounted to rail carriages at each end and arranged to travel at 90 degrees to the stockpile.



Circular Stacker and Bridge Reclaimer

Or as illustrated above a circular blending bed has a fixed central slew ring with a central column and stacker with the bridge supported on the outer travel bogies mounted on a circular track.

For longitudinal stockpiles the horizontal chain scraper conveyor is deflected upwards at the discharge to transfer the recovered material onto a conventional belt conveyor running alongside the stockpile.

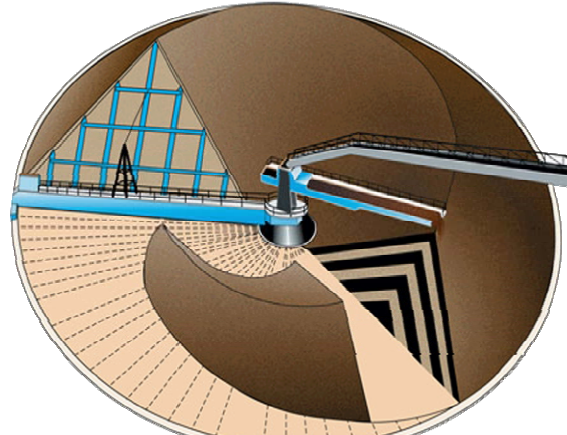


Bridge Reclaimer with Raised Discharge

This arrangement saves on civil works costs since the receiving belt conveyor, installed parallel to the stockpile, maybe at the same level as the stockpile base and a simple retaining wall employed to contain the material.

For circular storages the chain scraper generally discharges horizontally through a central outlet to a belt conveyor running in an underground gallery.

As with the longitudinal stockpile automated control of the boom stacker motion is essential to achieve the most effective homogenisation of the material by the circular bridge reclaimer.



Circular Stockpile Profile

The illustration above shows a typical stockpile profile generated by what is known as the “Chevcon” system originated by SCHADE to maximise the blending effect and stockpile capacity leaving adequate space for the reclaimer to operate.

Material is delivered to the stacker by belt conveyor arranged to span over the bridge reclaimer and discharge to the central axis of the stacker/reclaimer supporting column.

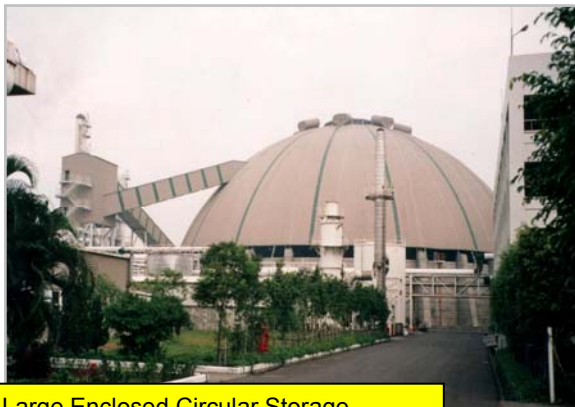


Enclosed Circular Storage

This column may support the head of the incoming belt conveyor also... thus saving on the cost of the bridge structure and eliminating any load transfer to the light weight fabricated dome cover.

To control the material flow from the stockpile face to the reclaim conveyor oscillating harrows, arranged to follow the material natural repose angle, move back and forth across the stockpile face using rakes to dislodge the material causing it to flow freely down in a steady stream.

The Bridge Reclaimer with oscillating harrow provides effective blending of the various layers of the stockpile where homogenisation is required.



Large Enclosed Circular Storage

Illustrated above is a typical circular storage scheme; comprising a stacker and reclaimer housed within a building including short vertical load bearing walls with a light weight dome structure above.

The Circular Storage offers an economical and compact solution compared to a longitudinal design with simplified enclosure requirements; ideal in today's environmentally sensitive market...

This argument is equally true for circular blending beds and also circular strategic storages where no critical homogenisation is required and therefore a simple boom type reclaimer may be employed.

This is well demonstrated by the recent projects SCHADE have undertaken in, for example, Taiwan with the Mai Liao power plant as illustrated opposite.

In this project coal is imported from Handymax size ships using a continuous ship unloading system discharging to belt conveyors which deliver the material to the SCHADE radial stacking boom conveyor, as illustrated below, with central column supporting both the stacker and reclaimer booms plus counterweight.

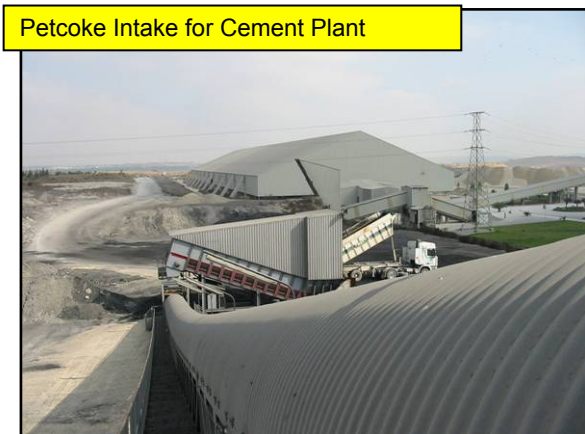
A total of nine units were delivered during the period 1996 to 1999 at 120 metres diameter for Taiwan plus a further 9 units for China of similar design with a stacking capacity 4,000 t.p.h. and reclaim capacity 2,000 t.p.h.. These were at the time the largest designs of that type ever produced



Circular Storage 120 metres diameter

From the SAMSON Company the Samson surface feeder has also been effectively utilised for the intake of bulk materials from tipping and dump trucks.

Illustrated below a Samson surface feeder receives Pet-Coke direct from road trucks in a cement plant located at Jerez in southern Spain (Holcim Group).



Petcoke Intake for Cement Plant

The Pet-Coke is imported through the port of Cadiz using grab cranes and trucked up to the cement plant on a merry-go-round basis with a truck frequency of around 3 minutes to maintain an effective ship discharge rate of 600 t.p.h..

From the Samson the Pet-Coke is raised up using a conventional troughed belt conveyor to the SCHADE circular storage.



Petcoke Circular Storage and Reclaim

This is an excellent example where AUMUND Group products may be combined into a complete new integrated solution and through a local partner a full turn-key project delivered including engineering for local manufacture if required.

In addition to the machinery and plant design considerations we also must address the civil works requirements and the environmental issues surrounding the stockpiling of bulk materials in general.

For outside storages there are considerable environmental issues particularly surrounding wind blown dust and surface water contamination.

Often stockpiles are located in areas exposed to severe weather conditions and high winds. In dry weather, if no measures are taken to wet the stockpile surface, significant tonnage of material will be lost and distributed in the locality as fugitive dust.

Not only is this dust a potential nuisance in itself, even if there are no neighbours to complain there are significant pollution considerations which in many countries are simply not acceptable.

For huge import/export terminals in the past the use of longitudinal stockpiles with portal reclaimers was the classic solution, as illustrated previously in this paper. And, this solution remains the only viable option in the major terminals and mine sites such as mentioned previously in Australia.

For smaller volumes where the site topography demands longitudinal storages then enclosure using a standard portal frame building is the obvious answer.

Generally in this situation material will be delivered to stockpile by a belt conveyor with travelling tripper mounted into the apex of the building, which must be designed to accommodate the extra loading.

A standard Portal Reclaimer cannot be used economically in this design due to the length of the reclaim boom as illustrated below.



Portal Reclaimer for Inside Storage

However, SCHADE have the solution to this problem... as illustrated below in Morocco.

In this implementation the reclaim boom is split into two parts to reduce the total height required and operate within economic building constraints.

The head of the auxiliary boom (right side) is supported to the tail of the main boom (left side) using a patented hinge arrangement to guarantee effective feeding from the auxiliary boom to the main boom scraper conveyors.

Using this system internal longitudinal storage may be implemented within reasonable building dimensions.

For outside longitudinal storages special adaptations are available to minimise the impact of levelling grades along the length of the stockpile. The reclaimer can be built with offset bogies to accommodate grades up to 3 % providing the rail base is level laterally and the grade is constant along the reclaimer travel length. With enclosed longitudinal storage generally the equipment would be level on both planes to minimise the building costs particularly.

However, for new projects where the site topology allows the Circular Storage is undoubtedly the preferred answer and when combined with a light weight dome enclosure is the least cost option with the lowest footprint per ton stored.



Circular Storage with Portal Reclaimer

Illustrated above, a large circular storage with portal frame reclaimer supported in the centre from the main slewing ring and on the periphery on a travelling bogie enabling a reduction in the total applied load.

The equipment illustrated in the previous pages refers typically to larger installations found in ports, terminals and power plant but these are not the only application areas for this technology.

There are many projects where relatively low tonnages are stored and large volumes are not required, such as storage of chemicals, fertilisers and in the cement industry.



Cantilevered Boom Reclaimer

In these situations there are alternative stacker and reclaimer specifications more suited to this type of operation.



Longitudinal Stacker for Inside Storage

In this cement plant a light weight cantilevered boom reclaimer is combined with boom stacker shown operating within a simple portal frame building.

Where the site and building design permits there is a further option of Semi-Portal reclaimer using the building structure to support the head of the portal as shown below.

Semi-Portal Reclaimer



For all of the combinations of stacker and reclaimer designs illustrated in this paper the common thread throughout is the effective management of the stockpiling and reclaiming philosophy to achieve autonomous, automated and safe operation and the level of blending and homogenisation required for any particular project.

All machines are supplied with comprehensive instrumentation to signal the machine status to a central control system using generally a PLC mounted to the Reclaimer plus sometimes the Stacker which communicates with the main plant control system often some distance away.

Software routines have been developed to manage the control of all machine functions which may be integrated to most plant systems and central PLC units and displays.

Clearly the level of control integration must be tailored to the demands of the plant and operators and SCHADE engineers are always pleased to advise on such systems.

In conclusion, as we have illustrated in the paper, SCHADE offer not only the widest range of equipment designs but also have an enviable reputation in critical industries for performance, quality, reliability, availability and support.

In these projects availability is the key consideration as unscheduled outages are both extremely disruptive and expensive and it is in these market sectors SCHADE are extremely well established.

Ultra Flexible Solutions

As we have discussed herein surface mounted solutions based on the Samson concept offer the Cement Plant operator great flexibility in equipment location and a fast track solution with minimum project total cost.

Particularly with Alternative Fuel projects a trial burning period is frequently demanded by the regulatory authorities to ascertain flue gas pollutant levels before a full burning licence is granted.



Reclaimed Samson Feeder

Such a trial period may demand the installation of temporary handling solutions and again the surface mounting concept is obviously a significant benefit as the equipment may be easily removed and redeployed if the project is abandoned.

For example the machine illustrated above was originally supplied to handle clinker and, after the original site was decommissioned re-built to handle tyre-chip.

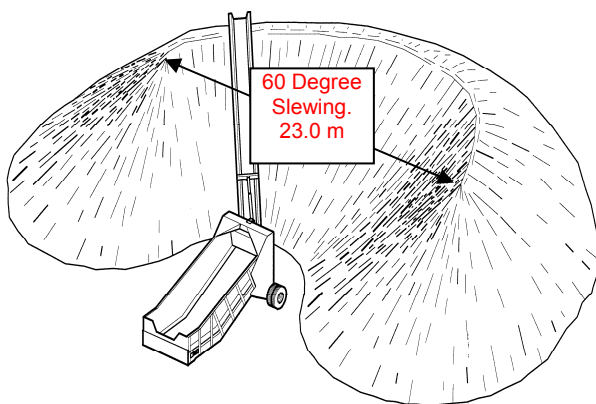
Similarly for the storage of alternative fuels and substitute raw materials mobile stacking solutions by SAMSON may be an attractive alternative to expensive fixed installations where budgets are constrained or for short term trials.



The Stormajor® comprises a Samson feeder section, to receive material direct from tipping trucks or shovels, plus a radial stacking boom all mounted to a mobile chassis.

As illustrated above, the Stormajor® can be used for stacking material inside a building and creating a stockpile of up to 50.000 tons.

These highly developed mobile solutions offer high performance, with handling rates up to 1,000 tons per hour, operating autonomously without the need for permanent civil works or infrastructure. The units illustrated herein are supplied with diesel motors eliminating the need for even a power supply...!!!



The equipment illustrated below are handling coal and granulated blast furnace slag delivered to a grinding plant by tipping trucks direct from the adjacent steel works.



Stormajor® Stacker Handling GBFS

Conclusion

Whilst the core processes in the Cement plant remain the key to productivity and are fundamental to the industries materials handling demands there are other issues.

As we have discussed in this paper there are many and varied possibilities for the introduction of substitute raw materials and additives in the cement manufacturing process each with its own peculiar difficulties for the handling systems designer considering the diverse behaviour of the materials involved.

The handling characteristics of these materials are extremely varied and to achieve a reliable solution experience is the key factor in selecting the appropriate handling equipment. The benefits may be substantial but the pitfalls are equally important...

The AUMUND Group can offer you the products and the experience you need to successfully implement the required handling solution to capitalise on the financial benefits offered by incorporating alternative fuels and substitute raw materials whilst minimising the total investment cost and, more importantly, the associated risks...

Retro-Fits and Upgrades

In many long established plants individual items of machinery, feeders, elevators, conveyors etc. may be effectively life expired requiring an ongoing investment in maintenance with the risk of unscheduled outages costing valuable production time.

In many circumstances it is possible to realise the detailed benefits of the AUMUND design and legendary reliability within the casing of an existing machine.

In addition to gaining long term reliability it is also frequently possible to upgrade the performance within reasonable parameters but even without an actual increase in handling rate the performance will be improved by reduction in unscheduled outages.

This is also valid for stacking and reclaiming equipment for which SCHADE can offer an upgrade and re-build facility to both increase the performance of existing equipment and for life-expired machinery to re-build using proven SCHADE components and expertise.

For example the Reclaimer at Fujairah Cement in the U.A.E. was originally supplied by MVT for a reclaim rate of 280 t.p.h. and a storage capacity of 36,000 tons. SCHADE were able to upgrade using new chains, harrows and drives to obtain a reclaim capacity of 400 t.p.h. and by extending the rails to increase the storage capacity to 43,000 tons...



Focus on Material Handling Top Stories in Middle East

Mr. Pietro de Michieli Chief Operating Officer Bedeschi Spa

The Middle East and North Africa economies have witnessed impressive expansion over the past few years. Those countries boast one of the fastest growing construction sectors in the world, which in turn has led to growth in their cement industry. New requirements are also coming due to coal handling in Middle East.

Bedeschi is currently increasing its activities in those marketplaces with a number of new contracts in the raw material handling area of expertise, as described in the following case study.

CASE STUDY: EREN HOLDING - MEDCEM CEMENT PLANT

Bedeschi and CTP are taking part in the construction of a new greenfield cement plant in Turkey for a production capacity of 10 000 tpd clinker (approximately 3.3 million tpa of clinker). Bedeschi will supply all the machinery for raw materials handling, as outlined below.

PREMIX STORAGE	
Material	Limestone/Premix
Bulk Density (t/m ³)	1.4
Grain size (mm)	95%<80 – 100%<100
Moisture (%)	5 - 10 max
Resting angle (°)	38
Diameters of rails (m)	90
Total storage volume (t)	50 000
Stacking max. capacity (tph)	2000 each
Reclaiming max. capacity (tph)	700 each

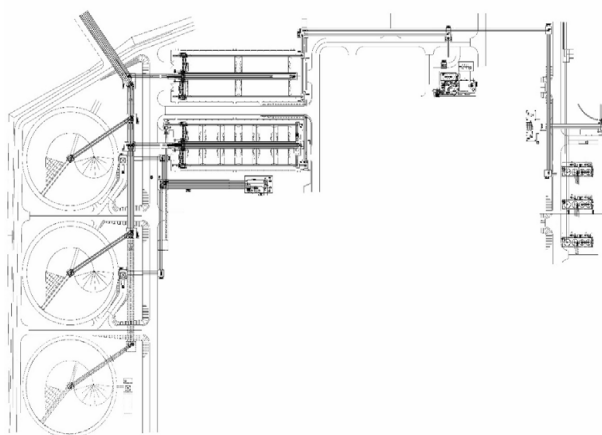


Figure 1: General lay-out of the plant

Premix Storage:

This comprises two circular limestone pre-homogenization plant with luffing slewing stacker and bridge reclaimer, each with a total storage capacity of 50,000 ton and 2,000 t/h stacking capacity and 700 t/h reclaiming capacity.



Figure 2: Circular Storage

ADDITIVE STORAGE FOR RAW MILL		
Material	Clay	Iron Ore
Bulk Density (t/m ³)	1.4	1.8
Grain size (mm)	0 - 100	0 - 100
Moisture (%)	10	3
Resting angle (°)	38 - 40	
Total stored volume (t)	10 000	10 000

Additive Storage (raw mill):

An additive storage facility comprising 4x10 000 areas will store materials for both the raw mill and cement mill (iron ore, clay or sand at one side and gypsum and additives at the other). Stacking will be carried out via a first belt stacking system with a capacity of 2000 tph. Iron ore and clay (or sand) will be reclaimed by a 250 tph side semi-portal reclaimer. From the additives storage plant, 300 tph belt conveyors will transport the iron ore, clay or sand to the raw mill's feed hoppers. Dust filters will be installed.



Figure 3: Side Semi-Portal Reclaimer

Additive storage (cement mill)

Gypsum and additives are stored in tone multi-box longitudinal shed. A 250 tph side semi-portal reclaimer will be used to transport gypsum and additives to the cement mills' feed hoppers. Again, dust filters will be installed for dedusting.

ADDITIVE STORAGE FOR CEMENT MILL		
Material	Additives	Gypsum
Bulk Density (t/m ³)	1.4	1.4
Grain size (mm)	0- 100	0- 100
Moisture (%)	5	5
Resting angle (°)	38	
Total stored volume (t)	10 000	10 000
Stacking max. capacity (tph)	2000	
Reclaiming max. capacity (tph)	250	

Coal preblending storage

A longitudinal storage has a 25,000 t capacity coal preblending. A 500 tph tripper car is installed to stack the coal and two 100 tph side semi-portal reclaimers reclaim coal.

ADDITIVE STORAGE FOR CEMENT MILL	
Material	Coal and Petcoke
Bulk Density (t/m ³)	0.8
Grain size (mm)	0 - 50
Moisture (%)	15
Resting angle (°)	35- 38
Total stored volume at 38°(t)	12 500 + 12 500
Stacking max. capacity (tph)	500
Reclaiming max. capacity each (tph)	100



Figure 4: Coal Preblending Storage

CASE STUDY: EREN HOLDING – YESILOVACIK PORT

Finally, there are two shiploaders installed at the Yesilovacik Port designed for loading at a rate up to 1,400 t/h vessels with a capacity up to 40,000 DWT. The shiploaders are slewing and travelling type (figure 5).

Material	Cement	Clinker
Bulk density	1,05 t/m ³	1.35
Temperature	Ambient	110 ° C max
Moisture (by weight)	dry	5% max
Size	0 - 1	0 – 30
Capacity	40,000 DWT	



Figure 4: Slewing and Travelling Shiploaders

CASE STUDY: LES CIMENTS DE BIZERTE -

Material	Cement	Clinker
Size	0 to 1 mm	0 to 50 mm
Design Capacity	500	500
Moisture (by weight)	dry	5% max

TUNISIA

Les Ciments de Bizerte, Tunisia, has commissioned to Bedeschi the modernization of the existing shiploader for cement, clinker, coke and coal, installed near the productive plant.

The supply consists of:

- Shiploader SHL 21 / 1200 to load cement and clinker for export
- Belt conveyors
- Tripper TRP 8 / 1000
- Grab crane to unload coal and pet-coke for import

Equipment	Material	Capacity
Quarry Limestone Handling Dpt		
Belt Conveyor NG 1450 / 1400	Limestone	2000
Limestone Handling Dpt with Longitudinal Storage		
Stacker STK 25 / 1600	Limestone	2000
Blade Bridge Reclaimer PAL T 220 / 34	Limestone	800
Clay-Silt Handling Dpt With Longitudinal Storage		
Stacker STK 21 / 1000	Clay-Silt	500
Blade Bridge Reclaimer PAL T 130 / 25	Clay	300
Blade Bridge Reclaimer PAL T 130 / 25	Silt	300
Reversible Apron Feeder RNSR 8 / 2000	Clay-Silt	500
Additives Handling Equipment with Longitudinal Storage		
Stacker STK 201200/	Additives	500
Blade Bridge Reclaimer PAL F 130 / 25	Additives	200
Feeder CNT 14 / 2500	Cement Additives	150
Feeder CNT 14 / 2500	Raw Meal Additives	150
Coal Handling Dpt with Longitudinal Storage		
Stacker STK 28 / 1200	Coal	500
Blade Bridge Reclaimer PAL T 130 / 34	Coal	150
Reversible Apron Feeder RNSR 8 / 2000	Coal	500
Plant Transport System		
Belt conveyors (total 3800 m)	Various	200 - 2000
Dedusting filters (CTP) in all transfer points and receiving sections	Various	5000 - 40000 m ³ /h

The shiploader has a nominal loading capacity up to 500tph of cement and clinker and a total installed power of maximum 300 kW.

The shiploading operation will be possible with wind speed under 20 m/sec. The machines are in the process of delivering.

CASE STUDY: CEMENT PLANT AIT BAHA – MOROCCO

Bedeschi recently commissioned the equipment for the complete raw material handling system at Italcementi's greenfield Ait Baha plant, close to the port city of Agadir in the southwestern Morocco. The facility includes four longitudinal storage halls for raw material feeding, including coal storage.

The company's scope of supply included the complete set of equipment for the 1.5 km transport system from

the limestone quarry up to the plant as well as all the material receiving departments with apron feeders, screens, bucket elevators, chain conveyors and belt conveyors, totaling more than 5000 m in length.

CONCLUSION

Bedeschi Group (including ONT & CTP) will be for our customers a guarantee of more efficient and reliable solutions in the handling sector. Thanks also to the know-how of CTP a leading provider of filtration, gas treatment, equipment and services in the cement, steel and metals, power plant and glass sectors, Bedeschi Group is able to meet the client's needs offering projects environmental friendly and with a low energy impact.



Fig.5 Ait Baha Cement Plant

QUARRIES EXPLOITED BY THE CEMENT INDUSTRY IN TUNISIA

المحاجر التي تديرها صناعة الاسمنت في تونس

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استغلال المحاجر الصناعية يخضع للوائح بيئية وطنية صارمة. يستعرض المقال بسطة حول المحاجر التي تديرها صناعة الاسمنت في تونس وأثارها على البيئة

1- Introduction

Tunisian cement plants sometimes have recourse to the purchase of the main raw material such as limestone, without citing annexes materials such as iron ore,...

The areas that could be exploited among the quarries available in Tunisia are highly variable. Annual production of quarries exploited by the cement industry in Tunisia vary depending on the case, 300 000 tones / year to 3,000,000 tons / year with a staff mobilization up to 300 days / year. The overall annual production of all careers in Tunisia exceeds 10 Million Tons / year.

On the localization plan quarries were in the past away from homes, but with urban sprawl, some careers have become to neighboring homes, which causes occasional complaints from neighbors against noise, especially the invasion of dust.

2- Geographical distribution of cement manufacturing units in Tunisia

The nine units constituting the cement industry in Tunisia, namely:

- * Ciments Artificiels Tunisiens CAT to the Italian group COLACEM (Tunis Governorate North East Region),
- * Société Ciments de Bizerte - SCB (Governorate

- Bizerte- North East Region),
- * Société les Ciments d'Oum El Khélil - CIOK (Governorate of Kef- North West Region),
- * Société les Ciments de Gabès - SCG to the Portuguese group SECIL (Governorate of Gabes- Southeast Region),
- * Ciments de Jebel Oust - CJO to the Portuguese group CIMPOR (Governorate of Zaghouan- North East Region),
- * Société Ciments Enfidha - SCE to the Spanish group UNILAND which was later acquired by CEMENTOS PORTLAND Group within the global purchase of Group UNILAND. (Governorate of Sousse- Region Centre),
- * Société Tuniso-Andalouse de Ciment Blanc - SOTACIB (Governorate of Kasserine- South West Region),
- * Société Carthage Cement (Gouvernorate of Ben Arous),
- * SOTACIB white cement factory, to the Spanish group PRASA, Kairouan (Gouvernorate of Kairouan)

Cement manufacturing units in Tunisia are distributed geographically as shown in figure 1:



Figure 1: The geographic distribution map of cement plants in Tunisia

3- The exploitation of quarries in Tunisia

The exploitation of any quarries starts with the operation of slaughter (figure 1(a)). In most cases, the slaughter of the rock to extract limestone is done by blasting, namely the explosive nitrate, while for the case of marl, slaughter is done General stripping bulldozed or even explosive nitrate. The explosive ratio varies from one technique to another and from one career to another.

After slaughter of the rock, the raw material is loaded, namely limestone, marl ... by shovels and loaders (figure 2(b)). The transport of the forehead to crushers is mainly by dumpers. Some careers are equipped with two types of crusher, primary and secondary; this remains in use when the initial particle size is too big or in the case where the limestone is too soft.

After crushing, limestone, marl and other crushed materials are transported, in most cases, using a conveyor belt and / or truck (figure 1(c)) to the cement manufacturing unit and especially to the crushing post.

(figure 1(d))



Figure2: exploitation of a career. (a): slaughter of the rock by blasting; (b): loading of excavated material; (c): transport of the material by dumper; (d): crushing of the material

4- Identification of environmental aspects

4- 1- Location of quarries in Tunisia

All quarries, exploited by cement plants in Tunisia, are initially located in uninhabited areas and were subsequently urbanized. For quarries which are close to urban centers, there is sometimes noise, vibration or dust of flights. However, all of Tunisian cement plants

have initiated specific measures:

- * Rehabilitation of quarry sites in response to the requirement of the specification for the quarrying industry
- * The development of access to quarries in order to improve the exploitation conditions
- * The establishment of trees, a voluntary action for a beautification quarries sites, cement factories and surrounding areas

Despite these actions, the exploitation of quarries remains at the origin of the modification of landscape. The degradation of the natural landscape, which results in a modification of relief, could cause a negative impact on the environment.

Optimal management of a career starts at the beginning of the project development. The physical characteristics of the site and their impact on opportunities for redevelopment must be precisely defined, so that at the end of operation, good quality site can be returned to the natural environment and human activities.

4- 2- Dust emissions related to the exploitation

The slaughter of the rock explosion requires very significant environmental impacts, including dust emission. Therefore, some measures to reduce these emissions are of use, namely:

1. Watering the tracks by tanker truck is practiced, to avoid the blow off dust due to the transport of material removed by dumper.
2. The improvement of blasting patterns
3. The cowling of the conveyor belt which leads the matter of the crusher to the station of homogenization
4. The consideration of the prevailing winds in its operating plan

4- 3- Dust emissions related to the movement of machines

The movement of machines between the fronts and crushers generates a significant ejection of dust (access to the interior of careers are not paved). This phenomenon is mitigated by a water spray using tankers, with nozzle system.

Some careers have developed an automatic watering system to reduce the dispersion of dust.

4- 4- The noise in quarries

Quarries are subject to Tunisian specific regulations of noise, namely Decree 19841556- (clause 26 of the 66-27 law of 30 April 1966 on the work code / clause 293). A critical threshold noise level of 80 dB (A) inside the local was set by the code of the Tunisian Labour.

However, the significant environmental aspect for the activity is taken into account by cement, because some of them are already certified ISO 14001 and others are in the process of implementing an Environmental Management System EMS. Sound measurements and noise maps are of use.

In quarries, noise can come from rolling stock (dumpers, loaders, excavators ...), crushers and blasting operations.

4- 5- The vibrations in quarries

The vibrations are essentially the blasting operations results. These operations are well organized and monitored, including their weekly frequencies and schedules.

An optimization of firing techniques is needed to further reduce their negative impacts on the environment.

4- 6- The wastewater in quarries

The waste water in quarries comes from the following consumption items:

- * Cleaning (washing + maintenance) rolling machines (Dumpers ...)
- * Domestic uses (health)
- * Rainwater

The use of oil separators in the quarries with workshops for maintenance and cleaning of rolling gear seems to be of use.

4- 7- The waste in quarries

The Hazardous wastes found in quarries are:

- * Waste oils are present in the maintenance workshops gear in career sites. They are usually recovered by recycling companies authorized by the Tunisian State (Ministry of Agriculture, Food and Environment) for the treatment of this type of waste.
- * The batteries that are recovered for some careerists, by recycling companies, authorized by the Tunisian State (Ministry of Agriculture, Food and Environment)
- * Dirty rags are collected and recovered by companies authorized by the Tunisian State (Ministry of Agriculture, Food and Environment) to be transferred to the hazardous waste treatment center Jradou.
- * Oil filters are usually stored in expectation of finding a treatment solution.

4- 8- The security in quarries

Through an inventory conducted in careers in Tunisia, another environmental aspect appears: the safety of people and property. This is even more significant in the case of cement plants that are fueled by natural gas pipelines which cross the perimeter of their active quarries.

In this field, although recruitment of an environmental and a security official, having the task of organizing the most appropriate anti-risk technological measures, as well as the enforcement environmental refer to either use, management could further strengthen its security provisions.

5- Conclusion

The exploitation of industrial quarries is subject to strict national environmental regulations. Regulatory and legal texts for this field of competence are available and must be applied



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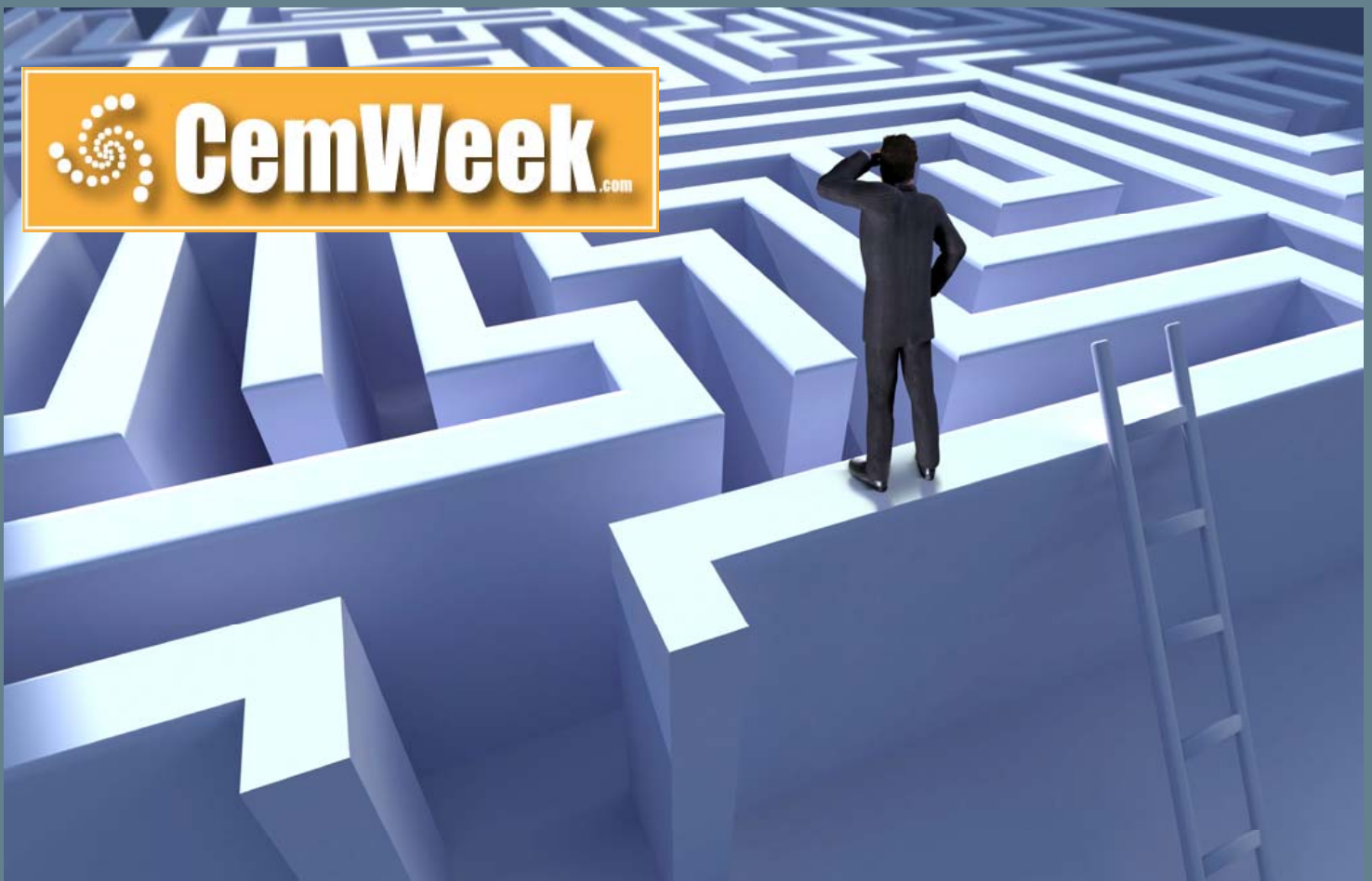
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BEUMER fillpac®: Filling technology for the building industry Bag after bag - continuous and exact filling process

Cement, mortar or gypsum – the bulk density, flow characteristics and grain distribution of these products, which are filled in bags and packed for delivery to the customer, may vary significantly. BEUMER Group, a single-source provider of filling, palletising and packaging systems offers the BEUMER fillpac®, which can be flexibly integrated and adapted with existing packaging lines by the user. Depending on project requirements, BEUMER Group offers varying designs. Specific weighing electronics are utilised to ensure weight accuracy of the bags. Operators can nearly eliminate rejects caused by too high or too low filling weights.

Building materials have their own specific characteristics, such as high product temperatures or different volumes and weights - they may show an unusual flow behaviour and may be dimensionally unstable. As a partner to this industry, BEUMER Group successfully enable material manufacturers to fill bags without any product loss with the BEUMER fillpac®, an efficient filling machine. The systems of this construction series fill reliably, carefully and sustainably while meeting the required throughput.

Precision filling

The BEUMER fillpac® is equipped with a weighing unit, which communicates permanently with the filler neck via a dedicated software. The automatic bag weight control determines the exact filling weight while filling. This way the system always achieves accurate degrees of filling. Thus the packaging line works more efficiently as it is no longer necessary to remove under or overweight bags from the material flow. In addition, the quantity indicated on the bag always corresponds to the real volume.

Air filling machines for pourable and coarse-grained products Depending on the requirements and on the material characteristics such as bulk density, flow behaviour or grain distribution, BEUMER Group can offer both air and turbine filling machines from the construction series. The air filling machines are suitable for bagging pourable and coarse-grained products with particle sizes up to ten millimetres. The systems use a blower to fluidise the materials in a pressure chamber.

The products can then be filled into bags gently and precisely. Depending on the throughput, the user may opt for a rotary or an inline filling machine. The air rotary filling machines have four to twelve filling modules which are arranged in a circular pattern. Depending on the number of filling spouts, the systems reach a maximum capacity of 1,200 to 3,600 bags per hour for 25-kilo bags.

The air inline filling machines are generally equipped with one to four filling modules. Depending on the number of filling spouts positioned next to each other, the system achieves a capacity reaching between 300 and 1,200 25-kg-bags per hour. Regardless of whether the system is arranged in a circular pattern or in a line, capacity and utilisation can be improved by installing an optional automatic bag placer. The filling process is carried out either automatically or at the push of a button. Two configurations are available for removing the bag at the end of the filling process: either manually or automatically with vertical bag discharge on a belt conveyor.

Turbine filling machine for free flowing and fine-grain products

The turbine process is the appropriate solution for companies which predominantly fill free flowing and fine-grained materials, such as cement or gypsum. The turbine filling machines use motor-driven impellers. They can be arranged either horizontally or vertically, ensuring a particularly high filling pressure and thus a very good compaction of the fine-grained materials to be bagged. The result is filled bags which are compact and dimensionally stable so that the user is no longer required to vent them.

With up to 20 filling modules, the BEUMER fillpac® R for example can fill up to 300 tons of fine-grain materials per hour into diverse bag types. The HDPE bag placer, an exclusive offering of BEUMER Group, enables dependable filling of HDPE bags. The filling impeller is characterised by its speed and the maximum material throughput. The bag weight adjustment, which automatically adjusts the weight of the next bag, always ensures precise results. Opening and closing of the vertically mounted filling spout is carried out

outside of the dirty area - this way the three-position cylinder which regulates the coarse and fine flow is protected from dust. The cylinder for bag discharging is also located in the dust-free zone above the filling spout. This solution minimises wear and tear on both cylinders and, therefore, ensures longer service life.

BEUMER Group also offers the turbine filling machines with inline design. The filling modules are placed next to each other for ready access, which makes them extremely easy to maintain. The inline filling machines are best suited for production environments with low throughput rates.

Individual customisation

The BEUMER construction series is equipped with an ergonomic control terminal. The improved Human Machine Interface concept allows operators to work in a simple and intuitive way. Almost all built-in components of the BEUMER fillpac® are freely available commercially. This reduces delivery times for spare parts and lowers capital costs for the user. Furthermore, the intralogistics supplier has designed the system in a way that individual customer requirements or special operational requests can be implemented flexibly and cost-effectively.



Picture 1: BEUMER Group has added the rotating filling machine, BEUMER fillpac®, to its product portfolio and equipped it with extensive features.



Picture 2: The BEUMER fillpac®, equipped with the BEUMER bag discharge line SA 4000.

BEUMER Group is an international manufacturing leader in intralogistics in the fields of conveying, loading, palletising, packaging, sortation and distribution technology. Together with Crisplant a/s and Enexco Teknologies India Limited, the BEUMER Group employed some 4,000 people in 2014. The group generated an annual turnover of approximately 680 million euros. With its subsidiaries and sales agencies, BEUMER Group is present in many industries worldwide.

For more information visit :
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For straight tracking belts and optimal material flow

Belt positioning systems from Flexco make it possible to avoid wear and material losses

An important step in preventing material losses on conveyor belts is correcting the guidance of the conveyor belt. To achieve this, Flexco Europe GmbH offers a range of different belt positioning systems. Through the use of sensors, these detect misalignment of the belt and correct its directional precision. This also reduces or prevents damage to the edges of the conveyor belts. With these positioning systems, operators not only achieve substantial reductions in terms of material losses, they also reduce their maintenance costs.

Does the belt always migrate towards the same side, or does it move from one side to the other? Is this misaligned travel a constant feature, or just an occasional occurrence? Does the belt get worn in a corrugated manner, and is the belt tension low, moderate or high? Operators ask themselves questions like these in order to select the most appropriate belt positioning system for their needs. Flexco assists them in this process, and offers appropriate solutions for different belt tensions and belt dimensions that are easy to install.

For belts that only migrate to one side, the Flexco 'Belt Positioner' offers a simple and adaptable system that is easy to install and maintain. The fixed, angled rollers always hold the belt straight. This system is only installed in the subspace. It is suitable for belts with a maximum tension of 210 Newtons per millimetres and belt widths of 450 to 2400 millimetres.

Flexco recommends the PT Smart series whenever belts are exposed to moderate tensions of no more than max. 280 Newtons per millimetre. Sensor rollers detect

whenever the belt starts to move out of alignment. The unique pivot-and-tilt movement then returns the belt to its correct alignment position. PT Smart can be installed in standard size for belt widths of 400 to 1800 and up to a thickness of 25 millimetres. Flexco also has such positioning systems in its portfolio specifically for use in underground mining applications. These are made of materials and components that have been specially adapted to withstand the unusual temperature and application conditions that exist in these harsh environments.

Where tensions are very high, i.e. up to 525 Newtons per millimetre and where belts are concave, the PT Max range is recommended. This also uses sensor rollers to detect whether the belt is starting to migrate. The belt is then guided back into its correct position. Depending on the application, the operator can install these systems either above or below the belt. They can be used in humid as well as in dry environments. The standard sizes of this series are suitable for belt widths of 650 to 1400 millimetres. The return side version is suitable for thicknesses of up to 25 mm, while the top-mounted version is suitable for thicknesses of up to 19 mm.

Operators of heavy belts that are under great tension of up to max. 1060 Newtons per millimetre rely on HD PT Max. This series works like its PT Smart and Max counterparts. Depending on the application, it can also be mounted above or below the belt. It is designed for belt thicknesses of 1200 mm and up.

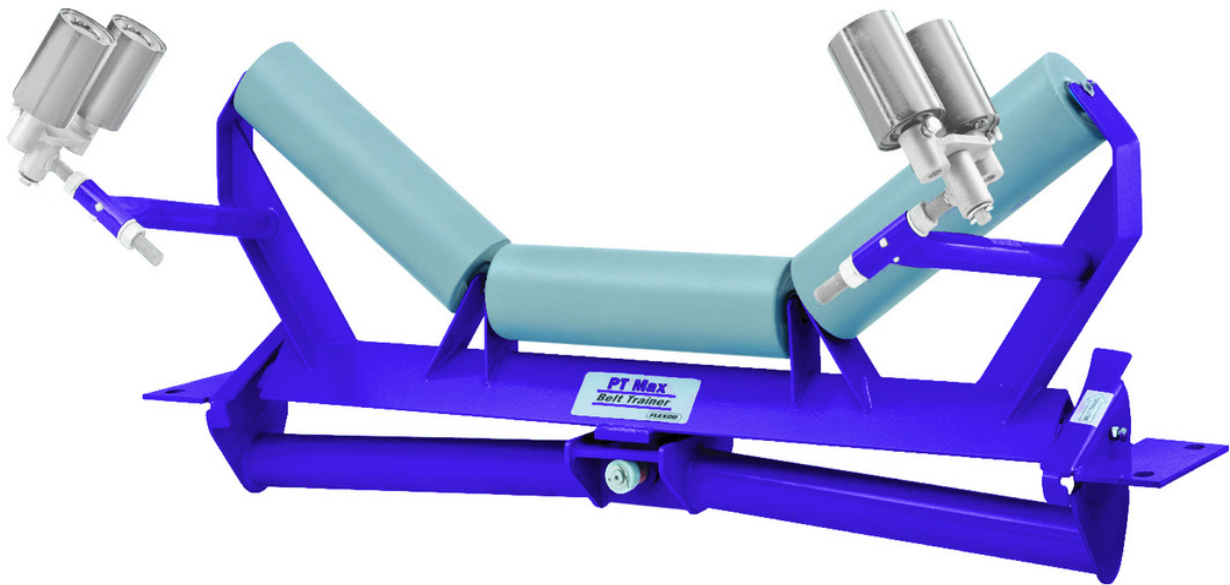


Fig. 1: The PT Max series uses sensor rollers to detect whether the belt is starting to migrate. The belt is then guided back into its correct position. Depending on the application, the operator can install these systems either above ...



Fig. 2: ... or below the belt.

About the company

Flexco, based in Downers Grove, Illinois, USA, is the leading international specialist in mechanical splicing and conveyor solutions, belt cleaners, belt positioners and pulley laggings for light and heavy conveyor belts. With its innovative solutions, user downtime periods can be reduced substantially, thus boosting productivity levels. FLEXCO Europe GmbH is the German subsidiary of FLEXCO and is based in the Swabian town of Rosenfeld where the group employs a staff of more than 60 employees. More information at: www.flexco.com.

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Mondi launches rain resistant Splash Bag

In response to lively customer interest for rain-repellent paper bags, Mondi has developed the Splash Bag. This new bag resists rain for up to two hours and withstands humidity better than a standard paper bag.

Standard paper bags for packaging cement and other powdery products are generally vulnerable to rain. To tackle the issue, Mondi, working in collaboration with major cement producer Lafarge, has developed an innovative rain-repellent bag particularly suitable for cement. The new wetstrengthened, machine-finished **Splash Bag** is designed to absorb less moisture than conventional bags. Its outer ply of Mondi Advantage Protect sack kraft paper has a water-repellent surface and is formulated to keep high tensile strength even in a wet environment. It also helps prevent moisture ingress if conditions are damp or humid during storage. **Advantage Protect** sack kraft papers have a water-repellent surface and are formulated to have high tensile strength, to help prevent rupture. For example, the wet tensile strength of Advantage Protect in a grammage of 80 g/m² is three times higher than that of standard sack kraft paper an impressive figure.

Splash Bag's water-resistive properties are immediately apparent in side-by-side visual testing versus standard paper cement bags (test conditions simulating direct exposure to rain). "Water gathers on the bag's surface without being absorbed, then evaporates over a period of several minutes, leaving the bag essentially dry," explains Claudio Fedalto, Deputy COO Mondi Industrial Bags. "By contrast, the standard bag absorbs the water, weakens as a result and may potentially rupture if exposed to extremely wet conditions," he adds. Results of Cobb tests, which measure the amount of water absorbed into the surface by sized paper over a set period of time, indicate that

Splash Bags are resistant to rain for two hours. If inadvertently left in damp (rather than wet) conditions, e.g. on damp sand, Splash Bag resists moisture ingress for up to 12 hours.

Even after two hours of direct exposure to rain, **Splash Bags** can be moved, handled and emptied without any difficulties. Bag breakage rates are significantly reduced, leading to genuine cost savings: fewer broken bags translate to lower vehicle and site clean-up costs, fewer trips from warehouse to site, as well as time savings for logistics and site managers. Excellent moisture resistance can also mean better protection of the filling good if conditions are damp or humid at the warehouse.

Importantly, none of these advantages comes at the expense of filling speeds or de-aeration rates, which match those of standard bags (in tests performed on Mega Gurley equipment at Mondi's Bag Application Centre in Austria).

According to interviews carried out at construction sites, **Splash Bag** has already won generous plaudits from construction workers for its ability to resist rain and moisture when used to package cement. The construction workers surveyed were particularly impressed that the bag shrugs off rain and remains strong and easy to handle even under damp conditions.

About Mondi Industrial Bags

Mondi Industrial Bags, a business segment of Mondi's Europe & International Division, is the leading international producer of industrial paper bags¹, selling around 5 billion bags per year. Thanks to its broad range of bag specifications, Mondi Industrial Bags serves major industries including cement and building materials, chemicals, food, feed and seed.



Building & Construction Industry

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More about Mondi's industrial bags:



Mondi's **industrial bags** are ideally suited for the high-speed filling of cement and powdered building materials. The bags are optimised for automated and precise application on the filling spout and offer optional features such as moisture barriers or sealable valves for increased product protection. Contact us at mena.bags@mondigroup.com

IN TOUCH EVERY DAY
www.mondigroup.com/cement



The business segment operates a dense sales and service 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 Mondi: In touch every day

Mondi is an international packaging and paper Group, employing around 25,000 people across more than 30 countries. Our key operations are located in central Europe, Russia, North America and South Africa. We offer over 100 packaging and paper products, customised into more than 100,000 different solutions for customers and end consumers. In 2014, Mondi had revenues of €6.4 billion and a return on capital employed of 17.2%.

The Mondi Group is 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. Our innovative technologies and products can be found in a variety of applications including hygiene components, stand-up pouches, super-strong cement bags, clever retail boxes and office paper. Our key customers are in industries such as automotive; building and

construction; chemicals; food and beverage; home and personal care; medical and pharmaceutical; packaging and paper converting; pet care; and office and professional printing.

Mondi has a dual listed company structure, with a primary listing on the JSE Limited for Mondi Limited under the ticker code MND and a premium listing on the London Stock Exchange for Mondi plc, under the ticker code MNDI.

For us, sustainable development makes good business sense. We don't just talk about sustainability; we make it part of the way we work every day. We have been included in the FTSE4Good Index Series since 2008 and the JSE's Socially Responsible Investment (SRI) Index since 2007.

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Email: sabine.ehrlich@mondigroup.com

Mondi Industrial Bags GmbH, Marxergasse 4A, A-1030 Vienna

www.mondigroup.com

XHQ Operations Intelligence enables process industries to get more value out of data

- **A platform for aggregating, relating and presenting operational and business data**
- **Performance management, analytics and dashboarding solutions**
- **Increase visibility to reduce operation costs across the supply chain**
- **Up-to-the-minute information**

With near-real-time visibility of operations within a process manufacturing facility, Siemens is expanding its range of Industry Software solutions for industrial management in the process industry with the XHQ Operations Intelligence platform. The solution helps enterprises to get more value out of existing investments in plant automation and IT.

“Siemens XHQ Operations Intelligence platform enables the establishment of a continuous-improvement practice and provides near-real-time visibility of operations within process manufacturing facilities. With the tool set of XHQ Operations Intelligence we provide a proven solution for empowered decisions and help enterprises to improve their performance with a possible reduction of up to 8% in operational costs and an increase in high-value product production of up to 10,5%,” Peter Baldermann, XHQ Business Head, Siemens.

XHQ Operations Intelligence is a set of tools that help aggregate, integrate, analyze, and present operational and business data from multiple backend data sources to improve enterprise performance. The solution provides a single coherent view of all critical business and transactional information, enabling a variety of real-time performance-management and decision-support solutions. Plant floor and operations personnel, as well as senior management are enabled to monitor real Siemens AG Communications and Government Affairs Head: Stephan Heimbach time performance against business goals, This helps to make more informed decisions about plant performance that positively impacts the bottom line.

XHQ Operations Intelligence filters out and edits the most diverse kinds of technical and business-management data acquired from a company's plant or production chain. Key performance indicators (KPIs) such as plant utilization, the availability of raw materials and additives, production throughput or product quality enable managers to compare their entire production process with other production lines. Then the process can be optimized and adapted, where it is required, to achieve business objectives and targets. Any changes in the market can also be taken into consideration, as well as the influencing factors at different production locations.

XHQ Operations Intelligence is well positioned within the Siemens product portfolio from management to field level. With its strong link between the Plant Lifecycle Management Solutions Comos and the DCS system PCS 7 the solution shares real time information and can be related with the asset metadata of Comos Walkinside, the Immersive Simulation & Remote Operations solution for improving enterprise performance.



Visibility improves the bottom line – XHQ Operations Intelligence provides users with a wide, unique range of coherent, up-to-the-minute information.

For further information on XHQ Operations Intelligence, please see <http://www.siemens.com/XHQ>

For further information on Achema, please see www.siemens.com/press/achema2015

Contact for journalists:

Evelyne Kadel

Phone: +49 (211) 6916 -1003;

E-mail: evelyne.kadel@siemens.com

Siemens AG (Berlin and Munich) is a global technology powerhouse that has stood for engineering excellence, innovation, quality, reliability and internationality for more than 165 years. The company is active in more than 200 countries, focusing on the areas of electrification, automation and digitalization. One of the world's largest producers of energy-efficient, resource-saving technologies, Siemens is No. 1 in offshore wind turbine construction, a leading supplier of combined cycle turbines for power generation, a major provider of 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 2014, which ended on September 30, 2014, Siemens generated revenue from continuing operations of €71.9 billion and net income of €5.5 billion. At the end of September 2014, the company had around 343,000 employees worldwide on a continuing basis. Further information is available on the Internet at www.siemens.com.



Cygnus Instruments Launches NEW Range of Multi-Mode Ultrasonic Thickness Gauges

Cygnus Instruments Ltd, the leading manufacturer of Multiple-Echo digital ultrasonic thickness gauges used for measuring remaining metal thickness without the need to remove protective coatings, unveils the latest range of surface instruments.

The new range of thickness gauges is launched following extensive customer engagement, working within industry standards and following careful / exhaustive design reviews.



New generation of Cygnus ultrasonic thickness gauges incorporating three versatile measuring modes for optimum performance

WHAT IS NEW

Versatile Measuring Modes as Standard with Latest PLUS Models

Cygnus has now incorporated two additional measuring modes in to their latest range of thickness gauges. Single-Echo and Echo-Echo modes, both using twin crystal probes, can assist in obtaining measurements in areas of extreme corrosion or back wall pitting:

- Single-Echo measuring mode - ideal for measuring uncoated surfaces with heavy front face and/or

back-wall corrosion and attenuative materials such as cast metals, plastics and composites

- Echo-Echo measuring mode - used for measuring painted metals but with heavy back wall pitting for improved back wall detection.



Three versatile measuring modes in one unit, providing surveyors with the capability to perform thickness gauging on all conditions of metal



Quick, simple and effective A-scan readings on extremely corroded pilings using a Cygnus ultrasonic thickness gauge in single-echo mode

Additional New Features

The range consists of 5 new models offering a comprehensive array of new features including: A-scan and B-scan displays; hands free units for climbing or rope access; simple sequential data logging or comprehensive data logging with features including



Grid Format, offering 16 directional formats; vibrate alert to warn the operator when the measurement is out of tolerance; Bluetooth data transfer capability; and MSI™ (Measurement Stability Indicator).

MSI™ is both clever and simple. Used in Single-Echo and Echo-Echo modes, this trademarked technique samples returning echoes to ensure they are all identical. If the returning echoes are identical the display changes colour or format which indicates the reading is stable and reliable.

Sequential and Comprehensive Data Logging

There are two data logging models in the range, one offering simple sequential measurements to be recorded while the other offers comprehensive data logging where the user can add defined text comments, create templates and add radial measurements around a last logged measurement point. Both models record up to 5,000 measurement points, including A-scans.

Data logging models are supplied with the Cygnus CygLink Software. CygLink is a Windows® application for PC's running Windows 7 and above and is used for uploading data from a data logging gauge. The information can then be analysed, stored, reports can then be created and the data can be exported as a .pdf or .csv file.

Extremely Rugged Enclosure

Designed for use in the most severe operating conditions, the purpose designed enclosure is both extremely tough and strong while small and light weight.

Manufactured using a twin shot injection moulded enclosure which has a soft but durable TPE outer skin, making them both comfortable and extremely durable,

while the inner shell is strong, keeping the electronics totally sealed from the outside environments.

This new instrument enclosure has allowed Cygnus to achieve the tough American Military Standard MIL SPEC 810G for environmental protection. These new gauges will survive the harshest operating conditions including drop, vibration, dust and water ingress (IP67) together with low and high temperature cycling.

While the new range from Cygnus offers many new features, the simple to use menu structure means that these new gauges are quick to learn and simple to use. Cygnus has concentrated on providing the user with key measurement functions for a wide range of thickness gauging applications, in a tough instrument designed and tested for the most severe operating conditions.

For more information please visit the Cygnus Instruments website :

www.cygnus-instruments.com.

Alternatively contact Cygnus Instruments directly on **+44 (0) 1305 265533 or**

email sales@cygnus-instruments.com.

CONTINUA PLUS®

Cutting-edge technology for the manufacture of large tiles



The ceramic tile manufacturing process is, today, a highly evolved one, allowing for the production of high quality materials at outstanding levels of output efficiency.

The reliability of pressing and firing technologies has, moreover, allowed a constant, steady increase in tile size in order to obtain ever-better products of the highest added value. Floor tiles of the 60x60 and 80x80 cm size are now standard, as are slabs with dimensions of up to a 2 metres.

It is in this context that Sacmi has, over the last few years, introduced highly innovative Continua technology, which executes on-conveyor powder pre-compaction prior to final pressing in order to ensure the easy shaping of large, complex products without penalising productivity.

Now, to achieve even larger sizes and greater productivity, Sacmi has taken things to the next level by developing CONTINUA PLUS®, a technology that, compared to traditional pressing, is nothing less than revolutionary.

The core of this new line consists of a “super-compactor” able to press ceramic powders at a pressure of 450 kg/cm².

The line loads the powders onto a metallic conveyor belt via a set of batching/mixing devices, which include dry digital decoration systems, subsequently forming a slab with a maximum width of 1800 mm (1600 mm post-firing) and unlimited length.

CONTINUA PLUS® undoubtedly represents an extraordinary technological leap forwards with respect to traditional pressing techniques: the ability to feed a bed of spray-dried powder continuously, “instantaneously” transforming it into a ceramic material ready for firing. This technology offers multiple advantages in terms of simplicity, attainable product flexibility and also as regards the considerably lower installation and production costs.

For example, a CONTINUA PLUS® line does not require any foundation work as it is simply set down on the factory floor.

With regard to energy savings CONTINUA PLUS® has less than 50 kW of installed power, that is, a specific consumption of just 0.06 kWh/m², lower than that of any other pressing technology on the market.

Absolute size flexibility is ensured by:

- a width (fired size) range of 1000 - 1600 mm, adjustable as desired with fast changeovers (20 minutes)
- length, adjustable as desired, with instantaneous changeover of the set cutting size (typical sizes: 1200, 2400, 3000, 3200 and 3600 mm)
- thickness is adjustable between 3 and 20 mm, with fast changeovers (30 minutes)
- further possibilities for the unfired cutting of sub-multiples up to a minimum size of 400 mm.

It should be pointed out that unfired slab lateral trim waste, which can easily be fed back into the grinding cycle, constitutes less than 3% of processed material thanks to rigid side containment and the resulting good compaction homogeneity.

Compaction of powders loaded onto the conveyor also offers considerable scope for the creation of products with outstanding aesthetics by way of numerous applicative combinations: loading of a base and/or economical powder, loading of a quality layer of coloured powders and/or spray-dried glazes, loading of a mix of powders, the creation of full-body products with through-veining, digital decoration with various (spray-dried, glaze, grain, flake and micronized) powder types, utilisation of conveyors with relief patterns and the blending of dry-type effects with digital ink-jet decoration before or after drying.

Lastly, the most important feature of CONTINUA PLUS® is, perhaps, its outstanding output rate: by using the maximum loading width of 1600 mm, a single line can produce up to 14,000 m²/day!

Following our very successful Symposium in 2014, we are glad to invite you to the



2nd Alternative Fuels Symposium on the 14th and 15th of October in Duisburg – Ruhrort, Germany

For registration, please visit www.lechtenberg-partner.de

The programme will feature again a range of senior industry decision makers and technical experts covering the key aspects of alternative fuels technologies used in cement, lime and power generation industry.

On Wednesday, the 14th of October

a wide range of **case studies** in alternative fuels processing, storage, dosing and feeding will be presented by leading equipment providers, such as **ATEC, Praxair, FCT International, Di Matteo, FLSmidth Pfister, Lindner Recyclingtech, MHC Engineering, Metso, Schenck Process, UNTHA shredding technology** among others.

On Thursday, the 15th of October

we will have the honor to welcome the following keynote speakers among others:

Market Developments

Ahmad al Rousan, Secretary General Arab Union for Cement & Building Materials, the Inter-Arab International Organization, affiliated to the General Secretariat of the Arab League and the Council of Arab Economic Unity

Bruno Carre, Italcementi Middle East VP, CEO, Suez Cement Co, Egypt

Funding Alternative Fuels Projects

Michel Folliet, Chief Industry Specialist – Global Manufacturing, International Finance Corporation, part of World Bank, USA

Dr. Ing. Wolfgang Pfaff-Simoneit, Technical Expert of KfW Development Bank, Germany

Case Studies in the use of Alternative Fuels

Dr. Ziad Habib, Director, Corporate Process Development and Process Innovation, Lhoist Group, Belgium

Anthony Nicolopoulos, Alternative Fuels Development Director, Titan Cement Co, Greece

Dr. Uwe Lubjuhn, Director Cement Operations, CEMEX, Latvia



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Dammstraße 11a, 47119 Duisburg, Germany

Tel: +49 (0) 203 34 65 16 – 25 Fax: +49 (0) 203 34 65 16 – 50 workshop@lechtenberg-partner.de www.lechtenberg-partner.de

CEMENT

Workshop & Training Program on Energy Management in Cement Industry Date : 20 - 21 August 2015

Venue: Raipur, India

For more information please contact:

Mr Vinod Reddy

CII – Sohrabji Godrej Green Business Centre

Tel.: +91 40 44185161

Fax: +91 40 44185189

Email: gbc.trainings@cii.in

www.greenbusinesscentre.com

Concrete 2015

Date : 30 August - 02 September 2015

Venue: Pullman Albert Park, Melbourne, Australia

For more information please visit: rastak-expo.com

Email: info@rastak-expo.com

Cement Business & Industry India 2015

Date : 03 - 04 September 2015

Venue: Mumbai, India

Tel: 1-203-516-7424

For more information please contact:

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Client Development & Marketing Director

Email: be@gmiforum.com

Mobile: +40 - 741 - 520 - 372

Ms. Raluca Neagu

Conference Producer

Email: rn@gmiforum.com

Mobile: +40 -722 -764 -802

www.gmiforum.com

The INTERCEM Cementitious Materials Forum

Date : 14 - 15 September 2015

Venue : Hyatt Regency Istanbul Atakoy Hotel, Turkey

Tel: +44 208 669 5222

Email: info@intercom.co.uk

DIARY DATES

Cemtech Europe 2015

Date: 20 - 23 September 2015

Venue: InterContinental Vienna, Austria

Tel.: +44 1306 740 363

Fax: +44 1306 740 660

Email: info@cemtech.com

For more information please visit:

www.cemtech.com/Europe2015

Cemtech Technical Workshop

Cement Manufacturing

Technology

Date: 20 - 23 September 2015

Venue: InterContinental Vienna, Austria

Tel.: +44 1306 740 363

Fax: +44 1306 740 660

Email: info@cemtech.com

For more information please visit:

www.Cemtech.com/Europe2015/Workshop

VDZ Jahrestagung Zement 2015

Date: 22 - 23 September 2015

Venue: Düsseldorf, Germany

For more information please visit:

www.vdz-online.de

10th Global Insulation Conference & Exhibition

Date: 29 - 30 September 2015

Venue: Istanbul, Turkey

For more information please visit:

<http://www.globalinsulation.com/conferences/global-insulation/introduction>

10th Middle East CemenTrade

Date : 05 - 06 October 2015

Venue: Dubai, UAE

For more information please contact:

Ms. Grace:

Tel: +65 6346 9147

Email: grace@cmtpt.com.sg

13th TÇMB International Technical Seminar & Exhibition

Main theme: "Sustainable Environment & Energy"

Date : 07 - 10 October 2015

Venue: Titanic Deluxe Belek Hotel, Antalya, Turkey

For more information please click:

<http://www.tcma.org.tr/ENG/index.php>

2nd Alternative Fuel Symposium

Date : 14 - 15 October 2015

Venue: Duisburg Ruhrort, Haniel Academy, Germany

For more information please contact:

Mr Dirk Lechtenberg

Marketing@lechtenberg-partner.de

sales@lechtenberg-partner.de

17th Asia CemenTrade Summit

Date : 20 - 21 October 2015

Venue: Bali, Indonesia

For more information please contact:

Ms. Grace OH

Tel: +65 6346 9147

Email: grace@cmtsp.com.sgor

Fourth open Technical Seminar in Duesseldorf

Date: 21 - 22 October 2015

Venue: Duesseldorf, Germany.

For more information please contact:

Theodora Bruns / Dr. Regina Krammer

Corporate Service / Training Center

E-mail: trainingcenter@loesche.de

For more information please visit:

<http://www.loesche.com/en/data-2/events/seminars/technical-seminar-duesseldorf-2015/>

15th Global Gypsum Conference & Exhibition:

Date: 26 - 27 October 2015

Venue: New Orleans, US

For more information please visit:

<http://www.globalgypsum.com/conferences/global-gypsum/>

13. ULUSLARARASI INTERNATIONAL TEKNİK TECHNICAL SEMİNER SEMINAR

7-10 EKİM / OCTOBER ANTALYA / TURKEY

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TÜRKİYE ÇİMENTO MÜSTAHİLLERİ BİRLİĞİ

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13th TÇMB INTERNATIONAL TECHNICAL SEMINAR & EXHIBITION 7-10 OCTOBER 2015 TITANIC DELUXE BELEK ANTALYA, TURKEY

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Low Carbon Technologies in Cement Production
Industrial Symbiosis
Use of Wastes
Innovation and New Technologies
All other subjects related to sector

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For Registration Fees and Other Details
www.tcma.org.tr/technicalseminar2015/index.html



introduction

INTERCEM Americas
Date : 02 - 04 November 2015
Venue : Miami, Florida, USA
Tel: +44 208 669 5222
Email: info@intercom.co.uk

11th Global Slag Conference & Exhibition: Bangkok
Date: 17 - 18 November 2015
Venue: Bangkok, Thailand
For more information please contact:
Dr Robert McCaffrey
Global Slag Conference convenor
rob@propubs.com
[http\ www.GlobalSlag.com](http://www.GlobalSlag.com)

BusinessCem Tashkent 2015
The 13th International Central Asia Conference & Exhibition
Date : 23 - 25 November 2015
Venue: Tashkent, Uzbekistan,
For more information please contact:
Ms. Irina Valyukova, Deputy Director
BusinessCem
Tel.: +7 499 977 4495
Fax: +7 499 977 4968
Email: irina@businesscem.msk.ru / valev@businesscem.msk.ru
www.businesscem.ru

International Building Forum
"Cement. Concrete. Dry Mixtures"
Date : 01 - 03 December 2015
Venue: Expocentre, Moscow, Russia
For more information please visit:
<http://infocem.info/eng/>

14th NCB International Seminar
Date : 01 - 04 December 2015
Venue: New Delhi, India
For more information please visit:
www.ncbindia.com/

Cemtech Americas 2015
Conference and Exhibition

Date: 7 - 10 December 2015
Venue: Ritz-Carlton Orlando, Grande Lakes, Florida, USA
Tel.: +44 1306 740 363
Fax: +44 1306 740 660
Email: info@cemtech.com
For more information please visit: **www.Cemtech.com/Americas2015**

2nd Global Boards Conference & Exhibition
Date: 25 - 26 January 2016
Venue: London, UK
For more information please contact:
Dr Robert McCaffrey
rob@propubs.com
[http\ www.GlobalSlag.com](http://www.GlobalSlag.com)

Advances in Cement and Concrete Technology in Africa 2016
Date: 27 - 29 January 2016
Venue: Johannesburg, South Africa
For more information please visit:
<http://www.accta2016.bam.de/en>

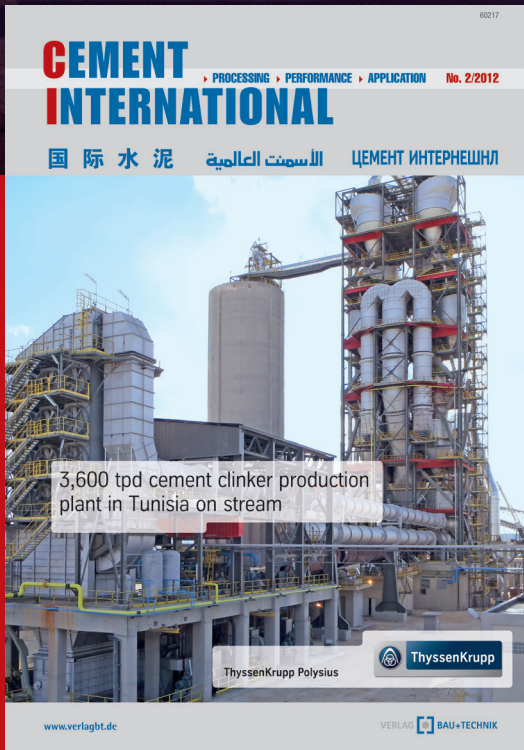
10th Global CemFuels Conference & Exhibition
Alternative Fuels for Cement and Lime
Date : 22 - 23 February 2016
Venue: Prague, Czech Republic
For more information please contact:
Pro Global Media Ltd
Tel: +44 1372 743837
Fax: +44 1372 743838
For more information please visit: <http://www.cemfuels.com>

Global CemCoal
1st Global CemCoal Conference on coal for cement and lime
Date : March 2016
Venue: London, UK
For more information please contact:
Pro Global Media Ltd

Tel: +44 1372 743837
Fax: +44 1372 743838
For more information please visit:
www.CemCoal.com

3rd Global Cement EnviroCem Conference on Environmental Technology for Cement & Lime
Date : May 2016
Venue: London, UK
For more information please contact:
Pro Global Media Ltd
Tel: +44 1372 743837
Fax: +44 1372 743838
For more information please visit:
www.Environmental-Technology.com

Global CemProcess Conference and Exhibition
Process optimisation, de-bottlenecking, production maximisation and troubleshooting
Date : June 2016
Venue: London, UK
For more information please contact:
Pro Global Media Ltd
Tel: +44 1372 743837
Fax: +44 1372 743838
For more information please visit:
www.Global-CemProcess.com



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DIARY DATES

14th Biennial Worldwide Congress –
UNITECR 2015
Date : 15 - 18 September 2015
Venue: Vienna, Austria
For more information please visit:
www.unitecr.org

Tecnargilla 2015
Date: 27 September – 1 October
2015
Venue: Rimini, Italy
[Tel. 39- 541- 744111 / 744206](tel:+39541744111744206)
[Fax 9- 541- 744200 / 744850](tel:+39541744200744850)
[Email: infovisitatori@riminifera.it](mailto:infovisitatori@riminifera.it)
For more information please visit:
www.tecnargilla.it

CERAMITEC 2015
Date: 20 - 23 October 2015
Venue: Munich, Germany
For more information please visit:
<http://www.ceramitec.de>

GENERAL

4th Annual EPC Conference
Date : 5 - 6 August 2015
Venue: Manila, Philippines
For more information, please
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[F: +603 2775 0005](tel:+60327750005)
[E: caseyl@trueventus.com](mailto:caseyl@trueventus.com)
mikej@eltrainingbkk.com

Coastal Engineering Asia
Conference
Beyond Boundaries: Accelerating
Marine Civil Engineering!
Date : 5 - 6 August 2015
Venue: Singapore
For more information, please
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[Fax: +603 2775 0005](tel:+60327750005)
[Email: johnk@trueventus.com](mailto:johnk@trueventus.com)
For more information please visit:
<http://www.gmiforum.com>

Advanced Predictive Maintenance
Date : 12 - 13 August 2015
Venue: Manila, Philippines
[Tel.: +603 2775 0067](tel:+60327750067)
[Fax: +603 2775 0055](tel:+60327750055)
[Email: caseyl@trueventus.com](mailto:caseyl@trueventus.com)

BUILDEX Egypt
Date : 13 - 16 August 2015
Venue: Cairo, Egypt
[Tel.: +2 0122 418 0563](tel:+201224180563)
[Fax: +202 272 38 104](tel:+20227238104)
[Email: info@buildexegypt.com /](mailto:info@buildexegypt.com)
buildexegypt@gmail.com
For more information please visit:
www.buildexegypt.com

4th Urban Renewal:
Code name renewal: Revitalizing
urban areas while moving towards
a vibrant cohesive city
Date : 19 - 20 August 2015
Venue: Goodwood Park Hotel,
Singapore
For more information please
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[Fax: +603 2775 0005](tel:+60327750005)
[Email: johnk@trueventus.com](mailto:johnk@trueventus.com)

Managing Contract During
Projects
Date : 24 - 25 August 2015
Venue: Kuala Lumpur, Malaysia
[Tel.: +603 2775 0067](tel:+60327750067)
[Fax: +603 2775 0055](tel:+60327750055)
[Email: caseyl@trueventus.com](mailto:caseyl@trueventus.com)

Condition Monitoring and
Diagnostic
Date : 24 - 25 August 2015
Venue: Kuala Lumpur, Malaysia
For further details, please contact:
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Integrated Logistics Hub
Conference
Date : 26 - 27 August 2015
Venue: Brisbane, Australia
For further details, please contact:
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[Fax: +603 2775 0005](tel:+60327750005)
[Email: johnk@trueventus.com](mailto:johnk@trueventus.com)

Dispute resolution on the
international energy sector
Date : 27 August 2015
Venue: Mexico City, Mexico
Language: English /Spanish
For more information, please
contact:
The ICC YAF (ICC Young
Arbitrators Forum) Team
[Email: iccyaf@iccwbo.org](mailto:iccyaf@iccwbo.org)
[http://www.iccwbo.org/
Training-and-Events/All-events/
Events/2015/Dispute-resolution-
on-the-international-energy-
sector/](http://www.iccwbo.org/Training-and-Events/All-events/Events/2015/Dispute-resolution-on-the-international-energy-sector/)

SFS India 2015
Date : 03 September 2015
Venue: Mumbai, India
[Tel.: +1 -203 -516 -7424](tel:+12035167424)
[Fax: +1 -928 -832 -4762](tel:+19288324762)
[Email: sales@gmiforum.com](mailto:sales@gmiforum.com)
<http://www.gmiforum.com>

AshTrade India 2015
Date : 04 September 2015
Venue: Mumbai, India
For more information, please
contact:
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FOR ALL EVENTS...

Global Cement also organises the popular *Global CemFuels* and *Global Slag* events...

www.Cement-Events.com

Exhibition enquiries:

Paul Brown, Commercial Director

Email: paul.brown@propubs.com

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Mob: +44 (0) 776 7475 998

Propose a paper:

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Organiser:

global
cement
MAGAZINE

DIARY DATES

GENERAL

World Paper & Pulp India 2015
Date : 08 - 09 September 2015
Venue: Mumbai, India
Tel.: +1 203 516 7424
Email: sales@gmiforum.com

APARTMENTS

Driving the next frontier for high rise living Australia!
Date : 09 - 10 September 2015
Venue: Melbourne, Australia
Tel.: +603 2775 0001
Fax: +603 2775 0005
Email: johnk@trueventus.com

FMCG Manutech Conference
Date : 09 - 10 September 2015
Venue: Jakarta, Indonesia
Tel.: +603 2775 0067
Fax: +603 2775 0055
Email: caseyl@trueventus.com

World Fertilizer Business & Technology India
Date : 10 - 11 September 2015
Venue: Mumbai, India
Tel.: +1 -203 -516 -7424
Email: sales@gmiforum.com

Financial Modelling for Property
Date : 10 - 11 September 2015
Venue: Kuala Lumpur, Malaysia
For further details, please contact:
Mr. John Karras:
Tel.: +603 2775 0001
Fax: +603 2775 0005
Email: johnk@trueventus.com

Central American Drymix Mortar Meeting
Date : Monday 14 September 2015
Venue: Mexico City, Mexico
Tel.: +49 89 6200 0232
Fax: +49 89 6200 9911
Email: info@drymix.info
For more information please visit: www.drymix.info

V International Conference Mediterranean Coal Markets 2015
Date : 14 - 15 September 2015
Venue: Ceylan International Hotel,

Istanbul, Turkey
For more information, please contact:
Mr. Maxim Baev, Managing Director / Chairman of Organization Committee Business-Forum
Tel / Fax: +7 495 77 560 55
Email: conf@b-forum.ru
www.b-forum.com

Tribology
Date : 15 - 16 September 2015
Venue: Bangkok, Thailand
Tel: +603 2775 0067
Fax: +603 2775 0055
Email: caseyl@trueventus.com

UNITECR 2015
Date : 15 - 18 September 2015
Venue: Vienna, Austria
Email: unitecr15@mci-group.com
For more information please visit:
www.unitecr2015.org

19th International Conference on Building Materials - ibausil
Date : 16 - 18 September 2015
Venue: Weimar, Germany
For more information please visit:
www.ibausil.de

Preventing Failure by Directors Effectively Managing Risk
Date : 23 - 24 September 2015
Venue: Bangkok, Thailand
Tel: +603 2775 0067
Fax: +603 2775 0055
Email: caseyl@trueventus.com

ICC YAF: What you need to know about quantum - the ultimate barometer of success or fail
Date : 28 September 2015
Venue: London, UK
Language: English
For more information, please contact:
The ICC YAF (ICC Young Arbitrators Forum) Team
Email: iccyaf@iccwbo.org
<http://www.iccwbo.org/>

[Training-and-Events/All-events/Events/2015/ICC-YAF-What-you-need-to-know-about-quantum-the-ultimate-barometer-of-success-or-fail/](#)

Slag & Ash Trade Americas
Date : 30 September – 01 October 2015
Venue: Rio de Janeiro, Brasil
Tel.: 1-203-516-7424
Email: sales@gmiforum.com
<http://www.gmiforum.com>

EURO PM2015 Congress & Exhibition – International Congress & Exhibition
Date : 04 - 07 October 2015
Venue: Reims, France
For more information please visit:
www.epma.com

Switchgear and Circuit Breakers: Operation and Maintenance
Date : 05 - 06 October 2015
Venue: Manila, Philippines
For more information please contact:
Mr. John Karras:
Tel: +603 2775 0001
Fax: +603 2775 0005
Email: johnk@trueventus.com

Turkey Stone
Date : 14 - 17 October 2015
Venue: Antalya Expo Center, Turkey
For more information please contact:
Pyramids Fair Group
Kucukbakkalkoy Mah. Koca Sinan Cad.Gumrukcu Sok.No.7 34750 Atasehir, Istanbul, Turkey
Email: pyramidsfair@ebultenim.com
www.pyramidsfair.com

The ICIS & GOIC Middle East Surfactants Summit
Date : 19 - 21 October 2015
Venue: Doha, Qatar
For more information please visit:
<http://www.icisconference.com>

DIARY DATES

GENERAL

Project Cost Estimation
Time and Risk Management for
Engineers

Date : 27 - 28 October 2015
Venue: Kuala Lumpur, Malaysia
For more information please
contact:

Mr. John Karras

Tel: +603 2775 0001

Fax: +603 2775 0005

Email: johnk@trueventus.com

Predictive Maintenance Strategies

Date : 27 - 28 October 2015
Venue: Kuala Lumpur, Malaysia
For more information, please
contact:

Trueventus

Casey Lee

Tel: +603 2775 0067

Fax: +603 2775 0005

Email: caseyl@trueventus.com

mikej@eltrainingbkk.com

Increasing Shareholder

Engagement Through Positive Csr

Date : 27 - 28 October 2015

Venue: Kuala Lumpur, Malaysia

Tel: +603- 2775 0067

Email: admin@

registerforaconference.com

For more information please

visit: <http://globalcongresskl.com/MKTGCL/MKT46>

[SHAREHOLDER.pdf](#)

2nd Annual Construction Risk and
Dispute Management Conference

Date : 28 - 29 October 2015

Venue: Singapore

For more information please

contact:

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Tel: +603 2775 0001

Fax: +603 2775 0005

Email: johnk@trueventus.com

12th Kenya Buildex 2015

Date : 29 - 31 October 2015

Venue: Nairobi – Kenya

Tel: 00971 4 2546285

Fax: 00971 4 2546286

Email: <mailto:info1@profexpos.com>

[biz / info@profexexhibitions.com](http://biz/info@profexexhibitions.com)

<http://>

www.profexexhibitions.com

Fit For Service

Date : 15 - 16 November 2015

Venue: Kuala Lumpur, Malaysia

For more information please

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Tel: +603 2775 0001

Fax: +603 2775 0005

Email: johnk@trueventus.com

Parking Management Preamailer

Date : 18 - 19 November 2015

Venue: Singapore

For more information please

contact:

Mr. John Karras

Tel: +603 2775 0001

Fax: +603 2775 0005

Email: johnk@trueventus.com

13th Edition of Green Building
Congress 2015

Date : 19 - 21 November 2015

Venue: Mahatma Mandir,
Gandhinagar, Gujarat, India

For more information please

contact:

Shankar Kundu

Tel: +91 88861 88828

Email: Somya.shankar@cii.in

www.greenbuildingcongress.com

Improving Construction Site
Productivity

Date : 22 - 23 November 2015

Venue: Dubai, UAE

For more information please

contact:

Mr. John Karras

Tel: +603 2775 0001

Fax: +603 2775 0005

Email: johnk@trueventus.com

15th Industrialists' Conference

Date : 25 - 26 November 2015

Venue: State of Kuwait, Kuwait

For more information please visit:

www.incge.com/Default.aspx

Façade and Lobby Design for

Buildings

Date : 25 - 26 November 2015

Venue: Kuala Lumpur, Malaysia

For more information, please

contact:

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Tel +603 2775 0001

Fax: +603 2775 0005

Email: johnk@trueventus.com

SteelFab 2016

The Middle East trade show

for the metal working, metal

manufacturing and steel fabrication

industry

Date : 17 - 20 January 2016

Venue: Expo Center Sharjah, UAE

For more information please visit:

www.steelfabme.com

E-mail: info@expo-centre.ae

Hannover Messe 2016

Date : 25 - 29 April 2016

Venue: Hannover Exhibition

Grounds, Hannover , Germany

For more information, please visit:

www.hannovermesse.de/en/

ISNR Abu Dhabi

Date : 15 - 17 March 2016

Venue: Abu Dhabi, UAE

For more information please visit:

www.isnrabudhabi.com

MSE 2016 – Materials Science and
Engineering

Date : 27 - 29 September 2016

Venue: Darmstadt, Germany

For more information please visit:

www.mse-congress.de

4th Latin American Drymix Mortar
Conference

Date : 6 November 2016

Venue: Sao Paulo, Brazil

For more information, please

contact:

Mr. Ferdinand Leopolder

Email: drymix-news@drymix.info