



CEMENT & BUILDING MATERIALS REVIEW

Published by: Arab Union for Cement and Building Materials No. 88 June 2022



25th ARAB INTERNATIONAL CEMENT CONFERENCE & EXHIBITION

(AICCE25)

Kempinski Hotel

Amman – Jordan

08 – 10 November 2022

المؤتمر و المعرض العربي الدولي

الخامس والعشرون لصناعة الإسمنت ومواد البناء

فندق كمبينسكي

عمان – المملكة الأردنية الهاشمية

Arab Union For Cement & Building Materials (AUCBM)

Event Secretariat :

www.aucbm.net

aicce25@aucbm.email / aucbm@scs-net.org

ADVERTISERS: June Edition # 88, 2022

AUCBM 25 th Arab International Cement Conference & Exhibition (AICCE25)	OFC	www.aucbm.net
ALIT, group of companies CEMENT. CONCRETE. DRY MIXTURES	89	www.infocem.info/en/
CCPIT Building Materials Sub Council (CCPITBM) CEMENTTECH 2022	94	www.cementtech.org
CEMENT INTERNATIONAL	61	www.verlagbt.de
CemWeek	11	www.Cemweek.com
DIFK - Deutsches Institut für Feuerfest und Keramik GmbH	17	www.difk.de
Evonik Fibres GmbH	9	www.P84.com
GEBR. PFEIFFER	7	www.gebr-pfeiffer.com
Global Cement Virtual (free) and in-person events	85	www.GlobalCement.com
International Cement Review	67	www.CemNet.com/subscribe
International Cement Review Cement Plant Environmental Handbook Third Edition	45	www.CemNet.com/CPEH3
Industrial Angles	65	www.industrialangles.com
JAMCEM Consulting	19	www.jamcem.com
Journal Cement Magazine	63	www.jcement.ru / www.petrocem.ru
S.I.G. SPA	25	www.sig.it
Siman News – Iran Cement News Agency	9AR	www.simankhabar.ir
UAE Cement Portal Website	83	www.uaacement.com
World Cement Magazine	57	www.worldcement.com/subscribe
ZKG INTERNATIONAL	71	www.zkg.de



Cement and Building Materials Review

Arab Album

International News

New Products

Technical Articles

Diary Dates

Editor-in-Chief

Eng. Ahmad Al-Rousan

Managing Editor

Suha M. Canaan

CONTRIBUTIONS

- *The Magazine editorial staff welcome the contribution of experts to enrich the contents of the magazine .*
- *Points of view expressed in the magazine do not necessarily express points of view of the AUCBM or the magazine itself . It is rather the opinion of the author. The AUCBM does not bear legal liability or responsibility from any article .*

Advertisements

Please contact Editor-in-Chief

Annual Subscription

Companies & Organisations

US\$ 150

Universities & Research Centers

US\$ 65

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

Website : www.aucbm.net

Contents

Arab News
International News
New Products and Media
Diary Dates

Articles:

- **Quantifying the effects of storage on cement flow properties**
By: Freeman-Technology, UK
- **Dust: An issue solved with Bruks Siwertell technology**
By: Bruks Siwertel AB, Sweden
- **Airscape in a Clinker Vessel Discharger**
By: Scrapetec-Trading GMBH, Germany
- **Bruks Tubulator - State of The Art Conveying Technology**
By: Bruks Siwertel AB, Sweden
- **Innovative planning method for curved overland conveyors**
By: BEUMER Group, Germany
- **Case Study: It doesn't always have to be new – Modernization of Bucket Elevators**
By: BEUMER Group, Germany
- **The impact of brick quality and misalignment on kiln lining stability – Part 2**
By: Greg Palmer and James Millard, Palmer Technologies, Australia
- **Phase IV: How the overall free allowances for part 1 of phase IV compare with Phase III by country member? What are the strategic questions facing the members of the scheme?**
By: Cement Business Research (CBR), UK

CORRESPONDENCE

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

Syria, Damascus – P. O. Box 9015

Tel : (+963 11) 611 5412 – 6118598

Fax : (+963 11) 612 1731

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

Website : www.aucbm.net



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

EDITORIAL SCHEDULE FOR 2022

ISSUE	THEMES	EVENTS
September 2022	<ul style="list-style-type: none"> - Coolers - Fans - Air cannons - Occupational health and safety - Comminution - Vertical roller mills - Increasing cement mill output - Crushing - Grinding & grinding aids - Waste heat recovery - Thermal imaging - Thermal recycling - Methods for treating and utilizing bypass dusts - Explosion protection in alternative fuel storage silos - Alternative fuels handling systems - Production and use of Solid Recovered -Fuels 	<p style="text-align: center;">AUCBM's 25th Arab International Cement Conference and Exhibition (AICCE25)</p> <p style="text-align: center;">Amman, Jordan 08 - 10 November 2022</p>
December 2022	<ul style="list-style-type: none"> - White cement manufacturing - Blended cements - Multi-component cements - Slag cements - Green cement production - Cement blends / mixes - Cement additive - Cement composition - Cement chemistry - Zero carbon cement - Producing low-carbon clinker - Raw material for cement additive - Supply chain management - Energy-efficient cement production - Quality assurance and process control in cement plants - Cement Production cost saving 	

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

September (bonus) issue: **31st August 2022**

December issue: **5th December 2022**

ADVERTISEMENT TARIFFS IN US DOLLARS

PLACE	Once insertion	Twice insertion	3-times insertion	4-times insertion
Outside Front/Back Cover	1,250	****	****	****
Inside Front/Back Cover (Coloured)	950	****	****	****
Full Page (Colored)	750	950	1,250	1,350
Half Page (Colored)	450	550	650	750
Quarter Page (Colored)	300	350	400	450
Full Page (B/W)	300	350	400	450

Size: A4 + bleed on the four sides

For the **outside front/back cover**, dimensions are: 20 (height) x 14 cm (width)

Resolution: 300dpi

File: PSD, EPS, or PDF

BANNERS (JPG) ON THE FIRST PAGE OF WWW.AUCBM.NET

US\$ 150 per month

Size is 200pixel w X 75pixel H

Resolution: 300dpi (please send with the requested link)



ALGERIA

Chlef cement plant to export 1.5Mt in 2022

The Entreprise des Ciments et Dérives d'Ech-Cheliff (ECDE) plant plans to export 1.5Mt of cement in 2022. Exports will be sent to countries in Europe, Africa and Latin America. The subsidiary of Groupe des Ciments d'Algérie's (GICA) opened a third production line at the site intended solely for exports. The unit has a production capacity of 4.2Mt/yr.

Global Cement

EGYPT

Mondi acquires production assets of Lafarge Cement Egypt

Mondi Paper Bags, part of Mondi Group, announced that it has acquired the paper bag converting lines from National Bag and Egypt Sack, two subsidiaries of Lafarge Cement Egypt. The acquired production lines will increase Mondi's capacity by around 150-180 million bags annually and strengthen Mondi's position in the Egyptian paper bag market, the company said in a statement.

Mondi Paper Bags already operates two plants in Egypt and with this acquisition will become a key supplier of paper bags to Lafarge Cement Egypt.

Lafarge Egypt, Lumika Renewables ink \$93mln solar power generation deal

Lafarge Egypt has signed a USD-93-million (EUR 89.55m) deal to offtake electricity from a solar park that will be built by Lumika Renewables Egypt.

Under a long-term agreement, Lumika will set up its first solar park in the North African country with a capacity of up to 50 MW and Lafarge Egypt will procure 140 GWh of green electricity a year from the facility to power its cement factory in Ain Al-Sokhna, Suez Governorate.

With the offtake deal, the cement maker aims to boost the share of clean power to 50% of the electricity used during the day at the plant. Lafarge Egypt's factory in Ain Al-Sokhna has a capacity of 10.2 million tonnes per year and annual power consumption of about 750 GWh.

The agreement will enter into force by the first quarter of 2024.

Lumika Renewables is a joint venture of South Africa-based industrial group Reunert and A.P. Moller Capital. The joint business was created in 2021 to develop a portfolio of cost-efficient, renewable energy solutions for commercial and industrial customers in Africa.

MOROCCO

Ciments du Maroc's new grinding center to be operational from July

It will have a production capacity of 700,000 tons of cement per year.

CW Group

OMAN

Companies confirm cement scarcity in local market in Oman

Oman Cement Company (OCC) has clarified on reports regarding the hike in the prices of cement and its inability to meet the demands of the local market, which has led to the long waiting period.

At the same time, the trading of Raysut Cement Company has been suspended for not disclosing and commenting on the reason for the scarcity of cement production and its impact on the company's financial position (if any) on the stock exchange's website.



GEBR. PFEIFFER



GETTING IT DONE MEANS LEADING TECHNOLOGY



We are the pioneers of vertical mill technology. The inventors of vertical mill drives with more than 10,000 kW, modular ready2grind systems and MPS gypsum grinding calcination. The in-demand specialist for innovative solutions worldwide. And a technology leader for over 155 years.

Grinding Drying Separating Hydrating - Getting it done!

www.gebr-pfeiffer.com



"OCC has made no increase in prices and the long queues of waiting trucks have been due to severe shortage of imported cement due to its high prices as well as the shortage of the supply from the local cement, which has driven those customers who used to buy cement from the neighboring countries and other local producers to buy cement from OCC".

"In light of this frustrated and increased demand for cement, the Company has increased its production capacity to the optimum extent possible averaging (10,000) TPD. However, cement demand is still beyond OCC's capabilities to meet".

SAUDI ARABIA

Al Kifah Ready-Mix & Blocks to launch ConGreen reduced-CO₂ concrete products

Al Kifah Ready-Mix & Blocks (KRB) has announced the upcoming launch of its ConGreen reduced-CO₂ concrete products range. ConGreen concretes replace clinker with lower-carbon materials such as Pozzolana and use Canada-based Carbon Cure Technologies' embedded recycled CO₂ technology to reduce its carbon footprint by up to 30% compared to conventional ordinary Portland cement (OPC) concretes. In addition to this, KRB says that ConGreen concretes also provide improved workability and pumpability properties, as well as being highly durable, with high passing and finishability. They have very low rapid chloride permeability (RCP), water absorption and water permeability properties and low heat of hydration.

[Global Cement](#)

Southern Province Cement commences construction of new line at Jazan cement plant

Southern Province Cement has completed technical studies and commenced construction of a new 5000t/day line at its Jazan cement plant. The company will also build the infrastructure for another 5000t/day line at the site. Reuters new has reported that, together, the lines will replace the plant's existing production lines.

[Global Cement](#)

Yamama Cement inks \$442mln financing deal with SNB

Yamama Cement Company has signed a financing agreement worth SAR 1.66 billion with Saudi National Bank (SNB).

The loan comprises a long-term financing that is valued at SAR 800 million and holds an 8-year duration period, including a grace period of three years.

This is in addition to a SAR 563 million refinancing of the long-term funding for a duration of four years, as well as a short-term financing amounting to SAR 300 million for one year.

The facility agreement comes in line with the company's decision to relocate and install its seventh production line from the old plant in South of Riyadh to Northern Halal in Al Kharj.

The production capacity of the line is 10,000 tonnes of clinker per day, while the new site aims to increase the output to 30,000 tonnes a day by the end of 2024.

[Mubasher](#)

UAE

ABB upgrades the control system at Star Super Cement's Dubai plant

Switzerland-based ABB has carried out an upgrade of the control system for UltraTech Cement subsidiary Star Super Cement at the company's Dubai grinding plant. The supplier says that it installed its ABB Ability 800xA distributed control system (DCS) across three grinding units at the facility. The DCS will communicate between the plant and the company's Ras Al Khaimah clinker plant. ABB previously supplied electric and automation engineering services for the Ras Al Khaimah plant in 2012.

ABB said that Star Cement's operations will benefit from improved operator visibility, easier maintenance and reduced downtime due to the new systems.

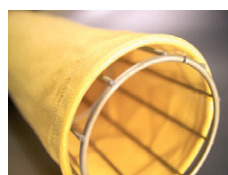
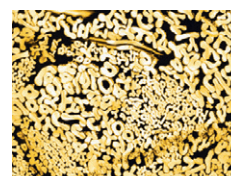
[Global Cement](#)

What can pasta teach us about filtration?



P84® filter bags ensure the best filtration performance. The unique multi-lobed P84® fibre shape maximizes the filter surface and minimizes emissions and pressure drop.
The Profile makes the difference.

P84



Evonik Fibres GmbH
Gewerbepark 4
4861 Schörfing
Austria
Contact: stefano.santorsola@evonik.com
www.P84.com



UltraTech invests \$101.1 mln in UAE's RAK White Cement, acquires 29.39% share

UltraTech Cement announced investing USD 101.10 million for a 29.39% equity stake in the UAE-based RAK Cement Co for White Cement and Construction Materials PSC.

This is a "strategic investment" for the company, Aditya Birla Group firm said in a regulatory update.

"UltraTech Cement Middle East Investments Ltd, a wholly-owned subsidiary of the Company in the UAE, has invested in 29.39% equity share capital of RAK-WCT, a company listed on the Abu Dhabi and Kuwait stock exchanges," the company said.

The shares have been acquired at a cost of USD 101.10 million. This together with the existing shareholding, will result in UCMEIL holding 29.79% of RAKWCT's equity share capital.

UltraTech has a consolidated capacity of 119.95 million tonnes per annum (MTPA) of grey cement. It has 22 integrated manufacturing units, 27 grinding units, one clinkerisation unit and eight Bulk Packaging Terminals.

[LinkedIn](#)

WORLD

GCCA launches Net Zero Accelerator initiatives in Colombia, Egypt, India and Thailand

The Global Cement and Concrete Association (GCCA) has launched new Net Zero Accelerator initiatives under its 2050 Net Zero Global Industry Roadmap strategy in several countries. The new initiatives will identify barriers to decarbonisation and recommend key actions in Colombia, Egypt, India and Thailand. The

association will set out national roadmaps with reduction levers, identify funding possibilities and enter into policy dialogues with national governments. Together, the four countries account for 10% of global cement production.

Chief executive officer Thomas Guillot said "Last year, our industry made a breakthrough net zero global commitment. This is the next logical step as we move our focus from a global roadmap to driving decisive local action." He continued "Global cooperation between governments and industry is crucial to ensuring net zero targets are met. Our Net Zero Accelerators will offer collaboration and support to a number of target countries to help them decarbonise and align with the global roadmap. I'm proud to launch the first phase of the Accelerator programme to assist these nations in embracing greener technologies and work towards a more sustainable future together. I now call on more partners around the world to join us and be part of this movement."

[Global Cement](#)

15% CAGR forecast in global green cement market in 2018 - 2023

Market Research Future has forecast a 15% composite annual growth rate (CAGR) in global green cement demand between 2018 and 2023, where green cement is defined as fly ash cement, slag cement, geopolymers cement and other cements produced using alternative raw materials. Market Research Future predicts that fly ash cement's global growth will be the sharpest due to its abundant availability. Its report concluded that cement sector strategies in response to the growth would include mergers, joint ventures and acquisitions.

[Global Cement](#)

NAVIGATE TOWARDS SUCCESS

The cement industry knowledge your competitive advantage needs:

- **News:** daily newsletter delivered to 23,000 recipients, including CEOs, equipment manufacturers, consultants, and engineers in 160+ countries
- **Proprietary intelligence:** interviews with cement industry thought leaders and experts, including CEOs, executives, analysts and consultants
- **Market research:** high-quality research reports, including detailed market studies, competitive assessments, cement trade flows, and export opportunity assessments. Custom research available upon request
- **Data services:** statistical and data research tools offering industry practitioners a wealth of cement supply and demand data



FLSmidth and AVEVA form global partnership to accelerate sustainable mining operations

FLSmidth and AVEVA, a global leader in industrial software driving digital transformation and sustainability, have signed a global partnership to deliver cutting-edge digitally enabled solutions and services to the mining industry. The agreement will accelerate the digitalisation of mining operations and allow miners to benefit from improved performance and productivity globally.

With the new partnership, FLSmidth will work with AVEVA, using their technology to securely integrate and provide various digitally enabled services to customers. AVEVA PI System will serve as the central digital platform across FLSmidth's operations. The vast majority of large mining companies around the world use the PI System to support data-driven decisions today and can now leverage their existing investments to gain new advanced insights from FLSmidth.

AVEVA PI System's robust data infrastructure collects, enhances and shares information about operational processes across equipment and operating systems in real time, from edge to cloud. With their smart product portfolio and process and service knowledge, FLSmidth can bring new insights to the data to allow mine operators to optimise key areas across the flowsheet, for example in predictive maintenance, process optimisation, improved recovery, and resource efficiency.

FLSmidth and AVEVA will immediately begin to integrate various AVEVA technologies and solutions with the FLSmidth IoT platform

and smart product portfolio. A select number of customers have already agreed to form part of a pilot project around equipment availability and optimisation, with customer value expected to be proven in a short timeframe.

The MissionZero Mine. Providing digital solutions that deliver extra efficiency and optimised resource use to the mining industry is a central part of FLSmidth's MissionZero ambition. A more efficient mine uses less energy, less water and creates a small environmental impact – and data analytics and machine learning are two significant ways digital can help in this area.

About FLSmidth

FLSmidth provides sustainable productivity to the global mining and cement industries. We deliver market-leading engineering, equipment and service solutions that enable our customers to improve performance, drive down costs and reduce environmental impact. Our operations span the globe and we are close to ~10,100 employees, present in more than 60 countries. In 2021, FLSmidth generated revenue of DKK 17.6 billion. MissionZero is our sustainability ambition towards zero emissions in mining and cement by 2030. FLSmidth works within fully validated Science-Based Targets, our commitment to keep global warming below 1.5°C and to becoming carbon neutral in our own operations by 2030. www.flsmidth.com

About AVEVA

AVEVA is a global leader in industrial software, driving digital transfor-

mation and sustainability. By connecting the power of information and artificial intelligence with human insight, AVEVA enables teams to use their data to unlock new value. We call this Performance Intelligence. AVEVA's comprehensive portfolio enables more than 20,000 industrial enterprises to engineer smarter, operate better and drive sustainable efficiency. AVEVA supports customers through a trusted ecosystem that includes 5,500 partners and 5,700 certified developers around the world. The company is headquartered in Cambridge, UK, with over 6,500 employees and 90 offices in over 40 countries. Learn more at www.aveva.com

About Schneider Electric

Schneider's purpose is to empower all to make the most of our energy and resources, bridging progress and sustainability for all. We call this Life Is On. Our mission is to be your digital partner for Sustainability and Efficiency. We drive digital transformation by integrating world-leading process and energy technologies, end-point to cloud connecting products, controls, software and services, across the entire lifecycle, enabling integrated company management, for homes, buildings, data centers, infrastructure and industries. We are the most local of global companies. We are advocates of open standards and partnership ecosystems that are passionate about our shared Meaningful Purpose, Inclusive and Empowered values.

www.schneider-electric.com



New cement partnership to eliminate fossil fuels by electrifying clay calcination

To further decarbonise the cement industry, FLSmidth and a series of leading industry experts have formed a new partnership called ECoClay™. To reduce CO₂ emissions from cement production by up to 50%, the ECoClay partners will develop and commercialise the technology needed to replace fossil fuels in the calcination of clay by fully electrifying the process.

The use of calcined clay to replace traditional, limestone-based clinker in final cement products is essential in drastically reducing the massive environmental footprint from conventional cement production, which today accounts for approximately 7-8% of the world's CO₂ emission.

Current clay calcination processes have gained momentum in recent years – especially with FLSmidth's flash calciner system, producing a highly reactive clay, which allows cement producers to replace up to 30% of the limestone-based clinker, resulting in up to 40% lower CO₂ emissions per tonne of cement produced. By electrifying the clay calcination process preferably from renewable sources and thereby eliminating the use of fossil fuels to drive the activation reaction, the ECoClay partnership expects to further reduce emissions by 10% at more uniform conditions that allow

processing of a broader range of raw clays.

Led by FLSmidth, the global ECoClay partners include the Danish Technological Institute, US-based industrial heating expert Rondo Energy, cement producers VICAT from France and Colombian Cementos Argos, and the Technical University of Denmark. The project is partly funded by the Energy Technology Development and Demonstration Program (EUDP) under the Danish Energy Agency.

Based on the shared research and tests on high-temperature electric heat generation, storage solutions and renewable grid integration, the ECoClay partnership will build a pilot plant at FLSmidth's R&D Center in Denmark. The consortium will seek to demonstrate how the ECoClay process is superior to the conventional combustion processes, has a smaller physical footprint on site and significantly lower emissions of air pollutants.

According to the project plan, the ECoClay partners expect to be able to commence construction of the first full-scale electric clay calcination installation by the end of 2025.

Baumit Germany Acquires Sakret (Schäfer Gruppe) and its Subsidiaries

Die Baumit GmbH, Vorderhindelang, has recently acquired all assets of Sakret Trockenbaustoffe Dr. Arnold Schäfer GmbH, Bad Lauterberg, both Germany. Baumit operates already ten plants for drymix mortars in Germany, With this transaction, four more are being added: Saarwellingen, Wellen, Bad Lauterberg and Nordhausen. The deal also includes Schäfer Gruppe's customer service center in Nordhausen, the aggregates mining plant in Windehausen and a paints & coatings operation in Berlin (Diessner Farben).

According to Baumit, the cooperation/licensing with Sakret Trockenbaustoffe Europa in Berlin will be continued. Management, sales force and administration of Sakret Bad Lauterbach will continue under the umbrella of Baumit Germany. A transaction value was not disclosed by either party, the deal is still subject to approval by the anti-trust authorities.

drymix.info News 268/2022

BEUMER GROUP ACQUIRES FAM GMBH, CONVEYING AND LOADING TECHNOLOGY

BEUMER GROUP STRENGTHENS ITS POSITION IN THE FIELD OF CONVEYING AND LOADING TECHNOLOGY

The BEUMER Group, Beckum, a leading international manufacturer of intralogistics systems in the field of conveying and loading systems, palletizing and packaging technology, sorting and distribution systems has acquired FAM GmbH, Magdeburg a supplier of conveying systems and loading technology. The contracts were signed with the aim of completing the transaction until the end of May. This significantly strengthens the BEUMER Group's market position in the large equipment sector as well.

The FAM Group, with headquarters in Magdeburg, Germany, is an internationally operating medium-sized group with a tradition as a manufacturer of conveying systems going back to the 19th century. FAM is one of the world's leading full-range suppliers of bulk materials handling and processing plants. FAM successfully plans, designs, and manufactures turnkey plants and systems for mining, conveying, loading, and storing minerals, raw materials, and goods. The FAM Group employs approximately 750 people at its headquarters and subsidiaries in Brazil, Chile, China, Canada and India, as well as representatives worldwide.

According to the analysis of industry experts the business area of the two companies complement each other ideally. With more than 4,500 employees over 70 countries, the BEUMER Group is focusing on also on conveying technology in mining and minerals. For decades BEUMER Group has also been consistently established in the bulk materials technology market. FAM's leading technology for transporting and processing minerals fits well with the portfolio of BEUMER Group.

In the future, this competence of the BEUMER Group will be supplemented by the know-how and global set-up of FAM in the project planning of systems. In addition to planning and engineering, FAM provides the entire value chain, including after-sales service to the BEUMER Group. As a global solution provider, FAM has been combining expertise, engineering and project management for over 100 years.

The BEUMER Group offers FAM a long-term perspective based on the highest quality, sustainability and innovation: As a family-run and 100% self-financed company, the BEUMER Group has been developing tailor-made system solutions for mining for almost 90 years.

Dr. Christoph Beumer managing partner and CEO of the BEUMER Group, confirms that this takeover underpins the company's long-term orientation in the segment of extraction, processing and handling of raw materials. The company motto, according to Dr. Beumer is long-term success and not short-term profit. It is necessary to act in a straight line even though difficult economic time. Beumer emphasizes, that they have done their homework in recent years and now they consistently investing in a qualitative expansion of their portfolio.

FAM Managing Director Torsten Gerlach: "The management is pleased to have found with the BEUMER Group a strategic investor. We see great potential for sustainable growth in orders and sales. In this context, the acquisition makes much sense."

Schenck Process announces the sale of its Mining Business to Sandvik AB

Schenck Process, a global company for sustainable, integrated measuring and process technology solutions, announced today that it has signed an agreement for the sale of its Mining business to Swedish engineering group Sandvik AB. Upon completion, the business will be integrated into Sandvik's Rock Processing Solutions business area, a leading supplier of equipment, tools, parts, services and solutions for processing rock and minerals in the mining and construction industries. The transaction is expected to complete in the second half of 2022, subject to regulatory approvals.

With locations in 21 countries, spread over 6 continents, Schenck Process is a global provider of process solutions for mission-critical applications. Schenck Process services a wide range of industries and provides customers with a unique combination of individual products, smart solutions, and deep application know-how.

Schenck Process's Mining business comprises operations in major mining locations around the world including Australia, South Africa and South America with FY2021 revenues of about €160m and approximately 630 employees.

Once fully integrated into Sandvik Rock Processing Solutions, the Mining business will benefit from a greater global reach combined with Sandvik's strong technical and commercial depth providing a more attractive customer proposition and broader career opportunities for all mining employees.

About Sandvik Group

Sandvik is a global high-tech engineering group offering solutions that enhance productivity, profitability and sustainability for the manufacturing, mining and infrastructure industries. Sandvik is at the forefront of digitalization and focuses on optimizing customers' processes. Its world-leading offering includes equipment, tools, services and digital solutions for machining, mining, rock excavation, rock processing and advanced materials. In 2021 the Group had approximately 44,000 employees and revenues of about 99 billion SEK in about 150 countries.

About Schenck Process

Schenck Process is a global provider of sustainable products, integrated solutions, and services in mission-critical applications for bulk materials. Headquartered in Darmstadt, Germany, the Group prior to the Mining sale has around 3,100 employees with a presence in over 21 countries across six continents focused on the food and mining markets, alongside chemicals and performance materials, and infrastructure and energy.

The product offering includes solutions for industrial weighing, feeding, conveying, pulverizing and classification, screening, mixing and blending, and associated digital applications.

For further company news and information, please visit: www.schenckprocess.com



Fifth SACMI-Riedhammer kiln for Duravit Egypt

New supply to the growing Egyptian factory; the focus for the Duravit Group's development plans for international markets. A further recognition of the unique reliability and performance of SACMI-Riedhammer technology.

The supply of a fifth kiln by SACMI-Riedhammer to Duravit Egypt is a sign of the continuing success of the Egyptian company which is becoming an even more important focus for the development plans of the multi-national group, world-renowned leader in the manufacture of quality design sanitaryware. The Egyptian plant has a production output which recently exceeded 2.5 million pieces per year, almost all of which were sold for export to overseas markets.



SACMI-Riedhammer is proud to have been their main partner since 2005 when the first two kilns were installed. Subsequently, hand-in-hand with the considerable growth of production output at Duravit Egypt over the years, we installed a further two kilns between 2017 and 2018.

As with the previous ones, the special characteristics of the new Riedhammer kiln are its unique levels of adaptability, reliability and usability. In particular, the SSK 440/198-8 model supplied is equipped with 8 modules measuring 15x4.4x2 metres each and is provided with innovative internal linings – cordierite-mullite refractory plates – which reduce the need for maintenance and improve the quality of the firing process. Furthermore, the kiln is provided with a rapid cooling system which reduces to just 14 hours the total cycle time for first-firing, thus optimizing production.

The new kiln will further contribute to developing the role of the Egyptian plant in Duravit's production plans and will operate alongside the numerous SACMI RobotGlaze solutions installed in recent years.

LB Group acquires Barcom

Following the acquisition of environmental technology specialist Barcom, the LB Group aims to reach a consolidated revenue of €60 million this year.

LB Officine Meccaniche, a market leader in the design and manufacture of plant and machinery for the treatment of slurries and powders for a wide range of industrial applications, has acquired a majority shareholding in Barcom, a company specialising in environmental technologies for air, fume and water treatment and dust filtration.

The acquisition is part of the Fiorano-based LB Group's strategy of expanding its range of products and services and reinforcing its strategic position in the circular economy and sustainability segments as well

as its role as an integrated partner in powder treatment for the ceramic and other sectors.

Founded in 1986 in Castellarano (Reggio Emilia) by Enrico Baroni, Barcom has 20 employees and posted revenues of around €7 million in 2021.

The LB Group employs 134 people and with this acquisition aims to exceed a consolidated revenue of €60 million following the €45 million posted in 2021, a 50% increase on 2020.

Astraco, the independent advisory firm that manages private equity investments and has owned LB since April 2019, sees the acquisition as a further step in the organic growth and acquisition strategy it has been

working on for the past three years. The processes of generational handover and extensive corporate and managerial reorganisation have already been successfully completed with the appointment of Corrado Fanti as CEO, the restructuring of the administration, finance and control department, the strengthening of the commercial department and the creation of the plant technical department.

On a corporate level, the LB Group has acquired Sitec (micronising mills and industrial conveying systems) and the AST4 business unit (software and industrial automation). More recently, the Astraco group of investors also completed the acquisition of the minority stakes, thereby becoming the group's sole shareholder.

Whatever the problem, the solution's right there



The partner of

- ▶ raw material industries
- ▶ refractories producers
- ▶ refractories application industries

An independent, most reliable and rapidly performing testing laboratory recognized by the industry for

- ▶ Testing according to EN, DIN, ISO, ASTM, API, PRE
- ▶ Damage assessment
- ▶ Test strategy development
- ▶ Consulting



According to DIN EN ISO/IEC 17025 accredited testing laboratory by DAkkS. The accreditation applies to the test methods listed in the certificate.



www.difk.de
info@difk.de



Rheinstr. 58
56203 Höhr-Grenzhausen
GERMANY

System Ceramics acquires Tecno Italia Digital



System Ceramics, the leader company in the design and production of innovative technologies and machines for ceramics, since 2019 part of the Coesia group, has completed the acquisition of Tecno Italia through the formation of a new company, Tecno Italia Digital.

Tecno Italia, a mechanical engineering company based in the ceramic district, has been operating since 1994 and is well-known internationally for its know-how developed in the production of solutions for the decoration of ceramic surfaces.

Specifically, it was Digiglaze – the innovative and original digital glazing technology developed by Tecno Italia – that led to System Ceramics’ acquisition of a majority shareholding.

With this operation, System Ceramics strengthens its own wide range of solutions in the direction of technological excellence and efficiency improvement in industrial processes, giving its customers the possibility of setting up a completely digitalized decoration line.

CeramicWorldWeb.it

Marshalls acquires roof systems specialist Marley



Marshalls, the UK-based concrete and natural stone paving company, has signed a £535 million deal with Inflexion Private Equity to acquire 100% of the Marley Group, a manufacturer of roofing systems based in Burton, Staffordshire.

The company’s board sees the acquisition as a strategic step in its growth trajectory that will accelerate its five-year strategy to become the UK’s leading manufacturer of products for the built environment.

The Marley Group has been operating for around 100 years and offers a broad range of products including concrete and clay roof tiles, timber battens, roof fittings, solar panels and roofing accessories, all of which are complementary to Marshalls’ offerings.

“Marley is a highly profitable business with established market positions across UK RMI and new build housing,” said Martyn Coffey, CEO of Marshalls. “Much like Marshalls, its position is underpinned by a track record of product quality and customer service, and we believe Marley will represent a strong cultural fit with our own business.”

Marley will remain a standalone division and will continue to be led by the current management.

KILN OPERATIONS OPTIMISATION

Kiln operators have one of the most important jobs on a cement plant and one where their actions can have a real-time impact on the profit and loss of the plant. They affect the kiln output, fuel and power consumption, clinker quality, plant emissions and the life of the refractory. But cement plant owners rarely invest in training, development and coaching of their operators to improve profits – JAMCEM can provide these services with its systems and kiln master burner services

PADS ASSESSMENTS

Desktop assessment of plant performance, limiting factor analysis on kiln output and gap analysis on fuel and power consumption

OPERATING COACHING

Bespoke training course for your plant and process type with JAMCEM specialist covering chemistry, kiln control loops, cooler operation and optimisation and kiln troubleshooting

OPERATING COACHING

Dedicating mentoring and coaching of operators in the kiln control room - side-by-side training of your operators to improve skills levels and understanding of the pyro-processing system

INDEPENDENT CONSULTANTS FOR THE
GLOBAL CEMENT INDUSTRY

Quantifying the effects of storage on cement flow properties

**By: Jamie Clayton, Operations Director
Freeman-Technology, UK**

Storing cement under appropriate conditions, from production through to the point of use, is essential to meet the exacting operational efficiency standards of the industry and safeguard product quality. During storage, the particle-particle interactions in bulk cement can gain strength as a result of applied stress, vibration and/or the ingress of moisture. Such consolidation or caking can significantly compromise flow properties, inhibiting the ease with which the product is conveyed from storage into tankers or IBCs, for example, as well as potentially impacting developed strength.

In this article we consider the mechanisms associated with powder consolidation and present experimental data contrasting the caking behaviour of two commercial cements. The results demonstrate the utility of dynamic powder characterisation in differentiating the sensitivity to storage conditions of closely equivalent products. The effects of storage.

Even if powders enter a storage environment – whether a tonnage-scale silo or a 25kg bag – flowing consistently, once they are at rest, their properties are susceptible to change. Increased humidity, the consolidating pressure exerted by stored powder, and/or vibration from, for example, transportation, can all transform flowability. The strengthening of particle-particle interactions produces a range of undesirable outcomes, from erratic hopper discharge to potentially irreversible ‘lumping’ (aggregate formation) in the product. For cement manufacturers, the associated bottom line penalties range from compromised operational efficiency to a failure to meet strength targets, due to altered hydration performance.

Caking can occur via both mechanical and chemical mechanisms, with the ingress of moisture often particularly influential. Liquid on the surface of powder particles often results in capillary bonds which tend to inhibit the movement of one particle relative to another. However, it may also trigger crystallization and/or chemical reactions and the formation of solid bridges in materials such as cement, that react with water. Such reactions do not necessarily occur uniformly throughout the powder but may be localised at the air interface, creating a strong ‘crust’ with essentially unchanged powder beneath. It is worth noting that even when water levels are closely controlled, changes in temperature can cause condensation, introducing sufficient liquid into a ‘dry’ powder to initiate these processes.

Vibrational consolidation changes flow behaviour by encouraging particles to re-orientate into a closer, more efficient packing arrangement. Prolonged direct compression, on the other hand, literally forces particles together, forming mechanical aggregates, as well as squeezing entrained air from the powder bed. For certain materials, elevated temperature enhances this effect by increasing the tendency for plastic deformation though this is not a pronounced mechanism for relatively hard, mineral powders such as cement, under typical storage conditions. Testing powders to simulate storage.

Shear cell testing was developed to support a scientific approach to hopper design and is particularly relevant for quantifying the behaviour of powders under the moderate to high stresses present at a hopper outlet due to the weight of stored powder. It can therefore be a useful technique for gaining insight into powder behaviour in storage. In simple terms shear testing involves measuring the forces required to shear one consolidated powder plane relative to another. The resulting data are used to generate parameters including Unconfined Yield Strength (UYS) and Flow Function (ffc) which can be measured as a function of, for example, exposure to humidity or prolonged consolidation to assess the sensitivity of a powder to storage conditions. Uniaxial testing, which also quantifies yield strength can be used in a directly analogous way.

Importantly though, shear testing has certain limitations when it comes to caking studies. Firstly, the extrapolation process used to generate both UYS and ff_c values can make it difficult to achieve good repeatability, potentially amplifying errors of less than 10% in measured shear stress to a variation in UYS of more than 100% [1]. Repeatability is instrument dependent and advanced systems deploy strategies to minimise such errors, thereby producing more accurate and repeatable data. Alternatively, uniaxial testing, a direct measurement technique, eliminates any requirement for extrapolation and can produce highly repeatable data. However, even highly reproducible UYS/ ff_c values may fail to differentiate powder behaviour as successfully as a technique that is able to quantify powder behaviour under conditions that are more relevant to the process of interest.

Dynamic testing directly quantifies flowability, a property most often compromised by storage, and can be applied to powders in a low stress, aerated or even fluidised state, extending the relevance of generated data well beyond unit operations such as hopper discharge. Dynamic powder properties are generated from measurements of the axial and rotational forces acting on a helical blade as it rotates through a powder sample, using well-defined, largely automated methods. An important advantage of these methods is that they can detect whether powder changes are homogeneous or limited to crusting. Measurements of the energy associated with movement of the blade, as a function of bed height, allows accurate measurement of both the strength and depth of any crust present.

The following case study demonstrates the complementary nature of shear and dynamic testing in caking studies and the data generated by each.

Case study: Comparing the caking behaviour of two commercial cements.

Dynamic, shear and bulk powder properties were measured for two commercial rapid setting cement products specified for directly comparable application from Supplier A and Supplier B, using an FT4 Powder Rheometer® (Freeman Technology, Tewkesbury, UK) and standard test protocols [2]. Table 1 summarises key results, highlighting clear differences between the two materials.

Dynamic Measurements:	Supplier A	Supplier B
Basic Flowability Energy, BFE (mJ)	1066 ($\pm 0.3\%$)	1274 ($\pm 0.1\%$)
Stability Index, SI	1.2 ($\pm 1.3\%$)	1.0 ($\pm 1.1\%$)
Conditioned Bulk Density, CBD (g/ml)	1.34 ($\pm 0.0\%$)	1.46 ($\pm 0.1\%$)
Bulk Property Measurements:	Supplier A	Supplier B
Pressure Drop, $PD_{15,1}$ (mBar)	52.8 ($\pm 0.5\%$)	36.7 ($\pm 1.0\%$)
Compressibility, CPS_{15} (%)	17.7 ($\pm 0.4\%$)	14.4 ($\pm 3.6\%$)
Shear Measurements:	Supplier A	Supplier B
Shear Stress, $\tau_{7,9}$ (kPa)	5.5 ($\pm 1.5\%$)	5.9 ($\pm 1.4\%$)
Shear Stress, $\tau_{3,9}$ (kPa)	3.1 ($\pm 1.7\%$)	3.5 ($\pm 0.5\%$)
Flow Function, ff_c	3.2	2.8

Table 1: Dynamic, bulk and shear properties for two cements highlight clear differences between the products.

The cement from Supplier A has a significantly lower Basic Flowability Energy (BFE) than that from Supplier B. It also has a lower Conditioned Bulk Density, lower permeability and higher Compressibility. These differences in bulk properties suggest that the cement from Supplier A is the more cohesive of the two with stronger interparticle forces that retain a higher level of entrained air. BFE is measured during a downward traverse of the blade which exerts a compressive action on the powder. The air entrained by more cohesive powders can dampen the impact of this action, while with a less cohesive, more efficiently packed powder, the flow zone may be much larger and BFE correspondingly higher. The observed difference in BFE is therefore consistent with the cement from Supplier A being the more cohesive of the two.

Shear cell results are in contrast with the preceding conclusion, indicating that the cement from Supplier B is more cohesive. This is evidenced by the higher shear stress values measured, as well as from the derived ffc values, and may be due to the different test conditions associated with the technique, specifically the fact that the sample is subjected to a consolidating load. However, the shear data for the two cements are in fact closely similar and do not provide reliable differentiation between the products, with the ffc values actually indicating an identical flowability classification. Dynamic testing was therefore chosen to assess the potential impact of storage conditions, including the effect of consolidation, in subsequent tests.

Vibrational consolidation

To assess changes in flow properties arising from vibrational consolidation, conditioned samples were subject to flow energy measurement following 50 taps on a jolting volumeter (JV-1000, Copley Scientific, UK). Flow energy and Consolidation Index (CI) data are shown in figure 1, where CI is the ratio of the flow energy of the consolidated powder to the BFE of the pre-consolidated cement.

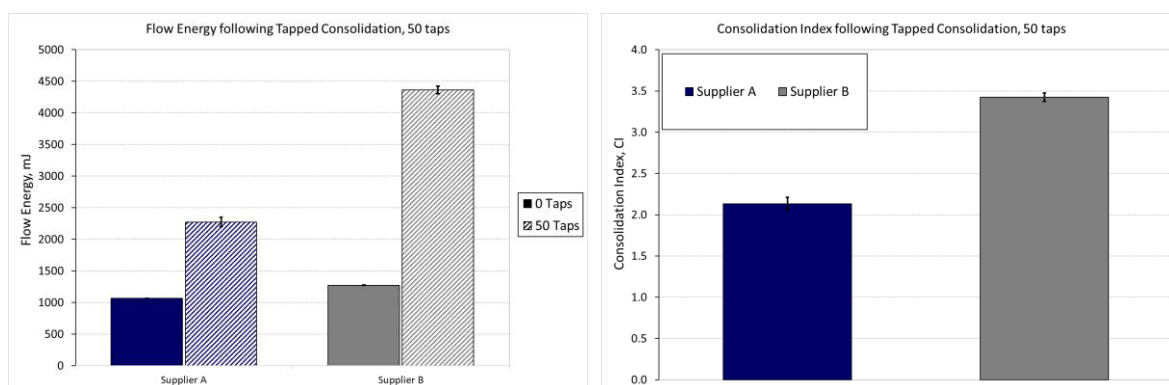


Figure 1: Flow energy and CI data show that cement from Supplier B is significantly more susceptible to vibrational consolidation than that from Supplier A.

These data show that the flow properties of cement from Supplier B (CI = 3.4 +/- 2.1%) are more susceptible to change by vibrational consolidation than those of the cement from Supplier A (CI = 2.1 +/- 5.0%). When inter-particle forces are relatively low particles can flow easily relative to one another. The vibrational disturbance of such powders promotes the development of highly efficient particle packing structures and an associated increase in flow energy. With more cohesive powders particle movement is more restricted, and such rearrangement occurs less readily.

Storage time

To assess changes in flow properties as a function of storage time, BFE measurements were repeated following storage for 24 and 72 hours under ambient conditions (23.9oC, Relative Humidity (RH) 45.7%). No external stresses were applied to the samples. Figure 2 shows the observed increases in flow energy, and associated CI values for each sample at 24 and 72 hours.

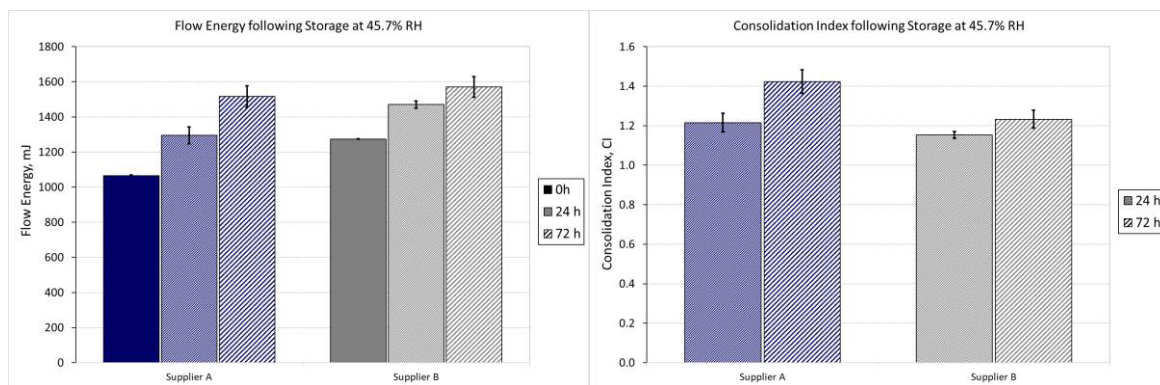


Figure 2: Cement from Supplier A is more susceptible to consolidation over time than that from Supplier B – the opposite trend to that observed with vibrational consolidation.

In these tests it is the cement from Supplier A rather than that from Supplier B that exhibits the greatest change. This suggests that if the cements are simply left undisturbed, under ambient conditions, during a plant shut down for example, then it is the cement from Supplier A, the more cohesive sample, that will suffer the more marked deterioration in flow behaviour.

Humidity

To assess the impact of humidity, the experiments described above were repeated at elevated humidity (75% RH). The resulting data (figure 3) show that once again the cement from Supplier A exhibits a more significant change in flow energy, indicating greater sensitivity to increased humidity.

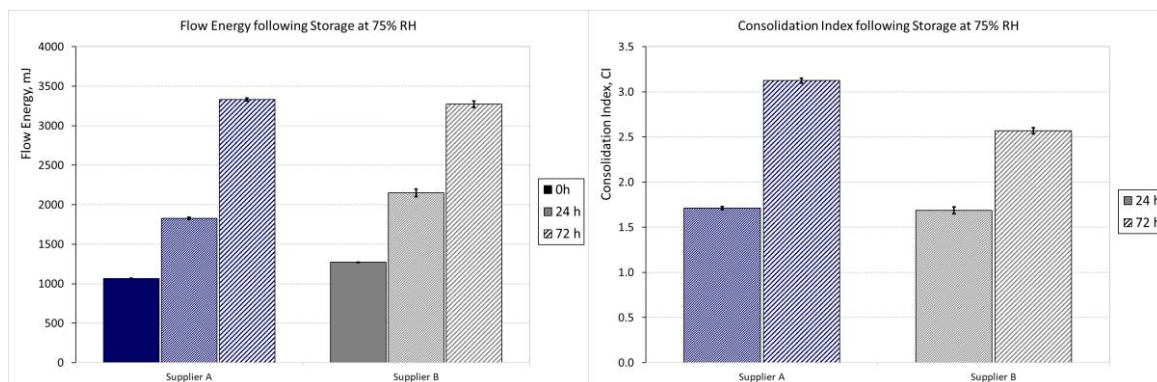


Figure 3: Cement from Supplier A is also more susceptible to change due to exposure to humidity, relative to that from Supplier B.

Raw data from these experiments (figure 4) indicate that rather than having a homogeneous impact, exposure to humidity most markedly increases flow energy in the upper ~5 mm of the powder sample, with both samples showing evidence of crusting. This suggests that moisture does not penetrate through the entire sample, but just an upper section in relatively close proximity to the air interface.

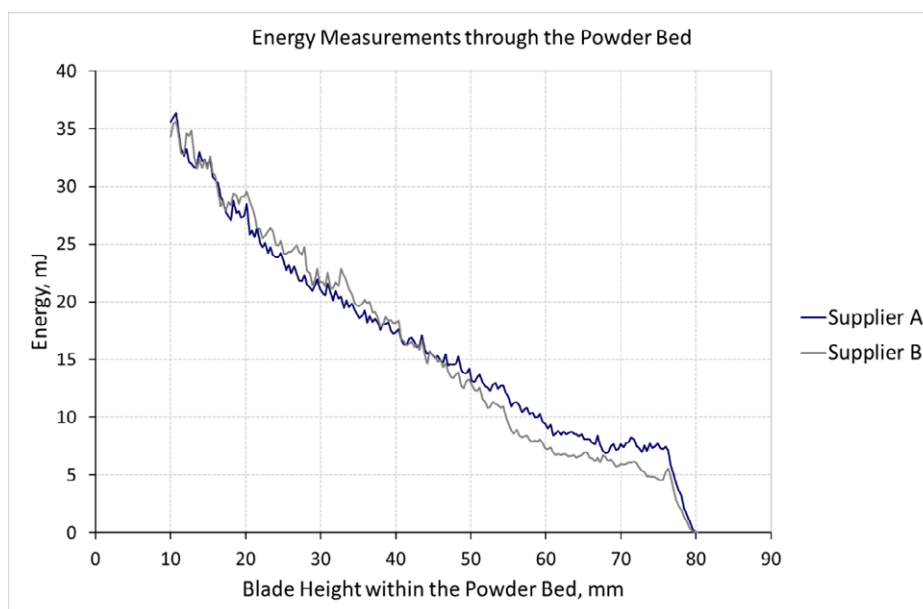


Figure 4: Raw force measurements indicate the presence of a relatively strong crust, confined to the upper 5 mm of the sample, for both cements, after both 24 and 72 hours.

Direct consolidation

Finally, to investigate the sensitivity of the two cements to storage under consolidation, storage experiments were repeated under three different consolidating loads; 0.92, 2.0 and 3.09 kPa.

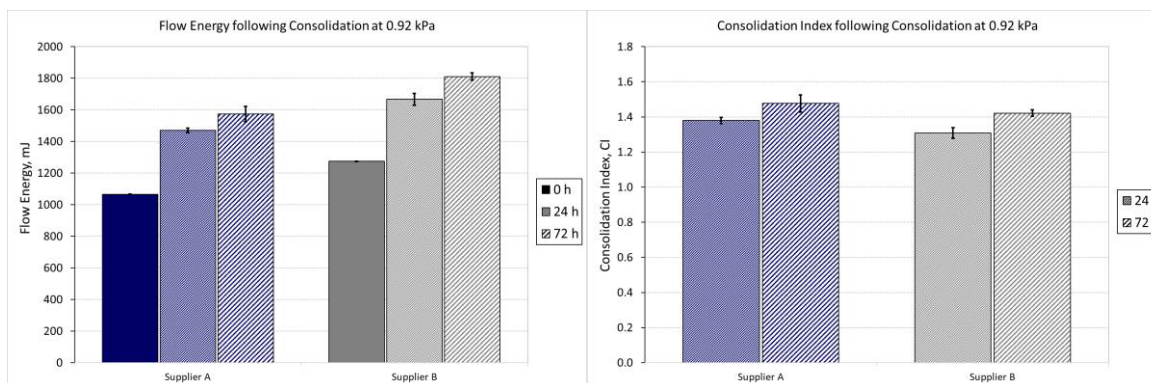


Figure 5: When stored under a consolidating load the behaviour of the two powders begins to converge.

When stored under a 0.92 kPa consolidating load (see figure 5), the cement from Supplier A exhibits a slightly higher CI than that from Supplier B, but the difference observed after 72 hours in the absence of a consolidating load (figure 2) has largely been eroded, i.e. both cements now exhibit similar behaviour. This similarity in behaviour is maintained in the tests carried out under higher compressive loads (see figure 6) though the cement from Supplier B exhibits a slightly lower CI at 72 hours than at 24 hours, at both 2.0 and 3.09 kPa (data not shown). Further investigation is required to rationalise this repeatable but somewhat unexpected decrease however, this demonstrates the complex relationship between powder flowability and consolidation, highlighting the need for greater understanding.

In combination, these data show clearly that the impact of direct consolidation is not linear with either time, or consolidating load, nor is it identical for these two closely similar products. When stored in a silo, cements may be subject to varying consolidation pressures and storage times, depending on production rates and demand. Data such as these demonstrate how dynamic testing may be applied to sensitively assess the impact of such variability on the flow properties of a cement to support the development of operational practices that help to safeguard consistent throughput.

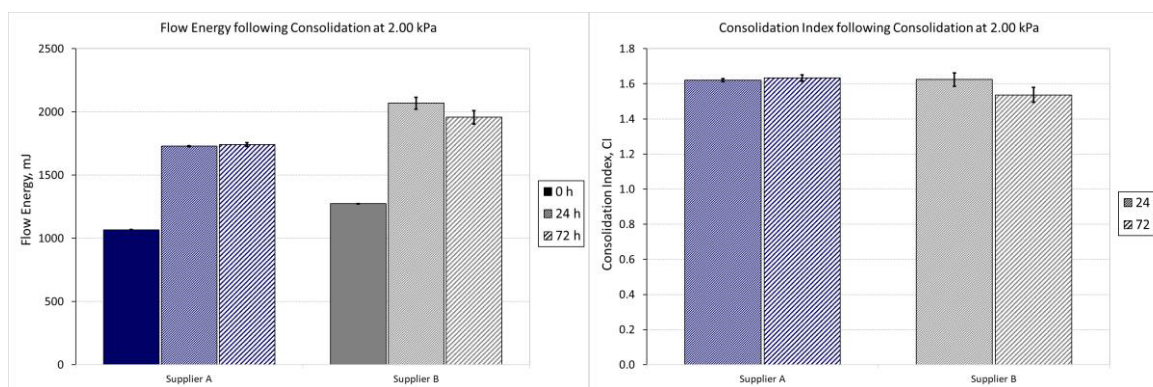


Figure 6: Under increased consolidation load, the CIs of the two cements become closely similar though cement from Supplier B exhibits a slight reduction in CI with longer storage times.

In conclusion

Understanding how a specific cement responds to the conditions under which it is stored directly supports the development of optimised storage and handling procedures. The study described here illustrates how powder rheology can be used to rigorously investigate and compare cement caking behaviour, with sensitivity and in a highly relevant way that includes the quantification of crusting. The resulting data supports efforts towards greater operational efficiency and the safeguarding of product quality.

References

- [1] Delancy, M. et al. 'Accurately quantifying process-relevant properties for AM applications' Proceedings of AM/PM Conference, Session A13, Paper 505, Orlando, FL, May 18 – 20, 2014.
- [2] Freeman, R 'Measuring the flow properties of consolidated, conditioned and aerated powders — A comparative study using a powder rheometer and a rotational shear cell' Powder Technology, 174 (2007) 25-33.



CONVEYOR & ELEVATOR BELTS STEEL CORD & TEXTILE

ISO 9001



21055 Gorla Minore (VA) - Italy
Via A. Colombo, 144

Phone +39 0331 36.51.35
Fax +39 0331 36.52.15

www.sig.it
E-mail: sig@sig.it



DUST: AN ISSUE SOLVED WITH BRUKS SIWERTELL TECHNOLOGY

By: Bruks Siwertell Americas

Demand for dust-proof solutions is increasing, driven by environmental, societal, and cost factors; from Bruks Siwertell's perspective, this is timely, as it has all the technology an operator needs to solve the issue of dust.

Although a natural part of handling dry bulk materials and processed wood, for powdery cargoes, dust is essentially the product, whereas for others, its presence can indicate material degradation, for example with biomass pellets or grains.

Whether it is the asset or the nuisance, fugitive dust emissions should be prevented from entering the atmosphere and impacting the environment, and from spreading to work areas, affecting personnel, gumming up machinery, and potentially increasing fire risk.

From one end of the supply chain to the other, Bruks Siwertell has developed all its key systems with the prevention of dust emissions in mind. Spanning the processed wood and dry bulk handling industries, we have leveraged more than a century of combined expertise in the development of our dust control solutions.

Every dry bulk material transfer has the potential to generate dust, and some more so than others. Aside from the obvious powdery cargoes, such as cement, some wood and agricultural residues, dry shavings and sawdust are inherently very dusty, while wet chips and barky fuels are less so.

CONTROLLING THE CLOUD

Materials like wood residues and sawdust are by-products from other industrial practices, and are a valuable raw resource in many industries, from pellet plants, where the production of biomass pellets can be used to offset coal in power stations, to panelboard and pulp and paper manufacturing.

They often arrive at production plants on the back of bulk trucks, traveling loose in large trailers. There are various techniques for offloading them quickly; but all rely on tipping the truck and trailer out into a receiving hopper. If



not well-managed, this part of the handling process has the potential to generate a considerable dust cloud, exacerbating environmental issues, but also presenting a fire risk.

Bruks Siwertell's range of back-on, extended arm and drive-over truck dumpers have numerous dust mitigation features. These include fixed or articulating covers for receiving hoppers, enclosed on all sides, along with dust extractors and dust collection systems. These systems negatively pressurize the air, capturing any dusty material in the receiving area and reintroducing it back into the system for use, ensuring that no usable product is being lost.

"Our truck dumper systems minimize dust emissions by utilizing a combination of technologies," says Christopher Duffy, Area Sales Manager, Bruks Siwertell. "For example, a covered receiving hopper and dust collection system combine to deliver the most efficient, optimized, safe unloading process.

"It is possible to deliver a truck dumper and receiving system that can ensure close to zero fugitive dust emissions," explains Duffy.

Bruks truck dumpers use a set of hydraulic cylinders that raise a platform at one end, lifting the entire truck. Full lift and lower cycles are completed in approximately four minutes, delivering the capacity to unload biomass at a rate of up to 85t/h.

"Although the hoppers, receiving systems and dust collectors provide very good dust control, the angle at which our truck dumpers work is another advantage. They have a low-profile design, which means that trucks tip their load as close to the ground as possible. This significantly reduces the impact, and therefore dust cloud, of material landing in the hopper," he notes.

UPGRADES ENHANCE OPERATIONS

Over the years, Bruks Siwertell technology has advanced, but the leeway for dust emissions from industrial practices is rapidly diminishing. Therefore, retrofitting dust control measures and upgrading existing systems is gaining industry interest.

A number of operators are already benefiting from this strategy. "It is particularly appealing to biomass production companies that regularly handle dusty, processed wood. Their existing dry shavings receiving and storage equipment, including truck dumpers, may not have been originally fitted with dust collection systems or covered hoppers, so relatively simple upgrades can yield very significant results," Duffy highlights. "Furthermore, if conveyors are replaced with totally enclosed systems, spillage is also not an issue. For some operators we are predicting a doubling of raw material throughput within the plant when switching to totally enclosed conveyors. "We can generally design new dust collection systems to suit all existing truck receiving systems, along with, for example screening systems, which remove any oversized dry wood shaving material received by a facility.

"The Bruks Siwertell dry shavings receiving system is totally enclosed, preventing dust emissions and protecting the material from any external moisture; a double-bonus," adds Duffy. "In fact, this is particularly beneficial to pellet plants; by protecting the flow of raw material from the elements, it potentially means that the dry shavings do not need to pass through the plant's dryer, which can often slow the process down or mean that the plant has to increase its dryer capacity."

CONTAINED CONVEYOR SYSTEMS

Enclosed screw conveyors are a good example of how facilities can contain materials and maintain high conveying capacities.

Siwertell screw conveyors offer particular advantages to dry bulk operators. They are robust and hard-wearing, so for the cement handling industry and for those that handle much more abrasive materials such as clinker and aggregates, screw conveyors offer very reliable, cost-efficient performance and minimal maintenance. But with particular reference to dust emissions, as they are totally enclosed, they bring these down to negligible levels and ensure spillage-free material transfers.

The same principle extends to Bruks Siwertell's range of Siwertell screw-type ship unloaders, from the road-mobile and port-mobile models up to the large, very high-capacity stationary or rail-mounted systems. Their success has been founded on the ability of every Siwertell unloader to deliver market-leading through-ship capacities, reliability, long service lives, and crucially no spillage or dust emissions. From the inlet feeder in the hold, to the downstream receiving system, the entire material handling process is totally enclosed.

"We want to make sure that as much as possible of any shipment of cargo, whether it is on a bulk truck, in a ship's hold, or on a conveyor, makes it from source to destination, and crucially, maintains its quality. Furthermore, this has to be achieved in the most environmentally friendly and efficient way possible," he adds. "Bruks Siwertell has focused a great number of resources on addressing exactly this."

Conveying dusty cargoes over any distance, but particularly long distances, can also present challenges. Traditional, idler belt conveyors have done a good job for centuries and offer very high capacities for relatively low investment costs. But they do have some intrinsic drawbacks. The rollers need high levels of maintenance to prevent seizing and therefore the potential for an idler-can fire, delicate materials can degrade during the process as the belt passes over multiple rollers, generating a bumpy ride and more dust, and as materials are conveyed, they often undergo a sifting effect. Belt conveyors also need secondary covers to contain dust and protect the cargo from the elements.

NEW WAYS OF THINKING

Aside from totally enclosed screw conveyors, and covered belt conveyors, Bruks Siwertell offers alternative conveying solutions for mitigating dust during dry bulk material transfers. This includes air-supported, low-friction conveyors, such as The Belt Conveyor™ and the Tubulator™.

In both cases, idlers beneath the belt are removed and replaced by an air cushion. To create this, The Belt Conveyor uses a header of pressurized air for each three meter section and the Tubulator uses a series of in-line, low-pressure fans.

Each system offers unique advantages. The Belt Conveyor shares the geometry of a 35-degree idler conveyor; therefore, it still meets the industry-standard calculations for the USA's Conveyor Equipment Manufacturers Association (CEMA). It can carry a wide variety of materials and delivers high-capacity conveying with minimal equipment wear and very low operating costs.

As for the Tubulator, it achieves capacities up to 40 percent higher than conventional belt conveyors and uses innovative suspension cable tower technology that enables it to span long and high installations.

The environmental gains that both these conveyor systems offer are also far-reaching. A fully enclosed cover provides dust-free operations, eliminates product losses and minimizes any noise production. Low-friction conveying also means that its energy consumption demands are minimal in comparison with traditional systems.

"The challenge in dry bulk handling and in wood-processing is that these are inherently dusty or dust-generating processes, but change is possible and necessary," Duffy says. "Spreading dust poses operational risks; it wastes cargo, and the fuel and emissions spent in carrying it. It also means lengthy clean-up procedures that cost money. Preventing dust emissions in the first instance is a Bruks Siwertell specialty and we are ready to help any operator overcome their dust issue."

AIRSCRAPE IN A CLINKER VESSEL DISCHARGER

Dust-, spillage- and maintenance-free conveyor belt skirting. Contact-free and thus frictionless by using a Venturi effect to prevent spillage.

By: Scrapetec-Trading GMBH, Germany

Companies whose daily operations include extraction, processing, crushing and screening of materials are familiar with the problems at the transfer points in conveying systems, such as nuisance dust generation, disruptive material spillage, costly belt wear, maintenance work that impedes operation and constant cleaning required. ScrapeTec from Kamp-Lintfort/ Germany with its specific products has been providing effective solutions to all these problems. ScrapeTec products as e.g. AirScrape, DustScrape and TailScrape are applied all over the world individually or in combination – serving as side skirtings or belt skirtings, for example and used by large and small companies.

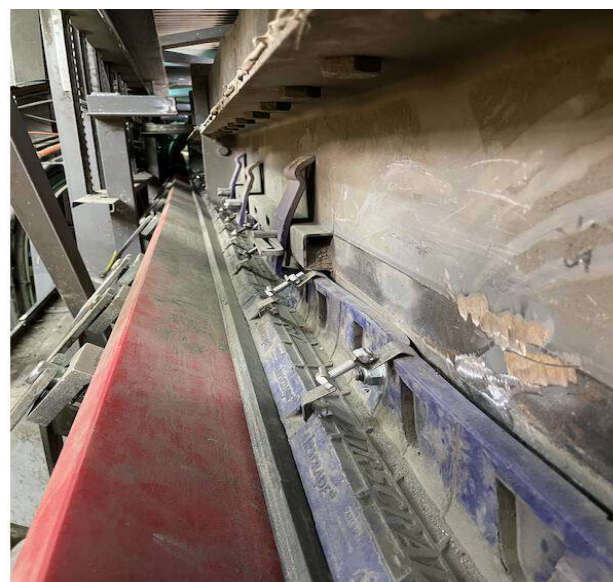
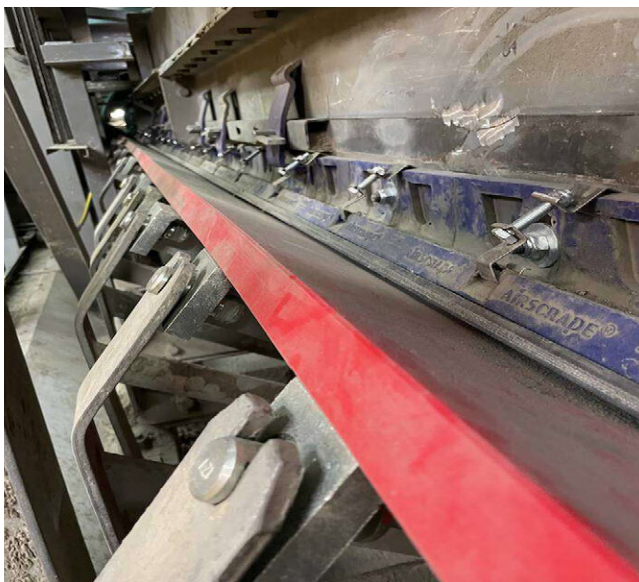
AirScrape: leak free without materials touching

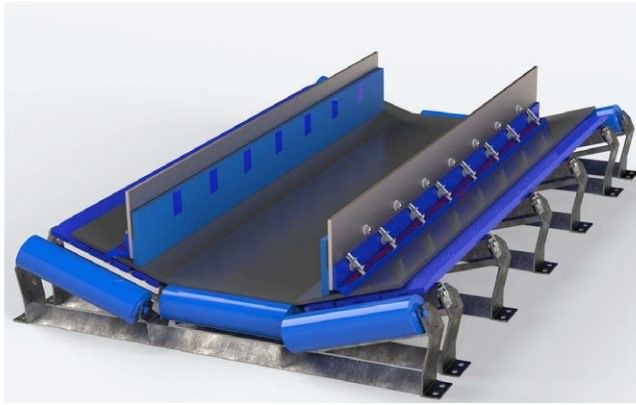
ScrapeTec Trading GmbH started with the AirScrape as its first product. The aim of company founder and developer Wilfried Dünnwald in developing this sealing system was to achieve maximum dust reduction at transfer points of bulk material handling systems. The AirScrape includes special skirtings at the transfer point which hover freely above the conveyor belt and use the air flow resulting from belt movement. They are mounted laterally with an air gap of approx. 1 – 2

mm to the belt at the transfer point. Lamellas integrated in the AirScrape provide a so-called “Venturi effect” which results in an air suction from the outside to the inside. Dust or other fine material can thus not escape to the outside. This particular dust-reducing feature of AirScrape is esteemed worldwide wherever this special system is installed as belt skirting for transfer points.

Further developments: DustScrape, TailScrape

The experience gained from the use of AirScrape has led to the development of further products supplementing the ScrapeTec Trading GmbH portfolio. All solutions relate to the transfer points of conveyor systems. Take, for example, the DustScrape. This dust protection device with its sturdy filter cloth is installed in front of the transfer point in the direction of belt run and catches coarse dust and particles. It has a self-cleaning function. The DustScrape spans the conveyor belt on its entire width and ensures optimum dust reduction in this position. In the rear area of the transfer, the TailScrape is applied. Like AirScrape, the TailScrape works according to the Venturi concept and without contact to the belt. Owing to its blade structure, it matches the contour of the belt trough precisely and serves as a





customized rear belt sealing. Together, the AirScrape, DustScrape und TailScrape ensure dust reduction in perfection. Here, it becomes apparent that the original idea during development of the AirScrape, namely a maximum dust reduction at transfer points, has been innovatively thought through in subsequent products.

Synergy effects

“Our drawing card is clearly the AirScrape,” says Thorsten Koth, Sales & Distribution Manager of ScrapeTec Trading GmbH. “But customers quickly recognize the synergy effects when the three dust reduction specialists work together.” Thorsten Koth supports customers worldwide. “Many interested people have seen the AirScrape on Youtube and have quickly recognized the advantages. Then they want more information or even on-site consulting. With the power of digital communications, companies find us from every corner of the world. With conference formats like Teams, we can present the whole system ourselves and do consultations. But we also have distributors in some countries for consulting. Or sometimes we travel ourselves.”

Skirting solutions for all enterprises

CODELCO, Chile’s largest copper producers, also apply the AirScrape product, as other major players, for example in Spain. It is important for Thorsten Koth to emphasize that small and medium-sized enterprises in particular also benefit from skirting solutions as the AirScrape. “Without making a large investment, immense costs can be saved in operation. This simply increases the profit.”

Paid off after one month

“Of course, I cannot present new clients with a cost-benefit calculation of our customers. No one would appreciate a look behind the scenes. But the calculation is quite simple: you take the acquisition costs for the AirScrape-equipment. There are no assembly costs;

this can simply be solved in-house. These costs are then compared with other costs: Maintenance work, cleaning work, repair costs and new acquisition costs for worn belts and skirtings. With the application of our skirting solutions, the costs for the items mentioned are reduced considerably. We hear from our new clients in Peru that the belt sealings applied before had to be replaced due to wear every fortnight and that each replacement resulted in a standstill of 3 hours. So 26 weeks times 3 hours a year: 78 hours. And every company knows what every hour of downtime costs. According to a rough calculation of the Peruvians, the AirScrape thus already paid off after only one month. And now it has been in service for 30 months already.”

Contact-free and thus frictionless

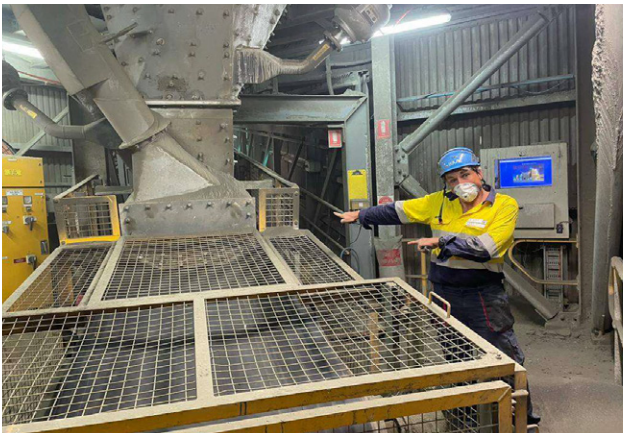
Owing to the contact-free and thus frictionless mode of operation of skirtings like AirScrape and TailScrape, the costly purchase of new belts necessary because of common sealing-friction damage is avoided. Interested customers should record the costs for a fiscal year which resulted from dust load (also the costs due to sickness-related absences), material spills, cleaning and exchange of skirtings and belts. This provides a good starting point to realize the economic benefits of the ScrapeTec skirting solutions.

The Essential AIR Seal Dust Containment Combination

A cement production operator based in the Port of Brisbane needed to deal with the following problems:

- Excessive dust emissions, posing major OHS issues
- Material spillage
- Belt support and belt sag issues
- Minimizing production shutdowns

The cement company’s core business focuses primarily on un- loading key cement materials utilized for



cement production. The finished cement products are then later packed into 20 kg bags, and bulk raw materials are also loaded into trucks to service building, construction, and road development projects.

A comprehensive site inspection was conducted by ScrapeTec's Area Technical Representative; it was noted standard chute sealing was used together with a basic clamping system positioned outside the chute. The current skirting system in place and lack of inner skirting was insufficient and failed to contain excessive dust emission and material spillage experienced at the transfer point. Dust and spillage levels were high and constant during ship unloading process. This provided zero visibility of the 70-metre-long conveyor tunnel and had greatly affected maintenance team's ability to monitor efficiencies and bottlenecks in the production process.

Site Management was mindful that material spillage was eroding the operator's bottom line, with additional cleaning up costs incurred to clear the spillage piles and prevent any tripping/ slipping hazards. Dust extraction trucks were also necessary to clean the walkway and the tunnel on regular base. Dust poses a serious OHS hazard to workers, the environment, and nearby communities; suppressing dust emissions was therefore high on the agenda and required rectification to minimize any production downtime and improve site availability.

After a presentation in 2020, ScrapeTec implemented the AirScrape® application on site. ScrapeTec's Technical Area Representative supervised the AirScrape® installation and performance when it was initially trialed in the ship's unloading transfer chute. Extremely satisfied with the outcomes achieved at this transfer point, the operator welcomed the implementation of the Essential AIR Seal Dust Containment Combina-

tion – phase 2 of ScrapeTec's recommendations. This entailed a few necessary adjustments before the installation of AirScrape®, TailScrape® and ceramic ST-Containment Seal® was installed and fully operational within the chute area.

To ensure maximum performance of AirScrape®, ST-Sure® Belt Support System, a vital component of the overall solution was installed in order to avoid the issues of belt sag between the impact rollers. A smooth straight and flat belt surface kept the AirScrape® lamellas continuously in the right position with no physical belt contact. TailScrape® worked synergistically with AirScrape® and provided outstanding sealing at the rear and ST-Containment Seal® delivered on its promise as the first line of defence and effective against dust and spillage.

The newly applied AirScrape® waterproofing system brought the following advantages:

- Problem free transfer point, dust emission and material spillage reduced by 98%
- No belt damage, no future adjustments and maintenance is necessary
- Product performance expectations exceeded
- More upgrade opportunities in other transfer points

Lest dust: more visibility

Maintenance teams are also thrilled to report, prior to the phase two recommended installation, there was extremely poor visibility of the tail end of conveyor from the head chute. With dust and spillage under control visibility along the 70-metre-long conveyor is now vastly improved. "The Essential AIR Seal, Dust Containment Solution is a huge improvement in comparison to our initial setup, no belt damage and no ongoing maintenance is required," reported by Site Manager.

And finally, the operator has cemented its plans to upgrade all the chutes in the conveyor stream from ship unloading to the stockpiles, representing five transfer points in total.

More information:

SCRAPETEC-TRADING GMBH
www.scrapetec-trading.com

Bruks Tubulator - STATE OF THE ART CONVEYING TECHNOLOGY

AIR-CUSHION TECHNOLOGY DELIVERS VERY LOW COST CONVEYING OVER LONG DISTANCES

By: Bruks Siwertel AB, Sweden

For operators looking for high-capacity, lighter-density dry bulk material conveying, the Bruks Tubulator TM is a very cost-effective option. It is especially well-suited for long distances, up to 500m and for high overhead installations.

With more than 600 installations worldwide and over 30 years of proven operational performance, even in extremely low-temperature environments, the industry-leading Tubulator has developed into the smartest conveying system on the market.

On a belt width-for-width basis, the Tubulator achieves capacities up to 40 percent higher than comparable conventional idler belt conveyors at very low energy consumption levels and is ideal for transporting wood chips, sawdust, bark, pellets and other low-density bulk materials.

For example, at a belt speed of 150 m/min, the Bruks Tubulator offers conveying capacities of up to 3,300 m³/h for wood chips with a density of about 350 kg/m³.



RIGOROUS ENVIRONMENTAL STANDARDS

As well as its very quiet operating profile and low energy demands, our Tubulator conveyor is totally enclosed. This ensures that it meets the highest environmental protection standards and eliminates material losses from the conveying line.

MODULAR DESIGN MAXIMIZES FLEXIBILITY

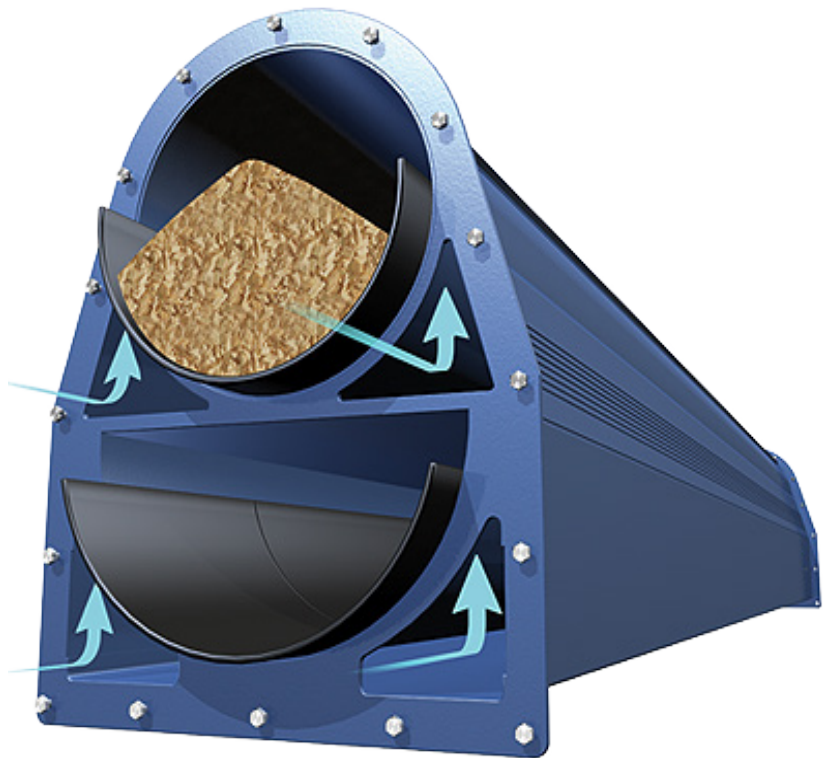
The easy-to-install conveyor system consists of a drive unit, tail end and the required number of intermediate flanged 6m or 12m pre-assembled modular sections, which are simple to connect. This ensures that it can be customized to suit a huge variety of specific applications from conveying lengths of 20m to 500m.

The conveyor has a free-span of up to 80m when using cable towers, or up to 30m between standard supports, and is self-supporting up to 25m.

The Tubulator comes in two basic forms: one is totally enclosed on the transport and return sides using an air carry return (ACR). In this version the return belt is supported on a cushion of air provided by a separate blower. The second alternative design uses rollers with 3m spacing to support the return side belt, or roller carry return (RCR).

The ACR version is most often used when a dust-tight design is needed, and for example, where full dust-tight connections at the feed and discharge end allow for dust collection. This design meets the majority of fire protection regulations that pertain to handling dry and dusty materials.

The RCR version is often used for boiler-feed systems where wet bark is carried to the boiler feed bin, but dust is really not an issue. Without the blowers on the return side, the overall power requirements of this style of Tubulator are lower than the ACR design. Higher installation angles can also be achieved with the RCR design through the use of cleated or ridged belts.



LOW OPERATING AND MAINTENANCE COSTS

The Bruks Tubulator has very low operating and maintenance costs. These are largely due to the fact that the belt runs on a cushion of pressurized air, which reduces frictional forces to a minimum. This has a positive impact on wear parts, and eliminates idlers, which have their own maintenance requirements, in the conveying trough.

The low-friction air-cushion technology has low power-consumption demands, which reduces operating costs. Its no-load power requirement is much lower than conventional belt conveyors.

AIR-CUSHION TECHNOLOGY

Low-pressure fans create the air cushion that supports the belt. Two fans, one located on the transport side and the one for return side are required approximately every 60m. Holes spaced along the bottom of the support steel ensure that the air-pressure is evenly distributed under the belt.





For operators looking for high-capacity, lighter-density dry bulk material conveying, the Bruks Tubulator TM is a very cost-effective option. It is especially well-suited for long distances, up to 500m and for high overhead installations.

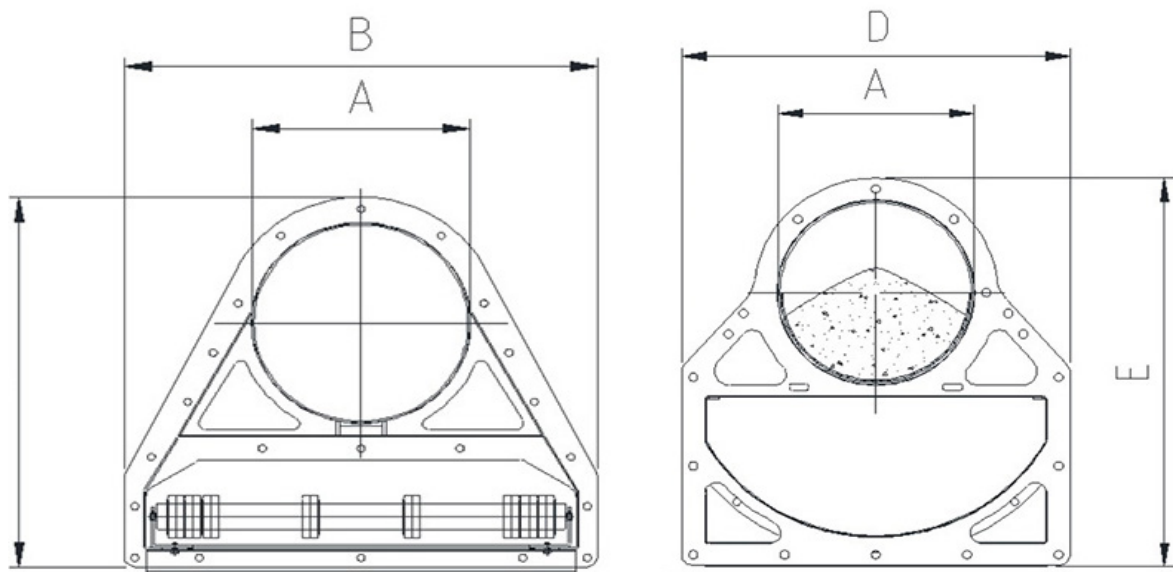


Image: Roller-carried return (ACR) and Air-carried return (ACR)

With more than 600 installations worldwide and over 30 years of proven operational performance, even in extremely low-temperature environments, the industry-leading Tubulator has developed into the smartest conveying system on the market.

CONVEYING SOLUTIONS

Bulk Material	Typical Density [kg/m³]
Wood chips	200-400
Sawdust	200-400
Size-reduced bark	200-400
Pellets	600-700
Bagasse	120-175
RDF	100-400
Shredded Tyres	400-550
Plastic Waste	400-600
Limestone	1350-1600
Coke	570-650
Crushed coal	800-1100
Sludge	800-1000
Shredded garbage	450-550
Size-reduced wood waste	350-550

Innovative planning method for curved overland conveyors

By: BEUMER Group, Germany

Since the late 1960s, BEUMER Group has been developing and producing curved overland conveyors, making the company one of the pioneers in this industry. Nothing has fundamentally changed in the functional principles of this technology since then - except for the feasible limits: With highly developed core components, precise calculation methods and own planning tools, the system provider continues to push the limits of what is technically feasible - while drastically reducing the time and costs involved both in the planning phase and in the handling of projects.

"Our belt conveyors are able to solve complex problems with regard to the transport of any bulk material whether in the mining or cement industry," says Christoph Dorra, regional sales manager South America, Conveying and Loading Systems, at BEUMER Group. "While the basic task to transport bulk material from the material feed up to the final discharge point seems to be comparable, on closer inspection no system is similar to the other. The spectrum of potential conveyed materials alone requires individual consideration of the components to be used with regard to wear resistance or the maximum permissible gradients of a conveyor." In addition, the mass flow to be conveyed and the height to be overcome are the main factors determining the dimensioning of the drive unit of an overland conveyor. "A further challenge is posed by systems at high altitudes," says Dorra. At altitudes exceeding 4,000 metres, as it is often the case in the South American Andes, for example, it must be considered that the air pressure and thus the density of the air decreases with increasing altitude. This reduces both the cooling effect and the insulating capacity of the air. As a consequence, the drive units like frequency converters and electric motors do not achieve the specified rated power that applies for installation heights up to max. 1,000 metres above mean sea level. This is the so-called derating factor.

In addition to the pure material specification and the mass to be conveyed over a certain height, the topography along the conveying route is of particular importance in the project planning.

The biggest challenge: the topography

"In 2009, we implemented an overland conveyor in China that is able to curve on 85 percent of the 12.5 km long conveyor line between the quarry and the cement plant. The system literally winds its way to the destination, without any transfer point," reports Dorra.

Potential obstacles appeared in the form of residential areas, roads and rivers that had to be crossed, larger bodies of water or mountains that could not be crossed. "Not everyone would automatically think of an overland conveyor as the optimal solution when faced with these challenges," says Dorra. "But for us, these projects are a special attraction. Our target is to have as few transfer points as possible along the entire conveyor line". This reduces both wear and tear and the environmental impact of dust, for example, but also increases the availability of the overall system and significantly improves ease of maintenance.

Four straight conveyors are converted to one BEUMER overland conveyor

A good example for such challenges is represented by the project of an American coal mine. Here, a BEUMER overland conveyor with a length of approx. 6.5 kilometres conveys coal from a new underground mine portal to its main coal preparation plant. In the original request for quotation, the client requested four straight conveyors where three transfer towers would have been needed. For BEUMER Group, there was clear potential for optimisation here, of which the system provider was able to convince the customer.

The BEUMER team was also faced with exciting challenges in a Belgian project. Since the 1970s, the residues of a coal-fired power plant were landfilled on a fly ash stockpile. It was intended to transform the terrain into a nature park. In order to make this possible, the fly ash had to be conveyed to the Mass river, about two kilometres away,

where it is loaded onto ships for further transport. These bring the fly ash downstream to an adjacent cement plant, where it is recycled as an aggregate.

A Pipe Conveyor is used, whose enclosed design prevents the volatile material with the environment and enables a low-noise transport. This was of particular significance in this project as the conveyor runs over roads, rails and residential areas. In the residential areas, a particularly noise-reduced idler design developed by BEUMER is used, which meets the high noise protection requirements in this area. The prescribed limit of 35 decibels at a distance of ten metres from the conveyor roughly corresponds to a very quiet room fan at low speed. Here, the system also achieves a slope of 23 degrees, which can be easily implemented with a Pipe Conveyor. Because of the rough terrain, special cranes and even helicopters were used during the installation.

The individually fitting system

How does the system provider manage to provide the appropriate solution for each of these applications? "We can draw on our comprehensive experience," says Martin Rewer, team lead overland conveyor at BEUMER Group. BEUMER Group installed the first conveyor of this type with horizontal curves already in 1969; the first downhill conveyor with regenerative drive in 1980. Since the 1990s, BEUMER Group has also developed into one of the leading suppliers of Pipe Conveyors. In 2019, two systems were commissioned in China that, with 5,500 tonnes of iron ore per hour, defined the current performance peak of the globally installed systems of this technology.

Since the first overland conveyor with horizontal curves was constructed in 1969, components such as idlers, belts and drives have continued to develop. In addition, the systems are becoming larger and longer and the routes more complex. This resulted in the necessity to also constantly improve the calculation and the planning tools in order to not only withstand the requirements, but to even be one step ahead.

In the first step of project planning, the systems must be dimensioned for the respective task. Using BEUMER calculation programs, a team of experts calculates the existing motion resistances and the related static and dynamic tractive forces of the belt of the system. These on the other hand determine both the drive power to be installed and the belt strength, and are also considered in the dimensioning of the horizontal curves.

"The energy consumption of long, horizontal belt conveyors is determined by the main resistance in the upper and return strand in stationary operating conditions," describes Rewer. The energy consumption consists of the running resistance of the idlers, the indentation rolling resistance and the flexing resistance of both the conveyed material and the belt when running over the idlers. The forces required for overcoming these resistances depend on various operational and design parameters. They can be determined with the so-called single resistance method. If components with low running resistances are considered, such as belts with reduced indentation rolling resistance or running-optimised idlers, the calculations of the systems nowadays show considerably lower tractive forces of the belt than a few years ago. This not only results in lower energy costs. Since the tractive forces of the belt are at a lower level, also the radii of the horizontal curves can be selected to be correspondingly smaller, because these forces are decisive for the design of these curves. Accordingly, the routing of overland conveyors can now be realised in a more flexible way and with smaller radii.

From the virtual toolbox

"In order to plan the conveyor for the individual application, we reach into our virtual tool box," Rewer explains. "This way we can arrange the whole routing of the system and then discuss it with the customer as a 3D plan". BOLT, the BEUMER Overland Layouting Tool developed specifically for this purpose, generates almost automatically a digital 3D model of the conveyor in the virtual landscape during the project planning. The required topography data are available in the public domain or are provided by the customer. Often drones are used. The aerial photographs include topographical information, which is then processed into digital terrain models.

In the simulation environment, the experts can adapt the conveyor to the route. The almost real illustration of the conveyor in the landscape also serves to recognise possible obstacles and to consider them accordingly in the project planning. Furthermore, the technicians are able to add the earthworks (cut & fill) and the steelwork structures in simple and precise way and evaluate them. BOLT not only ensures a very fast first project planning of the route. Especially modifications or adaptations during the project can be taken into account within short time. Project-critical data can be supplied at short term by BOLT. It includes the definition of the entire equipments on the route as well as the coordinates for foundation and earthworks. Since these data are generated automatically and

updated by BOLT in case of modifications, possible required adaptations of the route are not further time-critical. All necessary data can be generated immediately after rescheduling.

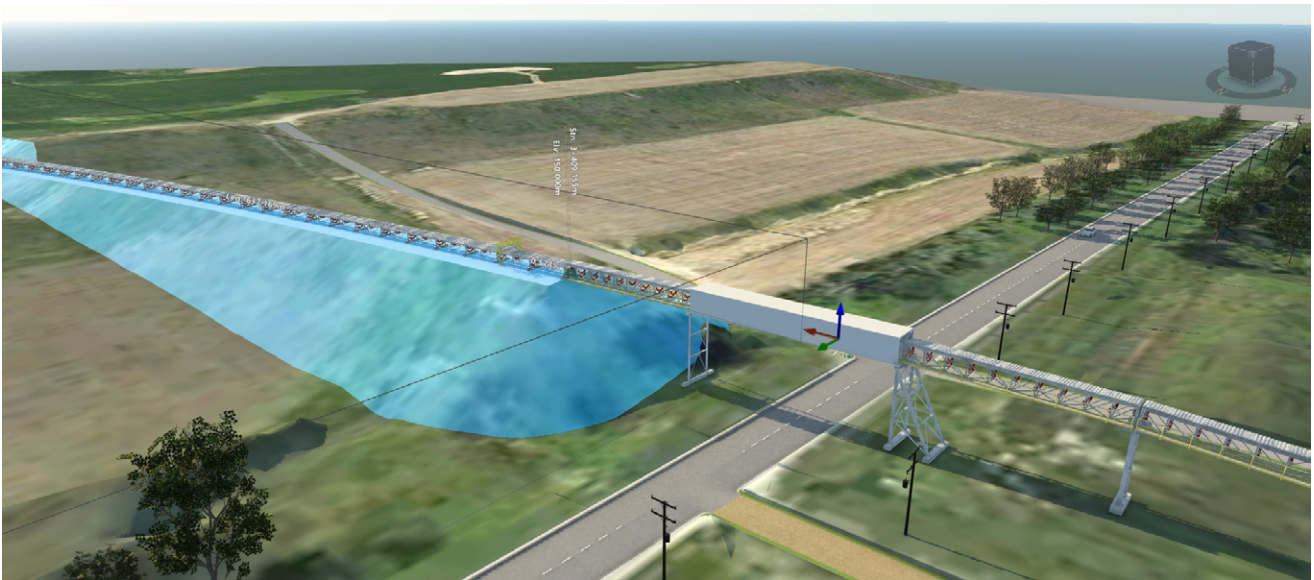
"With this procedure we are able to considerably accelerate the project planning," promises Christoph Dorra. "We have the possibility to provide the customer in advance with a concrete 3D project planning, which can be easily modified during the project life. This procedure allows us to tighten the time frame for the project".



Picture 1: "BEUMER Group implemented an overland conveyor in China that is able to curve on 85 percent of the 12.5 km long conveyor line.



Picture 2: A 6.5 kilometre long overland conveyor for coal: The concept of only one conveyor prevailed against four straight conveyors with transfer towers.



Picture 3: 3D model of terrain and conveyor: Earthworks (cut & fill) or steelwork structures can be quickly and precisely balanced against each other in terms of drawings and calculations.



Pictures 4 + 5: on the left: 3D model of the highway crossing during the project planning phase; on the right: real picture after commissioning of the same section

Photo credits: BEUMER Group GmbH & Co. KG

BEUMER Group is an international leader in the manufacture of intralogistics systems for conveying, loading, palletising, packaging, sortation, and distribution. With 4,500 employees worldwide, BEUMER Group has annual sales of about EUR 950 million. BEUMER Group and its group companies and sales agencies provide their customers with high-quality system solutions and an extensive customer support network around the globe and across a wide range of industries, including bulk materials and piece goods, food/non-food, construction, mail order, post, and airport baggage handling.

For more information visit www.beumer.com

BEUMER Customer Support assists cement manufacturer in the modernisation of bucket elevators:

It doesn't always have to be new

By: BEUMER Group, Germany

Outdated technologies often lead to increased maintenance, and that can rapidly become expensive. A cement plant owner faced this problem with his bucket elevators. An analysis carried out by the BEUMER Customer Support team made things clear: It is not necessary to replace the whole systems, but only components. The service experts were able to modernise the bucket elevators and make them more efficient, even if the systems were not from BEUMER.

"Right from the beginning, our three bucket elevators caused problems", says Frank Baumann, plant manager at a medium-sized cement company based in Erwitte, North Rhine-Westphalia, near Soest, Germany. In 2014, the manufacturer also established a plant in Duisburg. "Here, we produce blast furnace cement, using a central chain bucket elevator as circulation bucket elevator for the vertical mill and two belt bucket elevators for the silo feeding," describes Baumann. The central chain bucket elevator on the vertical mill was unusually loud right from the beginning and there was also an immense chain vibration of more than 200 millimetres. Although the original supplier made several improvements, a high level of wear and tear was evident after only a short running time. "We had to service the systems more and more frequently", says plant manager Baumann. Of course, this was expensive, on the one hand because of the downtimes, and on the other because of the spare parts.

Frequent downtimes, high costs

Due to the frequent downtimes on the vertical mill circulation bucket elevator, BEUMER Group was contacted in 2018. The system supplier not only supplies bucket elevators and modernises them if necessary, but also optimises existing systems of other suppliers. "In cases like this, operators of cement plants are often faced with the question of whether a completely new plant or a possible conversion would be the more economical and targeted measure," explains Marina Papenkort, Area Sales Manager in the Customer Support division at BEUMER Group. Because modernisation can be worthwhile: "With our customer support, we help our customers to fulfil future performance and technology requirements in a cost-efficient way in the context of modernisations and modifications", says Papenkort. "Typical challenges of our customers include performance improvements, adaptations to modified process parameters, new materials, optimisation of availability and extension of the maintenance cycles, designs easy to maintain as well as reduced noise levels". In addition, all new developments with regard to Industry 4.0, such as belt monitoring or continuous temperature monitoring, are included in the modifications. BEUMER Group offers everything from one single source, from technical dimensioning to assembly on site. The advantage is to have only one contact and thus to benefit from reduced organisational and coordination expenses.

The profitability and especially the availability play a crucial role for customers, because modifications are often an interesting alternative to new constructions. In case of modernisation measures, as many components and structures as possible are kept - in many cases also the steel structure. This alone reduces material costs by approximately 25 per cent compared to a new construction. In the case of this company, the bucket elevator head, the chimneys, the drive unit and the bucket elevator boot could be reused. "In addition, the assembly effort is lower, and so the downtime is usually much shorter," explains Papenkort. This leads to a faster return on investment compared to a new construction.

Heavy Duty for coarse-grained material

"We retrofitted the central chain bucket elevator to a high-capacity belt bucket elevator type HD (heavy duty),"

reports Papenkort. Belts with wire-free zones, and to which the buckets are fastened, are used for this type of bucket elevators just as with all BEUMER belt bucket elevators. In case of products from competitors, often the steel cords are cut through when mounting the buckets. Thus the steel cords are no longer covered, which might result in moisture penetration and, as a consequence, lead to corrosion and damaged supporting cords. "That's not the case with our systems. The tensile strength of the bucket elevator belt is completely kept," explains Papenkort.

Another important factor is the belt clamping connection: The rubber of the steel cord ends is first removed on all BEUMER steel cord belts. The technicians divide the ends into individual strands in the U-shaped part of the belt clamping connection, twist and cast it with white metal. "Thus, the customer benefits from a huge time advantage," says Papenkort. "After casting, the junction is completely cured after a very short time and the belt is ready for use".

For a steady running of the belt

In order to enable a steady running of the belt and to extend the service life in view of the abrasive material, the BEUMER team exchanged the existing segmented laggings of the drive pulley by specially adapted ones equipped with ceramic. These are crowned for a steady straight run. The design, which is easy to maintain, enables to quickly replace the single segments of the segmented lagging through the inspection hatches. Thus, it is no longer necessary to exchange the complete drive pulley. The segmented laggings are rubberised, with linings made of full ceramics or steel. The choice depends on the material conveyed.

The buckets are adapted to the crowned shape of the drive pulley and thus lie flat on, which considerably increases the service life of the belt. Their shape allows for smoother running and therefore less noise generation. Depending on the intended use, the operator receives the buckets in the design that suits him best. They can for example have a rubber bottom or be made of high-quality steel. The proven BEUMER HD technology impresses with a special bucket connection: In order to prevent coarse-grained material from penetrating between bucket and belt, the bucket is provided with an elongated back plate, which can be mounted flush to the bucket elevator belt. In addition, with the HD technology, the buckets are mounted firmly to the back of the belt with forged segments and screws. "All the screws would have to get lost for a bucket to tear out," explains Papenkort.

To keep everything running straight

In order to achieve a permanently correct tensioning of the belt, BEUMER mounted an external parallel take-up device without product contact in Duisburg, which ensures that the take-up pulley is limited to parallel movement. The tension bearing is designed as inner bearing in a completely encapsulated construction. The bearing housings are filled with oil.

"A part of our HD technology is the cage-type foot pulley which is easy to maintain. The bars are hardened due to the abrasive material conveyed and screwed into the cage-type foot pulley to enable a rapid replacement. The take-up pulley is equipped with a double deflection cone, which reliably prevents damage to the belt caused by jammed bulk materials," explains Papenkort.

Satisfaction led to follow-up order

"This modification enabled us to increase the availability of our vertical mill circulation bucket elevator and to be more competitive on the long term," Frank Baumann says happily. "Compared to a new investment, it was possible to reduce our costs and we were operating faster. At the beginning we had to convince ourselves more than once that the retrofitted circulation bucket elevator was in operation, because the noise level had changed drastically and we were not familiar with the smooth running from the previous chain bucket elevator".

The company was so enthusiast about the retrofitting that it commissioned BEUMER Group to optimise also the other two bucket elevators with regard to the conveying capacity. Also in this case, the operator complained about continuous off-tracking, buckets hitting the shaft casing and difficult maintenance conditions. "In addition, we wanted to further increase the throughput of the mill and were therefore interested in greater flexibility regarding the conveying capacity of the bucket elevators," explains Baumann. In 2020, the Customer Support of the system

supplier also solved this problem. "We are completely satisfied," states Baumann. "In the course of the retrofitting, we could also reduce the energy consumption of the bucket elevators".



Picture 1: The drive pulleys are equipped with segmented laggings. A steady running of the belt is ensured by the crowned drive pulleys.



Picture 2: The ends of the steel cords are divided into individual strands in the U-shaped part of the belt clamping connection, twisted and cast with white metal.



Picture 3: After casting, the junction is cured very quickly.



Picture 4: No material can penetrate between belt and bucket.



Picture 5: The buckets are mounted with forged segments and screws on the back side of the belt.



Picture 6: The parallel take-up device ensures that the take-up pulley is limited to parallel movement.



Picture 7: To avoid caking, the take-up pulley is designed as cage-type foot pulley and is provided with a double deflection cone. For this order, the screwed and hardened version of the cage-type foot pulley has been used.



Picture 8: With this modernisation, the cement manufacturer was able to increase the conveying capacity of the bucket elevators for the cement silo feed.

Photo credits: BEUMER Group GmbH & Co. KG

BEUMER Group is an international leader in the manufacture of intralogistics systems for conveying, loading, palletising, packaging, sortation, and distribution. With 4,500 employees worldwide, BEUMER Group has annual sales of about EUR 950 million. BEUMER Group and its group companies and sales agencies provide their customers with high-quality system solutions and an extensive customer support network around the globe and across a wide range of industries, including bulk materials and piece goods, food/non-food, construction, mail order, post, and airport baggage handling.

For more information visit www.beumer.com

**NEW PUBLICATION
AVAILABLE TO ORDER!**

Cement Plant Environmental Handbook

Third Edition

The third edition of the Cement Plant Environmental Handbook, published by International Cement Review, is the essential new reference work for cement plant owners and operators seeking to follow best practice cement manufacturing while adhering to the highest environmental standards.

Over 40 authoritative articles offering state-of-the-art technical know-how across all the main areas of the cement manufacturing process, with a focus on energy and resource efficiency, pollution control and carbon emissions reduction. Chapters include:

- Environmental context and the challenge of decarbonisation
- Quarry operations and ecosystems management
- Improving energy efficiency
- Process optimisation and the digital plant
- Alternative fuels technologies and case studies
- Emissions monitoring and abatement
- High efficiency grinding systems
- Clinker reduction and the production of low CO₂ cements
- The state-of-the-art cement plants
- Towards Net Zero: cement plants of the future

Cement Plant Environmental Handbook THIRD EDITION



Contributors to this handbook include Holcim, CTP Austria, Cementos Argos, GIZ-Geocycle, KHD, Carbon8 Systems, w&p Zement, Sintef, WL Gore, Köppern, Cementir, JSW Cement, EPFL, Dalmia Bharat, Optimitive, GCCA, Cementir, and many more...

**This publication is
free to subscribers
of International
Cement Review!**



**For more information or to order your copy, please
visit: www.CemNet.com/CPEH3**

www.CemNet.com
The Home of International Cement Review

The Impact of Brick Quality and Misalignment on Kiln Lining Stability – Part 2

By: Greg Palmer and James Millard, Palmer

Abstract

This paper discusses refractory brick quality and stability factors limiting brick life in rotary kilns to one year or less. Part 1 discussed mechanical mitigation steps to brick stress leading to failure.

The key area impacting longer run-times for cement and lime kilns is refractory brick life. The issues causing kiln brick failures are the same today as that experienced more than 50 years ago with little improvement since the introduction of magnesia bricks in the 1980's. Lime kilns can achieve longer runtimes, but points discussed here are very applicable. A critical analysis of kiln bricking procedures, brick dimensional tolerance and kilns shell condition, ie ovality and deformations, are factors causing brick failure, limiting reliability and impeding longer runtimes between maintenance cycles, for example a two yearly maintenance outage cycles. Such a change in maintenance cycles have a significant impact on a company's profitability.

Index Terms— Brick failure, quality, refractory brick, refractory maintenance, rotary kilns.

- Brick QA and ISO 5022, importance of warpage, dimension variance etc
- Brick installation quality. Arch stability. Interaction of bricking methods with static distortions.

I. INTRODUCTION

This paper discusses the impact of kiln brick dimensional variance (quality) and kilns shell distortions on the ability of bricklayers to align brick joints to the kiln centroid and final lining stability. In particular, the tension that exists between following the ideal ratio of brick types and the installation of bricks normal to the shell as these sources of alignment information are undermined by brick shape variance and kiln shell deformation, respectively. See the previous entry detailing the diagnosis, analysis, and mitigation of mechanical brick failure. Further parts will delve into key chemical attack mechanisms, and models for geometrical and statistical analysis of bricklaying distortion and stability. The problems in each of these domains are present roadblocks which must be understood and overcome to extend operating campaigns for cement kilns beyond 12 months. We have played a key role for our clients in elimination of refractory failures, and from this we know that a major kiln maintenance stop every 24 months is achievable, despite the cement industry norm of a year or less. Moving to a 24 month cycle is a desirable target not just due to the reduced downtime and maintenance expenditure, but also retaining alignment with a company's financial cycles and alignment with seasonal restrictions of shutdown timing.

Campaign lengths are limited by exposure to the risk of lining failure, in which the arch stability and the brick rings, gives way to gravity. This can occur either through loss of individual bricks or inversion and local buckling of a segment. While ring stability decreases with loss of thickness, it is also undercut by quality issues in the initial installation which can cause looseness in service, misalignment of brick joints, and ultimately failure. These installation issues are avoidable and must be understood in terms of the interaction of brick variance, kiln distortion and bricklaying craftsmanship.

II. THE IMPACT OF KILN BRICK LOOSENESS

Brick ring looseness contributes to loss of stability, not just by the obvious heightened risk of collapse due to the loss of hoop compression, but also by introducing the ability of the bricks to displace axially. This movement results in spiralling where adjacent rings become intermeshed, and proceeds until the available slack is consumed. The intermeshing of brick rings contributes to the uneven loading of partially overlapped brick faces, eventual fracture, and further destabilising the ring.

Under such conditions it is not possible to know if a brick ring is compromised or not until it is too late. Currently, avoiding loose rings relies on following manufacturer's the installation procedure for brick closure, and typically focused on correct selection of key bricks, shim installation and use of jacking. The use of jacking, notably, only ensures the closure bricks are tight, and does not supplant the need for prior ring bricks to be installed securely without slack. Additional sources of looseness may include brick warpage, workplace debris preventing complete mating of adjacent brick faces and an inadequately clean shell. If no mitigating steps to ensure mating surfaces are in contact and the base is in good contact with the shell, then these factors can allow excessive relaxation of a lining once in service. The introduction of circumferential looseness has a cumulative impact on stability, combining with the effects of thickness loss, and misalignment.

III. THE IMPORTANCE OF BRICK QUALITY

The quality of kiln bricks can impact the stability of the final refractory lining both directly through geometry, and through interaction with kiln shell distortion and disruption of typical bricklaying practice.

The material property data provided in the refractory manufacturers' catalogues is intended for approximate guidance only and the delivered refractory quality is not controlled by Product Data Sheets (PDS). Instead, each order must be paired with additional agreements to ensure enforceable ranges on key brick properties and dimension. The European Refractories Producers Federation recommends tolerances of 1 - 2 per cent (± 1 to 2 mm) [1]. Similar guidelines to those are offered by most manufacturers. The ISO 5022 standard [2] sets out a methodology for acceptance testing of shaped refractory products to an agreed quality. The example presented in the Standard, that steps through a calculation of acceptance parameters, chooses values that are more beneficial for the manufacturer than the consumer. However, the key parameters are left adjustable by the standard and this freedom should be used to strike a balance of protecting manufacturer and consumer interests.

The typical manufacturer's kiln brick layout is an idealized bricking map based on perfectly round shells and perfectly dimensioned kiln bricks. The variation allowed under a quality control scheme, or lack thereof, introduces deviations from this simplified model and increases the complexity for successful bricking. How well the bricks fit together to form the circle and ultimately how much damage or looseness occurs in a brick ring is in part, dependent on the brick dimensions and kiln shell condition and the role of craftsmen and workmanship when installing refractory brick under imperfect conditions.

It can be shown geometrically that the variance of each brick dimension is not of equal importance as each dimension impacts different qualities of the final brickwork. Warpage is critically important as non-planar faces cannot form a joint without gaps. These gaps result in looseness when the lining is temperature cycled and in severe case will cause brick fracture as large gaps between faces are closed under hoop compression, Figure 1. Taper in the axial direction can induce twist, distorting the brick ring decreasing stability. Circumferential taper impacts the bricking ratio, though, if identified early should not impact final stability. While error in the height and width



Figure 1: View of alumina brick showing varying size gaps between bricks

of bricks does not impact stability, the height variation may create a false sense of stepping causing a bricklayer to unnecessarily change brick ratio.

Historically, it is known that large variations in brick dimensions can be accepted only when bricks are laid with mortar in a rotary kiln Moeck [3]; otherwise dimensional deviations will require different proportions of bricks, with different tapers, and cause considerable difficulties in installing the bricks. This is consistent with our analysis, however we would add that mortar simply widens the acceptable quality bounds rather than eliminating them, and must be treated as a cost trade off against higher quality bricks.

Brick quality is the first factor needed for kilns to achieve run-times of more than 12 month campaigns. The tools already exist, it is just that they are underutilised.

IV. THE IMPACT OF KILN BRICK MISALIGNMENT

No quantitative assessment of the angular misalignment of bricks currently exists outside of computationally intensive Discrete Element Models, such as those by Ramanenka [4]. While rules-of-thumb are pervasive in industry, the link between best practices and brick reliability still lacks a theory grounded in dynamic stability of kiln linings. Due to this the engineering theory for assessing and optimising the stability and performance of various bricklaying approaches in imperfect circumstances is in turn under-developed.

Brick manufacturers currently provide bricking maps for rotary kilns that outline an exact sequence of brick shapes to suit a set diameter. It is known that these maps are idealized and ignore kiln shell distortion and brick dimensional variance, and thus cannot be followed exactly. Thus, in practice these dimensional variances must be accepted, and the ratio of brick shapes adapted to accommodate these variances by cancelling out accumulated angular error.

Every kiln has numerous distorted areas of varying amplitude, locating these areas is best performed by visualising distortions as a two dimensional surface, see Figure 2, which reveals the overall shell condition.

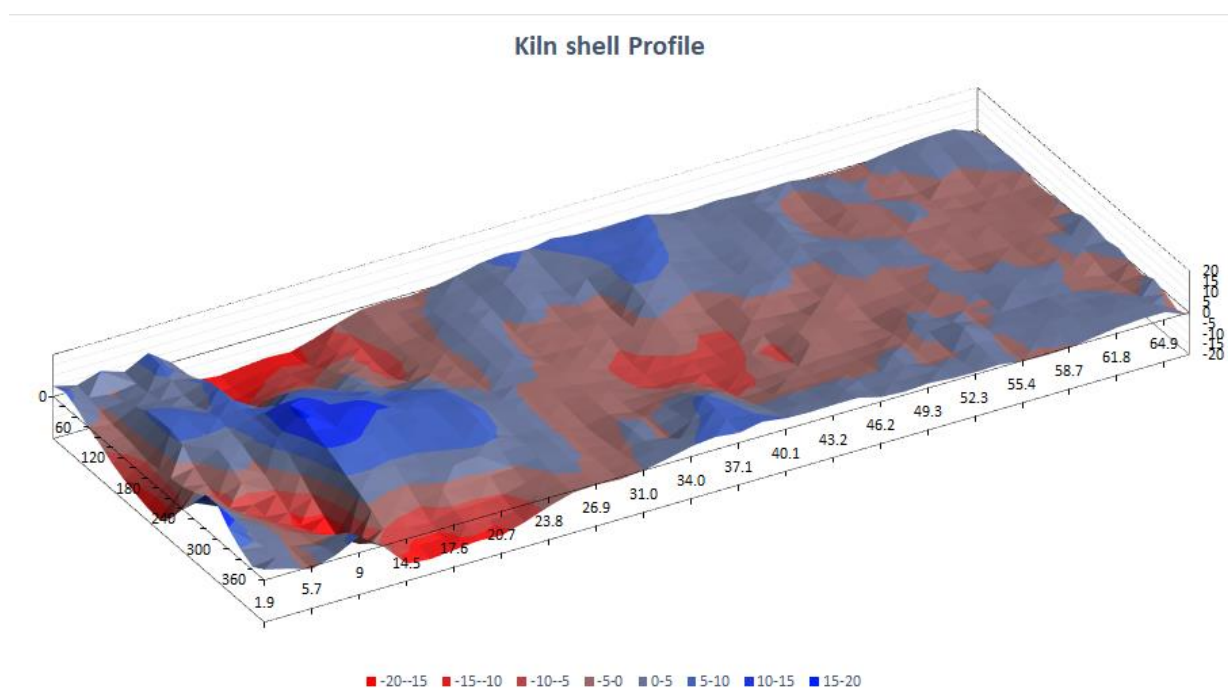


Figure 2: Typical kiln shell distortion (mm)

A kiln shell with many areas of shell “dips” and “bulges” makes it more difficult to lay bricks, as brick ratio must be varied from ideal during installation. This difficulty for bricklayers can be visualized by using kiln shell polar plots taken during kiln surveys to approximate shell distortions. Each shell polar plot can be locally approximated by a set of different diameter circles which when combined form the deformed kiln shell. A “flat” part of the shell is equivalent to a shell with a large diameter while a concave part of the shell is equivalent to a smaller diameter circle. This is shown in exaggerated form in Figure 3, where the shell profile is touched by four circles of different diameters varying from 3.7m to 4.9m diameter.

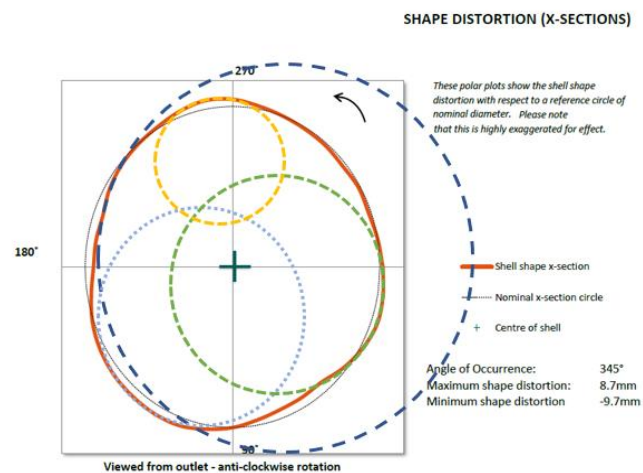


Figure 3: Kiln shell polar plot diagram showing deformation (exaggerated) zone

Brick manufacturer's laying guidelines provide similar recommendations for dealing with variability in bricks in the absence of shell deformations, for reference Refratechnik bricking manual [5] states, "If refractory bricks are laid clench, strictly observe the following:

The a-side (cold face) of the bricks must be in full contact with the kiln shell and the horizontal joint have to point in the direction of the kiln axis. See Figure 4. As to the clench lining, it is often necessary to deviate from the theoretical mix of shapes in order to accommodate the brickwork to the kiln shell. To avoid major deviations from the precalculated mixing ratio, it is advisable to make a joint- correction with mortar. Even if the installed brickwork is a clench lining, it is always advisable to have mortar available for any adjustments or corrections."

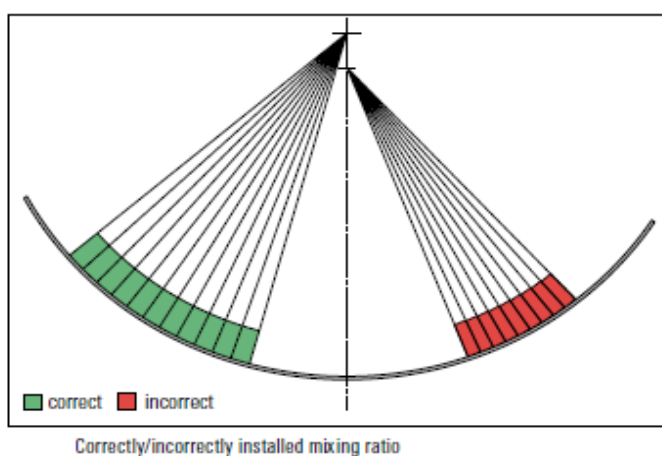


Figure 4: Illustration of bricklaying misalignment [5]

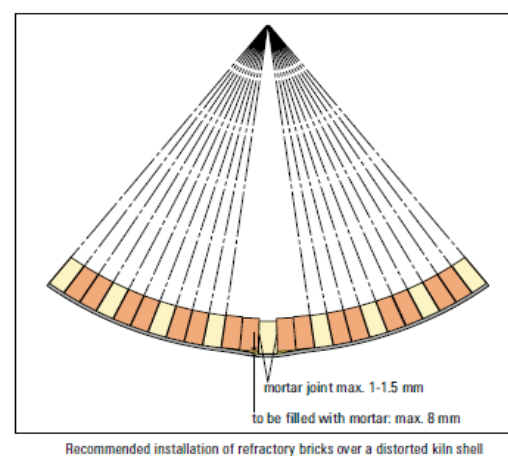


Figure 5: Typical bricking laying procedure over concave distorted kiln shell [5]

When discussing the challenges that come with kiln shell distortions Refratechnik illustrate their recommendation in Figure 5 and Figure 6 and state, "bricking over kiln shell deformations is more complicated, and therefore the bricks need to be laid most accurately. The following points need to be considered.

- Make sure that at least one part of the a-side (cold face) of the bricks fits tightly against the kiln shell.
- The axial joints have to point exactly in the direction of the center of the kiln and parallel to the kiln axis.
- All bricks installed over a distorted kiln shell should be mortared.”

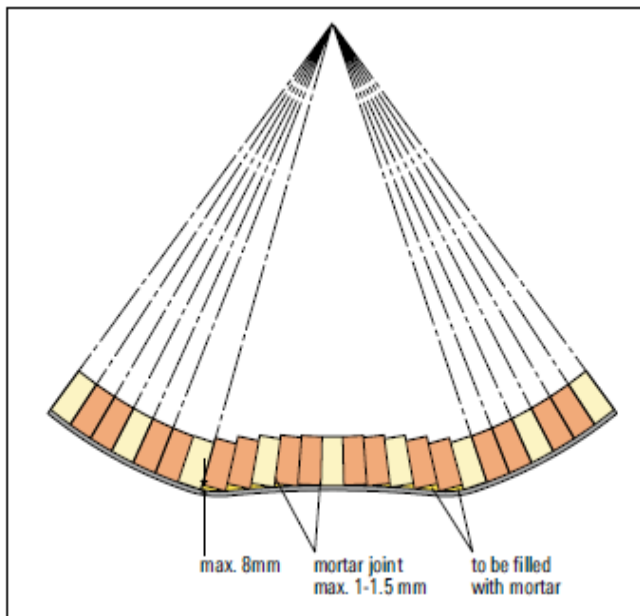


Figure 6: Typical bricking laying procedure over convex distorted kiln shell [5]

These diagrams show that where necessary, bricks should be placed with the sides touching and where necessary only one corner is in contact with the shell while maintaining joint alignment to the centre of the kiln.

As made clear in these diagrams, in the presence of kiln shell distortion, a bricklayer cannot simultaneously place bricks flat against the shell, and have joints aligned with the kiln centre. That means to optimise for one, the other must be sacrificed. The goals stated and shown in these guidelines are correct, however they are very difficult to achieve in practice as brick variance and kiln distortions can co-occur, preventing either the simple solution of following the shell or applying the given ratio. These problems are largely a result of the difficulty of identifying the centre of the kiln with any reasonable accuracy in the field. This forces bricklayers to use either the alignment to the shell or conformance to the brick ratio for feedback when they look to choose their next brick shape, though alignment with the shell is more common in this case.

In the absence of distortions, we have found that these guidelines are roughly followed, though stepping on intrados face is typically used as a proxy for sitting flat on the shell, as opposed to direct inspection of the contact area between the brick and the shell. When distortions are present our observations find that current bricking practice errs on the side of conforming to the shell rather than preserving the ideal bricking ratio or alignment of joints to kiln centre. We propose that this common but unfortunate outcome is due to the absence of a practical method by which to maintain alignment with the kiln centre.

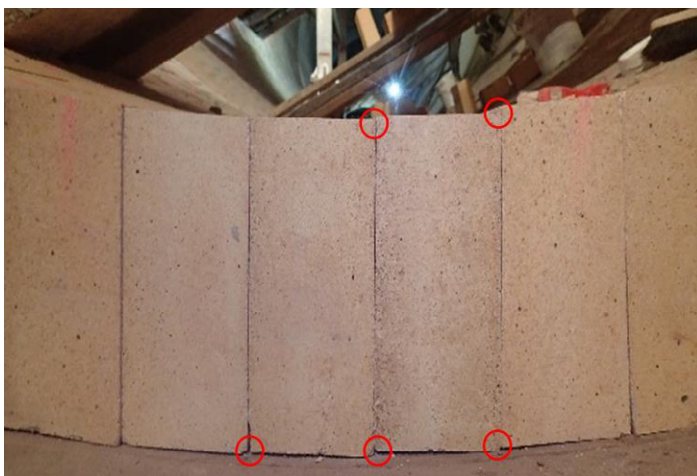


Figure 7: Brick stepping due to excess sharp forces selection of slows (RTL bricking)

When bricking is guided by stepping, it proceeds by ensuring adjoining surfaces are in full contact, the bottom corner/edge sits on the shell, and the tilt of the bricks is then judged by the size and direction of the step between the intrados faces of the previous brick pair. The next brick shape is then selected to counteract this tilt. A severe example of uncorrected tilt is shown in Figure 7 with associated lipping circled in red. Observed magnitudes for this stepping in installations range from 2mm in the forward direction to 2mm in the backward direction, several times larger than the theoretical minimum suggesting a perceivability limit below which shape selection is performed by another criteria. Stepping is also typically observed in the presence of severe distortions which exceed the curvature range available from ratio adjustments.

Applying the stepping driven shape selection procedure, identified above, in the presence of distortions results in significant deviations from the ideal ratio, and misalignment with the kiln centre. The expected change in the ratio can be calculated by the radius of curvature of the distorted section, that is by matching the curve of a virtual circle to the area. This also holds for any other method which fits bricks to the shell in distorted areas.

Figure 8 show an example of how bricks are laid over distorted shells in practice, with large local variations in ratio. In this case the ideal brick ratio is 1:1.68, however, to the right the ratio is almost 1:3. This highlights the difficulty bricklayers face due to brick and shell dimension variance.



Figure 8: Kiln bricking

For plant owners faced with imperfect conditions, whether stemming from brick or kiln variance, solving these issues surrounding installation quality is necessary to achieving extended campaign lengths. For improvement to occur a method must be available to bricklayers that does not assume the kiln centre is readily identifiable in the field, and accounts for the complexifying effect of brick variance and kiln distortions co-occurring.

We propose that geometric modelling the bricklaying process provides the necessary framework for assessing the combined impact of kiln distortions and brick variation on joint alignment and final stability. The distortion data typically collected by industry during mechanical surveys is already sufficient to support geometric analysis, and brick quality assurance data provides the information required to generate the statistical distributions that describe brick variance. As shown in Figure 9 and Figure 10, this approach can reproduce the outcomes observed when bricklaying over shell deformations. The development of models for geometric and statistical analysis of brick-



Figure 9: Stepping at base of bricks

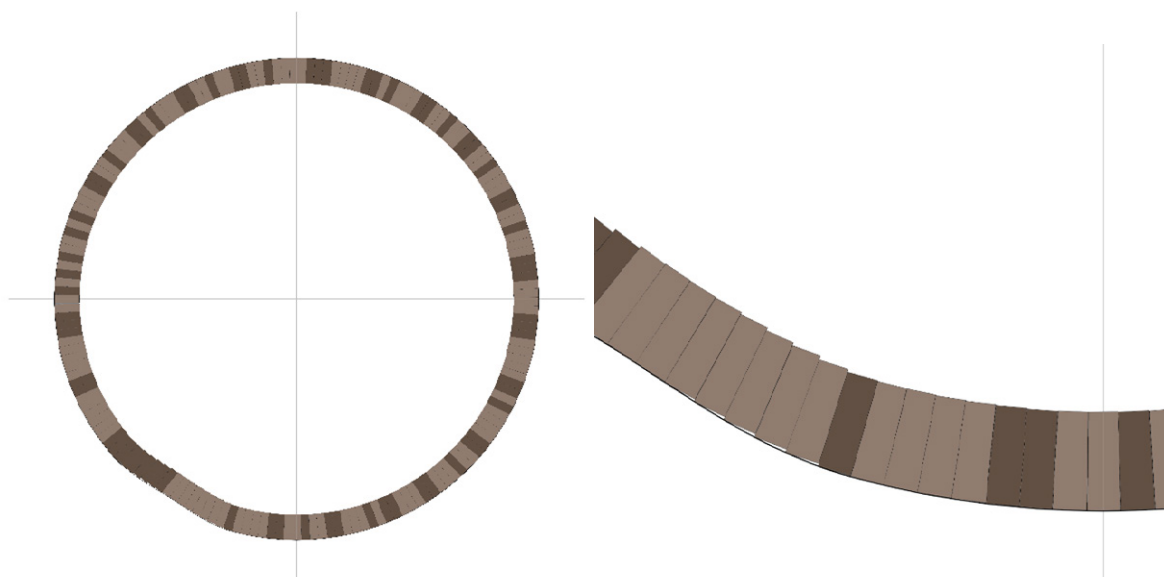


Figure 10: Example brick installation modelled in the presence of a large (almost flat) kiln distortion under randomised brick generation and stepping based shape selection.

laying stability to assess which kiln bricking methods, when limited to practical assumptions, can best optimise lining stability is left for future papers.

V. CONCLUSION

In this paper we have discussed how variation in the geometry of bricks and the kiln shell can affect the final installed quality of a lining and the resulting performance. Existing tools to achieve the necessary quality control of brick shape are already well developed, though rarely used. The ISO 5022 standard is well suited to the acceptance sampling of kiln bricks and should be used to ensure delivered brick quality, an important component in achieving multi-year campaign lengths. The configurable limits of the standard should be set to reflect the requirement of the purchaser, keeping in mind the impact of each dimension on lining stability and longevity.

When faced with the destabilising effect of a heavily distorted kiln, industry currently must choose between expensive shell repairs or living with the consequences of a difficult installation and a less stable lining. Computational analysis of existing kiln deformation data can provide a third option to alleviate this issue under specific conditions by augmenting installation procedures and optimising stability in the presence of shell distortions.

VI. REFERENCES

- [1] W. Nachtwey and G. Weibel, "Theory and practice of thermal insulation of basic-lined zones in rotary kilns," ZEMENT-KALK-GIPS, 1988.
- [2] "Shaped Refractory Products - Sampling and Acceptance Testing," ISO 5022-1979, 1979.
- [3] M. Moeck, "Explanatory comments on the ordering and acceptance of refractory bricks and monolithic refractories for rotary cement kilns," ZEMENT-KALK-GIPS, vol. 3, 1988.
- [4] D. Ramanenka, "Numerical Evaluation of Brick Lining Status in Rotary Kilns," Licentiate Thesis Department of Engineering Sciences and Mathematics Lulea University of Technology, 2015.
- [5] Refratechnik Cement GmbH, "Installation manual for refractory materials in rotary kilns and corresponding aggregates".

Phase IV: How the overall free allowances for part 1 of phase IV compare with Phase III by country member? What are the strategic questions facing the members of the scheme?

By CemBR, UK

CO₂ reduction initiatives have been in the forefront of most of the major cement manufacturers for several years. This is natural, as our industry is responsible for 7-8% of global emissions. Indeed, it is one of the most CO₂-intensive industries in the world. It has rightly attracted a lot of attention.

Currently, the only meaningful carbon reduction framework is the EU ETS (and recently the UK ETS). In January 2021 the EU ETS entered its Phase IV. The combination of the onset of Phase IV and the increased level of CO₂ pricing is beginning to influence a large part of cement manufacturers' strategies.

CemBR published its first report on carbon and cement in October 2019. It is now working on the follow up to the original report. The EU ETS & Cement – Enter the Phase IV report is scheduled to be published in February 2022.

This article is the second of three that CemBR will publish to provide data, insights and analysis based on the report. It concerns the changes to free allowances and the resultant implications on a country-by-country basis. The third article will look at the forthcoming Carbon Border Adjustment Mechanism (CBAM).

Allowances winners and losers:

As explained in the first article the overall allowances for Phase IV (2021) were 13% lower than the allowances in 2020. However, this overall reduction has not been uniformly distributed among the country members.

Figure 1: Free Allowances percentage changes 2021 over 2020

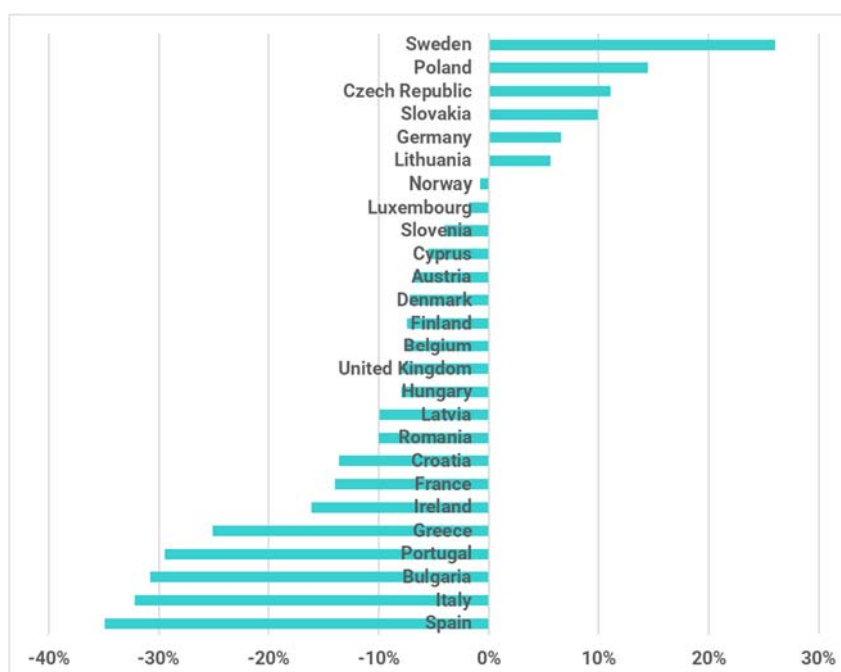


Figure 1 shows the country-by-country changes of the 2021 allowances from 2020. It must be noted that the Phase IV allowances have been adjusted for the 2019-2020 production. These adjustments were in the main positive (i.e., increased allowances over the original ones based on the 2014-2018 HAL), but there were also some negative adjustments. The report details the adjustments carried out for 2021.

The figure indicates that only six out of the twenty-six country members have increased their allowances in 2021 over 2020. As expected, most of the Med. rim members have reduced their allowances for phase IV.

What do these allowances mean for each member?

The clinker production in 2019 and 2020 indicates that the clinker utilisation rates for each country member are quite variable.

Figure 2: Clinker utilisation rates 2019-2020 (the highest level of the two years)

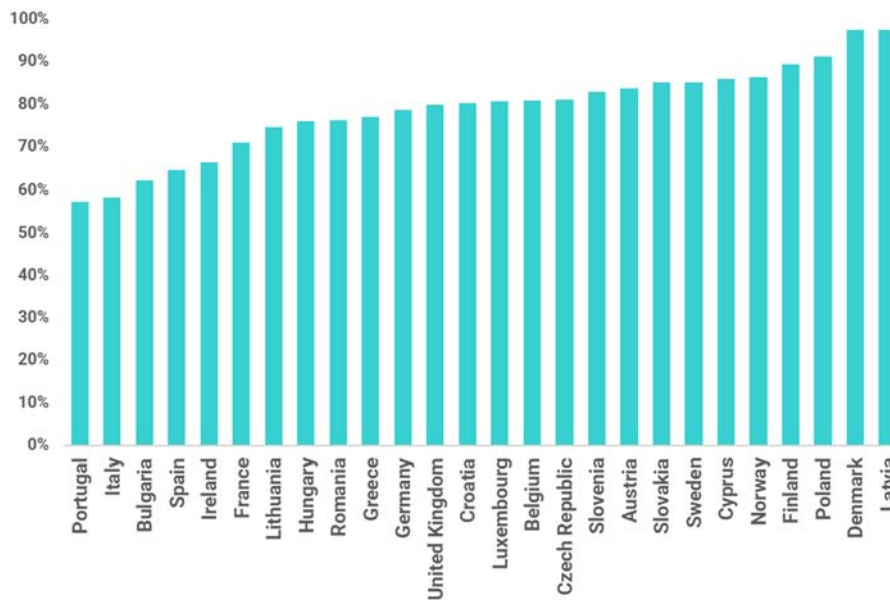


Figure 2 shows that highest clinker utilisation rates achieved in each member over the two years 2019 and 2020. Again, it is obvious that some countries were operating at high clinker utilisation rates, whereas others were operating at much lower levels. The Med. rim countries experienced the lowest clinker utilisation rates over the two years in question.

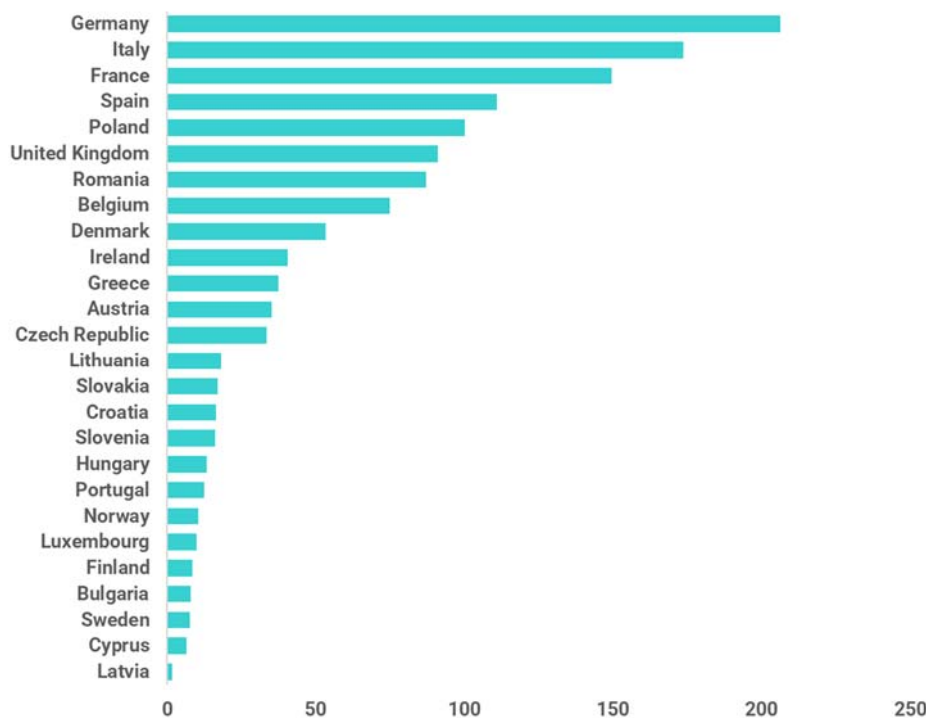
So, what are the options available to each country member? A detailed analysis of this topic is included in the report, but as an indicative exercise we consider here what might happen if all country members decide to continue to operate at the highest 2019-2020 clinker utilisation rates.

What would the carbon cost be for each member?

As explained in the previous article, the carbon cost to the whole scheme (including the UK) if each member operated at its highest 2019-2020 clinker utilisation levels would be approximately 1.3 billion Euro in 2022 (Assuming carbon prices as of January 2022).

However, this burden will not be distributed equally among all members, or indeed among all 201 operational clinker producing plants.

Figure 3: Carbon cost in million Euro if 2019-2020 clinker utilisation rates were maintained



However, Figure 3 shows the differences in the costs of each country member within the scheme (including the UK). As anticipated the larger markets will have to bear the highest carbon costs, but what is more important is the cost of carbon per tonne of cement sold in each market. This would offer an indication of potential cement price increases to cover these costs – everything else being equal. This analysis is included in some detail in the report.

What is even more interesting is the disparity between each individual plant within each country member. Their relative situation varies significantly making each plant’s strategy for Phase IV an interesting and important exercise.

It is therefore expected that every plant in Europe will have to define its own strategy regarding carbon costs. These strategies will affect levels of production, cement pricing, exports, and other aspects of plant operations (such as investments in carbon reduction initiatives). Clearly the plants that belong to larger groups will have a higher level of flexibility as they may be able to allocate their allowances based on an overall group benefit. This may not be achievable in the UK, however, where plants must define their individual strategies irrespective of ownership.

As it is, cement prices have been increasing in recent months spurred by both higher carbon costs and the unexpected supply – chain driven shortages leading to significant energy costs upward trends. 2021 demand has been strong in Europe, with almost every single country showing a recovery over 2020. This has also helped the increasing prices of cement in Europe.

In the next article CemBR will address the CBAM (Carbon Border Adjustment Mechanism) and how it might affect both the indigenous producers and potential importers into the scheme countries.

See full report for details on assumptions and analysis regarding both the EU ETS scheme members and the UK ETS. The report contains more than 150 pages and addresses 31 countries and 201 operational plants.
<https://cembrgroup.com/product/eu-ets-cement-enter-the-phase-iv/>



HOW HIGH-QUALITY FIBCS ARE MANUFACTURED

Six steps to create high quality big bags. This guarantees that all FIBCs are versatile, flexible and most of all: safe to use, in every environment.

FIBCs are known to carry all kinds of products – from heavy metals to delicate pharmaceutical products. This means that the bags have to be versatile, flexible and most of all: safe to use, in every environment. It all starts with a manufacturing process that is aimed at creating high-quality Bulk Bags, using only the best materials and safest techniques. In this article, we'll walk you through the steps our manufacturing partners go through to create your FIBCs.

STEP 1: SELECTING AND PREPPING THE MATERIAL

First up is the selection of the appropriate material. This is where our manufacturing partners start determining the type of polypropylene they will use for the production of their Bulk Bags. They will also confirm the source of the polypropylene, to make sure they are getting the best quality.

Once the material has been selected, the next step in the manufacturing process is to get it ready for use. This involves an extrusion process, in which the raw material is forced through a die to form tapes of specific widths and deniers. This is how the manufacturer gets the Bulk Bags that have the desired physical characteristics and are also safe to use.

STEP 2: WEAVING

Weaving the yarn is the next step in the manufacturing process.

The weaves used for Bulk Bags are known as 'open-end' weaves, which are crisscrossed to form a grid. This is how the manufacturer creates the grid-like structure needed for the bags to be flexible and safe to use in every environment.

The yarn is woven in such a way that the Bulk Bags are formed, with no air pockets and uniform thickness all over the fabric. All of this is done to ensure that the bags are as strong as possible.

STEP 3: MAKING SURE IT'S MOISTURE-PROOF

A crucial part of the process is making sure that the bag will be moisture-proof—you don't want your products to be affected by moisture and dampness. The holes in the inner part of the liner are sealed with a special product, making sure nothing goes in or out at a later stage.

STEP 4: CUTTING THE RIGHT SIZE AND PATTERN

Once the material is ready to work with, the pattern of the bag is decided and cut out from it. We minimize waste by creating and cutting our bags and liners to the right size immediately, instead of working with a standard shape and making changes afterwards.

STEP 5: STITCHING IT ALL TOGETHER

The different components, including the loops, are all stitched together tightly.

STEP 6: TIME TO PUT IT TO THE TEST

Now, for the most important part of the process: testing the strength of the bag. It's vital that it lives up to the desired safety standards and Safe Working Load.

For more information:
MASTERPACK GROUP BV
www.masterpackgroup.com

Subscribe today



A unique source
of information
for the latest
developments in
technology

Subscribe online at:
www.worldcement.com/subscribe

**WORLD
CEMENT®**



RopeCon® Booyensdal North enters into operation

A RopeCon® system has been transporting platinum ore in Booyensdal since the end of 2018. In December 2021, the second installation, Booyensdal North, was handed over to the customer. For this extension project at its Booyensdal site, the South African mining company Booyensdal Platinum (Pty) Limited, a subsidiary of Northam Platinum Limited, once again relied on technology from Doppelmayr. This second RopeCon® serves another mining area situated in the northern part of the site. It transports approximately 400t/h over a distance of 2.8km and a difference in elevation of -160m.

The Booyensdal North RopeCon® discharges the material into the same silo from which the material is loaded onto the Booyensdal South system, which makes it a perfect link in a continuous conveying line. Since early 2022, the second loading point along the line has been in use, too. The option of an alternative loading point was provided at tower 2. A conventional feeder conveyor transports the material to the RopeCon® line where it is loaded directly onto the belt via a chute.

RopeCon® is a technology developed by the ropeway manufacturer Doppelmayr. The system offers the advantages of a ropeway and combines them with the properties of a conventional belt conveyor. It essentially consists of a flat belt with corrugated side walls: Just as on conventional belt conveyors, the belt performs the haulage function. It is driven and deflected by a drum in the head or tail station and fixed to axles arranged at regular intervals to carry it. The axles are fitted with plastic running wheels which run on fixed anchored track ropes and guide the belt. The track ropes are elevated off the ground on tower structures.

By using the RopeCon® system, the customer did not have to rely on trucks to transport the material, a definite advantage in this topographically challenging terrain with its sometimes very steep roads. Furthermore, using the roads only for the transport of people and supplies will have a positive effect on road maintenance costs.

Booyensdal was also particularly careful to choose a transport system that would minimise the environmental footprint of the mine. By guiding the RopeCon® over towers, the space required on the ground is re-

duced to a minimum, or more precisely to the tower locations. At the same time, the system does not represent an insurmountable obstacle for wildlife or humans. The track crosses a number of roads, and even wildlife can roam freely underneath the RopeCon®.

Doppelmayr Transport Technology GmbH is a 100% subsidiary of the international Doppelmayr Group with headquarters in Wolfurt, Austria. Within the group, Doppelmayr Transport Technology is the point of contact for the transport of goods and materials. Doppelmayr is the technology leader and pioneer in ropeway engineering and is also present in other lines of business. Apart from material transport systems the group also designs, plans, and manufactures passenger ropeways for winter and summer tourism as well as for the urban transit sector, rope propelled APMs (e.g., the systems currently operating at the airports of Toronto and Mexico City) or fully automatic high rise warehouses.

Technical details:

Booyensdal North	
Length	2,752m
Difference in elevation	-160m
Conveying capacity	400t/h
Speed	3.6m/s
Number of towers	7
Motor rating, continuous	~0kW
Booyensdal South	
Length	4,767m
Difference in elevation	530m
Conveying capacity	909t/h
Speed	4.2m/s
Number of towers	12
Motor rating, continuous	2,400 kW
Booyensdal South Stockpile Feeder	
Length	185m
Difference in elevation	25m
Conveying capacity	909t/h
Speed	3.0m/s
Number of towers	1
Motor rating, continuous	100kW



Contact:

Doppelmayr Transport Technology GmbH
Konrad-Doppelmayr-Straße 1 / 6922 Wolfurt / Austria
T +43 5574 604 1800
dt@ Doppelmayr.com / [Doppelmayr-mts.com](http:// Doppelmayr-mts.com)



Doppelmayr_BooySendalNorth_03.jpg - The space required on the ground is reduced to a minimum



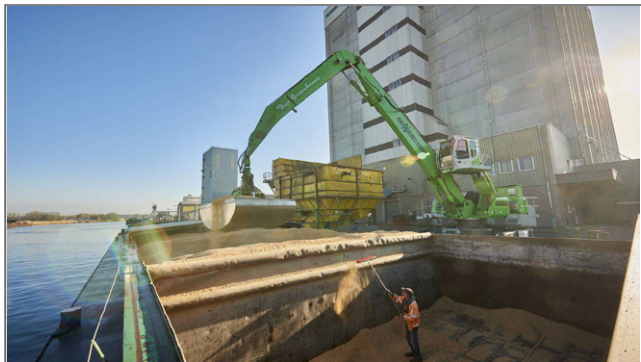
Doppelmayr_BooySendalSouth_01.jpg - The RopeCon® easily crosses this topographically challenging terrain.



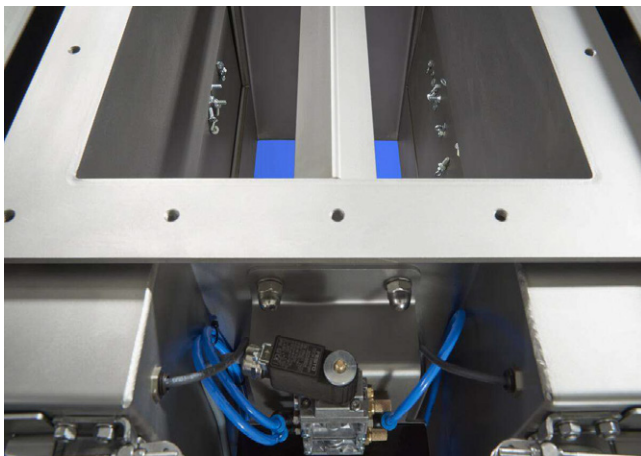
Doppelmayr_BooySendalNorth_06.jpg - The axles are fitted with plastic running wheels which run on fixed anchored track ropes and guide the belt.



Doppelmayr_BooySendalNorth_01.jpg - The option of an alternative loading point was provided at tower 2



AUTOMATIC EXTERNAL POLE MAGNET FOR FEED CAPACITIES UP TO 200 M3/HOUR



The automatic external pole magnet, recently developed by Goudsmit Magnetics, is suitable for processing large capacities of feed and other bulk goods.

The magnet can be used for intake in ship unloading installations and serves to protect the machinery. Moulds, grinding and mixing equipment can be damaged by undesired metal particles. The external pole magnet is intended for coarse separation and separates parts larger than 2 mm. Magnetic bars are suitable for the separation of finer metal particles. Fully automatic cleaning is integrated into the process system and takes place at the push of a button, without the intervention of an operator. The low built-in height of 500 mm makes the system easy to build into existing installations.

Free fall line

Two powerful capturing magnets are mounted on the outside of the completely smooth casing and, depending on the version, separate coarse or very fine iron

particles from various material streams. The outer core magnet is fitted with Neodymium-Iron-Boron (NdFeB) magnets for mounting in free-fall lines. An advantage of this outer-core assembly is that no bridging or clogging of the material can take place on the inside. Since the valve box is fully integrated in the design, the installation height remains limited.

Application

Application of such magnets is in ship unloading installations, at intake, in filling lines or for loading silos. A pneumatic controller ensures cleaning of the magnet. This is started via a 24V-DC signal and then runs fully automatically. The external pole magnet is available in various versions up to an inlet/outlet of 300x1000 mm. It is suitable for large capacities up to 200 m³/hour.

For more information:
GOUDSMIT MAGNETIC SYSTEMS B.V.
www.goudsmit-magnetics.nl

CEMENT INTERNATIONAL



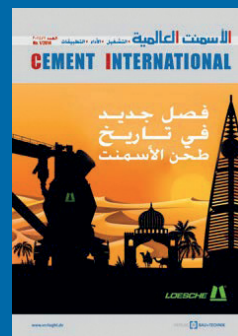
CEMENT INTERNATIONAL
 Circulation: 3 000 print copies and
 1 748 digital recipients

at home in the Middle East cement markets

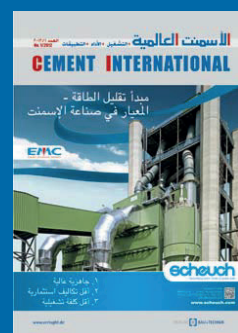
CEMENT INTERNATIONAL is one of the leading technical journals worldwide for the cement-, lime- and mortar industries. As the official organ of the German Cement Works Association (Verein Deutscher Zementwerke gGmbH (VDZ)) and the Hungarian Cement Association (Verband der Ungarischen Zementindustrie), CEMENT INTERNATIONAL sets the highest standards. With 3000 printed copies and 1696 digital recipients per issue distributed worldwide, you will reach all the relevant target groups. In addition, we deliver our know-how in the corresponding language of the country concerned to the up-and-coming emergent region of the Middle East. In this way, the circulation of CEMENT INTERNATIONAL guarantees fullest coverage of the areas concerned.



www.verlagbt.de



ARABIC Edition
 Circulation: 1 000 copies



ARABIC Edition
 Circulation: 1 000 copies



ARABIC Edition
 Circulation: 1 000 copies



ARABIC Edition
 Circulation: 1 000 copies

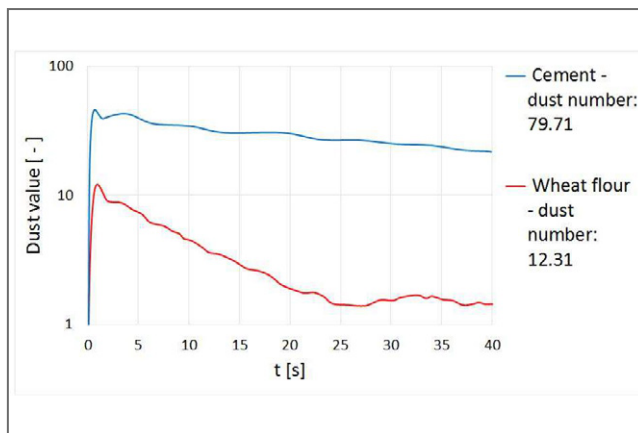
For further information contact:

Günther Jung
 Advertising Representation

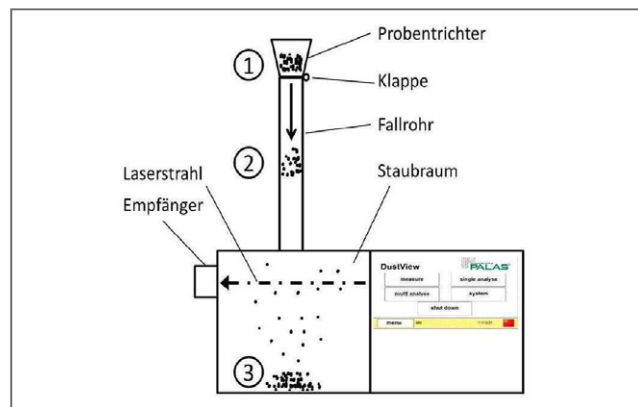
Tel.: +49 (0) 6123 / 605-193
 Fax: +49 (0) 6123 / 605-194
 E-mail: jung@verlagbt.de

CEMENT INTERNATIONAL
 Eichenbrink 38, 42289 Wuppertal, Germany
 E-mail: ci@verlagbt.de

VERLAG  **BAU+TECHNIK**



DUSTVIEW II: PRECISE DUST MEASUREMENT OF POWDERS AND BULK SOLIDS



DustView II is an easy-to-use, optical laboratory measuring instrument for characterising the dust release of bulk materials. Quick, clear and reproducible.

The fine dust measuring instrument for more quality

The DustView II from Palas® is an easy-to-use, optical laboratory measuring instrument for characterising the release of dust from bulk materials. Integrated is a touch panel PC with a large display and evaluation software so that you do not need an additional device.

The DustView II determines the individual dusting behaviour quickly, clearly and reproducibly.

The DustView II is ideally suited for

- Quality control
- product development of bulk materials, granulates, etc., as well as for
- occupational safety and hygiene.

Three good reasons for choosing the Dust View II:

1. The DustView II convinces with its simple and practical handling and integrated evaluation via a touch panel PC with a large display. You do not need another external PC.
2. With the DustView II you get a fully reproducible, detailed analysis of dust behaviour in accordance with CIPAC MT 171.1.
3. A fully automatic measuring sequence for series tests is also possible with the DustView II.

Measurement made easy

You can see the measurement results directly on the instrument, both as numerical values and graphically as a time curve of the dust values. The automatic storage of results allows you to analyse older measurements without an additional PC.

Reports as PDF or text files can also be created easily or printed directly if required. In addition to analysing individual measurements, DustView II also allows you to compare up to ten different measurements with each other.

Technical data

Interfaces: USB, Ethernet (LAN), RS232/485, Wi-Fi
 Measuring principle: extinction (30 g sample weight, 750 mm drop height)
 Measurement data acquisition: 24 bit AD/converter
 User interface: touch screen, 800 * 480 pixels, 7" (17.78 cm)
 Weight: 16 kg
 Operating system: Windows embedded
 Data memory: 4 GB
 Installation conditions: +5°C -- +40°C
 Electrical connection: 115 - 230 V, 50/60 Hz
 Dimensions: Approx. 500 * 250 * 950 mm

For more information:

Palas GmbH

www.palas.de

ЦЕМЕНТ и его применение

CEMENT AND ITS APPLICATIONS
INDUSTRIAL JOURNAL
SINCE 1901

News
Markets analysis
Science,
technology,
production
Solid partners
Effective
advertising



The journal for producers and consumers of cement and other binders, as well as for construction companies and equipment producers

The Russian-language periodical professional publication devoted to the production of cement and other binders, concretes, dry mixes and their applications, as well as to research and design.

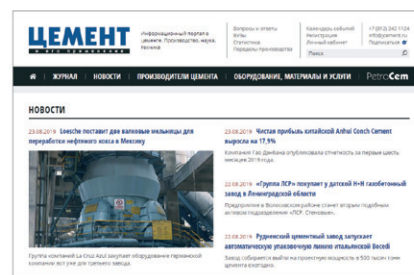
A conspicuous place in the journal materials is given to the problems of plant development, capital movement, economic problems facing the cement industries of Russia and other countries.

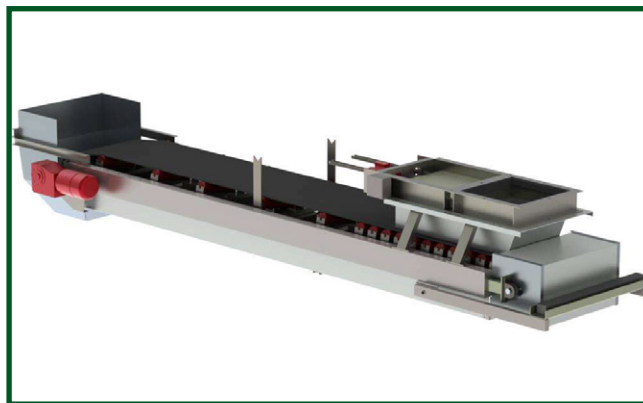
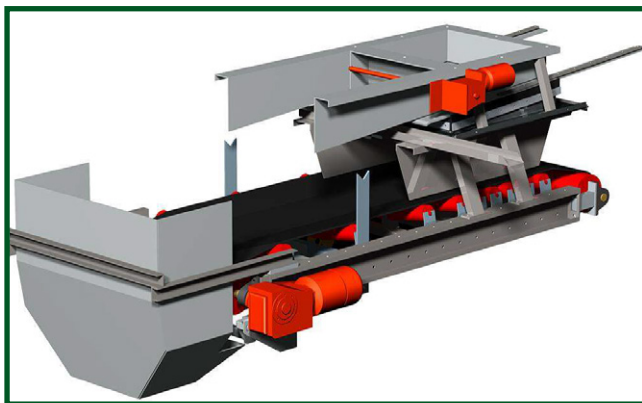
The journal comes out once in two months and includes news, analytical materials and detailed abstracts of all the articles in English.

«Cement and its Applications» is the only initiator and organizer of international cement conferences PetroCem. PetroCem 2018 which was held on April, 2018 in Saint-Petersburg, Russia – gathered more than 520 participants from 36 countries and representing more than 320 companies.

Jcement.ru web-based information portal on cement. Production, technologies, science. Always up-to-date news and data on cement producers, technologies, equipment suppliers and key-players. Journal, interviews, statistics, events, Q&A and other relevant materials.

Cement and its Applications, Journal
22 A Zvenigorodskaja Str. No 438
St. Petersburg, 191119, Russia
Tel. +7 (812) 242-11-24
E-mail: info@jcement.ru
Web: www.jcement.ru
www.petrocem.ru





WÖHWA WEIGH BELT FEEDERS

WÖHWA's weigh belt feeders are well suited for products with varying flow characteristics and bulk density. The modular design allows an individual adaptation to on-site conditions while using standard components.

More than 50 years ago, WÖHWA developed the first weigh belt feeders for products with varying flow characteristics and bulk density. All components and software for the modular designed weighing system are produced in-house at our factory. The modular design of the WÖHWA blending and reclaim weigh belt feeders allows an individual adaptation to on-site conditions while using standard components.

Each blending device can be equipped with either a manual WÖHWA shut-off/sealed gate or an electric slide gate. An electric slide gate allows automatic zero-setting of the belt scale.

The robust blending/reclaim weigh belt feeders can be supplied with belt widths from 400 mm (16 inches) to 1,400 mm (56 inches) to meet all application-specific requirements in respect of flow rate, product or flow characteristics. All standard components are cut on our own laser cutting machine and then hot-dip galvanized.

The weigh belt feeders can be supplied with troughed or flat belts. The well-designed construction protects the scale from any detrimental influences disturbing the high-accuracy weighing.

Each weigh belt feeder can be adapted in length and width to meet any customers' specific requirements. Prior to commencement of manufacturing, plans in PDF or DWG formats will be submitted to the customer for final approval. Connecting flange and chute can



be individually adapted to any customer application. The weigh belt feeder is equipped with a slip-on gear drive. The motor power rating is optimally selected for any specified blending/reclaim rate (special motor versions also available).

Numerous options are available, such as dust covers, wear-resisting lining, water gutters, emergency-pull cords, sheet cover for reverse pulley, frequency converters, etc. All sensors are non-contacting. WÖHWA blending/reclaim weigh belt feeders can be easily combined with other WÖHWA components.

Advantages of WÖHWA Weigh Belt Feeders

- Extremely robust design
- Hot-dip galvanized
- Modular design
- Manual or electric shut-off gate for repair purposes
- Automatic zero-setting with electrically driven shut-off gate
- Automatic belt-tensioning device
- High batching and weighing accuracy
- Pre-adjusted in factory
- Simple and fast re-adjustment with test weight (supplied by WÖHWA)
- Legal-for-trade (reclaim weigh feeders)

For more information:
WÖHWA WAAGENBAU
www.woehwa.com

WE CAN BE YOUR VOICE !!!



We serve your
“EXPERTISE”
in the right platter !

We strive for your
“RISE”
because that’s what
“MATTERS!!”

INDIA

INDUSTRIAL ANGLES

THE INDUSTRIAL LEADER'S VISION

CLEAN Technology | **KHD HUMBOLDT WEDAG**

SHREE CEMENT LIMITED
Rashtreeya Cement Plant

Clean Technology Delivered.

For almost 160 years, in every corner of the globe, KHD has forged lasting relationships with customers.

Our clean technology in innovations haven't just help us become the most recognized name in cement solutions, they've enabled us to be recognized as a trusted and relied-upon resource for our customers, partners, and employees.

www.industrialangles.com

INDUSTRIAL ANGLES

THE INDUSTRIAL LEADER'S VISION

TURNING IDEAS INTO TECHNOLOGY

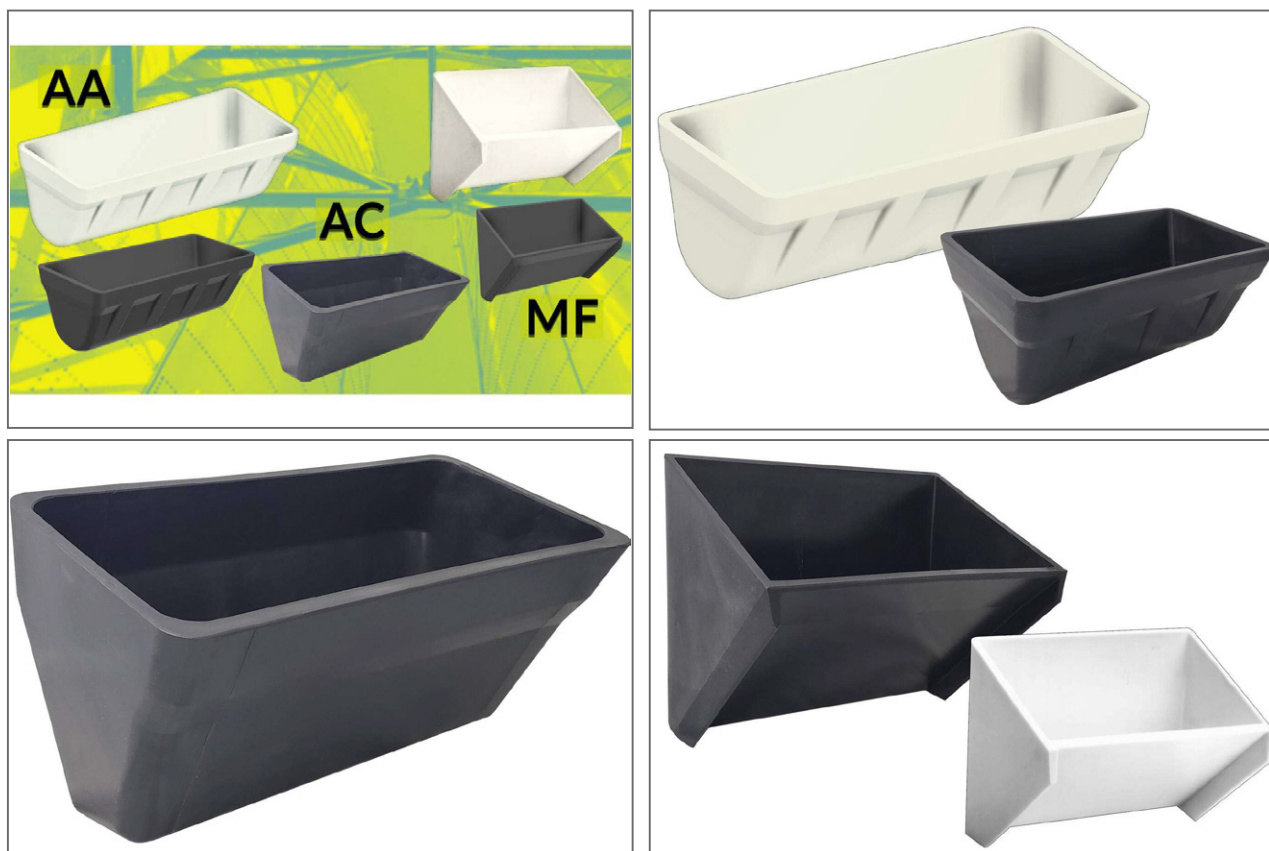
LOESCHE

INDUSTRIAL ANGLES

THE INDUSTRIAL LEADER'S VISION

HOW THEY BECAME BUSINESS TYCOONS

LOESCHE



4B GROUP LAUNCHES NYLATHANE INDUSTRIAL ELEVATOR BUCKETS

4B Group Launches Nylathane™ - The Next Generation of Industrial Elevator Buckets. Tough as Nylon - Slick as Urethane.

4B, a world leading supplier of bucket elevator and conveyor components, announces the release of its Nylathane™ line of industrial elevator buckets engineered for maximum durability and efficiency.

Nylathane™ is a high-performance polyamide 6 (Nylon 6) based polymer that is toughened through the addition of an elastomer. Typical applications include ultra-high performance elevator buckets for high impact and high wear resistance industrial applications. Using Nylathane™ in lieu of steel can reduce part weight by as much as 75%. Lighter buckets can prolong the life of costly components such as elevator belting or chain, can help reduce energy consumption of the equipment, and can help improve personnel safety while handling the parts. Nylathane™ possesses anti-stick properties that help improve bucket fill and discharge efficiency, and static conductive properties that help improve safety when conveying materials that generate combustible dust.

Nylathane™ is available in AA, AC, and MF style buckets and compatible with belt or chain bucket elevators.

Contact 4B for more information on upgrading to Nylathane™.

4B BRAIME ELEVATOR COMPONENTS
www.go4b.com



Delivering business insight, market knowledge and technical expertise to the global cement industry.

SUBSCRIPTION PACKAGE INCLUDES



MONTHLY MAGAZINE

12 issues of the cement industry's leading publication, delivered direct to your desk by First Class Airmail with early access to the digital magazine via CemNet.com.



FREE HANDBOOK

The Cement Plant Operations Handbook, 7th Edition



ICR SUBSCRIBER DISCOUNTS

Generous discounts on all ICR handbooks and reference works



BUILDING BULLETIN NEWSLETTER

Monthly newsletter covering the latest developments in the building materials sector – complimentary to all ICR subscribers.



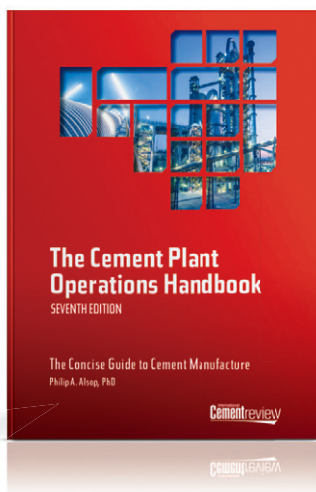
ONLINE CONTENT AND ARCHIVE

Search ICR's comprehensive database of articles, news and video presentations on CemNet.com



ICR SUBSCRIBER APP

Read the magazine anytime, anywhere (App Store or Google Play)



INCLUDES
FREE
HANDBOOK

A COMBINED
PRINT AND DIGITAL

ANNUAL SUBSCRIPTION TO ICR

GBP 210 / USD 315 / EUR 260



Subscribe online at
www.CemNet.com/subscribe

READ

ICR magazine
anywhere, anytime

SEARCH

the ICR archive of
digital back issues

ACCESS

premium articles

WATCH

video presentations
in high-definition



WEAR AND TEMPERATURE RESISTANT CHAIN ELEVATOR FOR FOUNDRY SAND

Sinfimasa designs and manufactures tailor-made elevators, such as this case: a robust and wear-resistant elevator for temperatures up to 500°C.

Elevator for foundry sand

Sinfimasa designs and manufactures tailor-made elevators. Each elevator is individually adapted to the specific project. We want to share publicly how we solve the problems posed by the market.

Our customer is an important foundry that needed to recover the sand used in its manufacturing process in order to reuse it for the filling of its moulds.

Wear and temperature resistant

The difficulties in this project are that this type of sand is very abrasive and that the working temperature at the inlet of the elevator is 200°C with peaks of up to 500°C. Therefore, we designed a chain bucket elevator. We used a round steel chain, as the high abrasiveness of the sand would cause unacceptable wear on the bushings.

The chain alloy contains a high percentage of manganese, which makes it wear resistant. The buckets are also reinforced with anti-wear steel.



Robust construction

The coating used for both primer and finish is anti-caloric, a coating based on silicone resins with aluminum pigments for high temperature resistance. The construction is industrially robust in terms of body, head and foot thicknesses. The elevator is self-tensioned by means of a system of counterweights, to assimilate the expansions produced by temperature changes, and has a stop that prevents the lower pulley from touching the bottom of its travel.

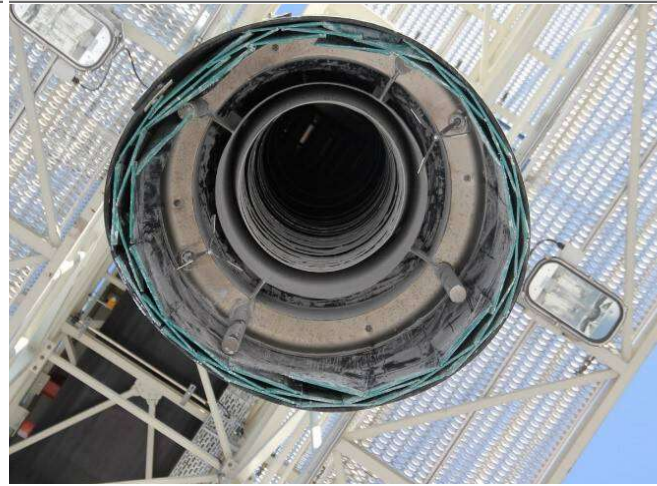
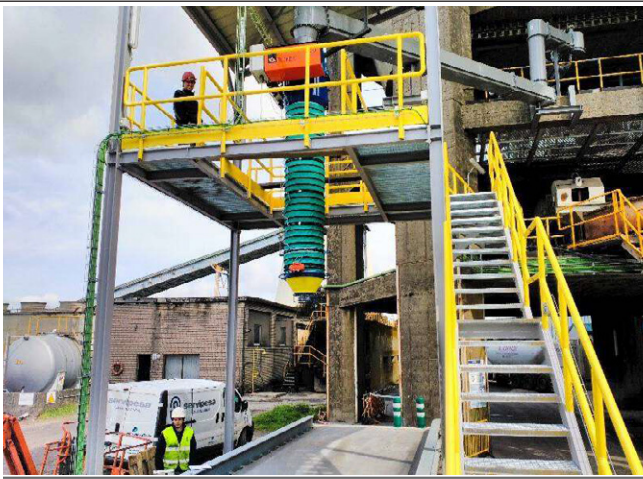
As drive a 4.4 SEW direct-acting geared motor was chosen to provide a capacity of 20 metric tonnes per hour. As bearings, both at the head and at the foot, SKF-SNH 22000 roller bearings were installed.

More information:

SINFIMASA

Sinfines y maquinaria S.A.

www.sinfimasa.com



LOADING BELLOWS AVOID HARM AND EXPENSES BY DUST

WAM GmbH offers loading bellows (telescopic loading spouts, telescopic loading chutes) with a loading capacity of up to 1800m³/h for dust free loading of all kinds of bulk materials

Wherever large quantities of bulk solids are moved, the wish list for process engineers is long: conveying, loading, transporting, filtering, mixing should be as fast as possible, ideally highly efficient with maximum safety for the process and employees and without costly or maintenance-intensive technology.

Loading systems can meet these requirements almost completely, if they are designed correctly. The key technology, which manufacturers call loading bellows or telescopic loading spouts or chutes, is used at an interface that is particularly sensitive for a successful loading process. Only little time is available for loading into silo vehicles, open trucks, transport wagons or big bags, because downtimes cost money. At the same time, loading should not only be fast, but also clean without material losses due to leakages, poor positioning or the escape of dust, because the costs for this should not be underestimated.

It becomes really expensive when the dust causes harm to workers, the environment or equipment. Dust on pavements, ladder rungs or handholds is the lesser cause of accidents. Exposure to dust over a long period of time can cause severe damage to the heart and respiratory tract. If dusts penetrate machines and sensitive technology, there is a risk of defects or even total failure. Conductive dusts such as those produced in welding shops have already been the cause of short circuits and even seemingly harmless flour dusts can be responsible for explosions.

The balancing act between a dust-free, safe working environment and fast, efficient loading succeeds when the loading system, bulk material and application are perfectly matched. The loading all-rounder that can do everything and always fits is a thing of the past. Specialists are needed here:

Product example Premix (plastic)

Premix of plastic granulate is a dry, very dusty and fine powdery material with a bulk density of 650 kg/m³. It does not behave abrasively, does not cake and therefore flows very well. In our application, the product is to be

loaded from a silo with an outlet of 300 mm diameter into tankers and partly also into big bags. In this case, WAM GmbH recommended a telescopic loader in the ZG design with double-walled bellows to be able to discharge the dust easily. The material falls through the inner bellows during loading, while the dusts can escape in the outer bellows. A central dust extraction system is provided for dust removal, which is why the telescopic loader is equipped with an aspiration connection. The inner and outer bellows are made of hypalon-coated neoprene, which is not only very flexible but also robust. Since product purity is of particular importance to the customer and painted mild steel is out of the question for this reason, all parts that come into contact with the product are made of stainless steel.

To prevent dust from escaping between the loader and the tanker, the telescopic loader has an attachment cone that completely seals the loader with the dome of the tanker. When the tank is completely filled, the integrated level indicator stops loading]. When the loader is raised by means of an electric winch, on which two lifting ropes pull the bellows together, a closing cone prevents material from trickling in and contaminating the surroundings.

In this configuration, a loading capacity of up to 250m³/h is possible.

Product example: hop pellets

The pellets have a bulk density of 600 kg/m³ with a diameter of 6-8 mm and a length of 30-50 mm. The material is moderately abrasive and slightly dusty. In particularly dry batches, there is a risk of explosive dust clouds forming.

The hop pellets are stored in pneumatically filled silos under which the ZA telescopic loaders are mounted on a 300 mm flange. Tankers and closed as well as open containers are loaded. With the discharge adapter, which can be attached to the hand guide ring of the attachment cone by means of quick-release fasteners, a change from closed to open loading and vice versa is possible in no time. The over 5-metre-long loading bowl contains an inner and an outer bellows as well as steel cups in mild steel for a longer service life. The 0.55kW electric winch is equipped with a spindle limit switch that measures the revolutions of the cable drum and stops the loader at the desired position. For safety, a slack rope contact additionally switches off the motor when the cone is put on.

Dust removal is provided by an integrated filter in the loader head with a 10 sqm cartridge filter that can process an air volume of 2400 m³/h. The integrated solution offers the advantage that the filtered material falls back into the bellows after cleaning the filter elements and remains in the loading process, whereas with a central dedusting system the material is collected elsewhere.

The highly flammable dusts require an ATEX version of the telescopic loader. This includes the explosion-proof design of the motors, an adapted control system and bellows in conductive material.

Product example glass powder

Glass powder, like sand in general, is one of the highly dusting and abrasive bulk materials. With a grain size of 0-1mm and a bulk density of 900-1000 kg/m³, this is a very fine material that has very good flow properties.

The basis for the customised configuration is a telescopic loader type ZG for loading free-flowing bulk materials into tankers and closed containers. Accordingly, the outlet is fitted with an attachment cone with integrated closure cone and level indicator. Due to the pronounced abrasiveness of the glass powder, WAM recommended a configuration with cups made of [Hardox] in the inner bellows. All other parts in contact with the product were also made of Hardox. For the comparatively short trunk with a stroke of 840 mm, the customer opted for a stroke adjustment by means of a manual cable winch and deflection pulley.

The loading capacity is up to 250 m³/h.

Product example: milled asphalt rubble

The material has a grain size of approx. 100 mm with a bulk density of 1300-1800 kg/m³. Asphalt crushed material is abrasive and moderately dusty. In the application, the ZX type telescopic loader is attached to a 500 mm wide flange via a conveyor belt and is intended to transport the free-flowing bulk material into ships, open trucks or containers that are sometimes much deeper. In order to be able to serve these quite different containers, a long bellows with a 5400 mm stroke and a total length of 8200 mm is required. To keep the dusts under control despite open loading, a dust skirt for the outlet was provided as well as an aspiration nozzle for connection to an on-site dust collection system. WAM recommended replacing the inner bellows with steel cups, which have a higher wear resistance to abrasive asphalt breakage. The outer bellows is made of durable hypalon coated neoprene.

In this configuration, WAM guarantees a loading capacity of 850m³/h.

Individual solutions

Individual solutions are also possible for all other bulk materials, where large quantities can be loaded safely. WAM GmbH offers loading solutions with a loading capacity of up to 1800m³/h. It is also possible to have a little more.

More information:

WAM GmbH

www.wamgmbh.de



We celebrate!

ZKG^{11TH}
ANNIVERSARY
CEMENT
LIME | GYPSUM
www.zkg.de



COMPOSITE SILOS FOR RENEWABLE ENERGY INSTALLATIONS

Renewable energy is more relevant than ever. As a partner to several renewable energy companies, Polem has the know-how to store the processed substances .

These days, almost 29% of our energy is from renewable energy sources. A large part is wind, solar or hydropower, however the percentage of other renewables such as bioenergy is increasing rapidly.

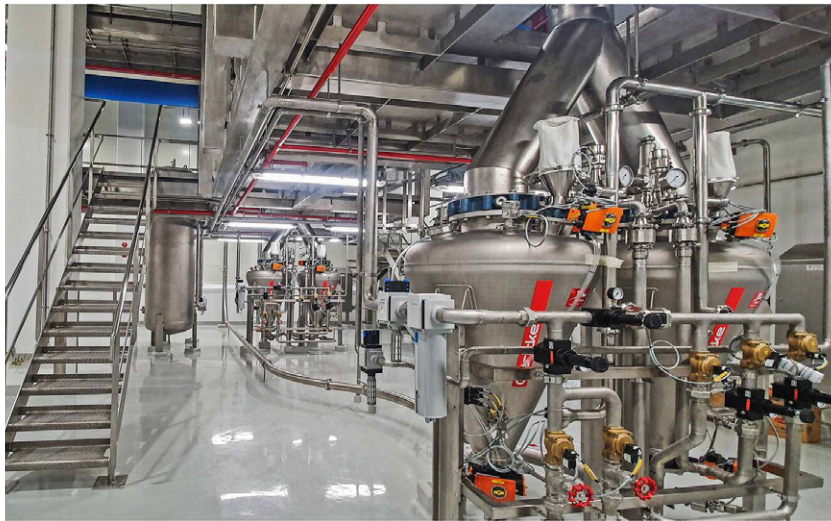
For years Polem is partner of several renewable energy companies. If you want to store co-products, glycerine, biodiesel and biomethanol in

tanks or biomass, wood pellets or starch in silos, Polem has already developed the proven technology.

Polem also has various partnerships with universities and composite knowledge centres for the use of composite as a fully circular raw material in the production of new materials.

More information:
POLEM BV
www.polem.com

GENTLE AND ENERGY-EFFICIENT PNEUMATIC CONVEYING SYSTEMS



As a supplier of all types of pneumatic conveying system types, Gericke can always offer the solution best suited, also considering the energy consumption and process safety.

Pneumatic dense phase conveying is among the gentlest solutions and is often the only technology suited to transport large product volumes efficiently and hygienically without demixing. It enables low-abrasion transport as well as complete emptying of the conveyor pipe. Additionally, it reduces maintenance costs and energy consumption. Gericke is a global market leader in the design and delivery of such systems.

Bulk handling is a major cost factor in the production process but can be well automat-

ed. So choosing the right system is crucial. Since the 1940s, Gericke has been a pioneer in the development of pneumatic conveying systems. Customers benefit from this experience. Gericke technology enables the conveying of a wide variety of goods over short and long distances.

Dust tight

Pressure vessels are utilised within pneumatic dense phase conveying systems to introduce the bulk solids into the pipeline and to control the pressure difference. Contrary to when using rotary valves, the system has no leakage air and is absolutely dust tight. This allows a high pressure range from 1 barg up to 6 barg, or more. The high solids loading and low velocity lead to gentle conveying and to low wear of

both pipeline and receiver in contrast to lean phase conveying systems. With dense phase conveying systems, the transport of bulk solids is possible from short distances right up to long distances of several hundred meters.

Efficient and safe

Gericke uses senders manufactured in house for dense phase pressure conveying systems. In contrast to many other systems available on the market, the air volume can be determined and regulated with significantly higher precision in Gericke systems. This minimises energy costs and makes the installation more economical. As a fully automated system, it also reduces operator workload and minimizes potential for errors.

Industrial Scale Test Centres

The Gericke test centres allow pneumatic conveying trials in many different setups, such as dense and dilute phase, under pressure or vacuum. These tests under real industrial conditions give customers the confidence to invest into the right solution. For almost every bulk material a conveying solution can be found.

PROMOTING THE FLOW IN SILOS AND CLEANING THE SILO WALLS

Flow in a silo can be promoted with a hammer. But the use of pneumatic knockers is a much better way. This gives maximum impact, without damage.

APPLICATION

The Pneumatic Knocker is used for bulk goods with flow problems, such as bridging, funnel flow and stagnant zones, when high speed shakers and vibrators with soft sine-shaped oscillations are no longer effective.

Better than a hammer

The effect of the knocker is comparable to the infamous "silo hammer", but without the damage a hammer can do. Dents by hammers will complicate the material flow even more. And cracks and ruptures can also occur.

The effectiveness of the knocker is evaluated according to the following rule: If the product can be knocked off or made to flow with a hand hammer, the Pneumatic Knocker is also effective.

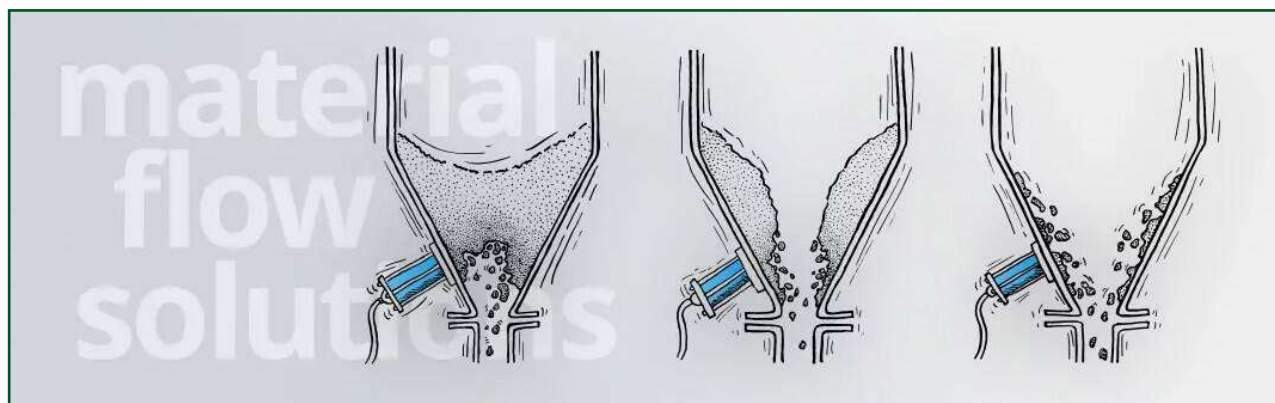
Mounting of the knocker

The knocker is normally controlled by an electrical control system with a solenoid valve. Within the area where the knocking takes place there should be enough space for the impact to expand in all directions.

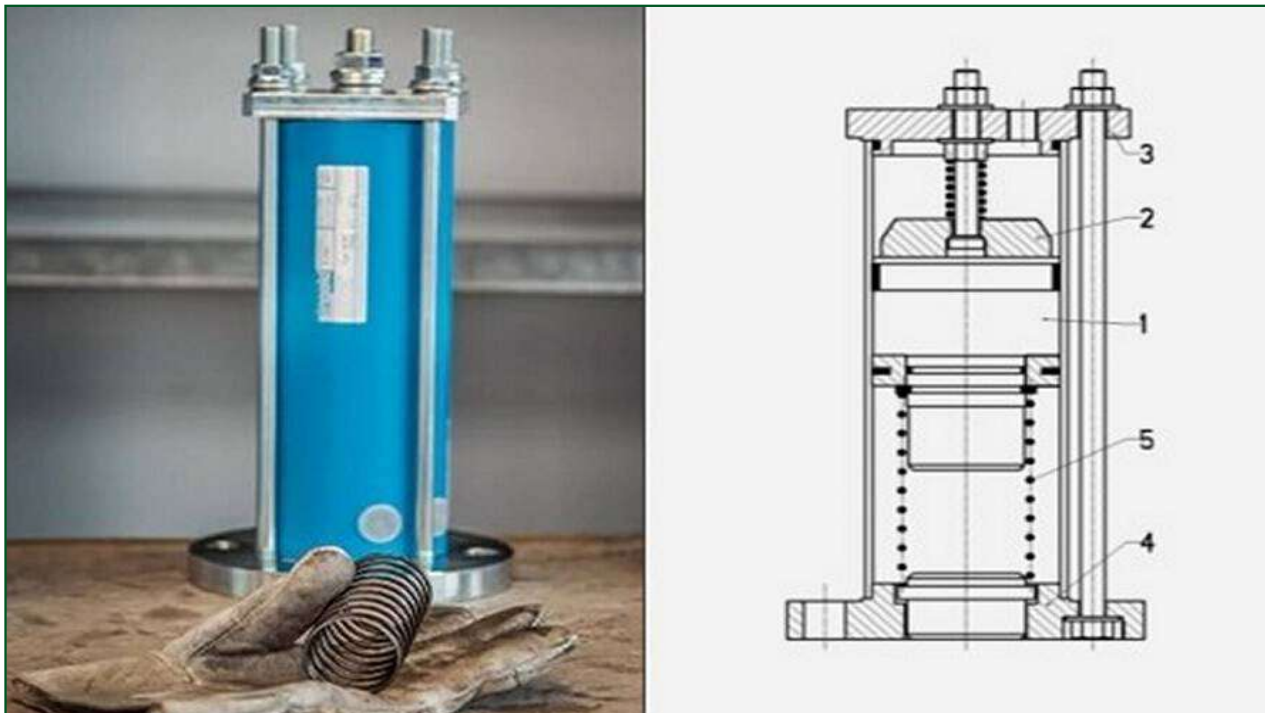
Reinforcements of the silo walls and additional ribs should be avoided, as this increases the weight and the strength of the silo walls and thus reduces the effect of the knocker.

Impact energy and impulse

The Pneumatic Knocker produces an ideal elastic shock that is specified as the impact energy: $E = m/2 * v^2$ [kgm/s² = Nm] and as impulse: $J = m * v$ [kgm/s = Ns]. There is no impact force or out-of-balance such as vibrators generate.



Operation of pneumatic knocker at bridging and cleaning out of the silo



singold pneumatic knocker – Type K

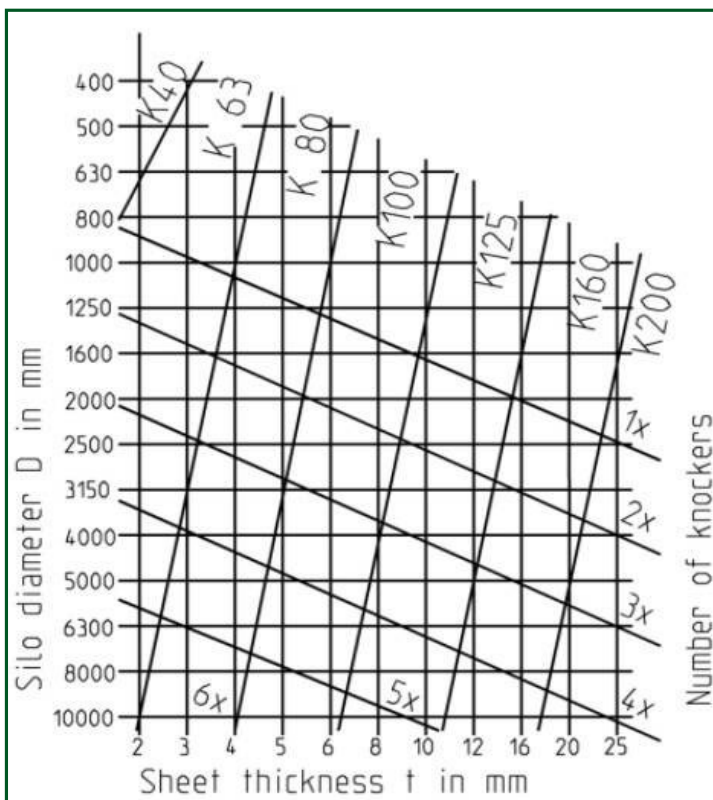
CONSTRUCTION & FUNCTIONING

The air hammer achieves a very high impact energy through the stored and immediately released compressed air energy.

The left picture shows the construction of the knocker: The piston (1) designed as a permanent magnet, adheres in the end-position to the anchor plate (2) until the compressed air fed through the lid (3) overcomes the magnetic force.

The impact piston (1) loosens from the anchor plate (2), is very highly accelerated by the accumulated compressed air and hits onto the striker (4) with a speed of 6 to 7 m/sec., which transmits the impact to the silo wall.

After deaeration of the knocker, the impact piston (1) is pressed back into the starting position by means of the spring (5).



Selection Chart for Pneumatic Knockers for a 60° cone

SIZES & SELECTION CHART

The singold Selection Chart provides a rough reference for selecting the adequate size and number of Pneumatic Knockers for round silos of 60° cone. In case of rectangular containers, a minimum of two knockers are mounted on the less steep sides.

Important parameters for the selection of the right knocker:

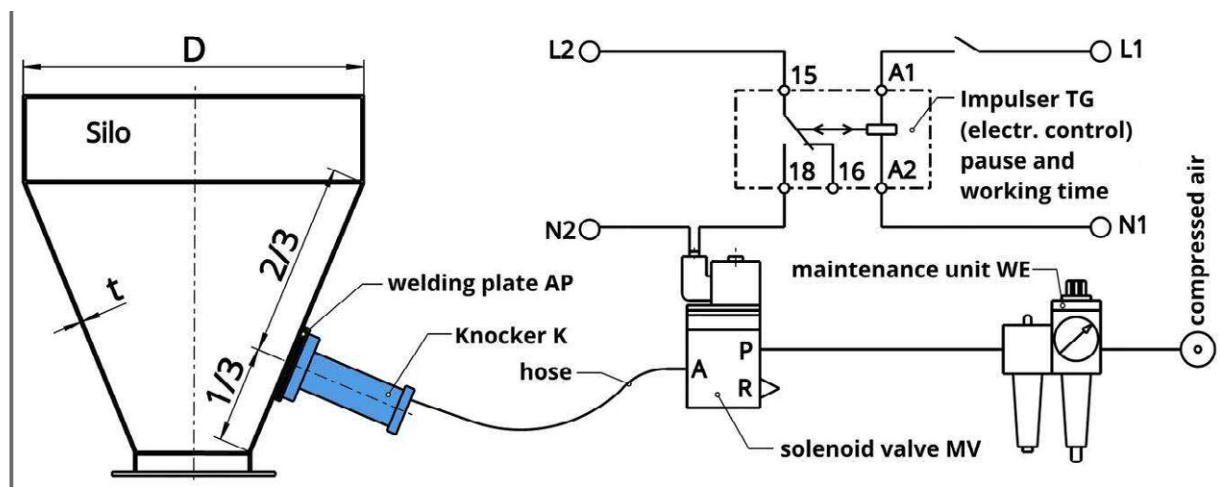
Mechanical aspects

- Thickness of the container
- Container material
- Container diameter
- Operating temperature
- If present, insulation thickness for the selection of the mounting
- Choice of version in aluminium, steel or stainless steel
- Protection type for operating environment

For the electrical components:

- Desired operating voltage
- Number of knockers
- Protection type for operating environment

MOUNTING & OPERATION



For the assembly and operation of the pneumatic knocker the components shown in the figure below are required:

Components needed for assembly and operation of the pneumatic knocker

- Attaching the Pneumatic Knocker Welding plate AP . With small pipes, small containers or containers with insulation welded plate in T-shaped APT
- Pneumatic 3/2 way solenoid valve in the desired control voltage.
- Electrical control for solenoid valve to desired control voltage. An existing PLC control can also be used.
- Pneumatic connectors and cables
- Maintenance unit for pressure reduction to 3.5 bar operating pressure, drainage and lubrication of the knocker is recommended.

More information:

SINGOLD GERÄTETECHNIK GMBH

www.singold-tech.de



MANAGE AND CONTROL YOUR SILO SYSTEM INDEPENDENTLY

In the field of silo-control and visualization, SSB Wägetechnik offers versatile and individual solutions that allow you to independently manage and control your silo system.

With our silo-control system, which can either be integrated into software tools such as SAP and ORACLE or tailored to your own database exchange, the management of your silo plant becomes more targeted, convenient and functional.

When using a control system, the production processes from product receipt, order acceptance, silo discharge control, safety scanning, determination of filling variants (e.g. truck, big bag, FFS) and backtracking to the finished container can be precisely monitored and controlled.

The WinCC software solution we offer helps you optimize the management of your plant and make it autonomous and user-friendly. To make the control of your silo plant even more functional, we offer control systems with integration of the filling technology, visualization system and databases. In addition to process monitoring, our silo control systems also enable remote monitoring with worldwide access, linking with databases, connection of truck scales, and flexible networking of the filling and loading technology.

The visualization of the silo control system is done with WinCC Scada or WinCC flexible.

More information:

SSB WÄGETECHNIK GMBH

www.ssb-waagen.de



TOUGH NEW SILO PROTECTION GUIDELINES CALL FOR A TOUGH NEW PRODUCT!

SHIELD Lite 2 is the final word in silo pressure safety



Recently having reinforced its reputation as a silo safety expert by collaborating with the Mineral Products Association (MPA) on new guidance for safer pressurised tanker deliveries, Hycontrol Ltd is now proud to announce the launch of the updated SHIELD Lite silo protection system. The revised SPS is smaller than previous versions, with all critical silo-top safety components built-in and pre-wired to provide simpler, easier and lower-cost installation. This design yields safe deliveries straight out of the box, cutting the chance of wiring mistakes. Utilising purpose-designed pressure monitoring and control equipment, SHIELD Lite meets and exceeds current best practices, including those in the new MPA guidance.

Powder storage silos are used across many industries but are at risk of over-pressurisation during tanker deliveries. Pressures as low as one psi are enough to rupture a silo or forcibly eject the filter unit from the roof. Besides the physical danger and risk of fatalities from falling equipment, this can cause massive equipment damage and environmental pollution. A comprehensive, failsafe safety and control system is vital to prevent such disastrous outcomes.

SHIELD Lite goes beyond failsafe, providing a fully-automated self-testing safety system that removes the risk of human error from the delivery process by thoroughly monitoring and controlling it. The high-accuracy pressure safety components are pre-assembled and wired for simple installation. In addition, SHIELD Lite incorporates Hycontrol's pioneering Ground Level Testing (GLT), whereby a single key-turn activates a full-function



test of all the crucial safety components without climbing the silo.

Hycontrol Managing Director Nigel Allen said: “We have insisted for many years that simplicity is the key to safety, so we have made a system that will make a silo safe straight out of the box. With baked-in failsafes like ratio alarms, filter blockage warnings and driver delivery behaviour diagnostics, we can effectively eradicate the risk of human error. We understand that mistakes in maintenance and testing are inevitable. Our philosophy is to accept this and provide a system that monitors and safely alerts you when these errors occur. Safety for staff, contractors and drivers should always be the number one priority. As we say – safe silos are tested every time.”



About Hycontrol: Hycontrol has been at the forefront of level control and silo protection technology for nearly four decades. The company has pioneered failsafe silo pressure safety and ground-level testing. Hycontrol systems reduce risk, create a safer working environment, and provide the best-engineered solution - without compromise. www.hycontrol.com / www.siloprotection.com / sales@hycontrol.com / 01527 406800

Sanindusa invests in factory digitalization with SACMI's HERE technology

With the recent installation of a new generation plant supervisor at the Tocha factory, Sanindusa's ambitious modernization plan, started in 2019, has been completed. Confirmation for SACMI of its success as a complete partner for digitalization utilizing all the opportunities and advantages of automation.

A completely new production plant, now equipped with SACMI'S HERE supervisor, opening the way to the digital r-evolution in the sanitaryware sector. This is the experience of Sanindusa, which has recently completed, together with SACMI, its ambitious plant renovation project at its production site in Tocha.

Recently started up at the Portuguese factory, the HERE plant supervisor is an integration both to the substantial fleet of SACMI machines installed at Sanindusa – pressure casting machines, AGV, robotized glazing systems – and to all the other technological and plant solutions available at the factory.

Modular and scalable, HERE is configured as the first platform on the market specifically designed to meet the requirements of the ceramic work process, thanks to its ability to manage integrated data and production processes from raw materials up to shipments and the finished product.

The main concept of this project, which SACMI has developed alongside the customer since 2019, is to match the high level of automation of the lines with a platform able to govern the digital identity of the piece.

Thanks to HERE's advanced functions as well as the sensors installed on the machines – the software is completely integrated with the control boards for automation of the cells – it is possible to monitor the operating state of the plant, keep the Key Performance Indicators (KPI) under control and, above all, react to the feedback received by, for example, managing any deviations in production in real time and scheduling maintenance jobs.





The distinctive feature of HERE, in addition to its specific design for the ceramic process, is its high level of modularity meaning it can be easily adapted to the needs of the customer. Among other functions, it can be integrated with the company ERP system so as to manage production flows right from the start according to a make-to-order logic. A further advantage is the total elimination of the need for hardcopies of documentation both as regards managing maintenance (as

well as purchasing and spare parts) and handling alarms, which is fully automated and is carried out without operator intervention.

Scalable over time, HERE can be integrated with new functions according to new requirements and the latest advances towards factory digitalization. In the case of Saninidusa, one of the most important requirements was to control the status of the semi-finished piece storage area in real time i.e. the number of

pieces stored post-casting during ageing, number of pieces being dried or glazed.

This is why the HERE supervisor has been integrated with the LGV handling system to allow for full control of these functions. Alongside this, is the tracking module, specifically developed to display the current stock status, with an indication of the pieces loaded on every car, their number, type and model as well as “parking” time elapsed.

Among the advantages of monitoring the pieces in this way, achieved thanks to the bar code tracking system integrated at every position along the line, is the possibility to generate statistics reports, of particular importance during the sorting stage, to associate any defects identified in certain areas of the piece with the related corrective actions which can be quickly activated on the plant. All this improves quality, reduces waste and leads to an increase of first grade product.

CEMENT EQUIPMENT UPGRADES AND SPARES TO INCREASE IN THE NEXT 5 YEARS

Upgrades and spares market size are expected to increase over the next five years, according to CW Research's World Cement Equipment Market and Forecast Report 2022.

Upgrades and spares are likely to grow at an average of 1 percent from 2022 to 2027, and account for more than 70 percent of the cement equipment market by 2027. Meanwhile, brownfield and greenfield projects are set for a downward trajectory in the next five years.

China is expected to be the main market for upgrades, as low quality and low-efficiency equipment is expected to be replaced.

“Looking onwards, upgrades will be increasing as their share of total projects in terms of US dollars increases substantially. Greenfields are expected to become less frequent as new limestone resources are limited, therefore, there is an increased focus on brownfield expansions. Additionally, there is a trend to place new grinding units closer to demand centers,” assesses Wanderson Teixeira, Business Analyst, CW Group.

Greenfield projects to decrease over the next five years

Greenfield projects are expected to drop sharply between 2022 and 2027 and represent a smaller share of the cement equipment market, as the majority of new additions will be taking form as expansions of already existing plants.

A surge in upgrades is expected to partially offset declining greenfield projects in terms of cement equipment market size. The factors weighing the most on the cement equipment market are sustained inflation and severe pricing competition.

Burners to record the smallest decline in terms of market size

The market size for burners is expected to record the slowest decline of all cement equipment market segments, down by about 2 percent over the 2022-27 period.

Regarding burners, the majority of upgrades are related to switching in fuels and stronger emissions standards. With growing concern over NOx emissions, particularly in China, the burner market is expected to face little pressure from pricing competition when compared to other segments.

Environmental, testing and automation market size to decline until 2027

Environmental, testing, and automation and control are also expected to see a decline in the next five years, despite stricter environmental regulations.

Precalciner and kiln manufacturers will be suffering the most from pricing declines, as these equipment pieces are low technology and often supplied by whoever offers the lowest price.

The World Cement Equipment Market and Forecast Report 2022 addresses important market dynamics and the outlook for equipment used in the production of clinker and cement as well as grinding units. Building on rigorous analysis of past and future cement plant capacity expansions (greenfield and brownfield expansions), the report covers key trends in the main production equipment segments, the cement equipment market size (USD) and capacity additions (tons), on both a regional as well as global perspective. It covers equipment required in crushing (crushers), milling (raw meal mills, fuel mills, finishing mills), power (electricity generation and waste heat recovery), pyro processing (burners, pre-heaters / cyclones, kilns, coolers, alternative fuel preparation), and dispatch (weighing, bulk loading, bagging and palletizing equipment), which are sized and forecasted.



www. **UAECement**.com

Become a member of UAECEMENT.COM ...

ARAB CEMENT FACTORIES

UAE CEMENT NEWS

UAE CEMENT FACTORIES

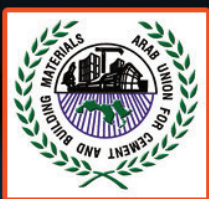
RELIABLE COMPANIES

INTERNATIONAL CEMENT CONFERENCES

CEMENT ARTICLES

UAE CEMENT TYPES

Our Partners :



www.aucbm.net

SIMAN NEWS

Iran Cement News Agency

www.simankhabar.ir

www.simankhabar.ir



www.cmtevents.com

UAE CEMENT PORTAL WEB SITE

www.UAECEMENT.com

info@uaecement.com

DIARY DATES

Cement Cement Cement

3rd Virtual Middle Eastern Cement Conference

Date : Tuesday 5 July 2022 at 10:00 - 17:00 EEST (UTC+2, Cairo time)

Venue: Your device

Free registration link: <https://register.gotowebinar.com/register/1871250460779741454>

For more information, please contact:

Dr. Robert McCaffrey

Tel.: +44 1372 743837

Fax: +44 1372 743838

Email: rob@propubs.com

Website: www.MiddleEasternCement.com

Cemtech Live Webinar: Clinker Reduction

Date : 06th July 2022

Venue: Your device

For more information, please visit:

www.CemNet.com

4th Cement Conference 2022

Date : 26 - 27 July 2022

Venue: Cham Palace, Damascus, Syria

For more information, please contact:

Mobile/WhatsApp: **+963969019984**

E-mail: info@cementtechco.net

Website: www.cementtechco.net

Cemtech Live Webinar: Decarbonisation

Date : 07th September 2022

Venue: Your device

For more information, please visit:

www.CemNet.com

15th Global CemFuels Conference & Exhibition on alternative fuels for cement and lime

Date : 14 - 15 September 2022

Venue: Tivoli Oriente Lisboa Hotel, Lisbon, Portugal

For more information, please contact:

Dr. Robert McCaffrey

Tel.: +44 1372 743837

Fax: +44 1372 743838

Email: rob@propubs.com

Website: <https://www.cemfuels.com>

INTERCEM 2022

Date : 19 - 21 September 2022

Venue: Hilton Istanbul Bomonti Hotel & Conference Center, Turkey

Tel: +44 20 8669 5222

Email: info@intercem.com

Website: www.intercem.com

CW Americas Summit 2022 Cement Strategy, Finance & Trade

Date : 21 - 22 September 2022

Venue: New York, USA

Email: communication@gmiforum.com

Website: www.gmiforum.com

2nd Virtual African Cement Conference - Market trends and technology in Africa

Date : 27th September 2022 at 10:00 - 17:00 West Africa Time (Lagos, Nigeria)

Venue: Your device

Free registration link: <https://register.gotowebinar.com/register/4243077361799452942>

For more information, please contact:

Dr. Robert McCaffrey

Tel.: +44 1372 743837

Fax: +44 1372 743838

Email: rob@propubs.com

Website: www.AfricanCement.com

Decarbonising the Cement Industry

Date : 02 - 05 October 2022

Venue: Barcelona, Spain

For more information, please contact:

Email: info@cemtech.com

Website: www.Cemtech.com/Barcelona2022

Virtual Global CemQC 3 - Quality control for clinker and cement

Date : 04th October 2022 at 10:00 - 16:00 CET (Central European Time, Berlin, Paris, Rome)

Venue: Your device

Free registration link: <https://register.gotowebinar.com/register/1913988478353243918>

For more information, please contact:

Dr. Robert McCaffrey

Tel.: +44 1372 743837

Fax: +44 1372 743838

Email: rob@propubs.com

Website: www.CementQC.com

Virtual (*free*) and
in-person events
in 2022 from:



Details and registration

Virtual Middle Eastern Cement 3

Market trends and technology in the Middle East

Co-organised by AUCBM

5 July 2022

www.MiddleEasternCement.com

15th Global CemFuels Conference
14-15 September 2022, Lisbon

**20th Global Gypsum/
15th Insulation Conference**
2-3 November 2022, Estoril/Lisbon

Virtual African Cement 2

Market trends and technology in Africa
27 September 2022

Virtual Global CemQC 3

Quality control for clinker and cement
4 October 2022

Virtual Global Concrete 4

Global concrete business
11 October 2022

Virtual Global CemProducer 5

Cement production optimisation
18 October 2022

Virtual Global Ash 3

Ash for cement and concrete
13 December 2022

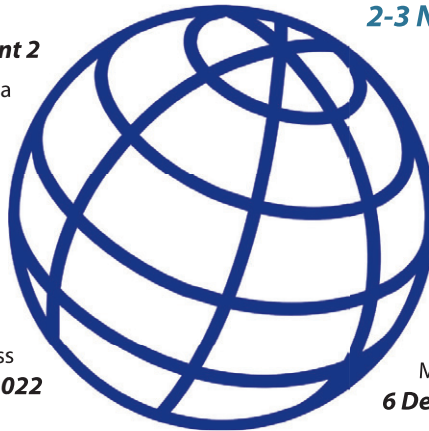
3rd Global FutureCem Conference
16-17 November 2022, Brussels

Virtual Global CemPower 2

Electrical generation and efficiency
29 November 2022

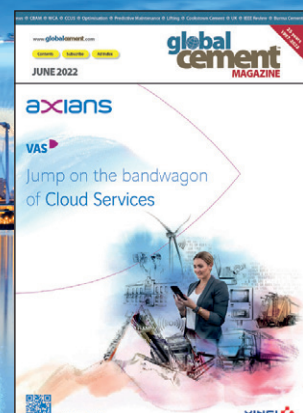
Virtual European Cement 2

Market trends and technology in Europe
6 December 2022



Check website for
latest details

www.GlobalCement.com



Cemtech Live Webinar: Quality Control

Date : 05th October 2022

Venue: Your device

For more information, please visit:

www.CemNet.com

4th Virtual Global Concrete Seminar - Concrete trends & technology

Date : 11th October 2022 at 10:00 - 16:00 Central

European Time (Berlin, Paris, Rome)

Venue: Your device

Free registration link: <https://register.gotowebinar.com/register/219015440443824654>

For more information, please contact:

Dr. Robert McCaffrey

Tel.: +44 1372 743837

Fax: +44 1372 743838

Email: rob@propubs.com

Website: www.Global-Concrete.com

Slag & AshTrade Asia 2022

Date : 14 - 15 October 2022

Venue: Bangkok, Thailand

For more information, please contact:

Mr. Ali Assad, Business Development Executive

Tel.: +40-754-023-330

Email: sales@gmiforum.com / mk@gmiforum.com

Website: <https://www.gmiforum.com>

Virtual Global CemProducer 5: Refractories, wear, lubrication & cement plant maintenance

Date : 18th October 2022 at 10:00 - 17:00, Central

European Time (Berlin, Paris, Rome)

Venue: Your device

Free registration link: <https://register.gotowebinar.com/register/2131961164866749964>

For more information, please contact:

Dr. Robert McCaffrey

Tel.: +44 1372 743837

Fax: +44 1372 743838

Email: rob@propubs.com

16th TURKCIMENTO International Technical Seminar & Exhibition

Date : 24 - 28 October 2022

Venue: Kaya Palazzo Golf Resort Belek, Antalya, Turkey

For more information, please contact:

Turkish Cement Manufacturers' Association

Email: info@turkcimento.org.tr /

tekniks@turkcimento.org.tr

Website: www.turkcimento.org.tr

Cemtech Live Webinar: Alternative Fuels

Date : 02nd November 2022

Venue: Your device

For more information, please visit:

www.CemNet.com

3rd Global FutureCem Conference & Exhibition - reducing CO₂ from cement and concrete

Date : 16 - 17 November 2022

Venue: Pullman Brussels Centre Midi Hotel, Brussels, Belgium

For more information, please contact:

Dr. Robert McCaffrey, Global FutureCem Conference convener

Tel.: +44 1372 743837

Fax: +44 1372 743838

Email: rob@propubs.com

2nd Global Cement Electrical Power Conference & Exhibition

Including waste heat recovery, captive power, grinding optimisation and electrical energy efficiency

Date : 29th November 2022 at 10:00 - 17:00 Central

European Time (Berlin, Paris, Rome)

Venue: Your device

Free registration link: <https://register.gotowebinar.com/register/4832835609615416590>

For more information, please contact:

Dr. Robert McCaffrey

Tel.: +44 1372 743837

Fax: +44 1372 743838

Email: rob@propubs.com

CW Cement & Solid Fuel Summit 2022 Middle East and Africa

Date : 29 - 30 November 2022

Venue: Dubai, UAE

For more information, please contact:

Mr. Ali Assad, Business Development Executive

Mobile: +40 754 023 330

Email: aga@gmiforum.com

Mr. Liviu Dinu, Market Services & Marketing Consultant

Mobile: +40 754 625 768

Email: ld@cwgrp.com

XXIV International Construction Forum | Cement Concrete - Dry Mixtures

Date : 29th November - 01st December 2022

Venue: Expocentre, Moscow, Russia

For more information, please contact:

Tel.: +7 812 3350992
Email: info@alitinform.ru
Website: <http://www.infocem.info>

2nd Virtual European Cement Conference - Market trends and technology in Europe

Date : 06th December 2022 at 10:00 - 17:00 Central European Time (Berlin, Paris, Rome)
 Venue: Your device
 Free registration link: <https://register.gotowebinar.com/register/5470726077176679695>
 For more information, please contact:
 Dr. Robert McCaffrey
Tel.: +44 1372 743837
Fax: +44 1372 743838
Email: rob@propubs.com
Website: www.EuropeanCement.com

Cemtech Live Webinar: The Digital Plant

Date : 07th December 2022
 Venue: Your device
 For more information, please visit:
www.CemNet.com

3rd Virtual Global Ash Seminar - 2022

Date : 13th December 2022 at 11:00 AM - 15:00 Central European Time (Berlin, Paris, Rome)
 Venue: Your device
 Free registration link: <https://register.gotowebinar.com/register/5120266641427681292>
 For more information, please contact:
 Dr. Robert McCaffrey
Tel.: +44 1372 743837
Fax: +44 1372 743838
Email: rob@propubs.com
Website: www.GlobalAsh.com

(1st real-world) Global CemProducer Conference & Exhibition on cement trade & technology

Date : Mid-January 2023
 Venue: Munich, Germany
 For more information, please contact:
 Dr. Robert McCaffrey
Tel.: +44 1372 743837
Fax: +44 1372 743838
Email: rob@propubs.com
Website: <https://www.globalcement.com/conferences/cemproducer/introduction>

CBI –Cement Business and Industry Brazil and LatAm & Alternative Fuels and Raw Materials 2023

Date : 15 - 16 March 2023

Venue: São Paulo, Brazil

For more information, please contact:

Email: sales@gmiforum.com / mk@gmiforum.com
Website: <https://www.gmiforum.com>

5th Global CemBoards Conference and Exhibition

Date : Spring 2023
 Venue: Hotel Pullman Brussels Centre Midi, Place Victor Horta 1, 1060 Brussels, Belgium
 For more information, please contact:
 Dr. Robert McCaffrey
Tel.: +44 1372 743837
Fax: +44 1372 743838
Email: rob@propubs.com

Argus Solid Fuels Asia Conference

Date : March 2023
 Venue: TBC
Tel.: +65 6496 9899
Email: asiaconferences@argusmedia.com
Website: www.argusmedia.com

07th American Drymix Mortar Conference - admcm7

Date : 08th June 2023
 Venue: Richmond, VA., USA
Email: info@drymix.info
Website: www.drymix.info

7th Alternative Fuels Symposium

Date : TBC
 Venue: Germany
Tel.: +49 0 203 34 65 16 0
Fax: +49 0 203 34 65 16 50
Email: workshop@lechtenberg-partner.de
Website: www.lechtenberg-partner.de

**Training
 Training
 Training**

Online Course - Firing Alternative Fuels:

Opportunities, impacts on process, optimisation and limitations
 Date : 05 - 08 September 2022
 Venue: Your device
Email: training@vdz-online.de
Website: <https://www.vdz-online.de>

Design of Equipment for Storing and Discharging Bulk Materials (Advanced Course)

Date : 26 - 30 September 2022
Venue: Your device
For more information, please visit:
www.gre.ac.uk

Overview of Particulate Handling Technology

Date : 10 - 14 October 2022
Venue: University of Greenwich Medway campus in Kent, England / or online
For more information, please visit:
www.gre.ac.uk

20th Global Gypsum / 15th Insulation Conference

Date : 02 - 03 November 2022
Venue: Estoril - Lisbon, Portugal
For more information, please contact:
Dr. Robert McCaffrey
Tel.: +44 1372 743837
Fax: +44 1372 743838
Email: rob@propubs.com
Website: www.GlobalCement.com

Pneumatic Conveying of Bulk Solids

Date : 08 - 09 November 2022
Venue: University of Greenwich Medway campus in Kent, England
For more information, please visit:
www.gre.ac.uk

Pneumatic Conveying System Design (Advanced Course)

Date : 22 - 23 November 2022
Venue: University of Greenwich Medway campus in Kent, England
For more information, please visit:
www.gre.ac.uk

Rotary Valves: Design, Selection and Operational Issues

Date : 24th November 2022
Venue: University of Greenwich Medway campus in Kent, England
For more information, please visit:
www.gre.ac.uk

Commissioning and Troubleshooting Pneumatic Conveying Systems

Date : 06 - 07 December 2022
Venue: University of Greenwich Medway campus in Kent, England
For more information, please visit:
www.gre.ac.uk

*Ceramic
Ceramic
Ceramic*

CERAMITEC 2022

Date : 21 - 24 June 2022
Venue: Messe München, Germany
For more information, please visit:
[HTTPS://WWW.CERAMITEC.COM/EN](https://www.ceramitec.com/en)

Uniceramics Expo 2022

Date : 20 - 24 July 2022
Venue: Foshan, China
Tel: +86 18566021320
For more information, please contact:
Email: info@dm.uniceramics.com.cn
Website: uniceramicsexpo.com

ACHEMA 2022

Date : 22 - 26 August 2022
Venue: Frankfurt, Germany
For more information, please visit:
www.achema.de

27th Tecna 2022

Date : 27 - 30 September 2022
Venue: Rimini Expo Centre, Italy
Tel: +39 0541 744111
Fax: +39 0541 744200
Email: segreteria@tecnargilla.it
Website: <https://en.tecnaexpo.com/>

ASEAN Ceramics 2022

Date : 30 November -02 December 2022
Venue : Bangkok - IMPACT Exhibition Center, Thailand
For more information, please contact:
Email: aseanceramics@mmlasia.com.sg **Website: <https://aseanceramics.com>**

Indian Ceramics Asia

Date : 15 - 17 February 2023
Venue: Helipad Exhibition Centre, Gandhinagar, India
For more information, please visit:
<https://www.indian-ceramics.com>

XXIV INTERNATIONAL CONSTRUCTION FORUM

CEMENT - CONCRETE DRY MIXTURES

NOVEMBER 29- DECEMBER 1, 2022. EXPOCENTRE, MOSCOW.



XXIV INTERNATIONAL CONSTRUCTION EXHIBITION
«Cement. Concrete. Dry mixtures»

More than **6000**
exhibition visitors

BlockRead

International Conference
«Precast Housing: Production, Design,
Construction»

450 members
of the business
program

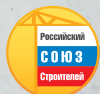
MixBuild

International Scientific and Technical
Conference «Modern Technologies of Dry
Mixtures in Construction»

150 exhibits

80 reports

18 countries



organizers

venue



info@alitinform.ru // www.infocem.info // +7 812 335 09 92



General General General

Hillhead 2022

Date : 21 - 23 June 2022
Venue: Hillhead Quarry, Buxton, Derbyshire, UK
For more information, please contact:
Email: hillhead@qmj.co.uk
Website: www.hillhead.com

Slope Engineering Summit

Date : 22 - 23 June 2022
Venue: Kuala Lumpur, Malaysia
For more information, please contact:
John Karras
Tel.: +603 2775 0067
Email: johnk@trueventus.com

Solids Dortmund

Date : 22 - 23 June 2022
Venue: Dortmund, Germany
For more information, please visit:
www.solids-dortmund.de

2nd Annual Chief Data Scientist

Date : 20 - 21 July 2022
Venue: JW Marriott Hotel Kuala Lumpur, Malaysia
For more information, please contact:
John Karras
Tel.: +603 2775 0067
Email: johnk@trueventus.com

10th Annual Modular & Prefabrication Construction

Date : 27 - 28 July 2022
Venue: Marriott Hotel, Singapore
For more information, please contact:
John Karras
Tel.: +603 2775 0067
Email: johnk@trueventus.com

3rd Annual BIM Summit

Date : 27 - 28 July 2022
Venue: Marriott Hotel, Singapore
For more information, please contact:
Mr. John Karras
Tel.: +603 2775 0067
Email: johnk@trueventus.com

World Cities 2022

Date : 31 July - 03 August 2022
Venue: Sands Expo & Convention Centre, Singapore
For more information, please contact organizers at:
Email: info@worldcities.com.sg
Website: www.worldcitiessummit.com.sg

Powtech 2022

Date : 27 - 29 September 2022
Venue: Nürnberg, Germany
For more information, please visit:
www.powtech.de/en

BAUMA 2022

Date : 24 - 30 October 2022
Venue: Munich, Germany
For more information, please visit:
<https://bauma.de/en>

5th International Drilling Congress and Exhibition of Turkey

Date : 27 - 28 October 2022
Venue: Izmir, Turkey
For more information, please contact:
TMMOB MADEN MÜHENDİSLERİ ODASI
Tel: +90 312 425 10 80
Email: maden@maden.imdlv.net
www.drilling.org.tr

18th Edition SteelFab 2023

Machinery, Technology, Equipment
Date : 09 - 12 January 2023
Venue: Sharjah, UAE
For more information, please contact:
Tel.: +971 6 5770000
Email: steel@expo-centre.ae
Website: www.steelfabme.com

European Coatings Show

Date : 28 - 30 March 2023
Venue: Nürnberg, Germany
For more information, please visit:
<https://www.european-coatings-show.com/>

interpack Düsseldorf

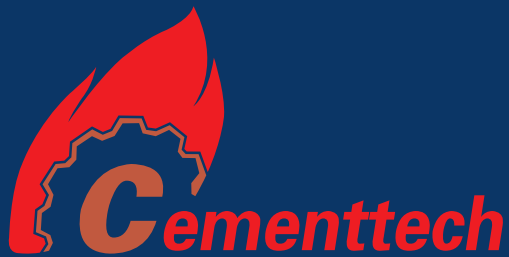
Date : 04 - 10 May 2023
Venue: Düsseldorf Trade Fair Centre, Germany
For more information, please visit:
www.interpack.com



عالم الإسمنت ومواد البناء

تصدر عن : الاتحاد العربي للإسمنت ومواد البناء العدد 88 يونيو / حزيران 2022

- أخبار عربية
- أخبار عالمية
- مقالات تقنية
- منتجات جديدة
- مؤتمرات ومعارض



The 23rd China International Cement Industry Exhibition

CEMENTTECH 2022

September 21-23, 2022

Nanchang Greenland International
Expo Center, Jiangxi, China

Organizer

-  China Building Materials
-  China Cement Association
-  CCPIT Building Materials Sub Council

Contact Information

Joanna Long
Tel: +86-10-8808 3329
Joannalong@ccpitbm.org

WWW.CEMENTTECH.ORG



عالم الإسمنت ومواد البناء

مؤتمرات ومعارض

منتجات جديدة

موضوعات تقنية

أخبار عالمية

الملف العربي

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

المساهمات

● ترحب هيئة تحرير المجلة بمساهمة السادة المهتمين والمتخصصين بهدف إثراء المادة التحريرية .

● الآراء الموجودة بالمجلة لاتعبر بالضرورة عن رأي الاتحاد أو المجلة وإنما عن الرأي الخاص ب كاتبها ولا يتحمل الاتحاد أية مسؤولية قانونية تجاه ذلك .

توجه كافة طلبات الإعلان بإسم رئيس التحرير

الإعلان

الاشتراكات السنوية

150 دولار أمريكي

65 دولار أمريكي

الشركات والمؤسسات ●

الجامعات ومراكز البحوث ●

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

Website : www.aucbm.net

المكتويات

أخبار عربية
أخبار عالمية
منتجات جديدة

الموضوعات:

- دراسة حالة: تطوير وتحديث الرافعات الدلوية
إعداد: BEUMER Group – ألمانيا
- تأثير جودة الطوب واختلال المحاذاة على استقرار بطانة الفرن - الجزء الثاني
إعداد: James Millard / و Greg Palmer
Palmer Technologies – استراليا
- المرحلة الرابعة: كيف تقارن التقديرات المجانية الإجمالية للجزء 1 من المرحلة الرابعة مع المرحلة الثالثة حسب البلد العضو؟ ما هي الأسئلة الإستراتيجية التي تواجه الأعضاء؟
إعداد: Cement Business Research (CBR)
- المملكة المتحدة
- تحديد تأثير التخزين على خصائص تدفق الإسمنت
إعداد: Freeman-Technology – المملكة المتحدة
- حل مشاكل الغبار باستخدام تقنية Bruks Siwertell
إعداد: Bruks Siwertel AB – السويد
- Airscrape في نظام التفريغ من السفن
إعداد: Scrapetec-Trading GMBH – ألمانيا
- Bruks Tubulator: أحدث ما توصلت إليه تكنولوجيا النقل
إعداد: Bruks Siwertel AB – السويد
- طريقة مبتكرة للتخطيط من أجل الناقلات البرية المنحنية
إعداد: BEUMER Group – ألمانيا

مؤتمرات ومعارض

المراسلات

توجه كافة المراسلات باسم رئيس التحرير / الاتحاد العربي للاسمنت ومواد البناء
الجمهورية العربية السورية - دمشق - ص . ب 9015
هاتف : 611 85 98 - 611 54 12 (11 963 +)
فاكس : 612 17 31 (11 963 +)

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

Website : www.aucbm.net



مجلة عالم الإسمنت ومواد البناء

جدول موضوعات المجلة لعام 2022

المناسبات	الموضوعات	العدد
المؤتمر والمعرض العربي الدولي الخامس والعشرون لصناعة الإسمنت: عمان / المملكة الأردنية الهاشمية 08 - 10 نوفمبر / تشرين الثاني 2022	* المبردات * المراوح * مدافع الهواء * الصحة والسلامة المهنية * تكنولوجيا الطحن * الطواحين العمودية * زيادة إنتاج مطحنة الإسمنت * التكسير * مساعدات الطحن والطحن * استعادة الحرارة المفقودة * التصوير الحراري * إعادة التدوير الحراري * طرق معالجة واستخدام غبار الممر الجانبي * الحماية من الانفجار في صوامع تخزين الوقود البديل * أنظمة مناولة الوقود البديل * إنتاج واستخدام الوقود الصلب المستعاد	سبتمبر/أيلول 2022
	* تصنيع الإسمنت الأبيض * الإسمنت المخلوط * الإسمنت متعدد المكونات * إسمنت الخبث * إنتاج الإسمنت الأخضر * خلائط الإسمنت * مضافات الإسمنت * مكونات الإسمنت * كيمياء الإسمنت * الإسمنت الخالي من الكربون * إنتاج الكلنكر منخفض الكربون * المواد الخام لمضافات الإسمنت * إدارة الإمدادات * إنتاج الإسمنت بطاقة منخفضة * توكيد الجودة ومراقبة العمليات في مصانع الإسمنت * توفير تكلفة إنتاج الإسمنت	ديسمبر/كانون أول 2022

آخر موعد لاستلام المقالات أو النصوص الصحفية أو الإعلانات هو على النحو التالي :

1. عدد سبتمبر / أيلول (عدد خاص) : 31 أغسطس / آب 2022

2. عدد ديسمبر / كانون أول : 5 ديسمبر / كانون أول 2022

الإعلانات

(بالدولار الأمريكي)

الإعلان في عدد واحد	الإعلان في عديدين	الإعلان في ثلاثة أعداد	الإعلان في أربعة أعداد	
1,250	*	*	*	غلاف خارجي ملون (يمين أو يسار) A4
950	*	*	*	غلاف داخلي ملون (يمين أو يسار) A4
750	950	1,250	1,350	صفحة داخلية ملونة A4
450	550	650	750	نصف صفحة داخلية ملونة A4
300	350	400	450	ربع صفحة داخلية ملونة A4
300	350	400	450	صفحة أسود وأبيض

أبعاد الإعلان : A4 مع مسافة على الأطراف الأربعة
أبعاد الإعلان على الغلاف الخارجي : ارتفاع 20 سم وعرض 14 سم
الدقة : 300dpi
نوع الملف : PDF أو EPS أو PSD

WWW.AUCBM.NET إعلان على موقع الاتحاد

- عرض 200 بيكسل وارتفاع 75 بيكسل ، بقيمة 150 دولاراً أمريكياً في الشهر الواحد
- يرجى إرسال الصور مع اللينك المطلوب ربطه بها بدقة 300 dpi (dot per inch)



أخبار عربية

أخبار عربية

الإمارات العربية المتحدة

أعلنت شركة إسمنت المنطقة الجنوبية عن آخر التطورات لإنشاء خط إنتاج بمصنع إسمنت جازان بطاقة إنتاجية 10,000 طن / يوم ليتم إحلاله محل خطوط الإنتاج الحالية ، حيث أنه ، وبعد استكمال الدراسات الفنية التفصيلية بالاستعانة بمكتب استشاري متخصص ، فقد قرر مجلس الإدارة البدء بإنشاء خط بطاقة إنتاجية 5,000 طن / يوم مع انشاء البنية التحتية لخط آخر بطاقة إنتاجية 5,000 طن / يوم .

المصدر: www.saudiexchange.sa

"إسمنت اليمامة" تحصل على تمويل من "الأهلي" السعودي

أعلنت شركة إسمنت اليمامة عن توقيع اتفاقية تمويل مع البنك الأهلي السعودي بقيمة إجمالية 1.663 مليون ريال .

وحسب بيان الشركة يكمن الهدف من وراء الاتفاقية فيما يخص التمويل طويل الأجل ، تمويل نقل وتركيب الخط السابع من المصنع القديم في جنوب مدينة الرياض إلى موقع المصنع الجديد في الحلال الشمالية بمحافظة الخرج التابعة لمنطقة الرياض، وتبلغ طاقة الخط الإنتاجية 10 آلاف طن/كلنكر يومياً وبذلك ستصل الطاقة الإنتاجية بنهاية عام 2024 في الموقع الجديد 30 ألف طن/كلنكر يومياً .

المصدر: www.alarabiya.net

سلطنة عُمان

شركتا الإسمنت "عُمان" ترفع طاقتها الإنتاجية و"ريسوت" تفصح عن توقف مصنعين

علقت شركة إسمنت عُمان تكديس الشاحنات المنتظرة على أبوابها بنقص الإنتاج المحلي من منتجين آخرين ، فيما أفصحت شركة ريسوت للإسمنت عن توقف مصنعين لها في عُمان والإمارات مما نتج عنه نقص في المعروض .

علقت شركة إسمنت عُمان حول امتداد فترات انتظار الشاحنات لأيام للحصول على كميات من الإسمنت بأن "هذا الأمر يرجع إلى الانخفاض الحاد في شحنات الإسمنت المستورد وذلك بسبب ارتفاع أسعاره ، وأيضاً النقص في الإنتاج المحلي من المنتجين

شهد سوق أبوظبي للأوراق المالية تنفيذ صفقات كبيرة على سهم رأس الخيمة للإسمنت الأبيض والمواد الإنشائية بقيمة 367.5 مليون درهم . وشهد السهم تنفيذ 5 صفقات بحجم 147 مليون سهم عند سعر 2.5 درهم ، ما نسبته 29 % من أسهم الشركة .

وكانت أرباح الشركة قد ارتفعت بنهاية 2021 إلى 32.9 مليون درهم مقارنة بأرباح قدرها 12.7 مليون درهم في 2020 .

المصدر: مباشر

الجزائر

نحو تصدير 1.5 مليون طن من الإسمنت لأوروبا وأمريكا اللاتينية

يتوقع أن يصدر مجمع الإسمنت جيكا بولاية الشلف خلال السنة الجارية 1.5 مليون طن من الإسمنت نحو دول من أوروبا وأفريقيا وأمريكا اللاتينية ، وهذه الحصاة هي جزء من عملية تصدير إجمالية تقدر ب 3 مليون طن يتجه مجمع جيكا على المستوى الوطني لتصديرها نحو الوجهات المذكورة .

وساهم دخول خط ثالث للإنتاج المخصص للتصدير في رفع طاقة إنتاج مصنع الشلف من 2 مليون إلى 4.2 مليون طن سنوياً من الإسمنت هذا فضلاً عن مادة الكلنكر التي يتم أيضاً تصنيعها بذات الوحدة التي دخلت حيز الخدمة سنة 1982 بينما كان يتوفر على خطين للإنتاج بطاقة تفوق 2 مليون طن من الإسمنت ويمول ولايات وسط وغرب البلاد بهذه المادة .

المصدر: www.djazairress.com

المملكة العربية السعودية

إسمنت المنطقة الجنوبية تعلن عن آخر التطورات لإنشاء خط إنتاج بمصنع إسمنت جازان



لافارج مصر تتعاقد على توريد الطاقة الكهربائية من الخلايا الشمسية بـ93 مليون دولار

وقعت شركة لافارج مصر ، عضو مجموعة هولسيم العالمية ، عقداً طويل الأجل مع شركة لوميكا مصر ، وهي إحدى فروع شركات الاستثمار العالمية إيه بي مولر كابيتال ، لتوريد الطاقة الكهربائية من الخلايا الشمسية ، وذلك بهدف استهلاك طاقة كهربائية نظيفة بنسبة 50 % من إجمالي الاستهلاك اليومي للمصنع خلال فترة النهار .

وتسعى إلى تحقيق منظومة متكاملة لصناعة إسمنت صديق للبيئة ، بهدف إلى الاستفادة من الطاقة المتجددة للحصول على 140 جيجاوات/الساعة سنوياً من الطاقة الكهربائية بالاعتماد على الخلايا الشمسية . وتبلغ قيمة الاتفاقية تبلغ 93 مليون دولار أمريكي ، ومن المتوقع أن تدخل الاتفاقية حيز التنفيذ بحلول الربع الأول لعام 2024 .

ويستهلك مصنع لافارج للإسمنت في مصر طاقة كهربائية سنوياً تقدر بنحو 750 جيجاوات/ساعة ، كما أن محطة توليد الكهرباء المزعم بناؤها ستكون بقدرة تصل إلى 50 ميجاوات ، وهي أول محطة تملكها لوميكا مصر بدخولها سوق توليد الكهرباء في مصر .

[المصدر: www.mubasher.info](http://www.mubasher.info)

المملكة المغربية

مركز جديد لطحن الإسمنت بالناظور بطاقة إنتاجية نحو 700 ألف طن

أعلنت شركة إسمنت المغرب عن تشغيل المركز الجديد لطحن الإسمنت في مدينة الناظور بحلول شهر يوليو القادم ، المتواجد بجماعة أولاد ستوت ، على بعد 18 كلم من الناظور .

وذكرت الشركة أن الطاقة الإنتاجية للمركز ستناهز 700 ألف طن من الإسمنت سنوياً ، وسيوكب التنمية التي تشهدها المناطق الشمالية والشرقية للمملكة .

[المصدر: https://attahadi.ma](https://attahadi.ma)

الأخرين" وأن تحول طلبات العملاء من مصادر خارجية إلى شركة إسمنت عُمان أدى لارتفاع الطلب بكميات تجاوزت بشكل كبير الطاقة الاستيعابية للشركة .

وقامت شركة إسمنت عُمان برفع الطاقة الإنتاجية إلى الحدود القصوى عند معدل 10,000 طن متري في اليوم إلا أن الطلب على الإسمنت يفوق الطاقة التي تستطيع الشركة تلبيتها .

أما شركة ريسوت للإسمنت فذكرت أن ارتفاع أسعار المواد الخام (الكلنكر) في الأسواق الدولية قد أدى إلى توقف عمليات كلاً من مصنع إسمنت صحار وشركة بايونير لصناعة الإسمنت (شركتان تابعتان بنسبة 100 % لشركة ريسوت) ، مع استمرار الإنتاج في مصنع صلالة و محطة الدقم .

وذكرت الشركة أن مصنع الشركة في صلالة لديه القدرة على توفير مادة الكلنكر إلى مصنعها في محافظة شمال الباطنة (إسمنت صحار) في حال انخفاض تكاليف الكهرباء و الغاز والنقل . مضيفاً أنه تم التغلب على التحديات وأنه تمت إعادة تشغيل مصنعي إسمنت صحار في شمال الباطنة في عُمان ، و مصنع بايونير في رأس الخيمة بدولة الإمارات ، وبيع كامل إنتاجهما من الإسمنت لتلبية الطلب المحلي .

في عام 2021 ، بلغ إنتاج شركة ريسوت للإسمنت 3.8 مليون طن من الإسمنت ، فيما بلغ إنتاجها من الكلنكر 3.1 مليون طن، بانخفاض بنسبة 7.57 % و 13.76 % على التوالي مقارنة بعام 2020 ، وذلك بحسب التقرير المالي السنوي للشركة .

[المصدر: https://wafoman.com](https://wafoman.com)

جمهورية مصر العربية

استحوذات في موندى:

استحوذت مجموعة موندى للتعبئة والتغليف على اثنين من أصول إنتاج الورق لشركة لافارج للإسمنت مصر ، وهما الوطنية للأكياس وإيجيب ساك .

[المصدر: https://enterprise.press](https://enterprise.press)



أخبار عربية

العالم

الرابطة العالمية للإسمنت والخرسانة : قطاع الإسمنت والخرسانة يطلق مُسرّعات تحقيق صافي الانبعاثات الصفري في العالم مع التركيز على بلدان 'عالم الجنوب'

تحقق تأثيراً فورياً ، مثل تعزيز جهود إعادة التدوير ، واستخدام النفايات كبديل للوقود الأحفوري ، وغيرها من ممارسات الاقتصاد الدائري . ويشمل ذلك أيضاً تحديد المشاريع المهمة صغيرة النطاق التي يمكنها القضاء تماماً على الانبعاثات خلال العقود القادمة ، مثل تكنولوجيا التقاط الكربون وتخزينه .

يقوم كبار منتجي الإسمنت والخرسانة من جميع أنحاء العالم بإطلاق المجموعة الأولى من مُسرّعات تحقيق صافي الانبعاثات الصفري في كلٍّ من الهند وتايلاند ومصر وكولومبيا لمساعدة القطاعات الوطنية على تحقيق أهداف إزالة الكربون بحلول عام 2050 .

هذا ويشتمل برنامج المُسرّعات على ثلاثة عناصر ، هي أولاً: خرائط طرق وطنية تهدف لتحقيق صافي انبعاثات صفري ، من ضمنها توقعات حجم الانبعاثات ، والخطط اللازمة لخفضها ، ووضع السياسات الداعمة ، والتزام شركات القطاع ، وثانياً: تحديد وتمويل استكشاف مشاريع الكربون المتطورة واسعة النطاق ، وثالثاً: إقامة حوارات مع الحكومات الوطنية للمساعدة في تسريع وتيرة التحوّل .

وستساعد المُسرّعات على تحديد مجموعة من خطط إزالة الكربون وتحفيزها وفقاً للظروف المحلية وستعمل على استكشاف أفضل السبل لتحقيق أهداف صافي انبعاثات صفري .

وستساعد المُسرّعات في مواصلة جهود قطاعي الإسمنت والخرسانة في البلدان المشمولة بالمرحلة الأولى من البرنامج مع خارطة طريق تحقيق صافي انبعاثات صفري بحلول عام 2050 الخاصة بالرابطة العالمية للإسمنت والخرسانة . وتُحدّد خارطة الطريق هذه المسار الذي يجب على القطاع اتباعه لإزالة الكربون تماماً بحلول عام 2050 ، وهو هدف يتوافق مع اتفاقية باريس للحد من ارتفاع درجة حرارة الأرض إلى درجة 1.5 درجة مئوية . وستساهم إجراءات خارطة الطريق المُتخذة من اليوم وحتى عام 2030 للحد من الانبعاثات الكربونية الناتجة عن القطاع بنسبة 25 في المائة ، في الحوّل دون إطلاق نحو 5 مليارات طن من الانبعاثات الكربونية في الغلاف الجوي مقارنةً بسيناريو متابعة الأعمال كالعادة .

تشير المبادرات إلى بدء المرحلة الوطنية والإقليمية من خارطة الطريق العالمية التي وضعتها الرابطة العالمية للإسمنت والخرسانة في سبيل تحقيق صافي انبعاثات صفري بحلول عام 2050 ، وتؤكد على أهمية الجهود المحلية وضرورة وضع السياسات لمساعدة قطاعات الإسمنت والخرسانة على تحقيق التزاماتها المرتبطة بإزالة الكربون .

تجدر الإشارة إلى أنّه سيتم الإعلان عن المشاريع الرائدة والمجموعة الجديدة من مُسرّعات المرحلة الثانية في وقت لاحق من هذا العام .

تشمل المراحل الأولى لبرنامج المُسرّعات إيلاء التركيز على دول عالم الجنوب حيث تُعدّ احتياجات البناء والبنية التحتية الأكثر إلحاحاً لمساعدتها في إزالة الكربون .

15% معدل النمو السنوي المتوقع في السوق العالمي للإسمنت الصديق للبيئة في 2018 - 2023

توقعت أبحاث السوق المستقبلية أن يبلغ معدل النمو السنوي المركب 15% C AGER في الطلب العالمي على الإسمنت الصديق للبيئة بين عامي 2018 و 2023 ، حيث يتم تعريف هذا الإسمنت على أنه إسمنت الرماد المتطاير، وإسمنت الخبث، وإسمنت الجيوبوليمر والإسمنتات الأخرى المنتجة باستخدام مواد خام بديلة . تتوقع أبحاث السوق في المستقبل أن النمو العالمي لإسمنت الرماد المتطاير سيكون الأكثر حدة نظراً لتوافره. وخلص التقرير إلى أن استراتيجيات قطاع الإسمنت استجابة للنمو ستشمل عمليات الدمج والمشاريع المشتركة والاستحواذ .

هذا وستطلق المجموعة الأولى من المُسرّعات في كلٍّ من مصر ، التي ستستضيف في وقتٍ لاحق من هذا العام الدورة السابعة والعشرين لمؤتمر الأطراف ، والهند وتايلاند وكولومبيا؛ إذ تساهم هذه البلدان مجتمعة بنحو 10 في المائة من الإنتاج العالمي من الإسمنت والخرسانة . وتُعدّ الخرسانة ، وهي مادة محلية ودائمة ، أساسية للتغلب على تحديات التنمية المستدامة التي تواجه الكثير من دول العالم ، على غرار النمو السكاني والزحف العمراني والحاجة إلى إنشاء بنية تحتية ومجمعات أكثر مرونة في مواجهة مناخ سريع التغير .

وعلى الصعيد العالمي ، يُعدّ قطاع صناعة إسمنت والخرسانة مسؤولاً عن نحو 7 في المائة من انبعاثات ثاني أكسيد الكربون. وتقتضي الخطة العالمية للقضاء على هذه الانبعاثات بحلول عام 2050 تسريع وتيرة خفضها من قبل جميع مناطق العالم . وسيجدد برنامج المُسرّعات العوائق التي تحول دون تحقيق أهداف إزالة الكربون في البلدان المستهدفة ويوصي بالإجراءات الرئيسية التي يجب اتخاذها ، من قبيل تشجيع وضع السياسات الحكومية التي قد

المصدر: Global Cement



SIMAN NEWS

Iran Cement News Agency



www.simankhabar.ir

پایگاه خبری تحلیلی صنعت سیمان ایران



simankhabar



@simankhabar

IRAN Cement Industry Capabilities and Equipments Production in SimanKhabar.ir

SK Automatic Big Bag Filling Station With Lifting System



For Export



SK Cement Packing Plant



For more information please contact us :



Tel : +98 21 6642 89 14

Fax: +98 21 6691 53 29

info@simankhabar.ir





ورشة العمل العربية حول (المهارات العلمية الحديثة في كيفية إدارة المنشآت والمؤسسات الصناعية في العالم العربي في ظل الفرص والتحديات العالمية الجديدة)
 المكان: القاهرة ، جمهورية مصر العربية أو عن طريق الانترنت
 التاريخ: 25 - 27 يوليو / تموز 2022
 الجهة المنظمة: المنظمة العربية للتنمية الصناعية والتقييس والتعدين
 جوال: 00201001521351
 هاتف: 0020223807565 / 0020223583990
 فاكس: 0020223803880
 بريد إلكتروني: roc@aidsmo.org
 موقع إنترنت: www.aidsmo.org/roc

ورشة العمل العربية حول (كيفية تطبيق السياسات الصناعية الخضراء في المؤسسات والشركات الصناعية في العالم العربي ودورها في تحقيق التنمية الصناعية المستدامة)
 المكان: القاهرة ، جمهورية مصر العربية أو عن طريق الانترنت
 التاريخ: 20 - 22 يونيو / حزيران 2022
 الجهة المنظمة: المنظمة العربية للتنمية الصناعية والتقييس والتعدين
 جوال: 00201001521351
 هاتف: 0020223807565 / 0020223583990
 فاكس: 0020223803880
 بريد إلكتروني: roc@aidsmo.org
 موقع إنترنت: www.aidsmo.org/roc

ورشة العمل العربية حول (دور التدقيق الداخلي في النهوض بمستوى المختبرات وكيفية إعداد المدققين الداخليين لهيئات والشركات الصناعية طبقاً للإصدار الجديد 2017 : ISO/IEC17025)
 المكان: القاهرة ، جمهورية مصر العربية أو عن طريق الانترنت
 التاريخ: 15 - 17 أغسطس / آب 2022
 الجهة المنظمة: المنظمة العربية للتنمية الصناعية والتقييس والتعدين
 جوال: 00201001521351
 هاتف: 0020223807565 / 0020223583990
 فاكس: 0020223803880
 بريد إلكتروني: roc@aidsmo.org
 موقع إنترنت: www.aidsmo.org/roc

ورشة العمل العربية حول (كيفية قياس وتحليل الاهتزازات للمعدات والآلات في الشركات والمؤسسات الصناعية)
 المكان: القاهرة ، جمهورية مصر العربية أو عن طريق الانترنت
 التاريخ: 27 - 29 يونيو / حزيران 2022
 الجهة المنظمة: المنظمة العربية للتنمية الصناعية والتقييس والتعدين
 جوال: 00201001521351
 هاتف: 0020223807565 / 0020223583990
 فاكس: 0020223803880
 بريد إلكتروني: roc@aidsmo.org
 موقع إنترنت: www.aidsmo.org/roc

نشاطات عربية نشاطات عربية نشاطات عربية

التاريخ: 26 - 28 سبتمبر / أيلول 2022
الجهة المنظمة: المنظمة العربية للتنمية الصناعية
والتقييس والتعدين
جوال: 00201001521351
هاتف: 0020223807565 / 0020223583990
فاكس: 0020223803880
بريد إلكتروني: roc@aidsmo.org
موقع إنترنت: www.aidsmo.org/roc

ورشة العمل العربية حول (نظام تحليل مصادر
الخطر ونقاط التحكم الحرجة "الهاسب"
(HACCP

المكان: القاهرة ، جمهورية مصر العربية أو عن
طريق الانترنت

التاريخ: 03 - 05 أكتوبر / تشرين الأول 2022
الجهة المنظمة: المنظمة العربية للتنمية الصناعية
والتقييس والتعدين
جوال: 00201001521351
هاتف: 0020223807565 / 0020223583990
فاكس: 0020223803880
بريد إلكتروني: roc@aidsmo.org
موقع إنترنت: www.aidsmo.org/roc

ورشة العمل العربية حول (الأساليب والتقنيات
العلمية الحديثة للمعايرة الكهربائية والإلكترونية في
المؤسسات والشركات الصناعية في العالم العربي)
المكان: القاهرة ، جمهورية مصر العربية أو عن
طريق الانترنت

التاريخ: 17 - 19 أكتوبر / تشرين الأول 2022
الجهة المنظمة: المنظمة العربية للتنمية الصناعية
والتقييس والتعدين
جوال: 00201001521351

ورشة العمل العربية حول (مهارات إدارة المخاطر
المالية في الاستثمارات والمشروعات الصناعية في
العالم العربي في ظل الفرص والتحديات العالمية
الجديدة)

المكان: القاهرة ، جمهورية مصر العربية أو عن
طريق الانترنت

التاريخ: 22 - 24 أغسطس / آب 2022
الجهة المنظمة: المنظمة العربية للتنمية الصناعية
والتقييس والتعدين

جوال: 00201001521351

هاتف: 0020223807565 / 0020223583990

فاكس: 0020223803880

بريد إلكتروني: roc@aidsmo.org
موقع إنترنت: www.aidsmo.org/roc

ورشة العمل العربية حول (الأساليب الإحصائية
للتحكم وتحسين جودة العمليات (SPC)

المكان: القاهرة ، جمهورية مصر العربية أو عن
طريق الانترنت

التاريخ: 12 - 14 سبتمبر / أيلول 2022
الجهة المنظمة: المنظمة العربية للتنمية الصناعية
والتقييس والتعدين

جوال: 00201001521351

هاتف: 0020223807565 / 0020223583990

فاكس: 0020223803880

بريد إلكتروني: roc@aidsmo.org
موقع إنترنت: www.aidsmo.org/roc

ورشة العمل العربية حول (إعادة تدوير المخلفات
"الصلبة / السائلة / الغازية" ومعالجة النفايات
الصناعية واستخدام التكنولوجيا الأنظف في
الصناعة)

المكان: القاهرة ، جمهورية مصر العربية أو عن
طريق الانترنت

نشاطات عربية نشاطات عربية نشاطات عربية

المكان: القاهرة ، جمهورية مصر العربية أو عن طريق الانترنت

التاريخ: 14 - 16 نوفمبر / تشرين الثاني 2022
الجهة المنظمة: المنظمة العربية للتنمية الصناعية والتقييس والتعدين

جوال: 00201001521351

هاتف: 0020223807565 / 0020223583990

فاكس: 0020223803880

بريد إلكتروني: roc@aidsmo.org

موقع إنترنت: www.aidsmo.org/roc

الملتقى الثالث للمناطق الصناعية ودورها في جذب الاستثمار وتنمية الصادرات

المكان: طنجة ، المملكة المغربية

التاريخ: 15 - 17 نوفمبر / تشرين الثاني 2022
الجهة المنظمة: المنظمة العربية للتنمية الصناعية والتقييس والتعدين

موقع إنترنت: www.aidsmo.org

ورشة العمل العربية حول (كيفية تطبيق نظام إدارة السلامة والصحة المهنية في المشروعات الصناعية في العالم العربي وفقاً لمتطلبات المواصفة القياسية الدولية 2018: ISO 45001)

المكان: القاهرة ، جمهورية مصر العربية أو عن طريق الانترنت

التاريخ: 21 - 23 نوفمبر / تشرين الثاني 2022
الجهة المنظمة: المنظمة العربية للتنمية الصناعية والتقييس والتعدين

جوال: 00201001521351

هاتف: 0020223807565 / 0020223583990

فاكس: 0020223803880

بريد إلكتروني: roc@aidsmo.org

موقع إنترنت: www.aidsmo.org/roc

هاتف: 0020223807565 / 0020223583990

فاكس: 0020223803880

بريد إلكتروني: roc@aidsmo.org

موقع إنترنت: www.aidsmo.org/roc

مؤتمر ومعرض الاستثمار العربي الأفريقي والتعاون الدولي "المجتمع المدني والتنمية الشاملة المستدامة" في دورته الـ 25

المكان: الأقصر ، جمهورية مصر العربية

التاريخ: 26 - 30 أكتوبر / تشرين الأول 2022

الجهة المنظمة: اتحاد المستثمرات العرب

جوال: 00201001221444

بريد إلكتروني: info@awiu.net

موقع إنترنت: www.awiu.net

ورشة العمل العربية حول (الممارسات التصنيعية الجيدة GMP)

المكان: القاهرة ، جمهورية مصر العربية أو عن طريق الانترنت

التاريخ: 07 - 09 نوفمبر / تشرين الثاني 2022
الجهة المنظمة: المنظمة العربية للتنمية الصناعية والتقييس والتعدين

جوال: 00201001521351

هاتف: 0020223807565 / 0020223583990

فاكس: 0020223803880

بريد إلكتروني: roc@aidsmo.org

موقع إنترنت: www.aidsmo.org/roc

ورشة العمل العربية حول (كيفية إدارة وترشيد تكلفة التشغيل بالشركات والمؤسسات الصناعية من منظور التطبيق الفعال لمفاهيم الجودة الشاملة وعلاقتها بتكلفة الجودة - QualityCoasting)

دورات تدريبية عربية

دورات تدريبية عربية

دورات تدريبية عربية

تطوير أداء الإدارات الوسطى

المكان: القاهرة ، جمهورية مصر العربية

التاريخ: 26 - 30 يونيو / حزيران 2022

الجهة المنظمة: معهد التنمية الإدارية

للحصول على كافة التفاصيل يرجى التواصل مع إدارة التدريب:

جوال واتساب وفايبر: 00201091780140

بريد إلكتروني: Training@iadmena.com

الأبعاد المتكاملة في إدارة المخازن ومراقبة

المخزون

المكان: القاهرة ، جمهورية مصر العربية

التاريخ: 26 - 30 يونيو / حزيران 2022

الجهة المنظمة: معهد التنمية الإدارية

للحصول على كافة التفاصيل يرجى التواصل مع إدارة التدريب:

جوال واتساب وفايبر: 00201091780140

بريد إلكتروني: Training@iadmena.com

إدارة الأداء: تحديد الأهداف وإجراء التقييم

المكان: القاهرة ، جمهورية مصر العربية

التاريخ: 26 - 30 يونيو / حزيران 2022

الجهة المنظمة: شركة المستشارون المعتمدون

للحصول على كافة التفاصيل يرجى التواصل:

هاتف: 00962 6 5233359

جوال: 00962 795870196

بريد إلكتروني: info@mostasharon.com

موقع إنترنت: www.mostasharon.com

التميز الإداري والإبداع المؤسسي

المكان: القاهرة ، جمهورية مصر العربية

التاريخ: 26 يونيو / حزيران - 05 يوليو / تموز 2022

الجهة المنظمة: معهد التنمية الإدارية

للحصول على كافة التفاصيل يرجى التواصل مع إدارة التدريب:

جوال واتساب وفايبر: 00201091780140

بريد إلكتروني: Training@iadmena.com

الجودة الشاملة في إدارة الخدمات العامة وتطبيق

معايير الأيزو

المكان: اسطنبول ، تركيا

التاريخ: 03 - 07 يوليو / تموز 2022

الجهة المنظمة: معهد التنمية الإدارية

للحصول على كافة التفاصيل يرجى التواصل مع إدارة التدريب:

جوال واتساب وفايبر: 00201091780140

بريد إلكتروني: Training@iadmena.com

الإدارة الفعالة للعلاقات العامة والتحدث إلى وسائل

الإعلام

المكان: اسطنبول ، تركيا

التاريخ: 03 - 07 يوليو / تموز 2022

الجهة المنظمة: معهد التنمية الإدارية

للحصول على كافة التفاصيل يرجى التواصل مع إدارة التدريب:

جوال واتساب وفايبر: 00201091780140

بريد إلكتروني: Training@iadmena.com

دورات تدريبية عربية

دورات تدريبية عربية

دورات تدريبية عربية

الجهة المنظمة: معهد التنمية الإدارية
للحصول على كافة التفاصيل يرجى التواصل مع
إدارة التدريب:

جوال واتساب وفايبر: 00201091780140

بريد إلكتروني: Training@iadmena.com

الأساليب الحديثة في اكتشاف المخالفات الإدارية
والقانونية

المكان: اسطنبول ، تركيا

التاريخ: 17 - 21 يوليو / تموز 2022

الجهة المنظمة: معهد التنمية الإدارية
للحصول على كافة التفاصيل يرجى التواصل مع
إدارة التدريب:

جوال واتساب وفايبر: 00201091780140

بريد إلكتروني: Training@iadmena.com

صياغة المواصفات الفنية للمشتريات وإعداد
كراسة الشروط

المكان: اسطنبول ، تركيا

التاريخ: 17 - 21 يوليو / تموز 2022

الجهة المنظمة: معهد التنمية الإدارية
للحصول على كافة التفاصيل يرجى التواصل مع
إدارة التدريب:

جوال واتساب وفايبر: 00201091780140

بريد إلكتروني: Training@iadmena.com

إدارة أمن المعلومات

المكان: اسطنبول ، تركيا

التاريخ: 17 - 21 يوليو / تموز 2022

الجهة المنظمة: معهد التنمية الإدارية
للحصول على كافة التفاصيل يرجى التواصل مع
إدارة التدريب:

استخدام بطاقة الأداء المتوازن في تصميم وتنفيذ
وتقييم استراتيجيات المؤسسات
المكان: اسطنبول ، تركيا

التاريخ: 03 - 07 يوليو / تموز 2022

الجهة المنظمة: معهد التنمية الإدارية
للحصول على كافة التفاصيل يرجى التواصل مع
إدارة التدريب:

جوال واتساب وفايبر: 00201091780140

بريد إلكتروني: Training@iadmena.com

التميز المؤسسي وفق معايير الجودة الأوروبية
المكان: اسطنبول ، تركيا

التاريخ: 03 - 07 يوليو / تموز 2022

الجهة المنظمة: معهد التنمية الإدارية
للحصول على كافة التفاصيل يرجى التواصل مع
إدارة التدريب:

جوال واتساب وفايبر: 00201091780140

بريد إلكتروني: Training@iadmena.com

استخدام الإحصاء وبحوث العمليات في اتخاذ
القرار

المكان: اسطنبول ، تركيا

التاريخ: 03 - 07 يوليو / تموز 2022

الجهة المنظمة: معهد التنمية الإدارية
للحصول على كافة التفاصيل يرجى التواصل مع
إدارة التدريب:

جوال واتساب وفايبر: 00201091780140

بريد إلكتروني: Training@iadmena.com

المحاسبة الإدارية ودورها في اتخاذ القرارات
المكان: اسطنبول ، تركيا

التاريخ: 03 - 07 يوليو / تموز 2022

دورات تدريبية عربية دورات تدريبية عربية دورات تدريبية عربية

إدارة المهرجانات والمؤتمرات والمعارض
المكان: القاهرة ، جمهورية مصر العربية
التاريخ: 24 يوليو / تموز - 02 أغسطس / آب
2022
الجهة المنظمة: معهد التنمية الإدارية
للحصول على كافة التفاصيل يرجى التواصل مع
إدارة التدريب:
جوال واتساب وفايبر: 00201091780140
بريد إلكتروني: Training@iadmena.com

تطوير الأداء الإداري للتنمية المستدامة وكيفية
إعداد وتطبيق مفاهيم الجودة الشاملة للمؤسسات
الصناعية
المكان: القاهرة ، جمهورية مصر العربية
التاريخ: 24 يوليو / تموز - 02 أغسطس / آب
2022
الجهة المنظمة: معهد التنمية الإدارية
للحصول على كافة التفاصيل يرجى التواصل مع
إدارة التدريب:
جوال واتساب وفايبر: 00201091780140
بريد إلكتروني: Training@iadmena.com
بريد إلكتروني: Training@iadmena.com

إدارة المستودعات اللوجستية وسلسلة التوريد
والتوزيع
المكان: القاهرة ، جمهورية مصر العربية
التاريخ: 31 يوليو / تموز - 04 أغسطس / آب
2022
الجهة المنظمة: معهد التنمية الإدارية
للحصول على كافة التفاصيل يرجى التواصل مع
إدارة التدريب:
جوال واتساب وفايبر: 00201091780140
بريد إلكتروني: Training@iadmena.com

جوال واتساب وفايبر: 00201091780140
بريد إلكتروني: Training@iadmena.com

الممارسات التنظيمية لتبسيط إجراءات العمل
وتعزيز الجودة
المكان: اسطنبول ، تركيا
التاريخ: 17 - 26 يوليو / تموز 2022
الجهة المنظمة: معهد التنمية الإدارية
للحصول على كافة التفاصيل يرجى التواصل مع
إدارة التدريب:
جوال واتساب وفايبر: 00201091780140
بريد إلكتروني: Training@iadmena.com

الدورة المتكاملة في إعداد وصياغة المرسلات
والتقارير وطرق العرض والتقديم
المكان: اسطنبول ، تركيا
التاريخ: 17 - 26 يوليو / تموز 2022
الجهة المنظمة: معهد التنمية الإدارية
للحصول على كافة التفاصيل يرجى التواصل مع
إدارة التدريب:
جوال واتساب وفايبر: 00201091780140
بريد إلكتروني: Training@iadmena.com

الإدارة بالجودة الشاملة
المكان: القاهرة ، جمهورية مصر العربية
التاريخ: 24 - 28 يوليو / تموز 2022
الجهة المنظمة: معهد التنمية الإدارية
للحصول على كافة التفاصيل يرجى التواصل مع
إدارة التدريب:
جوال واتساب وفايبر: 00201091780140
بريد إلكتروني: Training@iadmena.com

دورات تدريبية عربية

دورات تدريبية عربية

دورات تدريبية عربية

مهارات التعامل مع النظم الخبيرة ودعم اتخاذ
القرارات DSS

المكان: القاهرة ، جمهورية مصر العربية
التاريخ: 21 - 25 أغسطس / آب 2022
الجهة المنظمة: معهد التنمية الإدارية
للحصول على كافة التفاصيل يرجى التواصل مع
إدارة التدريب:

جوال واتساب وفايبر: 00201091780140
بريد إلكتروني: Training@iadmena.com

مهارات تنظيم ومتابعة أعمال الاجتماعات واللجان
وإعداد التقارير

المكان: القاهرة ، جمهورية مصر العربية
التاريخ: 31 يوليو / تموز - 04 أغسطس / آب
2022
الجهة المنظمة: معهد التنمية الإدارية
للحصول على كافة التفاصيل يرجى التواصل مع
إدارة التدريب:

جوال واتساب وفايبر: 00201091780140
بريد إلكتروني: Training@iadmena.com

أساليب ترشيد الإنفاق في مجالي الشراء والتخزين
المكان: القاهرة ، جمهورية مصر العربية
التاريخ: 11 - 15 سبتمبر / أيلول 2022
الجهة المنظمة: معهد التنمية الإدارية
للحصول على كافة التفاصيل يرجى التواصل مع
إدارة التدريب:

جوال واتساب وفايبر: 00201091780140
بريد إلكتروني: mo.training79@gmail.com

إعادة هندسة العمليات الإدارية

المكان: القاهرة ، جمهورية مصر العربية
التاريخ: 31 يوليو / تموز - 04 أغسطس / آب
2022
الجهة المنظمة: معهد التنمية الإدارية
للحصول على كافة التفاصيل يرجى التواصل مع
إدارة التدريب:

جوال واتساب وفايبر: 00201091780140
بريد إلكتروني: Training@iadmena.com

تعزيز جودة الخدمات الذكية

المكان: القاهرة ، جمهورية مصر العربية
التاريخ: 11 - 15 سبتمبر / أيلول 2022
الجهة المنظمة: معهد التنمية الإدارية
للحصول على كافة التفاصيل يرجى التواصل مع
إدارة التدريب:

جوال واتساب وفايبر: 00201091780140
بريد إلكتروني: mo.training79@gmail.com

التحليل الإحصائي للبيانات باستخدام حزمة البرامج
الإحصائية

المكان: القاهرة ، جمهورية مصر العربية
التاريخ: 21 - 25 أغسطس / آب 2022
الجهة المنظمة: معهد التنمية الإدارية
للحصول على كافة التفاصيل يرجى التواصل مع
إدارة التدريب:

جوال واتساب وفايبر: 00201091780140
بريد إلكتروني: Training@iadmena.com