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The Clay Brick Association
of Southern Africa

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The Clay Brick Association represents the clay brick and paver manufacturers of Southern Africa. We research and advise our industry on energy-efficient, sustainable, inclusive production technologies. We inspire eco-friendly, contemporary brick architecture and educate South Africans on best practice in masonry construction and restoration.



SEE INSIDE FOR MORE ON
CLAYTILE'S NEW KILN



THE VOICE

NOVEMBER 2021

OF THE CLAY BRICK INDUSTRY



today's **FOOTPRINT**
tomorrow's **LEGACY**

"Thina bantu, Ons die mense, We the people of South Africa are on our own".

The attempted insurrection in parts of KwaZulu Natal and Gauteng brought home the truth that we are on our own. It affected several CBA members directly, and had an overall negative impact on growth and sentiment across the country.

Government failed to protect lives. They failed to protect property. This is a gruesome reality we must take into account in our businesses. We need to build stronger alliances with the communities we do business in, and with the people working for us.

RULE OF LAW PREVAILS

The good news is that rule of law still prevails. The High Court decision against the Minister of Mineral Resources and Energy is testament to that. We are members of the Minerals Council – be it ever so small – and we must continue to work towards growth and prosperity for all. We cannot allow a Minister to ignore the basic principles of economics.

We cannot tolerate or accept a Mining Charter that inhibits investment and employment through frivolous rules around ownership, and other dubious regulations. When we all pull together we can achieve our goals!

Our next focus is to simplify our industry's ridiculous, complicating, duplicating, nonsensical regulatory framework, so we can invest, thrive and create jobs!

On a more positive note. When it comes to the crunch, we can and will beat ANY rugby team in the world! Like brick manufacturing, rugby in South Africa is not for the faint hearted. Like brick manufacturing, we must think long term! We are still the champions, and we can be proud to produce THE best walling and paving material of all time!

We clay brick producers must do our bit for sustainable growth. We must focus on the key drivers - sustainable production and consistent quality for future generations

Hendrik van Dyk - November 2021



EQUIPMENTS FOR HEAVY CLAY INDUSTRY

HOW TO BE
SUCCESSFUL?

40 YEARS
INNOVATING

EFFICIENT
SOLUTIONS

FOCUS ON...

MACHINERY
AND TURN-KEY
PROJECTS

 **metalcértima**
machinery and engineering





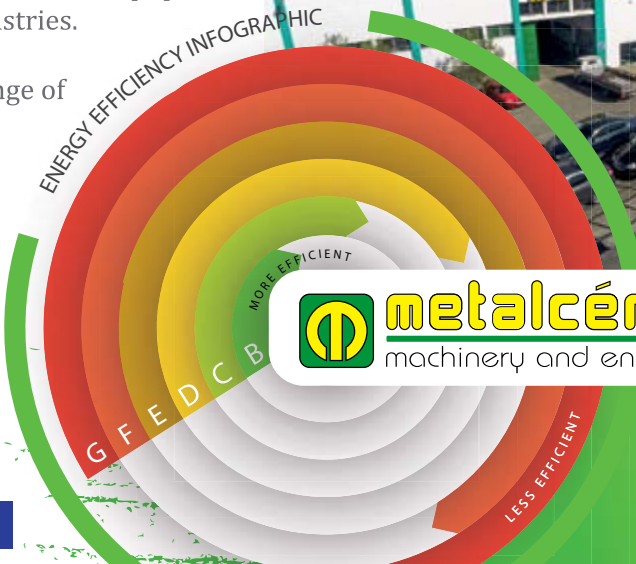
Metalcértima is an European company based in Portugal, with more than 40 years of experience, specialized in the development, fabrication/manufacture and installation of complete solutions / turn-key projects with highly automated equipment for the brick, roof-tile and ceiling block industries.

Metalcértima intends to present a wide range of solutions and machinery for the heavy clay industry such as cutting systems, handling equipment, dryers, tunnel kilns, burners, among other solutions.

Smart Clay Solutions



ENERGY EFFICIENCY INFOGRAPHIC



metalcértima
machinery and engineering



The CBA raised its profile with trade stands at Sustainability events around the country. The 11th Sustainability Summit was a 3-day interactive virtual event held in September. Our online stand welcomed 53 visitors and continues to be open for viewing.

GREEN BUILDING COUNCIL CONVENTION

The Green Building Council of SA 2021 convention combined in-person and online options.

"I was delighted to be able to attend the event in-person," reports CBA executive director Mariana Lamont. "Talking one-on-one with participants makes all the difference. We're planning further conversations with the friends we made over this week."

“Thank you to the Cabrico team for setting up and manning the stand, and to Claytile for delivering clay block samples at short notice!

Nico Mienie represented the CBA on the Green Innovation stage. He presented the latest research findings on Thermal Performance of clay brick.



Claytile recently revamped its entire production process.

This included the replacement of its tunnel kiln with a rotary kiln and the installation of variable speed drives in factory equipment.

MORE ON THE CBA WEBSITE!

Claytile redesigns for quality & sustainability with new rotary kiln



The revamp provided the opportunity for Claytile to reconsider its material flows, and streamline its clay milling process for efficiency, dematerialisation and sustainability.

Benefits achieved

- The rotary kiln is more efficient at using thermal energy. It relies on natural convection, this means fewer fans which has in turn led to a significant decrease in electricity use.
- The energy efficient variable speed drives in its conveyer belts and other factory equipment have also increased overall energy efficiency.
- Because the rotary kiln is carless, maintenance is reduced.
- A scrubber was installed to capture 90 % of the sulphur dioxide and particulate matter, reducing air pollutants.

Milling & extrusion

Clay milling operations were changed to screen before and after crushing."

By screening **before** crushing, we discovered that that about 30% of our raw material was already small enough to be used in production," reports Julian de la Hunt.

"This resulted in significant electricity savings. Claytile's screening must be particularly fine for its multi-perforated products. I really recommend pre-screening material because I believe most operations would find similar benefits."

By streamlining the building layout, green brick handling was minimised. Three-day souring was applied to improve water penetration, leading to increased wetting.

The result is energy savings at extrusion, reduced waste and improved brick quality.

Heat recovery & drying

As part of Claytile's recent production process overhaul, the company also implemented ambient drying and heat recovery measures.

Natural drying is less common with tunnel kilns, due to kiln car expenses and space issues,.

With the rotary kiln, Claytile was able to implement ambient drying. The bricks are packed on the ground inside the factory's semi-open building which protects them from rain. The extra 2-day drying time reduced moisture content from 15% to 10%.

By reconfiguring its production process, Claytile achieved full recovery of both exhaust gas heat from firing and waste heat from cooling, providing enough energy to power the dryer.

This cut overall energy use by 40% for drying and firing.





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Save energy, improve efficiency

Since its founding in 1955 in Italy, Bernini Impianti have earned a reputation as a service-orientated manufacturer and installer of energy-efficient firing systems for kilns and dryers. The company is respected on three continents for their in-depth knowledge of firing processes in the clay brick industry.

With hundreds of installations all over the world, Bernini understand the importance of customising their equipment and system for local conditions.

They work closely with the client to ensure consistent superior quality brick products, while minimising the producer's fuel costs and environmental impact.

A dedicated team of technicians, engineers and support staff allows Bernini to partner with clients, offering reliable support that is based on experience. They have numerous testimonials from very satisfied clients.

Bernini have a reputation for cost-effective solutions to burn traditional fuels such as coal, gas, heavy or light oils and pet-coke. The company continually invests in new technology and has a growing range of burners for alternative and renewable solid, liquid and gas fuels.

Bernini recently invested in the production of original spare parts in South Africa to support their rapid expansion in the territory.



Bernini Impianti solid fuel kiln burners are designed for energy saving and improved combustion efficiency.

- Regulated combustion with controlled heat distribution throughout the kiln.
- Fuel is crushed to appropriate sizes to achieve even firing, ensuring consistent, high-quality bricks.
- Burners are grouped independently with both central and group control panels for monitoring by section.
- Can be adapted to handle a wide range of solid fuels.

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- **HSFB:** hybrid burner for both granulated and micronised solid fuel with or without hammer mill
- **SDB:** burners for biomass

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Algoa turns sawdust into savings!

In 2017, Algoa Brick's tunnel kiln was upgraded to add sawdust biomass capabilities. The benefits were significant, and Algoa was keen to further improve.

In mid-2020, Algoa Brick took delivery of a Bernini sawdust burning system capable of firing a complete zone of the tunnel kiln.

"Despite the pandemic crisis Bernini provided continual technical support and advice online," says MD Nico Mienie.

The installation was successful and Algoa Brick increased biomass use to 4t per day.

In early 2021, the last remaining fuel oil zone on the kiln was upgraded to hybrid capacity. This time, the Bernini team was welcomed in person, to integrate the electrical controls.

"We are now set up for remote monitoring," reports Nico. "The Bernini team can also make adjustments from Italy if required."

Despite using exclusively solid fuel firing, Algoa's tunnel kiln meets the new emissions requirement for ceramic processes.

MORE ON THE CBA WEBSITE!





Mariana Lamont spoke at the closeout of the EU-funded Switch Africa Green Project which finished on 30 June 2021. The Clay Brick sector's commitment to sustainability will continue...



Sustainability Portal

Members - don't forget keep your stats updated! The Sustainability Portal remains free for members, costs are covered by the CBA Technical budget.

Not on the portal? Streamline compliance and minimise tax. Call 011 447-7892 for a demo.

AGM 2021

The 59th AGM will be hosted by the Eastern Cape region at Oubaai Hotel, Golf & Spa in George from 26 to 29 May 2022.

The AGM expands on the CBA's sustainability theme of **Today's Footprint, Tomorrow's Legacy**, focusing on water and ocean conservation.



Technical News and CBA Plans

SANS 10400-XA

- We are delighted to announce that SANS 10400-XA Edition 2 has been proclaimed!

Switch Africa Green

- Various sustainability reports have been completed, and print versions will be provided to members

Pipeline projects

- We are planning a comparison study of clay vs concrete masonry as well as perforated (clay) versus solid (concrete) bricks.
- We are seeking an international industry speaker for a training course to South Africa in 2022.
- Thermal hotbox testing
- Cost of clay bricks as a proportion of building costs.
- Compliance register with date reminders to members.

Official emission limits

- Chris Albertyn has been appointed to separate (non-clamp) clay brick manufacturing from their current ceramic process grouping for emissions limits purposes. The current grouping is unfair as ceramics manufacturing is a much more complex process.

- Non clamp members have been asked to supply 3 years of data. A significant analysis has been done.
- Current standards (from April 2021) are expressed in terms of concentrations (mg/Nm³). Real data from the 10 plants shows a significant variation in the concentrations measured. Mass flow comparisons (kg/hr) are more reliable.
- Because the Air Quality Act allows for mass flow data rather than concentrations, Chris Albertyn aims to push for mass flow limits in the future.
- A number of plants are not meeting the April 2021 limits. If mass flow limits are accepted, some plants will have to reduce emissions by $\pm 25\%$, a big improvement on the $+50\%$ if existing limits remain.

NAEIS data submission

- LAQS can assist with NAEIS annual data submission. Full reporting is critical - incomplete submissions have been failed.

Annual GHG data submission

- LAQS can assist with annual emissions submissions on the DFFE's System.

Marketing Mix

As you can see from this magazine, the Marketing team has worked tirelessly on numerous trade shows that connect with key audiences like architects who recommend and buy clay brick.

We continue to provide editorial and advertise in print and digital publications. Our upgraded website attracts around 40 000 visits each month. We email three newsletters per year, to building contractors and architects.

Social media is an inexpensive way to promote our members, website articles and publications. Please share our posts!

A cavity wall video is currently being redone with the assistance of the Corobrik technical team.



Year-end shutdown

The CBA offices will close from 15 December to 2 January 2022.

Thank you for your support of the CBA. Your continued commitment has been integral to CBA's achievements.

CBA Members in the community



So many communities are struggling with the pandemic. Federale Stene sponsored 100 school shoes to support pupils of Mvuzo & Moetanelo Primary School.



Members - share your community stories! Email admin@claybrick.org.za to be in the next issue!

The Federale team visited Sol Plaatje University project in August to view construction progress.

"Our Peach Satin face bricks have been beautifully featured," said GM Johan Humphries. The Central Campus and Stadium are complete with South Campus underway.



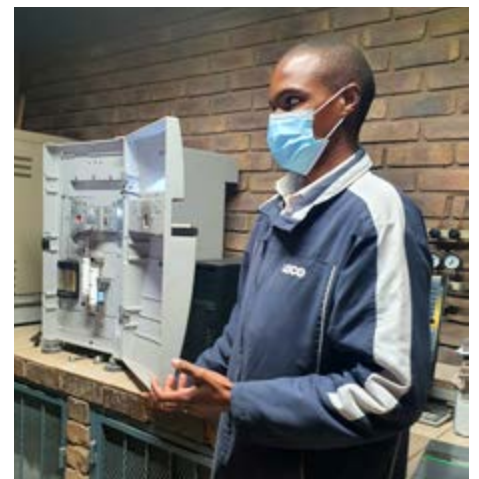
CBA Member Kopano Brick is proud to announce the launch of two new brick products - Brindle Rose Satin and Brindle variation



Colin Meyer and Mariana Lamont were enthusiastically welcomed by the Sabrix team on their factory tour of the company's ZIG ZAG kilns.



Thank you to our Regional Meeting speakers, hosts and participants!



Congratulations to our CBA Performance Award winners from NMU and UCT



The CBA celebrates 5 students from two universities who achieved outstanding results under the tough conditions. "On behalf of the CBA, we wish the students success with their studies, and all the best for the future," announced CBA executive director Mariana Lamont.

"They remained committed and disciplined through the pandemic. We are proud to offer this special contribution, as a reward for their performance and hard work."

NMU (Bachelor of Architectural Studies)

- Zara Poorun (Honours)
- Katelin Hagemann (3rd year)
- Danielle Marx (2nd year)

University of Cape Town (Construction Technology)

- Anita Ferger (Winner)
- Hermina van der Berg (Runner up)

Cape Institute Of Architects celebrates



Gauteng Institute of Architects Awards

Executive director Mariana Lamont represented the CBA at the Gauteng Institute for Architecture (GIFA) Grand Awards. The ceremony celebrated projects representing the best in local architecture.

"We were delighted to see that many of GIFA's selected projects included clay brick," said Mariana. "We are being recognised as not only an aesthetic walling solution, but also as a sustainable and energy-efficient option."

We will be highlighting these projects on our website over the next few months.

"The CBA values its relationship with architects," Mariana notes. "By working together that we can change attitudes to green building and energy-efficiency."

[READ MORE ON THE CBA WEBSITE!](#)

Please support our CBA Associate Members!

Are you are considering any type of upgrade or repair at your facility?
Please contact our CBA Associate Members first!

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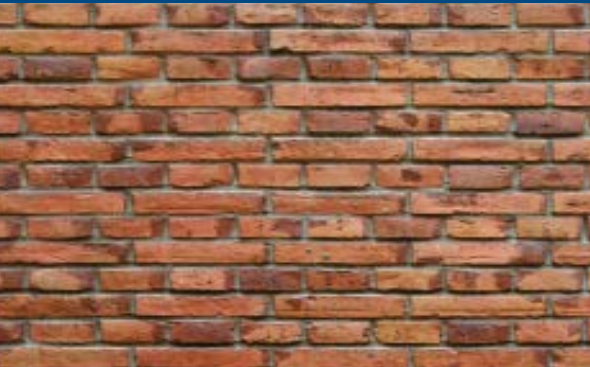
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