

CONCRETE CONNECT

BUILDING THE FUTURE – LAYER BY LAYER

ISSUE: 4/2025



WHY QUALITY PAVING &
TRAINING MATTER IN SOUTH AFRICA

SLOPE STABILISATION BOOSTS
CONSTRUCTION POTENTIAL

AN 'AGENT' BY ANY OTHER
NAME WOULD BE AS SAFE?

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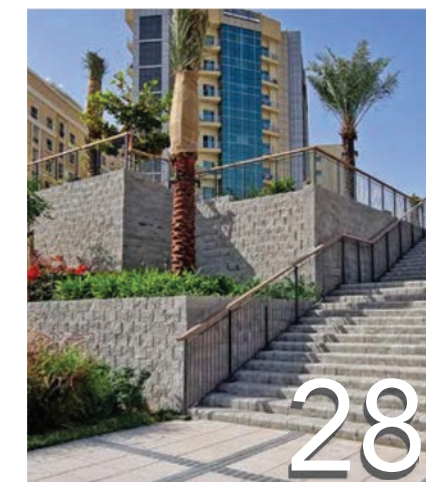


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THE CONCRETE MANUFACTURERS ASSOCIATION - THRIVING IN ADVERSITY

“It’s very encouraging to see the CMA brand on an upward trajectory. It is reminiscent of the days when cement producer sponsorship meant that funds were freely available to aid membership growth.”



Henry Cockcroft - CMA General Manager



Judges for this years CMA Awards

Now in its 52nd year the Concrete Manufacturers Association (CMA) is in a good place. Despite being entirely self-funded, the association continues to grow, belying the constrained environment in which it operates; so much so that membership, which now includes 40 precast concrete producers, is at an all-time high.

“It’s very encouraging to see the CMA brand on an upward trajectory. It is reminiscent of the days when cement producer sponsorship meant that funds were freely available to aid membership growth. Today’s membership growth is not inflated because of abundant funding but is purely organic and sustainably based,” says CMA general manager, Henry Cockcroft.

“A major contributing factor has been our subsidiary company, CMA Certification Services. Besides providing SANS accredited certification and auditing service to precast concrete producers it has enabled us to kick start other revenue streams such as consulting on and assisting with the implementation of quality management systems.

“Adopting modern media trends and methodologies was another significant contributor which allowed the CMA to improve brand awareness and to make the market aware of the very important role which the industry association plays. Our social media platforms have massively enhanced our ability to talk to engineers, architects, specifiers, developers and end users involved in the precast concrete industry and built environment and to enlighten a large pool of potential precast concrete users as to its advantages.



Regular conferences and seminars are organised by the CMA

“It has also given our Awards for Excellence competition a far greater reach and relevance than it had during the print-media era. Moreover, we no longer spend a small fortune on black-tie gala events to announce the winners; rather, by using social media platforms, our focus is the creation of ongoing awareness of all award entries from the day we receive them until well after the results are announced. The Awards for Excellence porthole has become a very valuable source of information for any person seeking project related material as applicable to precast concrete.

“Social media publicity is measurable. It enables us to define demographic environment with accuracy, pinpoint our focus market and measure our hit rate in delivering content that draws attention to precast concrete and its numerous benefits. We see this clearly through the calls we receive daily, from consulting engineers, architects and other professionals. Besides advising them on the technical properties and application of precast concrete products, it gives us the opportunity of promoting our members and their products and bringing some of the precast concrete advantages they may not have known to their attention.

“The promotion of precast concrete always has been and continues to be the primary objective of the CMA. The CMA logo stands for quality, honesty, professionalism and proper code of conduct and member companies are obliged to subscribe to these values. However, membership is not open to all comers. Besides the criteria applicable to prospective members companies, new applicants must operate to recognised quality management systems. This ensures that CMA producer members commit to the supply of precast concrete

units consistent in quality. It installs trust in the industry to support members of the CMA rather than procuring products from manufacturers who do not subscribe to an industry association.

“Our strongest membership base is in Gauteng, followed by the Western Cape and then the Eastern Cape and we have members as far afield as Namibia. Industry association membership remains a very important aspect for any precast concrete producer to be considered,” concluded Cockcroft.



Constant engagement and interaction with member organisations and their team are vital to the CMA





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the use of quality precast concrete products.

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- ✓ **Shine in the CMA Digital Awards for Excellence**
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Your business profile, complete with links to your website will be featured on our high-traffic CMA site. Great for SEO and even better for getting noticed by the right audience!
- ✓ **Get a Custom Membership Video**
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HDPE LINED PIPES SUPPLIED TO MEYERTON WATER PROJECT



ROCLA's HDPE pipes ready to be delivered

Rocla has supplied customised HDPE Lined Pipes for a water treatment plant in Meyerton. The project, which was completed in partnership with Civil Element Nkateko Group, was supplied with 1000 x 2500mm HDPE lined pipes manufactured to the client's required specifications.

"The advantages of Rocla's HDPE lined pipes is that they offer both the benefits of a conventional concrete pipe as well as a plastic pipe. The pipe is a rigid pipe that loses no shape under load and is inert to acid attack. The pipe joints deliver a degree of flexibility making them well suited for the water treatment plant project" said Sifiso Manqele, Rocla sales manager for Gauteng.

HDPE lined precast pipes do not rust, rot, corrode or leak and are the preferred solution to transport water, chemicals and sewage. Their resistance to acids, bases, salts, dissolved solids and brine enables the HDPE lined pipe to offer lifespans of up to 100 years under normal conditions. This longevity makes the HDPE lined piping a very cost efficient and reliable solution for critical sectors of infrastructural maintenance.

Rocla concrete HDPE lined pipes have been selected for sewer and waste water projects throughout South Africa and were supplied recently to the Driftsands Collective Sewer Augmentation in Nelson Mandela Bay in order to increase its capacity.

"Some of the benefits of the Rocla HDPE

lined pipes include a surface that is smoother than concrete and therefore a pipe with a smaller internal diameter can be used or alternatively, the same diameter can be used at a flatter gradient.

An HDPE capping strip is welded over the joint of the pipes after installation. The capping strip is generally 200mm wide and the same thickness as the lining used in the pipe. One 100mm long section of lining at the invert or at 60° either side of the pipe invert should not be welded so that any ground water that may gradually accumulate over time in the space behind the lining is relieved.

"It is one of Rocla's strengths that it has the flexibility and adaptability to design and manufacture to meet customer needs as

evidenced by the project contractor specifying Rocla bespoke HDPE lined pipes for this project in Meyerton. Quite a feather in our cap" concluded Manqele.

Rocla is a member of the Concrete Manufacturers Association of South Africa and has an extensive network of factories throughout South Africa, Namibia and Botswana. They can design and manufacture customized special products to meet customers' requirements. This is made possible because of Rocla's in-house engineering department and associated technical expertise and quality controls. The company has over 107 years of experience in the pre-cast concrete sector and is part of the Infrastructure Specialist Group of companies that includes Technicrete.

Pipes on their way to site.



CONCOR PROGRESSES ON KARREEBOSCH WIND FARM



An aerial view captures on-site crushing in operation near one of the wind turbine base excavations at Karreebosch Wind Farm.

Concor has become an important construction partner in South Africa's wind energy landscape and recently started work on the Cennergi Holdings and G7 Renewable Energies 140 MW Karreebosch Wind Farm.

Located between the towns of Matjiesfontein and Sutherland, Karreebosch Wind Farm is sited predominantly in the Northern Cape and will generate energy for a private off-taker. At the heart of the project will be 25 turbines at a height of 100 m with blades over 84 m long. Interestingly, the site of this project is adjacent to the Roggeveld Wind Farm which Concor completed about five years ago.

According to Stephan Venter, contracts director at Concor, the early work included establishing the necessary infrastructure on site, given the remote and rugged terrain. This will include access roads, site offices and a batching plant for the large volumes of concrete required for each turbine's foundation.

Concor has begun constructing about 45 km of internal access roads, allowing the transportation of components and equipment to each turbine site. Roughly 200,000 m³ of blasting are likely to be required for the roads, foundations and other work. The G5 and G7 material for layer works will be produced on site, using jaw and cone crushers feeding a screen.

"The roads need to support the long heavy trucks used to transport turbine components," says Venter. "For instance, the long turbine blades require the road design to provide sufficient turning radii as well as the

right K-values to avoid trucks striking their undercarriage on uneven surfaces."

In the early phases, Concor conducted detailed ground-line surveys and geotechnical investigations to understand the terrain. This helps in planning cut and fill operations, where material is removed from some areas and used to build up others – creating level roads that can support heavy loads. Geotechnical work was critical to the integrity of the turbine foundations and a specialised drilling company extracted 25 m cores at each turbine position. This established the founding conditions, allowing the foundation design to include the optimal bolt length for securing the turbine tower.

"The bolt length provides the key element

around which we can finalise the design of the steel and concrete aspects of each foundation," he says. "This is vital preparation as the early stage designs can only rely on conventional geotechnical maps which provide high level data rather than a detailed insight."

He points out that the foundation design must also align with the loading documents that are specific to each turbine supplier. The planned lifespan of these critical foundations tends to be longer than the 20 year off-take agreement, allowing for contract extensions that could see the turbines operating for up to 25 years.

The concrete foundations for each turbine measure over 20 m in diameter and are between 4 to 5 m deep, requiring about 600

m³ of concrete per foundation. The whole project will consume in the region of 25,000 m³ of concrete and 2,200 tons of reinforcing steel.

"We do our own concrete mix designs and will produce the readymix ourselves using aggregate from our Tweedside tillite quarry 70 km from site," he explains. "Material will be transported to our own batch plant on site, allowing us to cover most of the concrete value chain ourselves."

The concrete turbine foundations will be poured continuously to ensure even curing, followed by thermal management to prevent cracking from temperature changes. Water for the batching plant will come from two carefully managed boreholes, which feed a 1,5 million litre water storage facilities on site.

Among the environmental factors that the construction work will have to accommodate is the site's proximity to the world famous astronomical observatory at Sutherland. This requires any night-time work to be conducted without creating light pollution that would affect visibility at the observatory.

"The concrete pouring cycle on each foundation lasts about 24 hours, which means that some tasks need to be done when it is dark," he says. "We will take precautions by using special bulbs, for instance and ensure that we only shine light downwards onto our work and not directly into the sky."



A close-up view captures the excavation of a wind turbine base underway at Karreebosch Wind Farm, where Concor is preparing the foundation to exact specifications based on detailed geotechnical investigations.

Early project works undertaken by Concor include establishing access roads, site offices and an on-site batching plant, in preparation for the large volumes of concrete needed for the turbine foundations.



Active crushing operations on the temporary staging area while a drill rig works on extending the platform at the lower end of the site, preparing the area for further construction at Karreebosch Wind Farm.

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SAINT-GOBAIN AFRICA APPOINTS NEW CEO

Saint-Gobain recently announced the appointment of Aymeric d'Ydewalle as the new Chief Executive Officer for Saint-Gobain Africa.

He succeeds Othman Benjelloun-Touimi, under whose leadership the Africa region accelerated its transformation journey and reconfirmed its commitment to Africa. Aymeric brings with him a rich background of global experience, dynamic leadership and a passion for innovation and impact. A Belgian national, Aymeric holds a degree in electromechanical engineering, complemented by a master's in strategic management obtained in France.

His journey with Saint-Gobain began in 2012 through the Group's Graduate Program in Belgium, an experience he credits as foundational to his career and one that mirrors similar programs now offered within Saint-Gobain Africa. Over the past decade, Aymeric has held diverse roles across multiple geographies. His journey includes positions such as innovation manager in Germany, head of mergers & acquisitions in Belgium and commercial manager for Bearing Automotive in Europe. He later served as global business manager for the seals industry & energy segment, before taking on his most recent role as general manager of advanced ceramic composites, leading operations across Europe, the USA and Asia.

"I'm naturally driven by discovery, connecting with others and have the desire to contribute meaningfully. What excites me most is the chance to contribute to something truly meaningful and build on the strong

Saint-Gobain Africa's new CEO - Aymeric d'Ydewalle



momentum already created across Africa with our regional commitment, MABA (Make it in Africa to Build Africa)," says Aymeric.

Aymeric is committed to advancing a culture of trust, empowerment, collaboration and self-awareness. His leadership style focuses on enabling decisions at the right level, encouraging innovation and nurturing growth within teams.

"I've already been inspired by the energy and commitment of the people I've met in Africa. There's a real passion here combined with a bold vision for impact. I look forward to deepening connections with our partners and our customers and to

co-creating the future of construction in Africa."

The company designs, produces and distributes construction solutions that improve the sustainability and performance of residential and non-residential buildings as well as infrastructure. Driven by continuous innovation, it delivers low-carbon solutions with high recycled content, lightweight building systems and services that enhance energy performance, occupant well-being, long-term durability and fast, easy installation.



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About US

- Established **42 years ago**
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 - Focus on **Service and Innovation** for new & custom products
 - SABS Certified** with on Site Lab
- Proud member of **Concrete Manufacturers Association**

What we Offer:

Standard Production divisions

- Full Range of **dry cast Pavers, Blocks and Bricks**
- Full range of **civils products** – Kerbs, Markers, Cover Slabs, Channels, Copings, Bollards etc.
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- Löffelstein** and **Terraforce** retaining & grass blocks

Specialized production divisions

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- Solid and modular complete Pre-cast toilet systems**
- Pre-cast modular stairs** to specification
- Almost any size precast product to **customer specification**
- Walling systems** – Vibracrete /Decorative/Industrial

TERRAFORCE®

Löffelstein®
Retaining Systems

SmartStone



MPILO SAFARI LODGE WILL OFFER OPPORTUNITY TO EXPERIENCE SOUTH AFRICA

Construction is officially underway at Mpilo Safari Lodge, an exotic addition to the upcoming Club Med South Africa dual-destination experience. Nestled in a pristine 18,000-hectare private game reserve near Pongola in northern KwaZulu-Natal, Mpilo Safari Lodge will deliver a tailored safari adventure to complement Club Med's highly anticipated beach resort, both opening to international bookings in October this year.

Mpilo Safari Lodge forms part of a unique two-part holiday concept by Club Med South Africa, offering guests the ability to combine exceptional beach relaxation with an authentic Big Five safari experience that is just a short 45-minute scheduled charter flight from each other. Developed by Collins Residential, the lodge promises "a

traditional safari experience with elevated elegance", according to Chris du Toit, development manager at Collins Residential. "The interiors are locally inspired and curated to blend seamlessly with the surrounding bush it's contemporary safari styling with a neutral palette that exudes natural elegance."

Set against the dramatic backdrop of mountain ranges and traversed by the Mkuze River, Mpilo Safari Lodge will be situated on top of a hill with sweeping 180-degree views that will feature 75 luxury tented rooms made up of 55 family rooms and 20 adult-only rooms, with some of these interlinked to accommodate larger family groups. The lodge's capacity will be capped at 225 guests per night to preserve

the intimate and exclusive nature experience. Ultimately the emphasis will be on guests enjoying a personalised Big Five experience, with all construction undertaken being mindful of preserving the environment.

"The biodiversity is already here it's a living, breathing reserve that's been largely untouched", explains Murray Collins, CEO of Collins Residential. "We're not just building a lodge we're protecting a legacy. From anti-poaching patrols to community training initiatives, we're committed to a project that enriches both people and the planet. Our low footprint construction strategy is designed to preserve the natural terrain while promoting the use of local resources".



Construction of the safari lodge will create over 220 jobs and once it is complete, 120 permanent direct positions will be appointed and sourced primarily from surrounding Zululand communities. A local contractor, renowned for sustainable lodge construction, has been appointed to ensure low environmental impact, using local stone and materials from the surrounding areas, with even the canvas tents being manufactured in the province. "Our neighbours and the community have expressed excitement about Club Med extending its footprint into this region and we are optimistic there will be significant benefits to those living and working in the area as a result of this project coming to fruition," states du Toit.

Facilities of this luxury and exclusive private game reserve and experience will include a central reception, kids' club, teen lounge, adult-only clubhouse and two bomas for unforgettable dining experiences under the African skies. Guests can also enjoy stargazing decks, drinks around private firepits, game drives in dedicated safari vehicles, beading workshops with the local community, and an overall immersive connection to Zululand's rich natural heritage. These Club Med inspired activities and facilities will most certainly appeal to a range of holidaymakers, including families (with the lodge allowing children from four years old and upwards), wildlife enthusiasts, keen photographers, heritage seekers, honeymooners, active couples, corporates and more.

According to Club Med, a recent international focus group revealed that a significant percentage of overseas travellers regard South Africa as a top three destination on their travel bucket list, with the safari experience being a key driver. This insight is forming the basis of the international Club Med advertising campaign "L'aventure d'une vie", which translated into English means, "The Adventure of a Lifetime". Club Med International Mpilo Safari Lodge can be booked exclusively through Club Med South Africa's reservation system as part of their dual-destination packages with reservations opening globally in October 2025.



ESSENTIAL MARKETING SKILLS FOR CONSTRUCTION PROFESSIONALS



Marketing is a critical function for any business especially in the construction and concrete industry, where competition is strong and differentiation is key. At its core, marketing is about promoting and selling your product or services effectively.

Doing this well requires a focused set of skills as well as a deep understanding of your market including what motivates your customers and what turns them away. As a result, the most effective marketers position themselves as trusted industry experts. They emphasize how their products or services solve real problems for their clients. Gaining insight into customer behaviour not only informs buying trends but also fu-

els relevant engaging content for marketing campaigns. With digital tools evolving rapidly staying on top of the latest strategies and technologies is both challenging and essential.

Marketing roles also demand strong project management and problem-solving abilities. Let's be honest digital platforms don't always cooperate and algorithm shifts are constant. Time management is equally critical. With multiple platforms content channels and fast-paced demands it is easy to get overwhelmed. Standing out requires mastering a balanced mix of skills tailored to your industry.

Importance of Marketing

Marketing is not just a buzzword it's a business necessity. Without it even the best construction services may struggle to gain attention, retain clients or remain competitive. That's why understanding your target audience through market research is vital.

Whether you manage your own marketing or delegate it to a team you must know your audience well enough to anticipate their needs, preferences and decisions. This enables you to create strategies that resonate and build loyalty. In-depth market research and consumer behaviour analysis help uncover what drives client satisfaction and how to maintain it.

Equally important is the ability to communicate clearly both externally with clients and internally with your team. It is often overlooked - but strong communication skills allow marketers to craft messaging that captures attention and encourages action. Industry publications like Concrete Connect offer targeted platforms for editorial features and advertising that speaks directly to your market.

Effective communication with stakeholders also strengthens relationships whether convincing investors, managing subcontractors or coordinating with colleagues. It is the foundation for planning and executing campaigns that get results.

Communication and Storytelling

Two of the most powerful tools in a marketer's toolkit are clear communication and compelling storytelling. These are high-priority skills for anyone starting out in marketing and they're especially crucial in the construction industry where credibility and trust matter.

A strong marketer can articulate ideas, share decisions with clarity and unify a team. Understanding your audience's demographics lets you create content that speaks directly to their needs guiding them to solutions and prompting action.



This becomes even more critical in copywriting. A skilled copywriter fuses persuasive communication with storytelling to evoke emotion and build trust. People make decisions based on stories from family tales and cultural narratives to personal experiences and online content.

The same principle applies in business. Great storytelling doesn't just say why your service matters it shows the impact. On social media visual storytelling becomes even more powerful. Research shows that visuals combined with focused narratives significantly improve engagement and retention.

Modern marketing also offers powerful tools for collecting customer data and streamlining efforts through automation. Data analytics has become a cornerstone skill enabling marketers to interpret trends and adjust strategies. When applied correctly analytics guide decisions that cut costs and refine future campaigns. Whether you're leading marketing yourself or managing a team the ability to read and act on data will translate directly into better performance and profitability.

Use tools to track website traffic and understand how users interact with your content. These insights help tailor your marketing plan and refine campaign execution. With a firm grasp of data, you can target messaging more precisely and maximize your reach with fewer resources.

Strategic Thinking

Strategic thinking helps marketers align campaigns with broader business goals. This skill allows you to spot trends and craft marketing initiatives that directly support

growth. In the concrete and construction sector this could mean adjusting your messaging to reflect industry cycles or aligning with initiatives. Strategic thinking ensures that every marketing effort contributes to long-term success.

It is especially useful for e-commerce and digital platforms. By understanding how your customers interact at each stage of the buying process you can develop strategies that meet their needs at the right time and deliver measurable outcomes.

The digital landscape is constantly shifting and marketers must keep pace. Whether platforms change their rules or new technologies emerge, adaptability is the skill that keeps your marketing relevant. Understanding your audience makes it easier to pivot when needed. Ongoing research, testing and analysis ensure your marketing remains effective and aligned with client expectations.

Digital Marketing

Digital marketing is no longer optional it's essential. A strong online presence allows construction businesses to reach clients and build brand authority.

Social media plays a key role. Platforms like LinkedIn, Instagram and Facebook offer opportunities to engage with audiences, build community and generate leads. But the approach matters. Instead of broadcasting generic messages it is better to use targeted channels and trade-specific platforms that reach the right people.

Think of social media as your digital front door. Make the first impression count with

thoughtful content that encourages action. And always aim to "reach the people that count," not just rack up views. Search engine optimization (SEO) is another must-have skill. Optimizing your website ensures your business appears when potential clients search for services you offer. With strong SEO customers can find you at the moment they need you often before they even know who you are.

Email marketing adds a more personal dimension. Well-crafted campaigns deliver timely updates directly to your audience but they work best when paired with a human follow-up. Automating emails saves time and keeps prospects engaged, especially when supported by integrated tools that manage and track leads effectively.

Final Thoughts

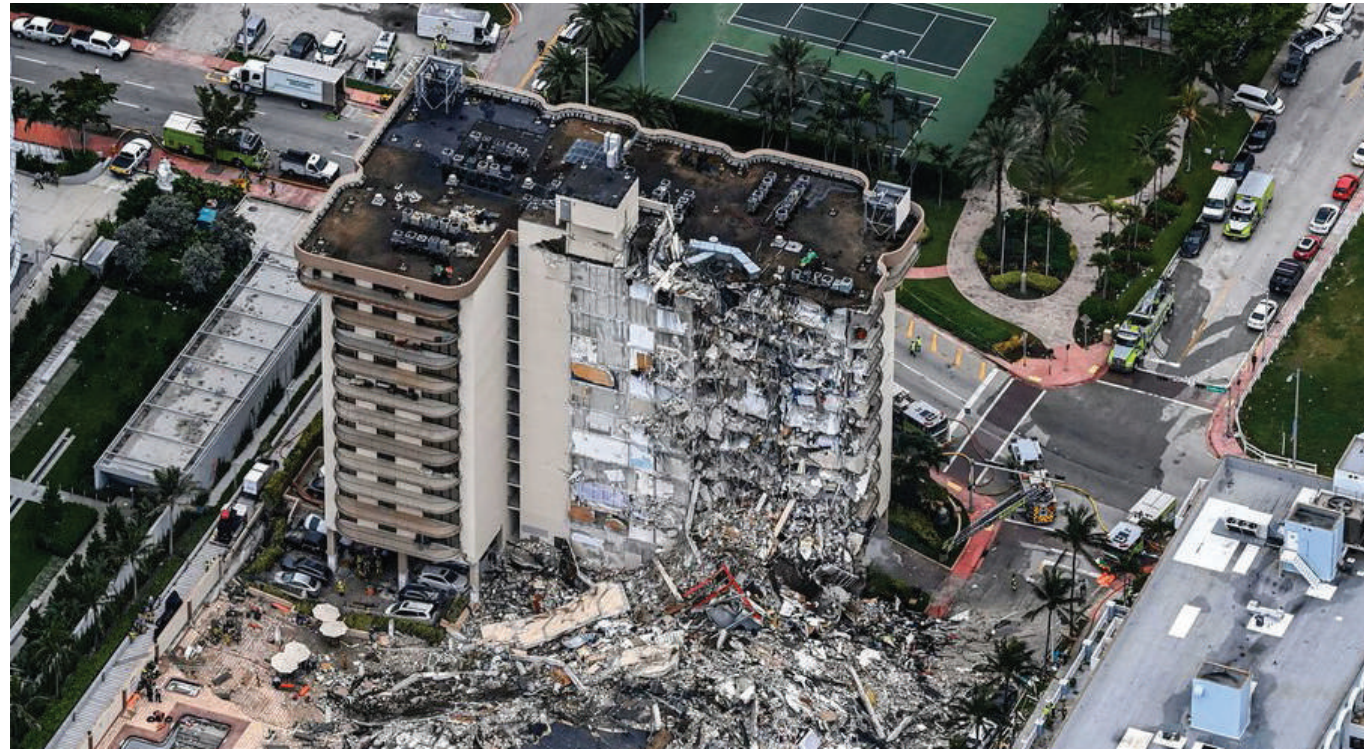
Marketing can feel like a rollercoaster especially for those wearing multiple hats. But whether you're a solo contractor or leading a larger team, the right skills and strategies can take your business to new heights.

If you are managing the marketing yourself, focus on developing communication, data analysis and strategic thinking. Keep your clients at the centre of everything you do. If you're hiring a team these should be the top qualities you look for in candidates.

At the end of the day the construction and concrete industry needs marketers who are not only creative but also analytical, adaptable and industry-savvy. Equip yourself or your team with these essential marketing skills and your business will be built for success.

AN 'AGENT' BY ANY OTHER NAME WOULD BE AS SAFE?

By Kenneth Coster, Partner & Hassan Mahlawie, Trainee Attorney at Webber Wentzel



For illustrative purposes only.

The Daily Maverick recently reported that the Minister of Public Works and Infrastructure, Dean Macpherson, announced the completion of two technical investigations into the tragic building collapse in George, Western Cape, in which 34 construction workers died. These reports will form part of the ensuing criminal investigations into the culpability of persons statutorily responsible for the project.

One of the health and safety shortcomings identified in the Council for the Built Environment's (CBE) investigation report, as reported by the Daily Maverick, was: "The resignation of the health and safety agent during construction, with the agent stating that it was 'impossible to safeguard the interests of both the client and contractors amid continuous safety violations.'"

On reading this finding, our thoughts turned immediately to our lived experience of the architecture and efficacy of the Construction Regulations, 2014 (CRs 2014), promulgated under section 43 of the Occupational Health and Safety Act 85 of 1993 (OHSA). Having represented 'clients', 'principal contractors' and 'contractors' (as

defined in the CRs 2014) at statutory investigations and inquiries, it appears that there continues to be a misunderstanding of, and improper implementation of, the role of an 'agent' at construction sites.

Let us explain. The CRs 2014 apply to all 'construction work', which is defined as:

"any work in connection with - (a) the construction, erection, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure; or (b) the construction, erection, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system; or the moving of earth, clearing of land, the making of excavation, piling or any similar civil engineering structure or type of work."

Albeit a mouthful of a definition, we can take it that the construction of the apartment block in George falls within the definition of 'construction work'. Furthermore, the CRs 2014 define various roles and powers in a construction project and their concomitant responsibilities and it starts at the very top with the 'client'.

A 'client' is defined in the CRs 2014 as the "person [entity] for whom construction work is performed." This person or entity need not be a construction company, but simply an entity for whom construction work is undertaken. While all the responsibilities of the client are set out in the CRs 2014, to keep your attention, let's say that, in the main, a client must supply a baseline risk assessment and a coherent health and safety specification to the 'designer' of a construction project. Usually, a client will outsource these duties to specialist construction companies or engineers. A client's duties continue while the construction work is being performed, which, as discussed below, becomes relevant.

Enter the next crucially important role player, the 'agent'.

An 'agent' is defined as "a competent person who acts as a representative for a client". (emphasis added)

The CRs 2014 distinguish between what we term 'bigger' and 'smaller' construction work. The regulations make it mandatory for a client to appoint an agent for larger

construction work, while for smaller work, the appointment of an agent is discretionary. We assume that the construction work undertaken in respect of the George apartment block made it peremptory for that client to have appointed an agent.

Under CR 5(7) an agent must be "registered with a statutory body approved by the Chief Inspector as qualified to perform the required functions." The statutory body with whom agents must be registered is the South African Council for the Project and Construction Management Professions (SACPCMP).

This then is what the law understands to be an agent, and it appears at this point that there is a disjunction between the architecture and implementation of the CRs 2014 in theory, and how it is implemented in practice.

Based on the legal understanding of an agent, that person or entity enjoys, or should enjoy, significant power at a con-

struction site. Under case law, it can be said that an agent owes a duty of utmost good faith towards its principal (ie the client). As such, an agent at a construction site is, for all intents and purposes, actually the client. It follows legally then that the client can be said to have delegated the responsibilities and powers it holds to the agent. For example, CR 5(1)(q) permits a client to: "stop any contractor from executing a construction activity which poses a threat to the health and safety of persons which is not in accordance with the client's health and safety specifications and the principal contractor's health and safety plan for the site." (emphasis added)

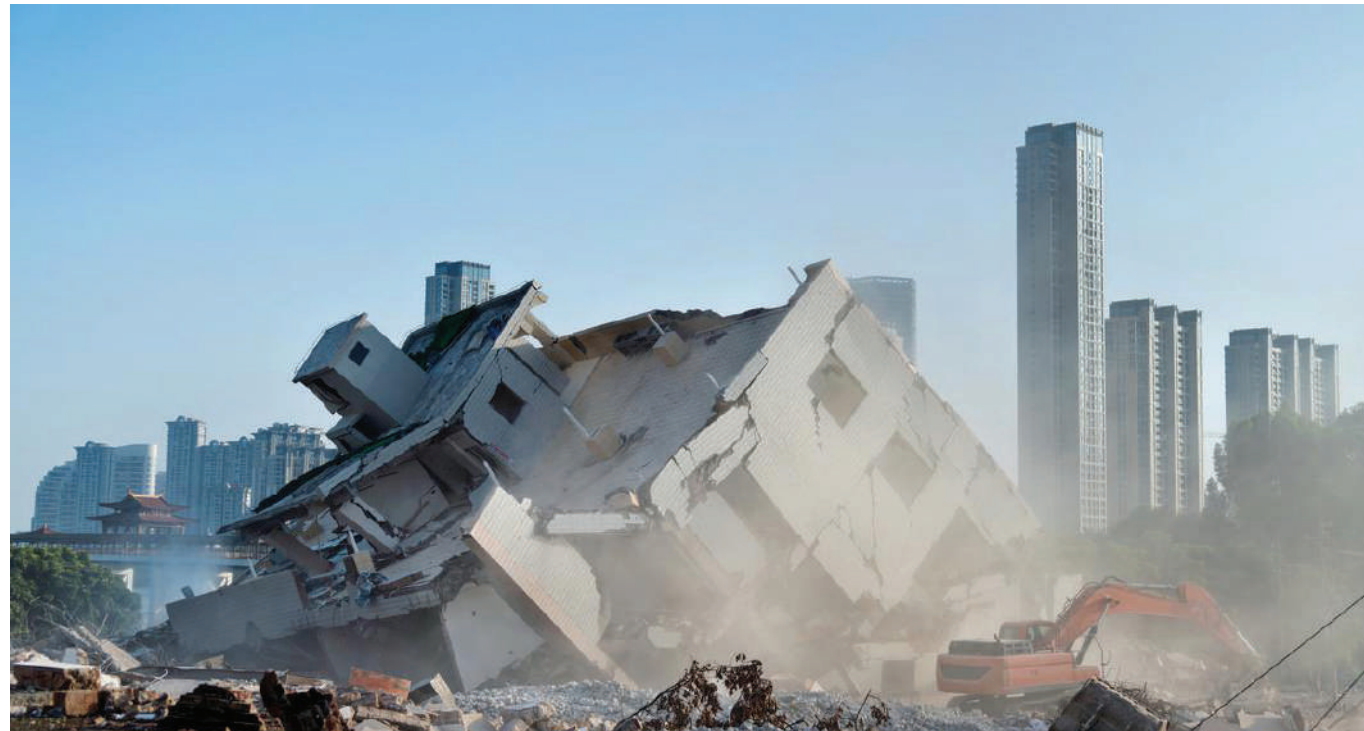
Accordingly, it seems to us that the role and power of an agent is far greater than what might colloquially be understood by the term "health and safety" agent. There are some who may argue that words do not matter on a construction site, a view with which we disagree, especially if those words inaccurately or insufficiently describe

the role of a specific party. The nomenclature of "health and safety agent", in our view, relegates what should be understood as a complete substitution of the client, its powers and duties, to (possibly) a superfluous entity interested only in the paperwork exercise of ensuring that health and safety files are kept up to date.

In our experience, it is easy for a 'designer', 'principal contractor' and a 'contractor'—all terms defined in the CRs 2014—to think that the agent works for them, and not vice versa. On this basis, it is easy to imagine an agent in name only, reverse engineering health and safety files to suit the requirements of the contractors. To make matters worse, now imagine that agent issuing an instruction on behalf of the client—as it is entitled to do under the CRs 2104—to a principal contractor or any other contractor, to immediately stop construction work.

Bearing in mind the legal (and reputational) risks to a client for health and safety accidents under the CRs 2014 and the OHSA





more broadly, if we were a client, we would want to insist that all appointed construction role players knew, firstly, who our agent was, and secondly, that our agent was clothed with our full powers and authority over all construction work, including the power to implement immediate work stoppage instructions.

We are, of course, not privy to the evidence and information made available to the CBE during its investigation of the George building collapse, and we shall not speculate as to the culpability of any person or entity involved. However, we would certainly focus our interrogation on what the true capacity of the appointed agent was. It would be puzzling to us if, after the “health and safety” agent in the George building collapse resigned, the client did not immediately halt all construction work. The risk of not doing so is unnecessary and significant. If we accept that the agent is actually the client, then an agent resigning is tantamount to the client resigning from the project, which can never occur. The resignation of the health and safety agent ought to have been an immediate red flag for all continuing and future construction work.

A problem that likely occurs in the South African construction industry is that a client, often not an expert in construction, selects a principal contractor to manage the construction work before it selects an agent. By then working backwards, a “health and safety agent” is nominated and recommended by the very same principal contractor appointed by the client. We advocate for a different approach: first appoint the agent, who will then appoint a principal

contractor. This will put real power in the hands of the agent.

However, the current situation seems to reinforce the adage that she who pays the piper calls the tune. Once an agent is engaged via the conduit of a principal contractor or contractor, one does not need to make a big leap to understand the compromised position of the agent. Such an agent sits more as the principal contractor’s agent than as the clients. In this context, a very real scenario comes to mind: what if an agent, recommended to a client by a principal contractor, issues a work stoppage instruction to that same contractor due to health and safety infractions? Relationships will quickly turn frosty between agent and contractor, and that agent can kiss future work from that contractor goodbye. Such practicalities, in our opinion, contribute to why health and safety shortcomings are ignored, or worse, covered up.

So where to from here?

It seems to us that there are relatively easy short-term solutions as well as medium to longer term solutions to such a problem.

In the short-term, and given the proposed repeal of the CRs 2014 by the Construction Regulations, 2025 (CRs 2025), clients must take care to writing clear roles and expectations from each role player in the construction process, starting with themselves. Clients should take all practical steps to ensure that the agent they appoint is aware of its powers, duties and responsibilities, and understands that the client expects, and is paying for, that agent’s independence in health and safety matters. A good start is

for a client to ensure that it has an overall suitable appointment structure with valid letters of appointment in place as prescribed.

In the medium to longer term, there is room, and possibly a market, for the establishment and growth of competent, independent construction agents capable of properly executing the duties of a client. These agents must avoid, at all costs, any subservience to principal and other contractors alike.

The proposed amendments to the CRs 2014 introduces some changes to the duties of a client and, naturally, to the duties of the agent. The CRs 2025 require that a client play a more active role in co-ordinating co-operation between multiple contractors to ensure health and safety. Furthermore, clients must ensure that role players such as the ‘designer’ not only take the prepared health and safety specifications into account during the design stage but also produce a written report to demonstrate such consideration.

While the definition of ‘agent’ has been slightly tweaked in the CRs 2025, we take the view that in substance it remains the same, save that it is now clear that an agent may also be a juristic person.

In effecting such changes, we hope we are never again faced with a finding that a “health and safety” agent resigned and that construction work was not immediately suspended and remedial measures put in place before any employees were exposed to unnecessary risk.

PREMIX CONCRETE BAGS: WE COMPARE DIY OPTIONS

In the world of do-it-yourself (DIY) home improvement and small-scale construction projects, few products have made concrete work as accessible as premix concrete bags. Whether you’re building a backyard braai, casting a small slab, fixing paving or setting a fence post, South Africa’s leading hardware retailers offer a wide selection of bagged concrete solutions. We compared premix concrete options from Builders Warehouse, BUCO and Cashbuild — the country’s top three general hardware chains — and took a closer look at their pricing, strength and best applications.

Top Retailers and Their Premix Concrete Options

1. Builders Warehouse

- Product: Builders Premix Concrete (40kg)
- Strength: ~20 MPa after 28 days (suitable for general-use concrete)
- Price: Around R59.90 per 40kg bag
- Use Case: Slabs, footings, driveways, DIY construction

Builders’ premix concrete is an easy-to-use blend of cement, sand and 13mm stone. The product is designed for small building projects and repairs. Mixing requires only the addition of clean water. It offers consistent strength and is especially good for casting small foundations, lintels or garden features like bird baths and benches.

2. BUCO

- Product: BUCO Ready Mix Concrete (40kg)
- Strength: 25 MPa (suitable for medium-load applications)
- Price: Roughly R64.95 per 40kg bag
- Use Case: Slabs, steps, paving bases, columns

BUCO’s concrete offers slightly higher compressive strength and is well-suited for structural elements such as small columns or beams, where increased durability is required. It’s ideal for more ambitious DIY jobs like precast garden tables, reinforced

bases for outdoor installations or brick column footings.

3. Cashbuild

- Product: Concrete Mix (Ready Mix, 40kg)
- Strength: ~20 MPa
- Price: Around R57.95 per 40kg bag
- Use Case: Fence posts, kerbs, DIY foundations

Cashbuild’s mix is one of the most affordable and readily available in rural and township areas. While it doesn’t reach the higher strengths of BUCO’s version, it’s perfectly suited for everyday construction tasks like installing palisade posts, repairing walls or patching worn-out concrete.

Common Applications and Creative Uses

These bagged concretes are designed for projects that require no more than a wheelbarrow and a shovel. Some of the most

popular applications include:

- Braai stands or fire pits – Cast your , sand and 13mm stone. The product is designed for small building projects and repairs. Mixing requires only the addition of clean water. It offers consistent strength and is especially good for casting small foundations, lintels or garden features like bird baths and benches.own concrete base and lay bricks over it for a long-lasting outdoor setup.
- Garden slabs – Use the mix for a patio base or stepping stones.
- Fence post footings – Simply dig a hole, pour in the mix and water and insert your post.
- DIY furniture – Concrete table tops, benches or stools are popular weekend projects.
- Shed or Wendy house bases – A small concrete slab ensures a dry, solid foundation.

Pros and Cons of Premix Bags

PRO’s

- Convenient – no batching required
- Consistent mix and strength
- Easily stored and transported
- Available countrywide

CON’s

- Limited to small jobs due to bag size
- Not economical for large-scale work
- Can dry out quickly in hot weather if not mixed properly
- Typically weaker than on-site batch mixes

Important Tips for Best Results

1. Mix with clean water only, preferably in small batches to prevent premature setting.

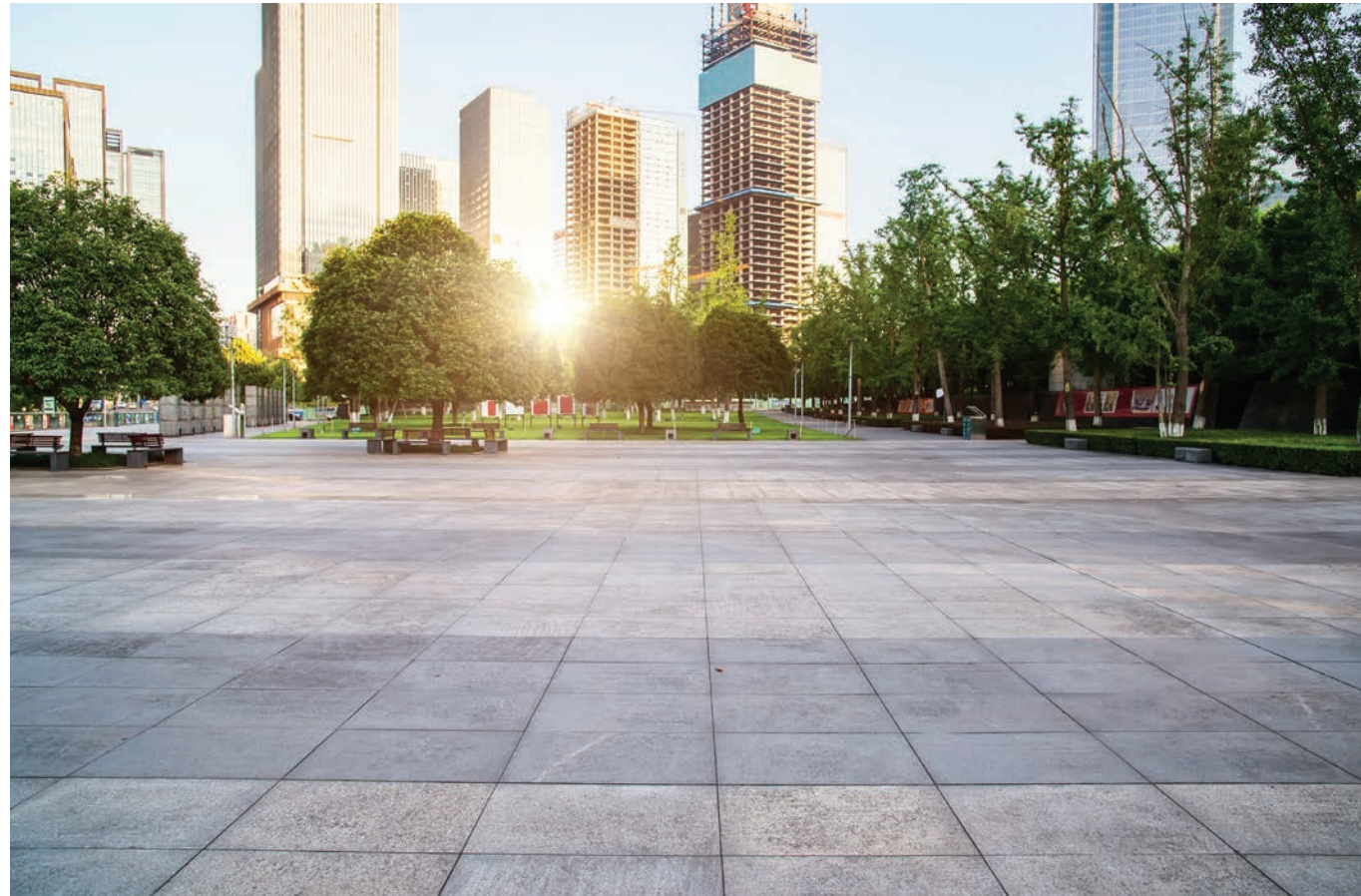
2. Cure the concrete properly by keeping it damp for at least 3 days to achieve full strength.
3. Don’t overwater, as this reduces strength and durability.
4. Use reinforcement (like steel mesh or rebar) for slabs over 1m² or when laying thicker sections.

Final Word

Premix concrete bags from Builders Warehouse, BUCO and Cashbuild offer South Africans a practical and efficient way to tackle a range of home and garden construction projects. While not suitable for large-scale pours or structural work beyond their rated strength, these bags are perfect for small to medium jobs — and they give anyone with a bit of elbow grease the ability to build, fix or create without calling in the professionals.

With prices hovering under R65 per 40kg and increasing availability even in remote areas, premix bags are cementing their place in South African backyards one slab at a time.

WHY QUALITY PAVING & TRAINING MATTER IN SOUTH AFRICA



From upmarket residential driveways to municipal walkways and large commercial developments paving is one of the most visible and commonly used elements in South Africa's built environment.

Due to the area it covers and its "under-your-feet" visibility it is also among the most noticeable features of any property which makes the choice of paving materials and the quality of installation critical to the success of a project. Mistakes at this stage can make or break a project and is the reason why Henry Cockcroft, general manager of the Concrete Manufacturers Association (CMA), insists getting paving right means more than picking a colour and calling a contractor.

"It's about aligning with standards, good practice and competent people. The paving industry in South Africa is incredibly active and there is a huge variety of applications which means both the quality of products and the skills of installers matter enormously.

"The CMA and our affiliated Certification Service (CMA CS) play a vital role in upholding standards and educating industry stakeholders. Through our published manufacturing guidelines, as well as our much-used paving manual and through constant member engagement the CMA works tirelessly to ensure paving solutions meet the demands of both aesthetics and performance," he says.

Henry advises users and installers that even with the highest quality paver and best intentions paving projects mostly fail due to poor planning or sloppy execution. "People underestimate how technical paving can be with so many small but crucial factors thrown into the mix such as preparation of the layering on which the paving will be installed, building lines, fall or slope, compaction, edge restraints and jointing that need to be considered and planned for. If any one of these is ignored the results can be disappointing or even disastrous.

"One of the common failures is inadequate layer work resulting in ponding where water accumulates on the paving surfaces, influencing the bedding layer negatively over the longer term, causing the pavement to fail "That's why good layer works, minimum slope requirements and proper drainage design are essential," he explains. "It all requires the right knowledge to do the job professionally."

He also highlights the challenges posed by certain soil types: "For example, if you're working with clay, you'll have to stabilise it before you pave on it. Otherwise the pavement will shift and you will get voids forming between the joints as it pulls apart. This in turn will affect the bedding layer, making the failure of the pavement imminent. Understanding the moisture content of the soil and the local water table is equally important as water is one of paving's biggest enemies."

The installation itself starts with proper preparation on the layers on which the



paving block will be installed, correct edging and restraints which is something many local contractors underestimate. "A pavement cannot function without restraints. That's what keeps it intact. Once the restraints or kerbs are in, the focus shifts to bedding sand and the pavers themselves. SANS 1200MJ published by the South African Bureau of Standards (SABS) gives specific regulations regarding the installation of pavers and compaction, for example, describes how many passes should be made with a compactor, when to sweep in jointing sand and even how many times to compact again afterward.

"In paving it's the details that matter right down to how gaps are filled either by cutting smaller pieces of pavers or by grouting with concrete. It's all covered in the CMA paving manual, which will soon be re-released in an updated form and will be an indispensable tool for contractors, foremen, site supervisors, engineers and property owners alike," says Henry.

Henry says the new manual won't just be a technical document it will also include checklists for both clients and contrac-

tors, troubleshooting charts and a guide to the most common causes of paving failures. A maintenance guide will also be included in the manual, making it a true one-stop reference for anyone involved in paving. "We're very excited about the publication and believe it will add enormous value."

To take things further, the CMA plans to digitise the manual and make it accessible as an online course in partnership with platforms delivering training content. "Our dream is to create a powerful, short course that's easy to access and practical to use. We'd like to see paving contractors sending their foremen and staff on these courses as a matter of best practice."

Henry concludes, "If you follow the right standards, work with qualified professionals and maintain your paving you will enjoy it for years. Paving should be a long-term asset, not a short-term regret."



SANS standard for pavers

In South Africa, the manufacture of concrete pavers is governed by strict standards to ensure consistent quality, durability and safety in the built environment and applies to SANS 1058: Concrete Paving Blocks.

SANS 1058 outlines performance-based requirements for the physical properties of concrete pavers, including tensile splitting strength, dimensional tolerances, surface texture, water absorption, abrasion resistance and resistance to weathering. Importantly, it classifies pavers into different strength classes depending on their intended application from light pedestrian use to heavy-duty industrial traffic areas. Compliance with this standard is vital for manufacturers wishing to supply to formal construction and infrastructure projects where engineers and authorities require evidence of conformance.

In recent years, the need for independently verified quality has grown, and this is where the Concrete Manufacturers Association Certification Services (CMA CS) plays a crucial role. CMA CS is an independent, SANAS accredited, certification body that provides third-party product certification for precast concrete products, including concrete paving blocks. Its purpose is to help manufacturers demonstrate compliance with relevant SANS specifications and build trust in their products.

The CMA Certification mark is only awarded to manufacturers who consistently meet the requirements of SANS 1058 through ongoing testing, factory audits and strict quality control procedures. Certified products bear the CMA Certification mark, signalling to contractors, engineers, and specifiers that the product is manufactured to a recognised and trusted standard.

For manufacturers being certified by CMA CS offers a competitive edge in the market. It opens doors to municipal and large-scale commercial projects that require certified pavers and provides peace of mind to customers that the pavers will perform as specified over their design life



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Wireless Concrete Sensor for Temperature and Strength Monitoring

“SmartRock has been a good investment in that it's extremely user-friendly, convenient, and saves us time on our project.”

Allan Hayes
Construction Quality Manager
Regional Rail Partners



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Overview

SmartRock is the world's leading wireless sensor for monitoring the curing and hardening of concrete. The sensor is fully-embedded and secured on the rebar, making it completely maintenance and hassle-free. Temperature data is collected at two locations in the sensors' cable and body. The strength of your in-place concrete is then calculated automatically based on the maturity method (ASTM C1074). These results are accessible in real-time and remotely through the SmartRock mobile app and on the Giatec 360™ cloud dashboard to help you make informed decisions. SmartRock's AI assistant, Roxi™, eliminates human-error by sending smart notifications and alerts to give you the upmost confidence in your mix calibration data and accuracy of strength test results.

SmartRock



Conventional Methods



Features

Software

- Accurate real-time data display (i.e. temperature, strength, max-min values, and graphs)
- Maturity calibration database
- Free Android/iOS app with easy-to-use guide
- Project management tools including live data sharing
- Giatec 360 web-based cloud dashboard
- Proactive AI notifications of concrete pouring time and mix calibration errors
- Full PDF & CSV reporting and data exporting
- Open API integration with project management applications (i.e. Procore)

Hardware

- Wire-free and wireless technology
- Fast, simple, and hassle-free activation and installation
- Extended temperature cable and probe for mass concrete
- Two points of temperature measurements located in sensor cable and body
- Rugged and waterproof design
- Long battery life
- 24/7 remote monitoring capabilities with the SmartHub™ device

Applications

- Measure temperature differentials
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- Control quality in the field
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- Open roads to traffic faster
- Optimize curing conditions
- Improve saw cutting time



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Measurement Resolution
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Measurement Frequency
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(for 2 months of data)

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Brick paving that has been damaged can be easily and affordably repaired, saving both time and money.

The aggregate from which concrete brick paving is manufactured renders the paver with a non-slip surface. It can be used in places that are frequently wet and see a lot of foot and vehicle traffic.

Concrete brick paving is also load-tolerant and sustainable since it can endure continuous high loads.

Brick paving comes in a wide range of colours, forms, patterns, textures, and design options, making it highly customizable.

The installation of concrete paver allows for labour-based construction. This advances job creation, skills transfer and community upliftment.

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READYMIX CONCRETE SUPPLIERS NEED INDEMNITY INSURANCE

Concrete suppliers face a unique and costly risk if a batch fails after curing when the financial consequences can be devastating.

Whether due to incorrect mix specifications, environmental factors or unforeseen site conditions the cost of removing and replacing faulty concrete can run into millions of Rands and potentially threaten the survival of a business. This is in part due to the severity of concrete failure which can result in structural damage and project delays as well as other legal claims.

Suppliers may be held liable for damages even when failures stem from factors beyond their control. In these instances repair costs may include demolition, disposal, re-pouring and potential legal fees.

Better to insure

Specialist indemnity insurance tailored for readymix concrete suppliers is available in South Africa through several construction-focused insurers. These policies typically cover:

- Claims for defective concrete resulting in structural failure.
- Third-party liability for injury or property damage.
- Equipment breakdowns and fleet insurance for delivery vehicles.
- Consequential loss and legal defence costs.

The Internet shows that providers such as GRIB and others in the construction insurance space offer customisable packages including Contractors All Risk (CAR), Professional Indemnity, and Product Liability insurance. These are designed to protect suppliers from the financial fallout of concrete-related failures.

Even with insurance in place claims are subject to the law and key legal instruments in South Africa that support the need for such insurance. These include among others:

SANS 2001-CC1:2007 – Concrete Works (Structural) This national standard outlines the technical requirements for structural concrete. Non-compliance can lead to liability for defects.



Housing Consumers Protection Measures Act (Act 95 of 1998) This act mandates warranty protection for homeowners against structural defects and places obligations on builders to rectify issues. Suppliers may be indirectly affected if their product contributes to such defects.

In order to mitigate risk and protect their businesses, readymix suppliers should always adopt strict quality control protocols and document compliance with all relevant requirements and standards. It is also wise to secure comprehensive insurance that includes indemnity for product failure and liability and to educate those receiving

the concrete on proper usage and curing practices to reduce misuse-related failures. Suppliers should also collaborate with legal advisors to ensure contracts include clear indemnity clauses.

As a readymix supplier it is increasingly important to conduct regular risk assessments to avoid problems further down the line. It is also wise to know that indemnity insurance is no longer a luxury it's a strategic safeguard. Suppliers who proactively manage their exposure through insurance and compliance will not only protect their bottom line but also build trust with clients and contractors.



SLOPE STABILISATION BOOSTS CONSTRUCTION POTENTIAL



Slope stabilisation is an essential element of infrastructure and construction projects. Whether it's along major transport routes, housing developments on hilly terrain or infrastructure in mining and industrial sectors, stabilising slopes allows engineers to unlock previously unusable land while ensuring long-term stability and safety.

Unstable slopes pose a significant risk to infrastructure and the environment. Heavy rainfall, poor soil cohesion, excavation activities or vibration from machinery can cause landslides or surface erosion. This can delay projects and in severe cases lead to structural failure and loss of life. Stabilisation measures not only mitigate these risks but also enable developers to safely use valuable land that might otherwise be discarded or remain underutilised.

From a purely cost perspective the stabilisation of a slope often outweighs the cost of redesigning a development or relocating infrastructure. With rising land costs in urban areas building safely on sloped ground becomes a strategic necessity. A wide range of techniques is available depending on soil type, slope angle, water content and the specific engineering requirements. Among the most widely used methods in South Africa are:

- **Gabion Baskets:** Wire mesh baskets filled with rock, gabions are particularly effective for preventing erosion and stabilising riverbanks, road embankments and cuttings. They allow water drainage and blend well with the environment over time. Leading suppliers such as Maccaferri and Gabion Baskets (Pty) Ltd provide both the

materials and design support for these systems.

- **Precast Concrete Panels and Retaining Blocks:** Systems such as Terraforce's interlocking retaining wall blocks are well-suited to landscaping, road support, and terrace creation. The advantage of these systems lies in their flexibility, ease of installation and aesthetic appeal. Terraforce products are used extensively by landscapers and civil engineers across the country often in conjunction with geosynthetics for added stability.
- **Soil Nailing and Rock Bolting:** These methods involve inserting steel rods into slopes to create a reinforcing grid. Used in both soft and hard rock applications, they are often combined with mesh and sprayed concrete. Companies such as SRK Consulting and GeoGroup offer geotechnical investigations and installation services for bolting and soil nailing projects.
- **Gunnite (Shotcrete):** Applying concrete via high-pressure hoses creates a strong, seamless layer that stabilises loose slopes or rock faces. Often used in mining and road construction, gunnite is typically applied in combination with mesh or bolts. Specialist contrac-



tors such as Mineshot and Guncrete Africa deliver turnkey solutions for sprayed concrete applications.

- **Geosynthetics and Erosion Control Fabrics:** Geotextiles, geogrids and drainage composites are commonly used in combination with other stabilisation methods to reinforce soil and manage water flow. Kaytech and Geofabrics Australasia are prominent suppliers in South Africa, offering a wide range of technical fabrics and on-site guidance.

A key factor in successful slope stabilisation lies in proper geotechnical investigation and engineering design. Integrated solutions combining structural and natural elements such as retaining walls with vegetative cover are increasingly preferred for sustainability and visual appeal.

Specialist contractors like Stefanutti Stocks Geotechnical, Geopile Africa and GCS (Geotechnical Consulting Services) bring together technology and local knowledge to implement complex stabilisation systems



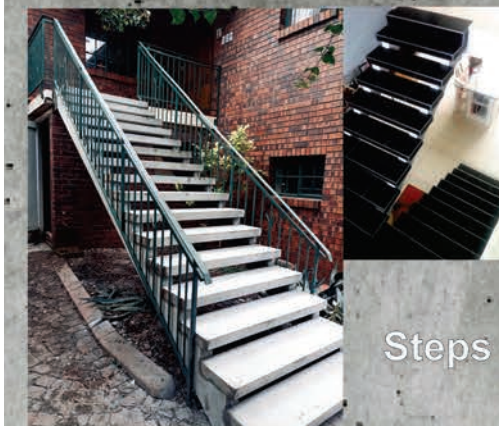
under varied geological conditions.

From residential developments in KwaZulu-Natal's hilly coastal zones to transport corridors through the mountainous Western Cape, slope stabilisation allows for expanded land use, reduced environmental impact and safer construction. With proper design the economic returns of stabilising a marginal slope far outweigh the investment and turns risky terrain into prime development land.

Slope stabilisation will only grow in importance as urbanisation intensifies. Engineers and developers alike are encouraged to work with experienced geotechnical professionals and rely on proven technologies and materials to ensure long-term success.

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SPRAYED CONCRETE: SIMPLE & EFFECTIVE



Shotcreting or sprayed concrete application is a key construction method in South Africa for stabilising slopes and repairing deteriorated structures.

It offers fast concrete placement without the need for traditional formwork especially on complex or vertical surfaces. The process, while efficient, requires specialised equipment and skilled operators to ensure quality and durability. Shotcrete is a method of applying concrete pneumatically at high velocity onto a surface. It can be applied using either the dry-mix or wet-mix method:

- **Dry mix:** Dry cement and aggregates are mixed and conveyed through a hose to a nozzle where water is introduced just before application.
- **Wet mix:** Premixed concrete (with water) is pumped through a hose and sprayed using compressed air at the nozzle.

The force of application ensures dense compaction allowing the concrete to adhere to vertical walls, overhead surfaces and uneven substrates without slumping or falling off. This makes shotcrete especially useful in retaining wall stabilisation and a wide variety of other applications.

The mix design for shotcrete differs from conventional concrete. For wet-mix shotcrete, a slump of **80–120mm** is typical being sufficiently fluid for pumping but stiff enough to adhere to surfaces. Dry-mix shotcrete uses virtually zero slump material since water is only added at the nozzle.

Key performance requirements include:

- **High early strength gain** for rapid stabilisation (typically 20 MPa in 24 hours).
- **Final strengths** between 25–50 MPa depending on application.
- **Low water-cement ratios** ($w/c \leq 0.45$) for durability and reduced rebound.
- Use of **accelerators** to improve setting time, especially for overhead or vertical surfaces.

Fibres usually steel or synthetic are often added to enhance ductility and reduce cracking.

Essential Equipment

Successful shotcreting requires a coordinated set of equipment:

- **Concrete Pumps:** Piston-driven pumps are preferred for wet-mix applications. They must deliver steady pressure and flow (typically 20–30 bar), capable of handling coarse aggregates without clogging.
- **Air Compressors:** For dry-mix and to propel wet-mix at the nozzle. Air pressure of 5–7 bar with a flow rate of 8–12 m³/min is required for effective spray.
- **Shotcrete Nozzles:** Specialised nozzles fitted with water injection (dry-mix) or air assistance (wet-mix) ensure proper atomisation and spray control.
- **Mixers:** Pan or drum mixers for dry-mix; transit mixers for wet-mix.
- **Robotic Arms or Nozzleman platforms:**

In tunnels or complex environments, robotic shotcrete arms improve safety and consistency.

Access and Support Equipment

To reach high or complex surfaces contractors will need cherry pickers or scissor lifts which can be used to elevate nozzle operators safely. Telehandlers often transport bulk dry material or premixed concrete to confined access points. Scaffold systems may also be erected where surface geometry allows. Safety platforms must comply with SANS 10085 and occupational safety standards especially for work at heights.

Once applied the shotcrete requires immediate curing to prevent moisture loss. This is usually done using spray-on curing compounds, Polyethylene sheeting or continuous water misting in closed environments. Minimum curing duration is 7 days though accelerated admixtures and curing accelerators are common to speed up processes in time-sensitive builds.

Typical Applications and Local Specialists

Shotcreting is commonly used in slope stabilisation: Used in cuttings along national roads or housing developments.

- **Tunnel linings:** Including Gautrain tunnels and infrastructure upgrades.
- **Dam and pool linings:** Offering seamless, water-tight finishes.

South African specialists like Baseline Civils, Ground Breakers Construction and Gunita Construction offer turnkey shotcrete services. International brands like Normet and Putzmeister supply pumps and robotic arms locally through partners.



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RETAINING WALL FAILURES ARE AVOIDABLE



Beautifully constructed retaining walls using Terraforce retaining blocks

As property prices soar and demand for space intensifies, developers are increasingly turning to marginal land such as sloped terrain for new builds and relying on retaining walls to stabilise these challenging sites. However, when these structures are poorly designed or improperly constructed they pose serious risks leading to structural failures that are not only costly but potentially catastrophic.

Although no hard and fast statistics are available, anecdotal evidence suggests that far too many retaining walls in South Africa are failing because people are cutting corners. From homeowners to developers the temptation to save money by using the cheapest installer or opting for substandard blocks is putting projects at risk.

In many instances retaining walls are seen as just being garden features instead of engineered structures that need to perform under pressure and if not built correctly, they will fail. In many instances the use of hollow core retaining blocks are the perfect solution, providing the strength and holding power required, while providing ample room for vegetation and beautification where required. Information from Terraforce, the country's top producers of hollow core retaining blocks, suggests the how to avoid costly mistakes:

1. Don't hire just any installer

One of the biggest mistakes made is hiring installers with little or no retaining wall experience. While many claim they can do the job few are trained in the specific design and structural requirements of retaining wall construction.

Terraforce recommends using their vetted list of professional installers, available at terraforce.com. "We've seen too many failures caused by poor workmanship and inexperience," they caution.

2. Don't skip the engineer

The South African National Standards (SANS 10400) do allow walls up to 1 metre high to be built without an engineer's involvement. But Terraforce advises otherwise especially if the wall carries any load or exceeds a 70° inclination.

Even a short wall can collapse if not designed properly. That's why we say: when in doubt get an engineer. Load-carrying and steep walls always need professional design input.

3. Don't buy non-compliant blocks

The integrity of a retaining wall is only as strong as the blocks that make it. Unfortunately, many fly-by-night operators are selling blocks that don't meet the required specifications.

Terraforce blocks are tested both locally and internationally and are manufactured according to stringent standards, including:

- SANS 207 and SANS 10400
- BS 8006-1 and ASTM D6916-18
- CMA (Concrete Manufacturers Association) guidelines

Their licensed producers undergo ongoing compressive strength testing and maintain tight tolerances for weight and dimension. You can find accredited manufacturers here: Lastly, it is important to know that while retaining walls might seem like simple landscaping features they are complex systems that require proper planning, design and execution. Saving money upfront by skimping on professional advice or using cheap products may cost far more in the long run not just in rand terms, but in safety and liability too.

COMMON FAILURE POINTS & HOW TO AVOID THEM

Wall collapses aren't random they're usually the result of one or more of the following:

- **Incorrect stability calculations:** If the wall isn't properly engineered, it can overturn or shift due to inadequate bearing capacity.
- **Poor drainage:** Without drainage behind and above the wall, hydrostatic pressure builds up, leading to bulging, sliding or collapse.
- **Overly steep design:** Steeper walls require more structural mass and engineered reinforcement – yet many walls are built too upright without accounting for this.
- **Excavations at the toe:** Weakening the base of the wall – especially during nearby earthworks – can cause immediate instability.
- **Substandard workmanship:** Uneven placement, insufficient compaction and lack of attention to detail all contribute to failures.
- **Saturated backfill:** Waterlogged soil behind the wall is heavy and exerts pressure that poorly designed structures simply can't handle.



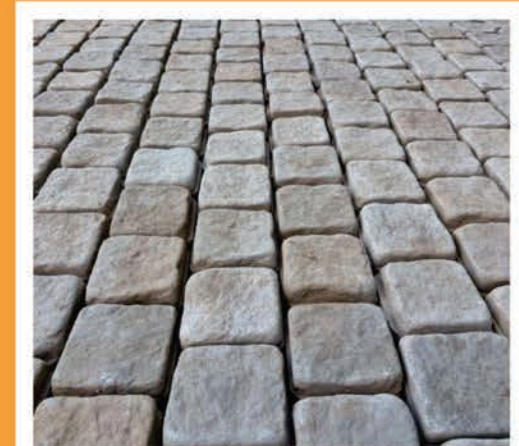
Incorrect stability calculations and limited bearing capacity, resulting in overturning



Saturated backfill and lacking sub-soil drainage

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AFRISAM SAYS WHAT GOES INTO IT MATTERS



Quality cement is a critical component to the built environment.

In a country building towards a better future, what we put into our infrastructure today determines its value tomorrow. From homes and schools to highways and water systems, South Africa's development depends on strong lasting foundations and that means choosing quality construction materials from the start. AfriSam's sales and marketing executive, Richard Tones, says that quality cement is one of the most unappreciated yet critical components in our built environment.

"It is central to the way we create our modern world and facilitate development, providing a cost effective path to a better future," Tones says. This cement, often hidden from sight beneath roads or inside walls, is the glue that binds the country's progress together.

He adds that what sets AfriSam apart is not

just the volume of cement it produces but the quality behind every bag. Each product is designed for longevity because early repairs or rebuilds are simply not an option for developing countries. Good cement choices made decades ago are still saving money today by reducing the need for maintenance and freeing up resources for other priorities.

AfriSam's All Purpose Cement is engineered to remove confusion in the market and deliver consistent high-performance results across structural and residential applications. For the manufacturing sector, AfriSam's Rapid Hard Cement gives precast and paving producers the speed they need to stay productive, offering high early strength and faster turnaround times. On South Africa's roads, the company's RoadStab Cement, a specially formulated cement for stabilising the layers beneath the surface, helping prevent the scourge of potholes.

Large infrastructure demands even more specialised solutions. On projects like the Lesotho Highlands Water scheme and the construction of wind turbine bases, AfriSam's low-heat cement helped mitigate cracking by carefully managing the heat of hydration during curing. "It is not just about performance – it is about precision," Tones says.

That same attention to detail extends to AfriSam's environmental approach. By incorporating extenders such as fly ash and slag - byproducts from coal and steel production - the company significantly reduces the carbon footprint of its cements. In fact, its average carbon content per kilogram of



High quality cement ensures durable cost effective structures.

cement is below the global average. And with low-water-demand options now available, customers can help preserve one of South Africa's scarcest resources.

But perhaps what matters most is how AfriSam ensures its quality promise reaches customers. Through its bi-annual Voice of Customer survey the company gains real-time insights across the full customer journey, from product selection to final payment. "Just like checking out of a hotel, the final experience can shape the entire perception. Our goal is to deliver not only a great product, but a great relationship through remarkable service."

"In the end, it is simple. If you want infrastructure that lasts, start with materials that are built to. What goes into it matters because the future depends on it," he says.

What sets AfriSam apart is the quality behind every bag.



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ENABLING SUSTAINABLE CONCRETE WITHOUT CONSTRUCTION DELAYS

A common challenge as the construction industry intensifies its focus on sustainability has been balancing lower carbon emissions with the need for fast-paced project delivery and Chryso is addressing this issue with a range of products that allows for the use of low-carbon concrete without sacrificing early strength performance.

"Reducing the carbon footprint of buildings is no longer optional it is becoming a priority for developers and specifiers. But traditional methods for lowering embodied carbon such as replacing ordinary Portland cement with supplementary cementitious materials (SCMs) typically slow down early strength development," says Patrick Flannigan, Chryso GM technical and product support management Africa

This trade-off can cause costly delays on site as slower strength gain means formwork and scaffolding must remain in place longer. It also limits turnaround time in precast manufacturing where production speed is key to profitability.

Chryso's EnviroMix range effectively resolves this challenge. Designed to support concrete mixes with high SCM content such as fly ash or ground granulated blast furnace slag it ensures that early strength targets are still reliably achieved. This allows for quicker demoulding, formwork removal and overall project momentum without compromising sustainability goals.

"The economic impact of delayed early strength is significant.; Whether it's slowing down a construction schedule or reducing precast output it affects profitability. "Our products give contractors and manufacturers the ability to keep to their deadlines while using greener materials."

"With EnviroMix, sustainable concrete no longer means a compromise on productivity or quality. It is a vital step toward greener construction made practical, reliable and economically viable," Flannigan concludes.

Through the use of tailored polymers and catalysts to enhance performance, EnviroMix reduces CO₂ emissions by up to 50% per cubic metre of concrete.



Patrick Flannigan, Chryso GM Technical & Product Support Management, Africa.



With a strong focus on innovation, Chryso's R&D teams develop customised EnviroMix solutions using precise material analysis to deliver sustainable high performance concrete formulations.



The EnviroMix range simplifies sustainable construction with SCMs, making the process more efficient and less disruptive for contractors and precast manufacturers.



CONCRETE CONNECT

BUILDING THE FUTURE – LAYER BY LAYER



Dear Reader

We have now published our 8th edition of **Concrete Connect** since starting at the beginning of 2024 and we are excited at the support and contributions we have received from the market so far. We are excited about where we are headed with our publication and believe we have a major role to play in the industry.

We invite all roleplayers, stakeholders and supporters to allow us the opportunity to meet face-to-face and introduce you to our brand-new **Concrete Connect**.

Over the past few years, we have witnessed division in the cement, concrete and precast industries and seen a steep decline in real order and growth of the construction industry. As the market returns to a new phase of growth, we think it is critical to reignite interest in the sector, to build communication bridges and stimulate interest among suppliers and users of concrete products and the tools and services that go with it.

Our aim for the concrete industry is to facilitate a sustainable sector that is resilient and able to withstand the onslaught from competing construction projects such as steel, plastic, clay and other synthetic materials competing against concrete and precast concrete.

Concrete Connect is all about cooperation, collaboration and spreading the word of concrete's many advantages among clients and developers. Allowing them to form opinions based upon facts and expertise of our customers and contributors

while communicating and explaining why concrete is the foundation of civilizations through the ages, while modern advances continue to elevate it to being the most exciting construction material of tomorrow.

We also want to introduce you to the team of publishing professionals leading the **Concrete Connect** team who have worked in the industry and understand what is needed to build and assist with effective communications and marketing.

Publisher: Andrew Meyer, past founder and publisher of Precast magazine. Andrew also served as MD of a design & marketing company with amongst its clients SASOL, The Jewellery Council of South Africa, Edgars, CMA and numerous others for many years.

Editorial: Raymond Campling is a past editor of Precast magazine and currently owns a PR and advertising agency, Media Savvy. His experience as a journalist, editor and publisher spans more than 30 years.

We do need your support to ensure that the **Concrete Connect** is sustainable and we will be seeking six sponsors who will be asked to contribute an amount towards the running of the publication.

Sponsors will have the opportunity to get great value for their sponsorship of R13,980.00 per issue (6 issues per year) which ensures that publishing costs are covered. Sponsorship will be based on a one-year contract.

In return each sponsor gets a logo on the content page, logo on letterhead, a page

in every issue, editorial coverage and first refusal rights on sponsorship of any events. This funding will cover essential operational costs and as such ensure we are sustainable.

Advertising will also be sold to generate development costs.

Our long-term view is to develop other exciting elements to add to the **Concrete Connect** portfolio to strengthen the cement, concrete and precast markets. As a group we will be offering an array of marketing, PR, video and photography services at special rates to our clients.

South Africa now has a publication serving all aspects of the cement, concrete and precast industries under one cover.

We look forward to hearing from you and meeting in person to share information on **Concrete Connect**.

The **Concrete Connect** team.

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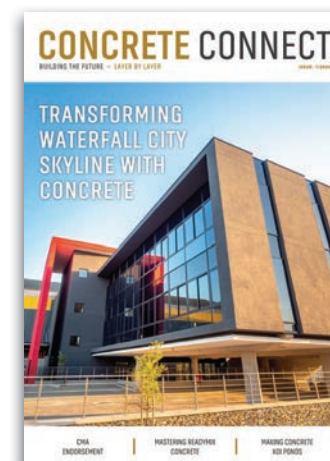
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HARD TO BEAT NEW BAKKIE PACKAGE FROM GWM

GWM South Africa has officially pulled the covers off the latest addition to its range of bakkies in the new GWM P300 LS range.

In a move which replaces the previous P-Series Black Edition LS, GWM has added models promising to deliver even more of what local drivers value in terms of toughness, capability and a standout design for city, worksite or the adventure track.

The P300 LS duo arrives at a time when GWM's share of the local auto market is on a steady rise and is driven by a focus on models that combine robust mechanical engineering with modern comfort and tech. "The P300 LS was developed for customers who refuse to compromise" says Floyd Ramabulana, head of marketing at GWM South Africa. "It's for those who want more power, more confidence and more style all wrapped up in a package that's very competitively priced."

Beneath its assertive exterior, the new P300 LS carries the recently introduced and well-received 2.4-litre Turbo Diesel engine that's become a cornerstone of GWM's engineering. Producing 135 kW and a muscular 480 Nm of torque it delivers the kind

of grunt that makes light work of hauling heavy loads or tackling steep climbs. Paired with a sophisticated 9-speed automatic transmission it ensures a seamless flow of power on tar or over challenging terrain.

The combination of torque and smooth gear ratios means the LS pulls confidently in every gear maintaining fuel efficiency while giving the punch needed when the job demands it. A towing capacity of up to 3.5 tonnes underscores its serious work credentials easily handling everything from construction trailers to boats or off-road caravans.

Built on a rugged platform featuring a split chassis guard, double wishbone front suspension and leaf spring rigid axle suspension at the rear the new P300 LS has been engineered to handle uneven surfaces and harsh loads with ease. Plus the 4WD version comes with an electronic rear differential lock adding extra traction for when the terrain gets really harsh.

Inside the cab, thoughtful features elevate this bakkie from utilitarian to surprisingly refined. A 12.3-inch touchscreen infotainment system complete with Apple CarPlay and

Android Auto sits alongside a crisp 7-inch digital cluster delivering all your key driving and entertainment data in sharp clarity.

The new P300 LS proves that you don't have to sacrifice comfort or tech to get serious strength," says Ramabulana. "Whether it's the advanced multimedia interface or the thoughtful creature comforts that turn a long drive into a pleasure, it's all been designed with the driver and passengers in mind."

Confidence behind the wheel is reinforced by a suite of advanced safety technologies. The new P300 LS range features electronic stability control, traction control, hill start and downhill assist, trailer sway control and a reverse camera with dynamic parking making tricky manoeuvres and heavy towing simpler and safer.

Backing this up is a robust braking system with ABS and EBD as well as multiple airbags helping protect occupants in the event of an impact. Together, these features ensure that the new LS feels stable and secure, regardless of load or road.



SOUTH AFRICA'S TRUCK MARKET HOLDS SOLID IN JUNE 2025

South Africa's Truck Market Holds Solid in June 2025

South Africa's truck sector held steady in June, riding on favourable economic conditions and continued fleet demand. According to Naamsa, total new vehicle sales hit 47,294 units an 18.7% year on year increase compared to June 2024.

Sales of medium commercial vehicles (MCVs, 3 501–8 500 kg) reached 652 units, up 24.7% versus June 2024 reflecting stronger fleet acquisition and improved financing post the South African Reserve Bank's 25 bp interest rate cut in May 2025.

Heavy Trucks & Buses Slow a Touch

In contrast, the heavy commercial vehicle segment (heavy trucks and buses) recorded 1 943 units, down 3.1% year on year from 2 005 units in June 2024. Analysts suggest this reflects a minor consolidation following a robust performance earlier in the year.

Top Selling Heavy Duty Brands (June 2025)

Based on Naamsa data these are the top five heavy duty truck manufacturers in June:

Rank	Brand	Units Sold
1	FAW Trucks	450
2	Toyota (Hino)	315
3	Isuzu Motors SA	296
4	Daimler Truck SA	283
5	Scania	214

FAW Trucks led overall, although sales edged down slightly from May. Toyota's Hino brand surged into second, showcasing mounting interest in high spec yet affordable heavy duty options.

Industry Sentiment & Outlook

Naamsa CEO Mikel Mabasa commented:

"The first half of 2025 has shown just how resilient and responsive our domestic market truly is." He pointed to robust consumer demand and easing credit conditions—though he cautioned that global trade risk, inflation pressures and political uncertainty remain watch points in the second half.

What Lies Ahead

With the trucking market expected to remain broadly steady, stakeholders are watching for swings in fuel prices, export demand and infrastructure funding. The second half of 2025 may hinge on how effectively the sector navigates these dynamics.



SIZING PLANT EQUIPMENT FOR CONCRETE WORKS



Handling the raw ingredients of concrete such as aggregates, admixtures and cement requires careful selection of plant equipment where bucket sizing and horsepower play an equally important role as hydraulic capability and mobility around the site.

Getting either one of these wrong can lead to an uncomfortable and often less profitable outcome for concrete manufacturers and construction contractors alike. Whether it be a 30-ton excavator, loader or a small TLB (tractor-loader-backhoes) or skidsteer, the right decisions need to be made based on the weight and density of the product being handled otherwise known as specific gravity of the material.

Based on specific material gravity and an understanding of how those materials behave during transfer, mixing and batching are the most important consideration followed by reach requirements and mobility on the specific site. Get it wrong and you're either under-delivering on productivity or overworking your machine which are potentially expensive mistakes.

The backbone of accurate sizing starts with a fundamental concept: **specific gravity**. This simple number tells you how dense a material is relative to water and when applied to earthmoving it quickly determines

the weight your machine is lifting with each bucket load. For instance, sand typically has a specific gravity of about 2.65 while fly ash is lighter at around 2.3 and cement heavier at 3.15. Loaders and excavators don't measure buckets in ton but rather move materials in volume so unless you know how dense the material is you won't know the real payload weight. Multiply the specific gravity by 1,000 kg/m³ and you'll get the bulk density. That's the figure that matters.

Let's put that into a working example. A typical 2 m³ loader bucket filled with sand (SG 2.65) weighs about 5.3 tons. But fill the same bucket with dry Portland cement (SG 3.15) and you're looking at over 6.3 tons or a full ton heavier. This could easily exceed the lift capacity of smaller machines. For an experienced fleet operator it is therefore no wonder that concrete batch plants and precast yards often run different machines for different tasks for example one for aggregates, another for admixtures and a third for stacking and palletising. This can help larger plants to get the most out of their equipment by controlling, accuracy and avoiding unnecessary wear.

In a **precast yard** where consistency and cycle times are king, mid-sized wheel loaders such as the **Caterpillar 950**, **Komatsu WA380** or **Bell L2606E** are popular choices.

With bucket sizes ranging from 2.5 to 4.5m³ they're ideal for loading hoppers, feeding batch plants or transferring stockpiles. Admixtures like slag and silica fume which are finer and more flowable often require smaller more precise buckets to avoid overloading and spillage. A machine with a 1.5 m³ bucket like a JCB 437 or LiuGong 856H provides enough capacity without overshooting dosing accuracy.

At a **building materials supplier yard** the requirements may be very different with machines required to be nimble and versatile as well as capable of navigating confined stock areas and loading customer trucks. Compact loaders or TLBs are a staple here in this type of environment especially those with quick couplers that switch between forks, buckets and hoppers. Front-end buckets are typically around 0.8 to 1.2 m³ in size which is ample to handle aggregate without exceeding axle limits on paved yards. The Kubota range, JCB 3CX, Terex TLB890 and Bell 315SK all offer respectable capacities with good road manners and serviceability.

On **construction sites** machine selection depends on the scope of concrete works. For major civils or roadworks where large volumes of concrete are poured daily a dedicated 20–35-ton class excavator with a 1.8 to 3.5 m³ bucket is ideal for aggregate management, mixing pad loading and handling recycled materials. Contractors using excavators like the **Komatsu PC300**, **Caterpillar 345C** or **LiuGong 925E** typically pair them with heavy-duty rock buckets when handling crushed stone or slag. These attachments are often reinforced with side-cutting edges and wear plates to extend service life in abrasive conditions.

This brings us to a critical component that's often overlooked: **ground engaging tools** or GET. The teeth, cutting edges and wear plates on a bucket are a machine's point of contact with hard reality and some of these materials are brutally abrasive. Silica, for example, while fine and seemingly benign becomes an aggressive wearing agent over time especially when dry and airborne. Slag is even more punishing with coarse angular edges that chew through standard-grade steel. Machines operating in these environments benefit from hardened GET whether



it's a Cat HD rock bucket with bolt-on edges or Komatsu's K VX system using segmental cutting plates.

There's also a balance to be struck in productivity. Bigger buckets might seem better but overfilling adds stress to hydraulics, frames and tyres and shortens the lifespan of equipment. Instead, the use of **specific gravity as a sizing guide is a better option**: if your operator is scooping a 3 m³ bucket full of slag (SG 2.9), that's an 8.7-ton payload not something every loader can handle on repeat. In many cases it's safer and more productive to opt for a slightly smaller bucket, load a few more cycles and avoid mechanical stress and safety risks.

And what about fly ash and silica fume those light, dusty by-products that can be challenging to handle? Despite their lower density these materials often require special handling equipment like sealed buckets, low-dust hoppers or even vacuum loaders in sensitive environments. This isn't about brute strength it's about finesse and containment.

Across the board, manufacturers like **Caterpillar**, **Komatsu**, **JCB**, **LiuGong**, **Terex**

and **Bell** provide extensive documentation and application guidelines for their machines. Most include cycle time estimates, fuel burn rates and volumetric efficiency charts based on material density. The trick is to build your machine spec backwards from the material you're handling not the other way around. Start with the specific gravity do the maths on the bucket size and then find the machine that lifts that weight safely, efficiently and consistently.

Concrete Material Specific Gravity Reference Table

Material	Specific Gravity (SG)
Portland Cement	3.15
Ground Granulated Slag	2.85–2.95
Silica Fume	2.2–2.3
Fly Ash (Class F/C)	2.3–2.5
Fine Sand	2.65–2.77
Coarse Aggregate	2.65–2.84



Understanding Specific Gravity in Metric

Specific Gravity (SG) is a unitless number that tells you how dense a material is compared to pure water which has an SG of exactly 1.

Since the density of water is 1,000 kg/m³, the specific gravity of a material multiplied by 1,000 gives you its bulk density in kilograms per cubic metre (kg/m³).

Here's the basic formula:

$$\text{Material Density (kg/m}^3\text{)} = \text{SG} \times 1,000$$

So, when you see:

$$\begin{aligned} \text{Material Specific Gravity} &= \text{Cement} - 3.15 \\ \text{Meaning in kg/m}^3 & \\ 3.15 \times 1,000 &= 3,150 \text{ kg/m}^3 \end{aligned}$$

$$\begin{aligned} \text{Material Specific Gravity} &= \text{Sand} - 2.65 \\ \text{Meaning in kg/m}^3 & \\ 2.65 \times 1,000 &= 2,650 \text{ kg/m}^3 \end{aligned}$$

$$\begin{aligned} \text{Material Specific Gravity} &= \text{Fly Ash} - 2.4 \\ \text{Meaning in kg/m}^3 & \\ 2.4 \times 1,000 &= 2,400 \text{ kg/m}^3 \end{aligned}$$

This means a 1m³ bucket of dry Portland cement weighs about 3,150 kilograms, or 3.15 tons in metric.

How to Use It for Equipment Sizing

Let's say you're using a wheel loader with a 2.5 m³ bucket to move sand (SG = 2.65):

- Payload = 2.5 m³ × 2.65 × 1,000 = 6,625 kg or 6.6 tons

Now compare that to cement:

- Same 2.5 m³ × 3.15 × 1,000 = 7,875 kg or 7.9 tons

So you need to ensure the machine's tipping load or lifting capacity exceeds the heaviest bucket weight not just the volume. You can quickly see why heavier materials require smaller buckets or beefier machines.



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CABLE CARE CRITICAL TO MACHINE LONGEVITY



The management of moving cables and hoses in machine building is critical to the operation and longevity of the equipment with modern systems like energy chain cable carriers often replacing conventional systems like cable festoons, reels or free-hanging loops.

Introduced in South Africa by German polymer manufacturer, igus, the innovative polymer chains act as a protective guide for cables and hoses, ensuring that they move in a defined, controlled path without tangling, twisting or wearing prematurely.

Widely used in manufacturing, automation, packaging, mining, robotics and machine tool industries, igus energy chains are fast replacing traditional festoon and cable reel systems due to their low-maintenance characteristics and ability to handle multiple energy types (electrical, hydraulic, pneumatic, fibre optic and even auxiliary components such as hoses) all in one neat, flexible solution.

"Our e-chain cable carriers are increasingly being designed into new systems or retrofitting festoons and cable-reel systems in most industries. Our e-chains simply act as a moving conduit or a sort of spine that keeps the cable neat and always protected," says igus South Africa managing director, Ian Hewat.

According to him the following are the ten most compelling reasons why engineers

and system integrators in South Africa are increasingly turning to igus energy chains when designing and building machines:

1. Cable-friendly design

igus energy chains have smooth inner surfaces and controlled minimum bending radius based on cable specification. It also protects cables and hoses from micro-abrasions and stress cracks. This drastically reduces premature failures and extends cable life even in highly dynamic applications.

2. Modular, lightweight and strong

Made from high-performance polymers, igus chains are lighter than metal systems yet offer impressive strength and stability. Their modular construction means they can be easily extended, shortened or customised on site which makes them ideal for tight project timelines.

3. Multi-media integration

Igus energy chains can simultaneously carry electric cables, pneumatic lines, hydraulic hoses and even fibre optic cables in a coordinated and well protected housing. This helps streamline machine design and reduces the number of separate systems required.

4. Predictable service life with warranty

igus backs its products with a guaranteed service life based on millions of lab-tested

cycles. Many igus chainflex cables carry up to a four-year warranty or the prescribed minimum cycles lifespan, offering peace of mind to OEMs and machine users alike.

5. Low-friction, energy-efficient operation

igus chains glide with minimal resistance thanks to their self-lubricating plastic design which significantly reduces drag forces. This makes them more efficient than festoon or reel systems that suffer from mechanical resistance or cable overlap.

6. Maintenance-free operation

No greasing or lubrication is needed throughout the life of the chain. This reduces downtime and makes igus energy chains perfect for use in clean environments like food processing or high-dust areas like cement and mining operations.

7. Quick configuration and customisation

Designers can use the free igus online configurators to select, model and download their ideal energy chain setup. This speeds up the design process and ensures perfect compatibility with machine layout.

8. Intelligent condition monitoring

With igus's i.Sense smart plastics add-on sensors can be embedded to monitor wear, cable tension and chain motion in real-time. This enables predictive maintenance and reduces the risk of cable failure.

9. Space-saving and safe

Energy chains allow for neatly routed cables and hoses that don't hang or swing in order to improve machine aesthetics and workplace safety. They also fit into compact machine designs where festoons or loops would be impractical.

10. Broad industry uptake

igus e-chains are in use in over 50 industries from CNC machines and robotics to packaging lines, quarries and marine applications. Their proven versatility makes them a reliable choice across virtually any moving cable application. From travels as short as 100mm up to the current longest application of 950m.

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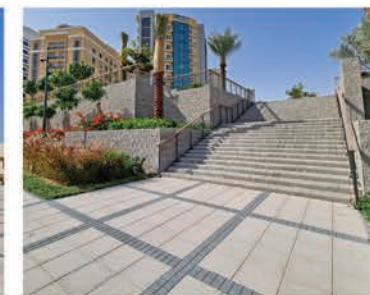
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