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SABITA

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Editor: Hazel Brown

CEO OVERVIEW

EVERY PART OF THE ECOSYSTEM COUNTS

It is a privilege to write my first CEO overview for **Asphalt News**. As I have stepped into this role, I have been reminded again that the bituminous products industry is not defined by a single material, company or profession. It is an ecosystem: one that depends on the knowledge, care and contribution of many people and organisations working across the value chain.

From the planning and procurement of bitumen, through importation, storage, testing, manufacture, transport and construction, to maintenance and the long-term management of our road network, each link matters. So do the people behind those links: the laboratory technician checking a result, the operator managing a plant, the driver delivering material safely, the engineer making a technical decision, the supervisor supporting a team on site, the administrator ensuring that systems and communication work, and the young professional finding their place in the industry.

Much of this work is not always visible to the road user. Yet it is the collective attention to quality, safety, competence and collaboration that enables durable roads and supports the communities and economies that rely on them.

This is where SABITA has an important role to play. Our task is not to stand apart from the industry, but to connect and support it: through sound technical guidance, practical training, credible standards, knowledge sharing and constructive engagement with our members and broader stakeholders. In a changing supply environment and with growing expectations around sustainability, resilience and delivery, this shared platform is more important than ever.

The articles in this edition reflect that breadth: industry safety and training, the development of young people, international learning, lower-carbon asphalt technologies and practical approaches to building more resilient infrastructure.

This edition also carries a special tribute to Prof Fred Hugo, whose passing marks the end of an extraordinary era in South African pavement engineering, education and mentorship. Yet his influence remains present in the people he developed, the institutions and programmes he helped shape, and the technical knowledge he worked so hard to connect with practice.

There is something fitting about this reflection in my first CEO address. As we honour the contribution of those who built much of the foundation on which our industry stands, we are also entering a new chapter at SABITA. The task is not to leave that legacy behind, but to carry its best qualities forward: technical excellence, practical relevance, high standards, generosity in developing others, and a



commitment to ensuring that knowledge continues to serve people and society. In Prof Hugo's words: "we must deliver".

In Women's Month, I would also like to acknowledge the many women whose contribution strengthens our sector every day. Women serve in technical, operational, professional, administrative and leadership roles throughout the industry. Their expertise, perseverance and distinctive perspectives add real value to the work we do. In celebrating women, we are also reminded to recognise the contributions of men, and to affirm that the industry is strongest when all people, regardless of gender, are valued, supported and able to contribute with confidence and purpose. Our work is also enabled by the support of others - in our homes, communities and workplaces - which allows each of us to focus on our contribution.

When I started at SABITA, Hazel reminded me that the office would now have "Women of Worth" at its core. With four dynamic women forming the backbone of the SABITA and SAT support teams, I have come to appreciate deeply the work that happens behind the scenes to keep the wheels turning. It has been an interesting three months getting to know each member of the team better, and I would like to sincerely thank everyone for the warm welcome and support during this time.

I am pleased to share that Lorraine Wagner will continue to support the SABITA office for the foreseeable future. Her experience, relationships across the industry and longstanding ability to connect people and stakeholders provide valuable continuity as SABITA moves into a new season. I am grateful that the industry will continue to benefit from her contribution.

Thank you to our members, contributors, partners and the wider SABITA community for the welcome and openness I have received. I look forward to listening, learning and working with you as we strengthen an industry in which every part of the ecosystem counts.

Melanie Kemp Hofmeyr Pr Eng

CAPSA 2027: SITE VISIT

CAPSA 2027 is also firmly in view. On 14 August, I joined members of the CAPSA Executive Committee and Technical Advisory Committee at Sun City for a working site visit. We reviewed the developing technical programme, venue options, accommodation, social programme and digital platforms for the conference. The scale of preparation behind an event of this nature is considerable, and it was encouraging to see the shared commitment to creating a technically relevant and memorable event for the World roads' community, in Africa.



CAPSA 2027 representatives at Sun City, 14 August 2026

We know that many SABITA members and industry partners are enthusiastic to support CAPSA 2027. SABITA members will be among the first to receive information on sponsorship opportunities as these are finalised. In the meantime, members interested in participating or discussing potential sponsorship may contact Lorraine Wagner at the SABITA office.

For other information on CAPSA 2027 you are welcome to visit the website: <https://capsa2027.co.za/>

ENGINEERING A LEGACY THAT CONTINUES

A TRIBUTE TO PROF FRED HUGO: 1935 - 2026

Shortly before his 90th birthday, reflecting on a career that had traversed engineering practice, academia, research, innovation and education, Prof Hugo said:

“It is a privilege to have seen so many of my plans come to fruition.”

For the asphalt and pavement engineering fraternity, Prof Hugo’s name is closely associated with pavement engineering, accelerated pavement testing, and the development of the Mobile Load Simulator. Yet his contribution reached considerably further. Throughout his career, engineering practice, research and education remained closely connected, with a consistent emphasis on developing people and putting engineering knowledge to work.

FROM PRACTICE TO PAVEMENT INNOVATION

Prof Hugo graduated as a civil engineer in 1958 and spent 19 years in industry before joining Stellenbosch University. His early career took him through construction, bridges, airport and pavement engineering, and in 1965 he became a founding partner of Bruinette Kruger Stoffberg and Hugo, responsible for geotechnical, pavement and airport engineering.

His early experience also left him with a lifelong belief in ***“quality first”***, good planning and the thorough, timeous completion of projects — principles that remained visible throughout his career.

That practical foundation remained important when he moved into academia. His doctoral research into asphalt cracking led to intensive work in accelerated pavement testing and ultimately to the development of commercially viable and transportable Mobile Load Simulators. A patent was registered in 1991, the first commercial small-scale MLS3 was launched in 1997, and MLS Test Systems was established in Stellenbosch in 1998. More than 30 units would eventually be used in South Africa, China, Europe and the USA. Prof Hugo continued contributing to their development well into his eighties.

In 2017, Prof Hugo described the technology as a ***“great testament to South African ingenuity and skills”***.

It is a fitting description of one part of his legacy: South African pavement engineering knowledge developed through research, translated into practical technology and ultimately taken to the world.

CAPSA, SABITA AND CONNECTING KNOWLEDGE WITH PRACTICE

Prof Hugo’s relationship with the asphalt fraternity extended well beyond his own research. He was involved in the planning and management of CAPSA from its early years and played a leading role in organising the 1974 conference in Durban. He contributed significantly in the early years to the



Fred Hugo in 1958 at Graduation

SOURCES referenced in the compilation of this tribute: *Civil Engineering* profile of Prof Fred Hugo (1993); F. Hugo, *Civil engineering is now highly relevant: We must deliver!*, SAICE Presidential Address, *Civil Engineering*, May 1993; *Engineering News*, “Export of equipment attests to exceptional local engineering”, 10 March 2017; Stellenbosch University honorary doctorate commendation and acceptance material (2014); Stellenbosch University Faculty of Engineering, *Prof Fred Hugo: a man for many challenges* (2024).

Society for Asphalt Technology (SAT) and was later recognised as a Life Honorary Member. In 1990, his contribution to the asphalt fraternity was recognised when he received the SAICE Asphalt Pavement Technology Award, sponsored by CAPSA, for his outstanding contribution to asphalt pavement technology. He continued contributing to CAPSA over the decades, including a peer-reviewed paper published at CAPSA 2015. That association reflected something characteristic of Prof Hugo: an ability to connect academia, research and engineering practice. Piet Myburgh, former CEO of SABITA, recalls Prof Hugo's important role in facilitating the establishment of the SABITA Chair of Learning at Stellenbosch University and guiding the appointment of its first incumbent, Martin van de Ven — another significant legacy in linking the spheres of academia and practice. These were not isolated achievements. They formed part of a much larger commitment to ensuring that technical knowledge was not simply generated, but shared, challenged, applied and carried into the future.

HURRICANE HUGO — AND THE EDUCATOR

Prof Hugo's extraordinary energy was well known. During his collaboration with the University of Texas at Austin, the time difference itself became part of the way the work moved forward. When he was in South Africa, work could continue in Texas while Stellenbosch slept; when he was in the United States, the process could work the other way around. It created an almost continuous rhythm of activity between the two institutions and reflected the work ethic that earned him the nickname **"Hurricane Hugo"**.

Closer to home, Emile Horak remembers the same urgency and passion across postgraduate education, CMP and TRAC: **"Fred was always in a hurry."** CMP participants had another affectionate name for him —

"The Ant. Always running and busy." The names were humorous but revealing. Prof Hugo's pace was accompanied by high standards, wide-ranging curiosity and a remarkable ability to turn ideas into programmes and to get people moving with him.

But there is another part of this story that should not be overlooked. A professional life lived with such intensity was not achieved in isolation. When accepting his honorary doctorate in 2014, Prof Hugo made special mention of his wife, Marie, saying that she had "held his arms high" throughout his 55-year career. It is a powerful acknowledgement that behind a remarkable professional contribution are often the people who make that contribution possible. Prof Hugo served for 20 years as full-time Director of Stellenbosch University's Institute for Transport Technology, remaining involved thereafter as vice-director. His teaching and mentorship extended from the technical detail of pavement rehabilitation



Fred Hugo in 2015 at CMP-Graduation

VOICES OF COLLEAGUES, STUDENTS AND THE INDUSTRY

"Fred Hugo was an exceptional engineer, excelling across a broad spectrum in the field of pavement engineering. He also played a key role in linking the spheres of academia and practice, notably by facilitating the establishment of a SABITA chair of learning at Stellenbosch University and guidance on the appointment of the first incumbent – Martin van de Ven, a significant legacy among many others." - Piet Myburgh Former CEO, SABITA

"Fred was always in a hurry. Whether it was with putting together the post graduate course programme at Stellenbosch with renowned overseas and local guest lecturers or the Construction Management Programme (CMP) it was done with real passion and speed. He initiated and coordinated the development of the TRAC initiative to support and draw in learners into the Science Engineering and Technology field reaching out to schools in developing communities and drove it with passion and urgency. I always remember the CMP group who referred to him as the Ant. Always running and busy. I always thought he was everybody's role model, like mine, of people who wanted to get somewhere in this life." - Emile Horak

"Fred Hugo was 'n besondere mens, hy het my gementor vanaf my Stellenbosch dae. Ons het vir laaste jare van sy aktiewe lewe aangrensende kantore gehad. Toe hy finaal oppak het hy van sy boeke aan my geskenk om op te pas, hy het my so goed geken dat hy geweet het ek is mal oor boeke, en hy het sy boeke, wat hy jare lank vertroetel het, aan my toevertrou, wat 'n voorreg was dit nie." - Steph Bredenhann

and transport engineering to broader management and leadership development. This commitment to teaching remained with Prof Hugo. Prof Kim Jenkins recalls one of the last times he saw Prof in the pavement laboratory, explaining to students how to enhance performance. Despite being in pain, “he insisted that he should stand up during the discussion.” It is a small but powerful memory of an educator who remained determined to engage, explain and pass on what he knew.

He managed the Construction Management Programme (CMP) from 1987 into the mid-2010s and remained its advisory director until 2021. The programme itself continued beyond Prof Hugo’s direct involvement and, after decades at Stellenbosch University, was handed over to the University of the Witwatersrand, allowing another of the programmes he helped shape to continue into a new chapter. He also founded the Southern Transport Centre of Development, supporting and mentoring students in transport engineering, and in 1994 founded TRAC SA, adapting an American concept to South African circumstances to support Grade 11 and 12 learners in science and mathematics and help create pathways towards tertiary study.

HIGH STANDARDS — AND HELPING PEOPLE GET THERE

Those who studied under Prof Hugo remember that his commitment to people did not mean lowering the bar. Dr Herman Wolff recalls meeting Prof Hugo at Johannesburg Airport for feedback on his Master’s dissertation. After the third and final boarding call, Prof Hugo’s assessment was characteristically memorable: **“The embryo is here, but you must come to Stellenbosch for three months to let it grow.”**

It captures something that appears repeatedly in the memories of those Prof Hugo mentored: he expected more, but he was also prepared to invest in helping people achieve it. As Herman puts it, Fred never took “no” for an answer but was prepared to help you get to **“yes”**.

Prof Hugo often advised students to: **“Admit your mistakes”**. He also encouraged them to **“constantly move laterally within your discipline”**, seeing breadth of knowledge as part of a sustainable professional journey. Prof Hugo’s 1993 SAICE Presidential Address carried the striking title:

“Civil engineering is now highly relevant: We must deliver!”

He spoke about technological capability, professional standards, education and continuing professional development. He also reminded engineers of their responsibility to **“plough something back into the profession”**, so that the profession itself could continue to grow and flourish.

More than three decades later, those words remain remarkably relevant. Prof Hugo demonstrated that engineering excellence was not only about solving the immediate technical problem. It was also about creating value: bringing research and practice together, sharing knowledge, developing people and ensuring that what one generation learns becomes available to the next.

ENGINEERING SHOULD ULTIMATELY BE ABOUT PEOPLE

When Stellenbosch University awarded Prof Hugo an Honorary Doctorate in 2014 — an honour he regarded as greater than all his other awards combined — the citation recognised not only his engineering achievements, but also his contribution as an educationalist who believed that civil engineering **“should ultimately be about people”**.

Thomas F. Moolman remembers the same philosophy in practice: **“True engineering excellence is achieved when solutions create meaningful value and contribute positively to society.”**



Prof Fred Hugo in 2014 Graduation receiving Honorary doctorate

It is a useful lens through which to view Prof Hugo's career. The MLS, CAPSA, the SABITA Chair, ITT, CMP, TRAC, other industry bodies and his many students were very different undertakings, but each involved moving knowledge beyond the individual and creating value through others.

A PERSONAL THREAD



Melanie Hofmeyr with Prof Hugo in 2024 at a CMP function

although, for me, it was not always at a time when you expected him to be on the other side of the line. A 2:00 am call was not unusual for Prof; my husband took some time to understand that. But Prof kept tabs on you and where you were. At the CMP event marking the handover to Wits, I remember fondly that he still took time to ask about my family. We had a laugh or two about the 'dual days' — the normal class day, and then the MLS/ITT day. I think his appreciation for the way it continued into my professional career was what made him smile.

Looking back now, I recognise something more in Prof's influence. Much of my own passion for seeing our industry as an ecosystem in which every person counts resonates with what I experienced around him. Prof moved naturally between research and practice, universities and industry, students and experienced professionals. He understood, perhaps long before I had words for it myself, that none of these existed in isolation.

There are people who influence what you know, and others who influence something of how you eventually see the world. Prof did both for me.

That is also why Prof's own words — that civil engineering **"should ultimately be about people"** — resonate so strongly with me today. I was once one of the students benefiting from that ecosystem; decades later, I can see more clearly how an opportunity associated with the Institute Prof led became part of a much longer journey.

I was fortunate to personally experience a small part of Prof Hugo's influence. During my university years, I had a bursary and working arrangement with the Institute for Transport Technology while Prof was Director. I appreciated the significance of that opportunity even then. The support was not only academic or professional; it helped put food on the table while I was studying, learning, working and trying to find my own way.

Over the years, our paths crossed many times, and Prof was always only a phone call away —

VOICES OF COLLEAGUES, STUDENTS AND THE INDUSTRY

"A memory that will stay stuck with me is I met Prof Hugo at Johannesburg Airport to get feedback on the properly researched and well written draft dissertation I had submitted for my master's degree. Needless to say, the draft required substantial work. After the third and final boarding call for his flight, he turned to me and said, 'The embryo is here, but you must come to Stellenbosch for three months to let it grow.' Those words reflected both his high standards and his unwavering commitment to helping his students succeed. Prof Hugo never took 'no' for an answer, but he was always prepared to help you get to 'yes'. One example was the submission of my master's dissertation. At the time, I was a resident engineer on a roads project in the then Venda. At the end of November 1985, Prof Hugo phoned me with a list of tasks that still had to be completed before graduation in early December. I explained that I could not leave the project at such a critical stage and asked whether my wife could handle the outstanding matters on my behalf. True to form, he readily agreed. My wife, a home economics teacher, worked closely with Prof Hugo in Stellenbosch, and together they ensured that everything was completed and that the dissertation was submitted on time. - Dr Herman Wolf

"As a youngster attending my first short course at Stellenbosch University, I was amazed at Prof Hugo's immense energy! From serious concentration all day to wining and dining in the evenings, Fred led the charge. His ability to bring so many international pavement scholars together on South African soil is a testament to the respect with which he was held. While I grew up in the South African and USA pavement industries, Fred was a constant presence contributing, involved, supporting to all, respected and - most definitely - energetic! - Dr Fenella Long Johns

WHAT CONTINUES

There is a wonderful symmetry in the memories of Prof Hugo. Across different generations, people remember his energy, demanding standards, curiosity and determination to turn ideas into action. They also remember the personal investment: the stories shared, the opportunities created, the encouragement to learn and the trust placed in those who followed.

In Prof Hugo's later working years, Steph Bredenhann's recollection of being entrusted with books Prof had treasured for years offers a particularly tangible image of that legacy: knowledge, and trust, passed to another generation.

The photographs accompanying this article tell some of the same story: Prof Hugo in 1958; Prof Hugo receiving his Honorary Doctorate; presenting a CMP certificate to another generation; and, many years later, still among the people and programmes he helped shape.

Research becomes technology. Knowledge moves between academia and practice. Opportunities given to young people become careers. Students become engineers, researchers, mentors and leaders themselves.

Perhaps this is the most appropriate way to understand Prof Hugo's legacy: not as a single pavement, machine, publication, conference or programme, but as an interconnected legacy of engineering, innovation, education and people that continues because others carry it forward.

**Prof Hugo challenged engineers to deliver and to
plough something back into the profession.**

He did both.

What he planted continues to grow.

Through us and for many generations to come, may it flourish.

VOICES OF COLLEAGUES, STUDENTS AND THE INDUSTRY

During my Masters studies at Stellenbosch, I was one of a fortunate few who had the opportunity to attend Prof Hugo's lectures. His approach to rehab designs fundamentally shaped me to be a better engineer. His interests were vast. He regaled me with stories about his most tricky projects over lunch breaks and inspired me to broaden my own understanding through research and learning.

It can never be overstated, the extent that this one human helped to shape the next generation of engineers. It is with honour and respect that I reflect back on the impact that Prof Fred Hugo has made in my life. I extend my deepest condolences to those who loved him best and offer my sympathy when stating that his legacy lives on in everyone he guided to greatness. - Ane Cromhout

"Prof Fred Hugo was a special person with many attributes. He had tenacity and never said "no". The last time that I spoke to him in the pavement laboratory, Prof Fred was explaining students how to enhance the performance. He insisted that he should stand up during the discussion, even though he was in pain. We were blessed to share Prof Fred.

A senior member of our friend said it was an undoubtedly, the closing of an era. We all learnt so many lessons from Prof Fred and wished that he would go on, providing assistance to many more students. All good things come to an end. May Prof Fred Hugo lie in peace!" - Prof Kim Jenkins

"Prof F Hugo was synonymous with teamwork, inspiration, outstanding presentation, completeness, innovation, and problem-solving through logical thinking. These qualities defined not only a distinguished career but also the profound impact made on colleagues, students, and the broader engineering community.

One of the most valuable lessons learned from Prof F Hugo was that Civil Engineering is not merely a problem-solving profession. True engineering excellence is achieved when solutions create meaningful value and contribute positively to society. This perspective inspired many to look beyond technical answers and strive for solutions that make a lasting difference. May Prof F Hugo be remembered with gratitude, admiration, and respect. - Thomas F. Moolman

IBEF AT 30: A GLOBAL STORY OF EMULSION TECHNOLOGY, COLLABORATION AND PROGRESS

For three decades, the International Bitumen Emulsion Federation (IBEF) has helped connect people, knowledge and practice across the world of bitumen emulsion technology. Its 30th anniversary, celebrated in Vienna during the IBEF Seminar on Emulsion Technology, marked more than the passing of time: it celebrated a shared journey of innovation, technical exchange and commitment to more sustainable road solutions.



The celebration came to life through the [IBEF Workshop on Bitumen Emulsion Technology](#), held on Wednesday, 10 June 2026. The workshop brought together international experts, national road authorities, researchers and industry leaders for a focused programme dedicated to the latest developments, field experiences and innovations in bitumen emulsion applications.

Speakers and participants explored worldwide practices, including micro-surfacing, cold recycling, advanced emulsion formulations, high-RAP solutions and sustainable surfactants. With international speakers representing Europe, Asia, Australia and the Americas, the workshop reflected the spirit that has defined IBEF since its founding: open technical dialogue, practical learning and cooperation across regions and continents.

The anniversary moment added a human dimension to the technical programme. Congratulations received from different parts of the world were shared with the audience, reminding participants that IBEF's impact is measured not only in research, specifications and applications, but also in the professional relationships it has built over 30 years. Vienna became a meeting point for reflection and renewal: a place to honour the Federation's contribution to the sector while looking ahead to the next generation of emulsion technology.



Francois Olard with Bennie Greyling (Sabita Chairman)

As IBEF enters its fourth decade, the workshop's message was clear: the future of bitumen emulsion technology will be shaped by collaboration, sustainability and the continued exchange of experience between countries and disciplines. The 30th anniversary was therefore not only a celebration of what has been achieved, but a call to keep building, learning and innovating together.

To learn more about the IBEF, see their website [here](#).

WARM THE NORM

LESSONS FROM EUROPE FOR TURNING DOWN THE HEAT TO LOWER-CARBON ASPHALT

Composed by: Michelle Lewis: Much Asphalt (Pty) Ltd

INSIGHTS FROM THE 2026 EAPA WARM MIX ASPHALT WORKSHOP AND THE EURASPHALT & EUROBITUME EVENT IN VIENNA, AUSTRIA

A VISIT TO VIENNA IN JUNE 2026 OFFERED A PRACTICAL VIEW OF HOW EUROPE IS APPROACHING WARM MIX ASPHALT, DECARBONISATION, SUSTAINABILITY AND WORKFORCE DEVELOPMENT - AND WHAT THESE CONVERSATIONS COULD MEAN FOR SOUTH AFRICA.

The asphalt and bitumen industry is under increasing pressure to reduce its environmental impact while maintaining pavement performance, constructability and cost effectiveness. Warm mix asphalt (WMA) is one potential pathway because it enables asphalt mixtures to be manufactured and placed at temperatures below those traditionally associated with hot mix asphalt (HMA).

The opportunity to attend the EAPA Warm Mix Asphalt Workshop in Vienna on 10-11 June 2026, followed by the 3rd Eurasphalt & Eurobitume (E&E) Event, provided direct exposure to international developments in this field. The events brought together practitioners, researchers, suppliers, contractors and other stakeholders to consider the evidence for WMA, practical experience with different technologies, sustainability objectives and the future skills required by the sector.

WHAT EUROPE IS LEARNING ABOUT WARM MIX ASPHALT

Warm mix asphalt was first developed in Europe more than 25 years ago, but its adoption has accelerated in response to decarbonisation targets, green public procurement, occupational health and safety requirements, stack-emission limits and changes in energy costs. The workshop reported that countries such as Germany and the Netherlands have set ambitious objectives for reduced-temperature asphalt production, including a goal of 100% WMA production by 1 January 2026.

II. Lessons learned about WMA

Throughout all the MASAI projects (**over more than 10 years**), we have carried out an **in-depth study of WMAs**, from plant manufacturing to laying and compaction...



EAPA Workshop on Warm Mix Asphalt | Vienna | 10–11 June 2026



The 2026 WMA workshop brought together approximately 123 professionals from 24 countries. Discussions addressed the status of WMA technologies, including evidence, practical experience and industry perceptions, and considered how Europe and the rest of the world could progress towards broader adoption.

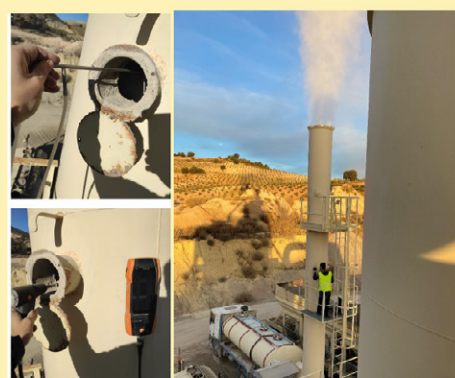
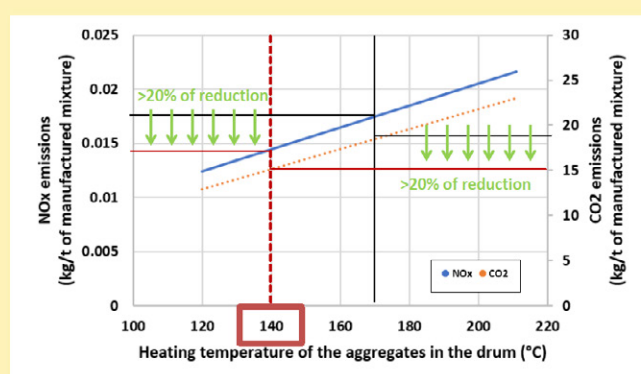
WHY LOWER TEMPERATURES MATTER

The technical drivers discussed at the workshop included:

- Protection of the binder through reduced production temperatures.
- Reduction of fumes and smoke during production and paving.
- Reduced fuel consumption and associated energy costs.
- Lower emissions and improved sustainability performance.
- Reduced energy intensity and improved working conditions.
- Encouragement of innovation in asphalt production and paving.

II. Lessons learned about WMA

Setting the **maximum mix temperature around 140 °C** ensures a **reduction of at least 20% in emissions**, and about **25-30% in plant energy consumption**...



EAPA Workshop on Warm Mix Asphalt | Vienna | 10–11 June 2026



TECHNOLOGY, SPECIFICATIONS AND PERFORMANCE

WMA is not a single technology or a one-size-fits-all solution. Different additives and production methods can be used to obtain the required temperature reduction and mixture characteristics. Selection therefore needs to consider the materials, plant, construction process, climate, pavement application and performance requirements, without altering the basics of asphalt as we know it. An important technical challenge remains the limited body of long-term performance data for some WMA applications. Specifications are still developing in several markets, and the absence of extensive historical data can make it difficult to establish universally applicable requirements. Continued field trials and systematic performance monitoring are therefore essential to build a stronger technical basis and industry confidence.

THE BARRIERS ARE OFTEN NOT ONLY TECHNICAL

A recurring theme was that the greatest barrier to change is often not the technology itself, but the established practices and expectations of people across the value chain. Moving from 'the way we have always done it' to a more performance- and sustainability-driven approach requires communication, training and confidence in the available evidence.

- Lack of harmonisation between countries and specifications.
- Concerns about final product quality, particularly in thin-layer applications.
- Uncertainty regarding long-term performance and limited historical data.
- Potential additional costs associated with some additives or technologies.
- Reluctance to move away from established HMA practices.
- Limited demand where project owners do not explicitly require WMA in contracts.
- Uncertainty regarding the definition, classification and control of WMA technologies and added substances.

COLLABORATION: MAKING 'WARM THE NORM' PRACTICAL

The second day included a World Café format in which participants worked in rotating groups to identify barriers, priorities and practical actions across the world. A central conclusion was that successful implementation requires collaboration across the full value chain. Road authorities, suppliers, contractors, researchers and tertiary institutions need to exchange the right information at the right time.

II. Lessons learned about WMA

Successful applications can be achieved with all technologies available on the market (chemical additives, organic additives, and binder foaming)...



However, **not all available technologies are suitable for every type of project, nor do all products perform equally** well depending on the circumstances.

EAPA Workshop on Warm Mix Asphalt | Vienna | 10–11 June 2026



Trust was also identified as a prerequisite for innovation. Fear of failure can prevent the industry from undertaking trials that could generate valuable knowledge. A more constructive approach is to treat controlled failures as learning opportunities, provided that trials are properly designed, monitored and documented. The discussion on making 'Warm the Norm' reinforced the importance of training, collaboration and stakeholder engagement. These activities can help build the technical confidence required to transition from isolated WMA applications towards broader industry adoption.

THE WIDER CONVERSATION: DECARBONISATION, SUSTAINABILITY AND TALENT

The 3rd Eurasphalt & Eurobitume Event focused on perspectives from the asphalt and bitumen sector, with particular emphasis on decarbonisation, sustainability and the next generation of industry talent. A key message was that the asphalt sector forms only a small part of the wider road-infrastructure system, yet its performance is fundamental to the connectivity of towns, cities and countries. The event also highlighted the linkage between infrastructure investment, sustainability and economic conditions. Funding remains a significant challenge, while geopolitical developments can affect the availability and cost of key materials such as bitumen and additives. These factors reinforce the importance of resilient supply chains, efficient construction practices and a strong focus on pavement maintenance. Maintenance was repeatedly recognised as an important component of sustainability. Extending pavement service life and achieving the required performance from existing infrastructure can reduce the need for premature reconstruction and the associated consumption of materials, energy and resources.

LESSONS FOR SOUTH AFRICA

Engagement with industry leaders from different countries demonstrated that many of the challenges facing South Africa are shared internationally. At the same time, the discussions showed that the sector has significant technical expertise, innovative capacity and enthusiasm for developing better solutions.

One of the most relevant observations for South Africa is that the international transition towards lower-temperature asphalt production is occurring while specifications and accepted methodologies are still evolving. The combination of limited long-term data and active innovation creates an opportunity for South African practitioners to contribute to the evidence base rather than simply adopt approaches developed elsewhere.

This is particularly relevant given ongoing local WMA field activities. Current trials and construction using WMA for the Upgrade of National Route 3 Section 3 between the Ashburton Interchange (km 0.8) and Murray Road (km 5.9) can contribute useful evidence on mixture performance, production, paving and constructability under South African conditions. To realise this opportunity, field data should be collected systematically and shared transparently between industry participants.

Priorities for the South African industry

- Develop a coordinated research and trial programme for WMA under South African materials, climatic and traffic conditions.
- Collect and publish consistent production, paving and performance data from field trials.
- Strengthen collaboration between road authorities, contractors, suppliers, consultants and tertiary institutions.
- Develop clear and practical guidance for specifying and evaluating WMA technologies.
- Establish agreed terminology and performance-based criteria where appropriate.
- Use pilot projects to build confidence while managing technical and construction risks.
- Define measurable industry objectives for the next five years, including sustainability and decarbonisation targets.
- Create stronger pathways for young professionals to work alongside experienced practitioners and contribute new approaches.

People and knowledge transfer

A notable theme of the E&E Event was the need to connect technical experience with the perspectives and capabilities of younger industry professionals. The transition towards lower-carbon construction will require both accumulated engineering knowledge and new approaches to data, materials, production technologies and sustainability. South Africa can benefit from deliberately creating opportunities for knowledge transfer between experienced practitioners, researchers and young professionals. Such collaboration can help ensure that innovation is supported by practical experience while also challenging established assumptions where new evidence becomes available.

MOVING FORWARD

Build the evidence base: Continue controlled WMA trials and implement consistent monitoring of production temperatures, energy use, emissions, mixture properties, paving performance and longer-term pavement behaviour.

Develop fit-for-purpose guidance: Use accumulated field evidence to support practical specifications and evaluation procedures rather than relying solely on prescriptive approaches.

Coordinate the value chain: Create structured forums in which authorities, industry, suppliers and research institutions can share data and jointly address technical barriers.

Promote informed innovation: Encourage trials while maintaining appropriate controls over additives, materials, safety and quality.

Set a five-year industry roadmap: Define realistic, measurable objectives for WMA adoption, energy efficiency, emissions reduction, research and workforce development.

Invest in people: Strengthen training and mentorship programmes so that technical expertise and emerging industry perspectives are developed together.

CONCLUSION

The Vienna experience demonstrated that the transition towards more sustainable asphalt production is both a technical and an industry-wide challenge. Warm mix asphalt offers a promising route towards reduced energy consumption, lower emissions, reduced fumes and improved working conditions, but successful implementation depends on evidence, appropriate specifications, stakeholder confidence and collaboration.

The international discussions also showed that Europe is not operating from a position of complete certainty. Significant questions remain around long-term performance, harmonisation and the most appropriate methods for different applications. This is important for South Africa: there is an opportunity not only to learn from international experience, but also to generate locally relevant evidence and contribute to the development of the wider industry. The key lesson is therefore not simply that WMA should replace HMA, but that the industry should create conditions in which lower-temperature technologies can be evaluated objectively, specified appropriately and implemented where they deliver evident value. Training, collaboration, transparent data and a willingness to learn from both successes and failures will be central to making 'Warm the Norm' a practical industry objective.

ACKNOWLEDGEMENT

Michelle Lewis acknowledges Much Asphalt for the opportunity to participate in the 2026 EAPA Warm Mix Asphalt Workshop and Eurasphalt & Eurobitume Event in Vienna, and for supporting her professional development and international industry engagement associated with the trip.

BITUMEN SUPPLY IN SOUTH AFRICA:

QUALITY, RESILIENCE AND PLANNING IN AN IMPORT-DEPENDENT MARKET

Bitumen is one of the least visible, but most important, materials in South Africa's road network. It is the binder used in asphalt and many other bituminous road applications, helping to create the durable surfaces that carry people, goods and essential services every day. Despite various challenges since importation started in 2021 the industry has not been in short supply of bitumen at any point of time

For most road users, bitumen only becomes visible when a road deteriorates or a project is delayed. Yet its availability, consistency and appropriate use are fundamental to the delivery and maintenance of safe, reliable transport infrastructure.

South Africa's bitumen supply environment has changed significantly in recent years. The country no longer produces bitumen locally and now relies on imported supply. This transition has been anticipated by industry, but it requires careful planning, sound technical controls and ongoing investment across the supply chain. The central issue is therefore not whether bitumen is imported. The important question is whether the material supplied into the market is of the required quality and is available when road projects need it.

A SUPPLY CHAIN, NOT SIMPLY A SHIPMENT

Imported bitumen does not arrive at a road project ready for use. It moves through a supply chain that includes overseas production, shipping, ports, storage facilities, testing laboratories, transport operations, suppliers, asphalt manufacturers, contractors and road authorities. Each part of that chain has a role in protecting quality and reliability.

A shipment may be affected by shipping delays, port congestion, global events, exchange-rate movements or changing demand. These are risks associated with many imported products, and they require the industry to plan ahead, maintain suitable storage and logistics capacity, and communicate clearly across the supply chain.



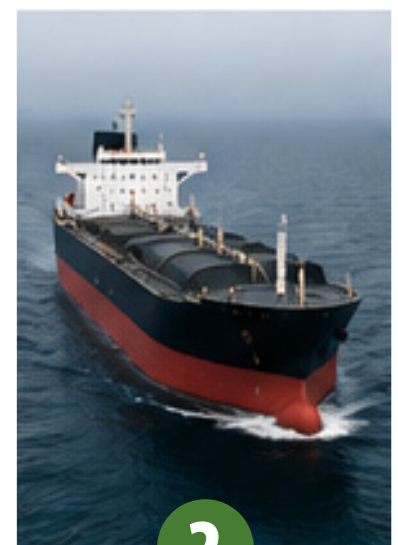
1. OVERSEAS PRODUCTION



1

Bitumen is produced at refineries from crude oil.

2. SHIPPING



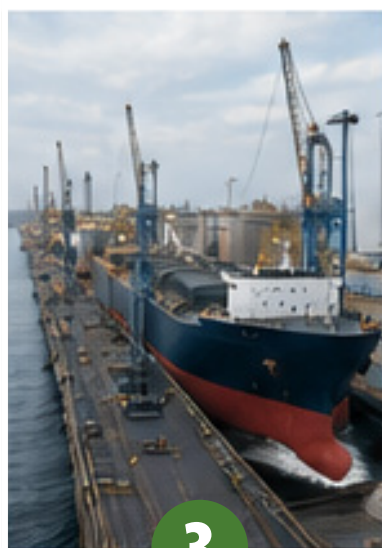
2

Bitumen is shipped in specialised tankers to South African ports.

SUPPLY CONFIDENCE AND CONTINUED INVESTMENT



3. PORTS



3

Bitumen is offloaded and moved to storage facilities.



4. STORAGE



4

Bitumen is stored in temperature-controlled tanks to maintain quality and consistency.

Despite the various challenges faced since importation started in 2021, the market has not experienced a general shortage of bitumen. Furthermore, based on the information currently available to SABITA, the industry does not anticipate a general shortage in the foreseeable future. South Africa's transition to an import-dependent supply environment has required the sector to adapt, and that adaptation is continuing.

Private-sector participants have invested substantially in the facilities, storage capacity, logistics systems, testing capability and quality-assurance processes required to support the reliable supply of bitumen into the South African market. This investment has not been static. As the industry responds to the changed supply environment, the network of import, storage and distribution facilities is widening, strengthening the capacity available to serve road construction and maintenance programmes.

These investments are an important example of the private sector supporting government's infrastructure delivery objectives. They enable the industry to plan ahead, manage supply-chain risks and provide the material needed to build and maintain roads, provided that demand is communicated clearly and projects are planned with sufficient certainty.

There will always be supply-chain risks associated with imported products, including shipping delays, port congestion, exchange-rate movements and global disruptions. However, the industry's response is not simply to react when a problem arises. It is to strengthen the systems, facilities and partnerships that help manage those risks before they affect project delivery.

QUALITY IS THE FOUNDATION

Bitumen is not a generic commodity once it is used in the road. Its properties affect how asphalt and surfacing products are manufactured, placed and ultimately perform in service. Consistency of supply is therefore important.

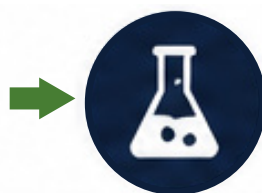
Suppliers need to understand the source of their material, the characteristics of the crude and refinery processes from which it is produced, and the controls required to demonstrate that the product meets applicable specifications. Testing and quality assurance are not administrative exercises. They are part of protecting the performance of the road asset.

This is particularly important where materials are sourced internationally and may be supplied from different refineries or regions. A resilient supply chain must combine commercial planning with rigorous technical controls.

PLANNING TOGETHER FOR RELIABLE DELIVERY

Reliable supply cannot be created by suppliers alone. It depends on better information and collaboration across the road sector. When road authorities and clients are able to provide clearer indications of future programmes and anticipated demand, suppliers can plan imports, storage and distribution more effectively. Asphalt manufacturers and contractors can then programme production and construction with greater certainty.

The need is not simply to secure a shipment of bitumen. It is to build and maintain an environment in which the industry can plan, invest and operate efficiently over the long term. This includes clear and appropriate technical standards, consistently applied quality-assurance systems, investment in storage, handling, testing and logistics capacity, and communication between road authorities, clients, suppliers and contractors.



5. TESTING & QUALITY ASSURANCE



Laboratory testing verifies that bitumen meets relevant standards and specifications.



6. TRANSPORT



Bitumen is transported by road tanker to suppliers and asphalt plants.



7. SUPPLIERS



Suppliers manage stocks, blending (where required) and add technical support.



8. ASPHALT MANUFACTURERS



Bitumen is used in asphalt to produce high-quality mixes.

SABITA's role is to support the industry through technical guidance, standards, training and the sharing of knowledge. The Association also provides a platform through which members and stakeholders can engage on matters that affect the quality, safety and sustainability of bituminous products and road infrastructure.

BUILDING CONFIDENCE IN A CHANGED ENVIRONMENT

In the May 2026 edition of Asphalt News, Deon Pagel reflected on the industry's transition from local production to full reliance on imported bitumen. His observation was a useful reminder that this change did not happen overnight: it has required adaptation by companies, people and industry institutions across the value chain.

The next phase is to continue strengthening the systems that support resilient supply: sound planning, reliable infrastructure, technical competence and consistent quality assurance. Ultimately, the discussion is about more than bitumen. Well-maintained roads improve safety, reduce transport costs, connect communities and support economic activity.

As the industry continues to adapt, collaboration will remain essential. By working together, the sector can support a supply environment that is resilient, technically sound and capable of meeting South Africa's future infrastructure needs.



9

Contractors construct and maintain roads using quality asphalt.



10

Road authorities deliver infrastructure that keeps South Africa moving.

LISTEN TO THE CONVERSATION: THE COMMODITY SEALING SA'S POTHOLES

SABITA recently joined the MoneywebNOW podcast to discuss the role of bitumen in repairing and maintaining South Africa's road network. Listen here: <https://iono.fm/e/1689236>

FURTHER READING

- SABITA Manual 41: Best Practice Guide for the Procurement and Importing of Bitumen.
- SABITA Manual 25: Code of Practice: Transportation, Off-Loading and Storage of Bitumen and Bituminous Products.

FUTURE-PROOFING ROADS WITH ORGANO-SILANES: PART 1 - HYDROPHOBICITY

Comprised by: Sasheen Rajkumar, Dr Mikhil Ranka, and Miles George Le Grange

MOISTURE HAS ALWAYS BEEN THE PROBLEM

South Africa's pavement industry has long understood that moisture is the single most destructive agent in road structures. Regardless of traffic loading or material class, once water enters a pavement layer, strength reduces, deformation accelerates, and durability declines rapidly. This reality is evident across cemented bases, bitumen-stabilised materials (BSM), and untreated granular layers alike.

Moisture ingress into pavements occurs through multiple mechanisms. Surface infiltration through cracks and joints, lateral ingress from road shoulders, groundwater movement from underlying layers, and capillary rise driven by soil-water interaction at particle level all contribute to progressive wetting of pavement layers. As illustrated in Figure 1, these mechanisms act both independently and cumulatively, often without obvious surface distress during the early stages of deterioration.

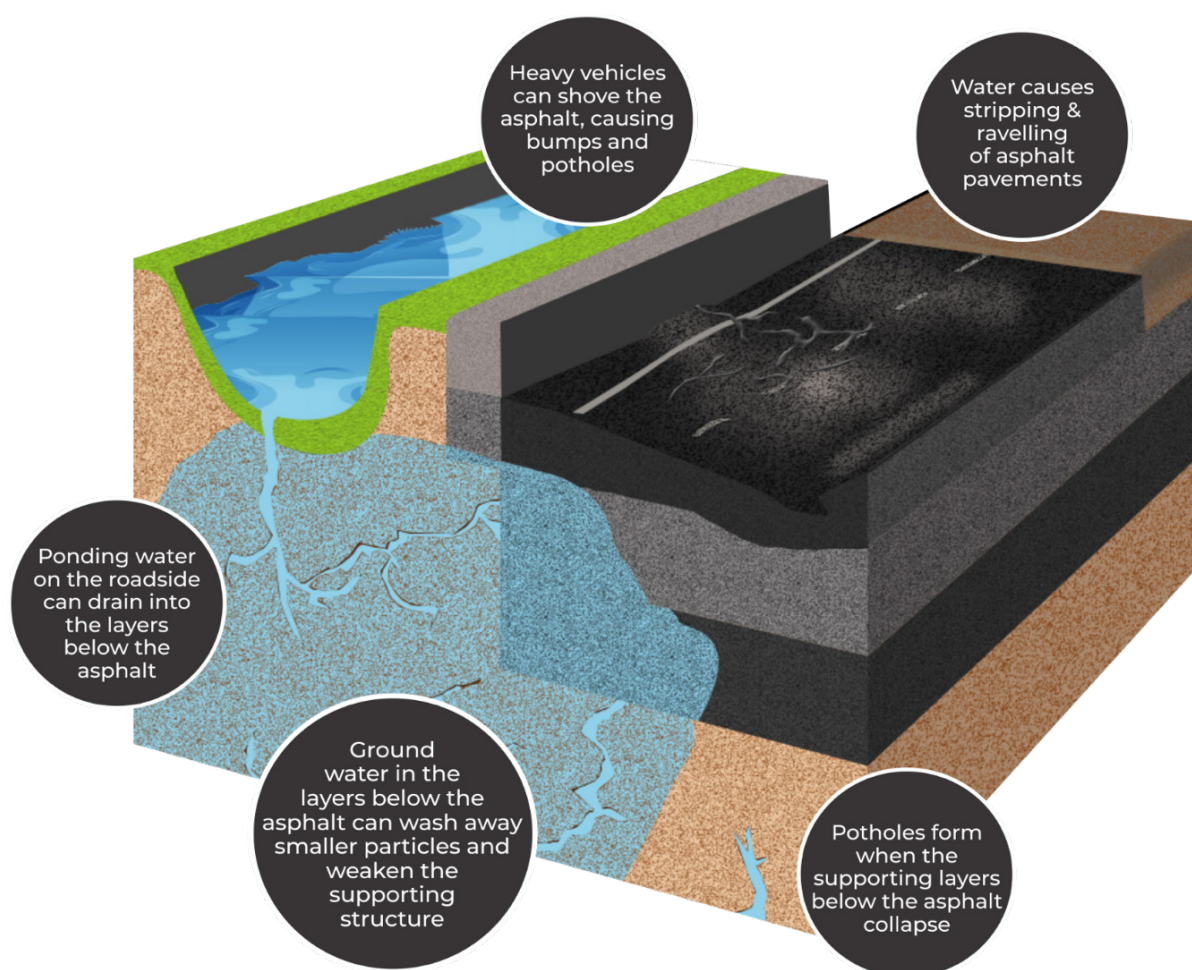


Figure 1: Mechanisms of moisture ingress and moisture-induced pavement distress in flexible pavements

This first article in the *Future-Proofing Roads with Organo-silanes* series focuses on a foundational but often under-articulated concept: hydrophobicity – the deliberate engineering of soil and aggregate surfaces to resist water interaction at particle level. By altering the way materials interact with moisture, hydrophobic treatment addresses the root cause of many moisture-related failures, rather than only their symptoms.

TRADITIONAL SOIL-STABILISATION DESIGN: WHAT WE HAVE BEEN SOLVING

Conventional soil stabilisation has historically focused on three primary design objectives:

- Strength: to provide adequate load-bearing capacity and shear resistance.
- Flexibility: to control deformation and cracking under traffic and environmental strain.
- Permeability: to manage the movement of water once it enters the pavement system.

These parameters remain essential and form the backbone of cement and BSM practice. However, it is important to recognise what these parameters actually do – they largely manage the mechanical and hydraulic response of materials after moisture ingress has already occurred. They do not fundamentally change the hydrophilic nature of soils and aggregates, particularly clay-bearing marginal materials, which actively attract and retain water at particle level.

HYDROPHOBICITY: ADDRESSING THE ROOT CAUSE, NOT THE SYMPTOMS

Moisture-related pavement distress is not governed solely by how much water enters a pavement, but by how pavement materials interact with water once it is present. In many cases, moisture ingress occurs gradually and internally, without obvious surface infiltration.

Soils and aggregates are inherently hydrophilic due to the presence of hydroxyl (–OH) groups on their mineral surfaces. These surface groups, commonly referred to as silanol groups, promote strong physico-chemical attraction between water molecules and the particle surface.

Using capillary rise as a mechanism of moisture ingress as shown in Figure 2, the surface chemistry of hydrophilic soils enables:

- Moisture adsorption onto individual particles,
- Capillary rise through interconnected pore spaces, and
- Progressive wetting of pavement layers from below and laterally.

Traditional pavement design and stabilisation approaches have therefore focused on managing the consequences of moisture ingress, through increased layer thickness, improved drainage, and the use of cementitious or bituminous binders to maintain strength after wetting has occurred.

Under wet conditions, this interaction leads to:

- Weakening of inter-particle bonds,
- Reduction in shear strength and stiffness,
- Accelerated permanent deformation, and
- Poor durability under repeated wet–dry cycles.

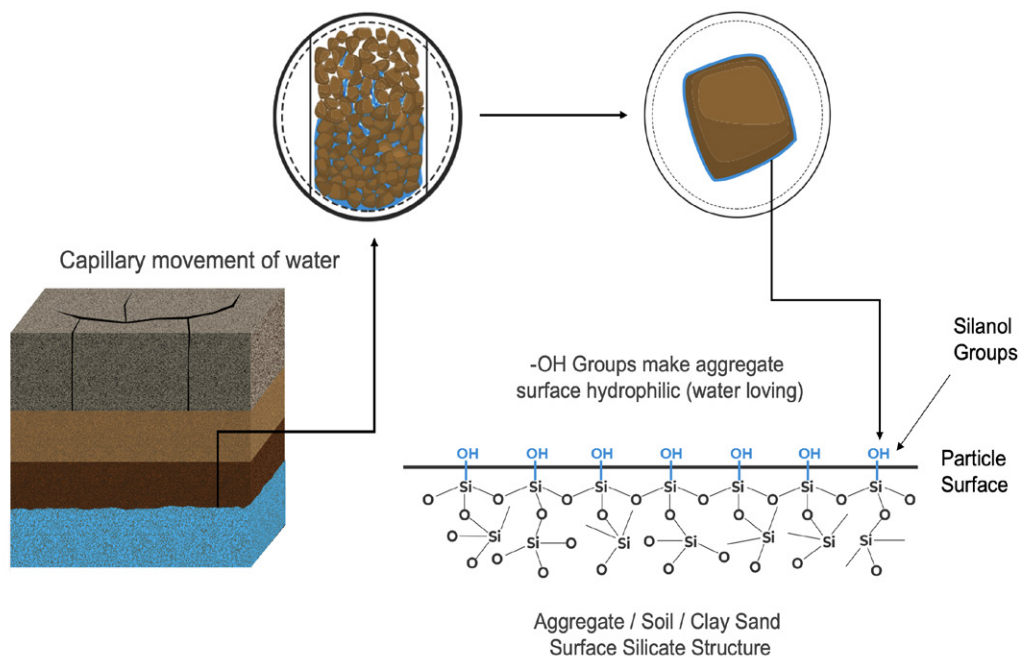


Figure 2: Capillary water movement in hydrophilic soils, illustrating moisture adsorption and upward capillary rise driven by hydroxyl ($-OH$) groups on mineral surfaces

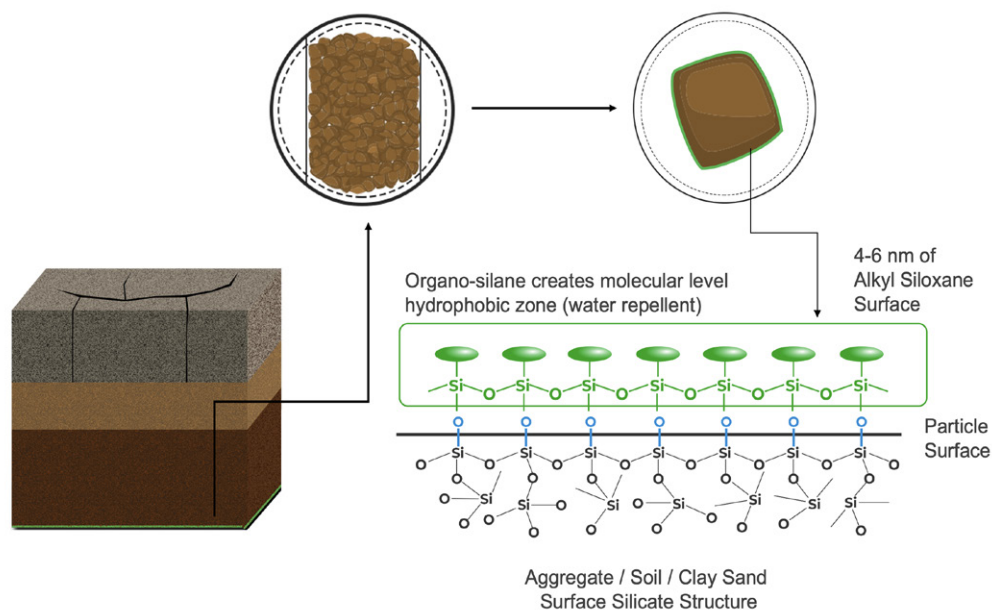


Figure 3: Molecular-scale modification of mineral surfaces by organo-silanes, showing the formation of a permanent hydrophobic layer

Hydrophobicity directly addresses this fundamental soil–water interaction mechanism. Organo-silanes chemically react with silanol ($-OH$) groups on the mineral surface, replacing them with hydrophobic organofunctional chains. As illustrated in Figure 3, this reaction forms a continuous, molecular-scale alkyl-siloxane layer, typically only a few nanometres thick, that is permanently bonded to the particle surface.

This modification creates a water-repellent zone at particle level, rather than a surface seal or coating. By altering the surface chemistry of the soil and aggregate particles:

- Capillary rise is suppressed,
- Moisture adsorption is reduced,
- Degree of saturation under wet conditions is limited, and
- Strength retention and durability are significantly improved.

Importantly, this hydrophobic treatment does not block pore spaces or inhibit vapour movement. The layer remains breathable, allowing trapped moisture to dissipate while preventing damaging liquid water ingress. Drainage characteristics of the pavement layer are therefore preserved. This represents a physico-chemical intervention, rather than a purely mechanical or hydraulic one. Hydrophobicity does not replace conventional stabilisation methods such as cement, lime, or bitumen emulsion systems; instead, it enhances their reliability, particularly in moisture-sensitive and marginal materials.

QUANTIFYING SOIL–WATER INTERACTION AND HYDROPHOBIC BEHAVIOUR

The influence of organo-silanes on soil–water interaction is best demonstrated through soil–water characterisation testing, notably capillary rise testing and Soil Water Characteristic Curve (SWCC) determination. Capillary rise testing provides a clear, visual indication of reduced moisture ingress, while SWCC testing quantitatively links treatment effects to changes in soil suction behaviour.

Preliminary findings from ongoing studies indicate a marked reduction in water absorption and in soil suction in treated materials, see figures 4 and 5 respectively. From a pavement engineering perspective, reduced soil suction directly translates to lower in-service moisture contents, with consequent improvements in resilient modulus and wet-strength retention. These observations align with the fundamental objective of hydrophobic treatment: limiting moisture interaction at particle level rather than merely managing its effects after ingress.

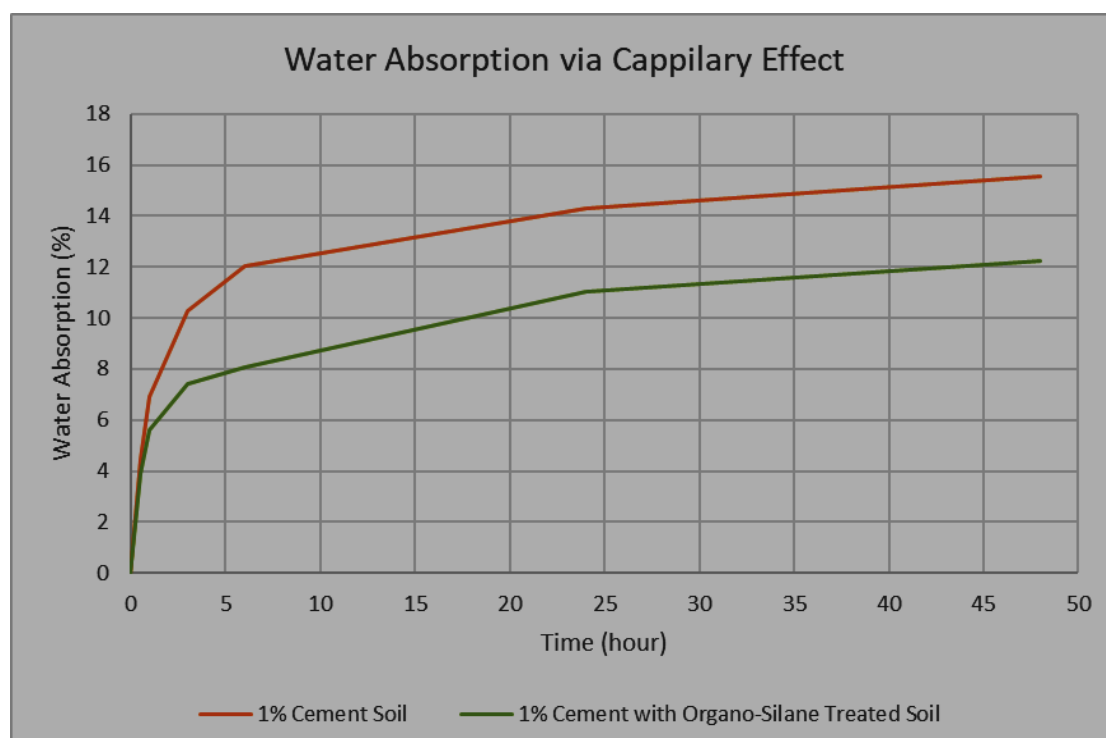


Figure 4: Graph of water absorption (via capillary effect) vs time – demonstrating a considerable reduction in water absorption of treated material compared to untreated material

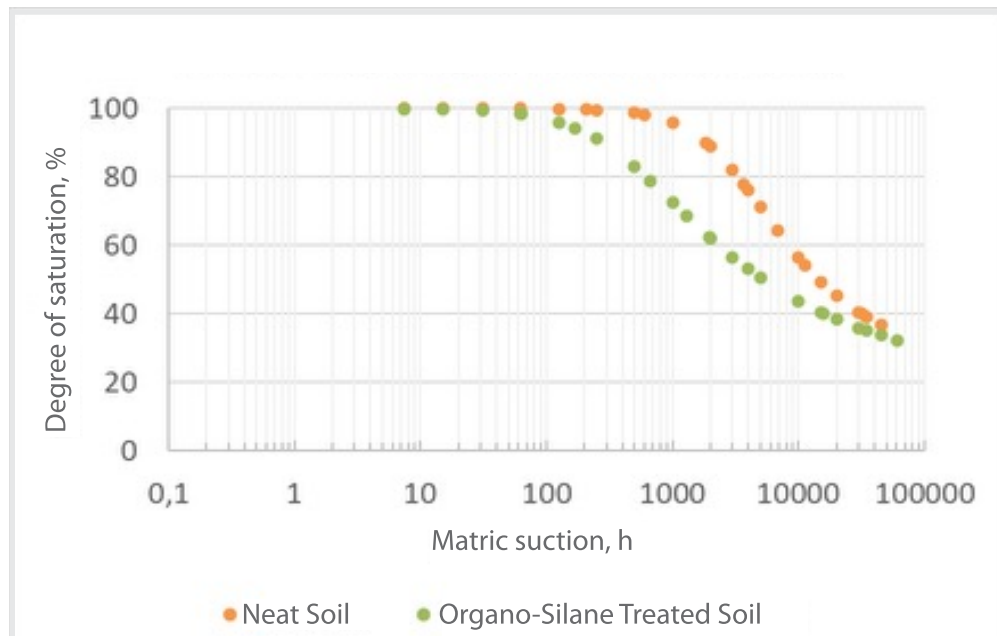


Figure 5: Graph of Soil Water Characteristic Curves - demonstrating a significant reduction in soil suction of treated material compared to untreated material

TRH24: RECOGNITION OF HYDROPHOBICITY AS A DESIGN DRIVER

TRH24: Upgrading of Unpaved Roads (Draft Standard, 2024) marked an important shift by explicitly recognising organo-silanes as the core technology responsible for imparting hydrophobicity in Nano-Modified Emulsion (NME) systems. This acknowledgement elevates moisture resistance and retained wet strength from secondary checks to central performance criteria.

Importantly, hydrophobicity is not limited to NME. Because organo-silanes bond directly to mineral substrates, they are compatible with:

- Cement-treated materials
- Bitumen-stabilised materials (BSM)
- Lime modification
- Crushed stone and high-quality granular bases

On a practical note, organo-silanes integrate seamlessly into existing construction practices using water as the carrier medium, without specialised equipment.

UNLOCKING MARGINAL MATERIALS

Across South Africa, the dominant challenge is not the availability of high-quality aggregates, but the cost, environmental impact, and logistical burden associated with rejecting and replacing marginal in-situ and local borrow-pit materials, typically classified as G6 and poorer gravels. These materials are widely available, but their use is often constrained by pronounced moisture sensitivity, evidenced by:

- Low soaked strength performance, reflected in CBR, UCS and ITS results.
- Rapid loss of bulk strength under wet conditions, even when dry strengths appear adequate.
- Poor durability under repeated wet–dry moisture cycles, leading to premature deterioration.

Case studies under SANRAL projects demonstrate that when hydrophobicity is introduced through appropriate organo-silane selection and dosage, guided by mineralogy and fines content, these materials can retain strength and meet TRH24 performance requirements, even at lower emulsion and/or cement/lime contents. The outcome is:

- Improved wet-strength performance.
- Increased binder efficiency.
- Reduced reliance on imported material.
- Lower lifecycle and carbon costs.

CLIMATE CHANGE: AN AGGRAVATING FACTOR

Climate change has not created the moisture problem, but it has intensified it. In many regions of South Africa, pavements are now exposed to:

- More frequent high-intensity rainfall and flooding events.
- Longer saturation periods.
- Repeated wet-dry cycling.
- Elevated water tables.

These conditions place additional stress on materials that were already moisture-sensitive. Although hydrophobicity has not been primarily driven by climate change, it provides a robust engineering strategy that supports the design of pavements resilient to moisture exposure. As climate variability increases the frequency and duration of wet conditions, hydrophobic treatment enhances the reliability of existing stabilisation approaches rather than replacing them.

THE THREE FUNCTIONAL ROLES OF ORGANO-SILANES

Hydrophobicity is the first and most visible function of organo-silanes, but not the only one. This article forms Part 1 of a technical series. Subsequent articles will explore:

Part 2: Chemical Bonding: How organo-silanes form chemical bonds with mineral surfaces strengthening bonds in treated surfaces and enhancing compatibility between inorganic (concrete/soils/ aggregate) and organic (bitumen) matter, significantly improve adhesion, and anti-strip properties.

Part 3: Interfacial Activity: How organo-silanes improve coating, penetration and binder efficiency across bitumen and emulsion, BSM, and composite stabilisation systems.

Together, these functional mechanisms take organo-silanes far beyond NME, positioning them as a modern, multi-purpose pavement chemistry.

CONCLUSION: HYDROPHOBICITY AS A CORE ENGINEERING STRATEGY

Strength, flexibility and permeability define a pavement's mechanical framework. Moisture interaction determines whether that framework survives.

Hydrophobicity does not replace conventional stabilisation – it enhances its reliability, particularly in moisture-sensitive and marginal materials.

As South Africa continues to rely more heavily on local in-situ resources under constrained budgets and variable climates, engineering moisture resistance at particle level is no longer optional. It is a logical evolution of modern pavement design.

SOUTH AFRICAN INNOVATION ON THE GLOBAL STAGE: CLIMATE-RESILIENT ROADS AT THE 17TH PIARC WORLD CONGRESS

Composed by: Tarlia Luciele Gerald and Semeshan Naidoo from Naidu Consulting (Pty) Ltd

The opportunity to represent South Africa at the 17th PIARC World Congress on Road Winter Service, Resilience and Decarbonisation was both professionally rewarding and deeply inspiring. Held in Chambéry, France in March 2026, the congress brought together engineers, researchers, road authorities and industry leaders from across the world to exchange ideas on resilience, sustainability and the future of road infrastructure. Beyond presenting South Africa's work, it offered a valuable opportunity to learn from international best practice and showcase the innovation taking place within South Africa.

This edition of the congress reflected the rapidly changing priorities of the road engineering profession. The 2026 programme placed significant emphasis on resilience, sustainability and decarbonisation. These themes are increasingly relevant across all climatic regions, including countries such as South Africa where changing weather patterns, resource constraints and increasing traffic demands are placing additional pressure on existing infrastructure.

A record 432 abstracts from 65 countries were submitted to the congress, illustrating the growing international interest in resilient infrastructure. Notably, many participating countries do not experience snow or ice, highlighting that resilience is now recognised as a global engineering priority rather than a challenge limited to cold climates.

CLIMATE CHANGE AND THE SOUTH AFRICAN CONTEXT

South Africa is already experiencing many of the impacts associated with climate change. Extreme rainfall events have resulted in widespread flooding and damage to transport infrastructure, while prolonged droughts and increasing temperatures continue to affect pavement performance across different regions.

Historically, pavement design has focused primarily on traffic loading, material strength and construction costs. While these remain fundamental considerations, future climatic conditions have not traditionally formed part of standard pavement design methodologies.

As climate variability increases, this approach is no longer sufficient. Higher pavement temperatures accelerate binder ageing and rutting, more intense rainfall increases erosion and drainage failures, while changing moisture conditions influence the behaviour of subgrade soils.

Designing roads for tomorrow therefore requires engineers to consider not only how much traffic a pavement will carry, but also how climatic conditions will evolve throughout its design life. This shift in thinking formed the basis of our presentation at the congress.



Figure 1: Welcome Ceremony

Our presentation at the conference titled, **“Enhancing Climate Resilience in Road Infrastructure: Adopted Pavement Design Methodologies,”** explored how climate resilience can be integrated into pavement design using practical engineering tools already being implemented within South Africa.

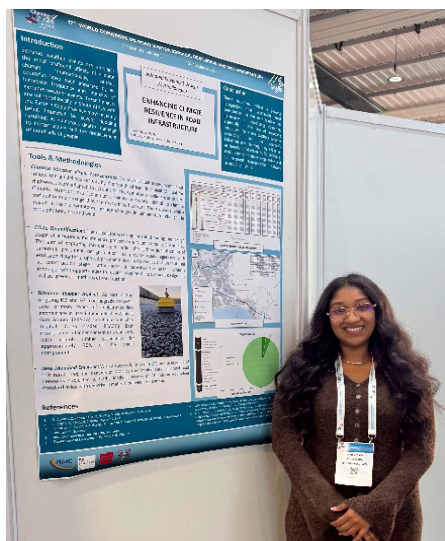


Figure 2: Poster Session

Rather than viewing climate resilience as an additional design requirement, the presentation demonstrated how resilience considerations can be embedded within existing engineering workflows. One of the first steps involves undertaking a Climate Stressor Visual Assessment. This assessment enables engineers to identify environmental hazards—including flooding, erosion, heatwaves, droughts, storms and even snowfall in higher-altitude regions—during the early stages of project planning. By identifying these risks before construction begins, more appropriate pavement materials, drainage systems and construction techniques can be selected to improve long-term performance.

A second key component of the presentation focused on carbon quantification. The road construction industry is increasingly expected to demonstrate how infrastructure projects contribute towards national and international climate commitments. However, reducing emissions requires first understanding where emissions occur.

The presentation described how carbon accounting can be incorporated into pavement design by quantifying emissions associated with material production, transportation, plant operations and construction activities. Rather than relying solely on engineering performance, designers are therefore able to compare alternative pavement options based on both technical performance and environmental impact. This approach provides infrastructure owners with valuable information for decision-making while supporting South Africa’s broader sustainability objectives.

Projects that have adopted Warm Mix Asphalt, New Modified Emulsion (NME) technology and Rubber-modified asphalt were also presented at the conference highlighting South Africa’s growth in engaging resilient and sustainable practices.

The most encouraging message put forward at PIARC was that many sustainable technologies are already being implemented successfully within South Africa.

Beyond presenting our own work, attending PIARC offered an invaluable opportunity to learn from international best practice.

As part of the congress programme, delegates participated in a technical site visit to the Fréjus Road Tunnel, which connects France and Italy through the Alps. The visit provided insight into the tunnel’s operation, maintenance and safety management, showcasing how critical transport infrastructure is managed to ensure reliability and resilience. It was an



Figure 4: Fréjus Tunnel

excellent opportunity to observe international best practices in infrastructure management and to see how proactive maintenance and continuous monitoring contribute to the long-term performance of major transport assets.

Many countries are already integrating climate projections into pavement design, adopting digital asset management tools and developing innovative methods for measuring infrastructure resilience. Despite differences in climate and economic conditions, the discussions reinforced that collaboration enables all countries to accelerate innovation by learning from one another's successes and challenges.

For South Africa, participation in PIARC ensures that our industry remains connected to global developments while also providing an opportunity to share locally developed solutions that are directly applicable to other low- and middle-income countries.



*Figure 5: African country delegates in attendance
(Republic of Guinea, South Africa, Senegal and Côte d'Ivoire)*

LOOKING TOWARDS A MORE RESILIENT FUTURE

The PIARC World Congress highlighted that future road networks must be designed not only to withstand increasing traffic demands but also to adapt to changing environmental conditions while reducing their carbon footprint.

Representing South Africa at PIARC was both a professional honour and a reminder that the engineering solutions developed locally have relevance on the international stage. As the road sector continues to evolve, organisations such as PIARC will remain instrumental in fostering collaboration, advancing research and ensuring that the global engineering community is equipped to meet the challenges of a changing climate. The challenge before us is therefore also an opportunity: to reimagine the roads we design today as the foundations of a more resilient, connected and sustainable tomorrow, turning engineering innovation into a lasting legacy for generations to come.

SABITA YOUNG PROFESSIONAL INSPIRES LEARNERS AT LETSATSING SCIENCE SECONDARY SCHOOL

BRIGHT YOUNG MINDS INITIATIVE INTRODUCES GRADE 12 LEARNERS TO CAREER PATHWAYS IN THE BITUMINOUS PRODUCTS AND ROAD CONSTRUCTION SECTORS

A recent visit to Letsatsing Science Secondary School in Mahikeng placed the spotlight on the value of early career guidance and industry exposure for science learners. During August, SABITA Young Professional Chapter member Keabetswe Pholo of ROMH Consulting, returned to her former school to take part in its Career Talk programme and share insights into career options within the asphalt and bituminous products industry.

Letsatsing Science Secondary School is a public secondary school in the North West and forms part of the Ngaka Modiri Molema Education District. Its career day programme is driven by alumni who return to give back, mentor learners and broaden awareness of the many study and career choices available after school.

This approach aligns closely with SABITA's Bright Young Minds programme, which was established to reach underserved schools with support from the Young Professional Chapter. The programme

introduces learners to career possibilities in the asphalt and bituminous products sector, while helping them understand how subjects such as science, mathematics and engineering can lead to meaningful roles in infrastructure delivery.

The school's initiative is anchored in a mentor/mentee model, where alumni adopt learners interested in similar fields of study and guide them through the transition from school to university. This is complemented by alumni talks, during which former learners present practical topics to Grade 11 & 12 learners and help connect classroom learning with real-world career opportunities.

Keabetswe's presentation introduced learners to SABITA, the role of the association, and the work being done across the bituminous products value chain. It also outlined various entry routes into the industry, including technical, engineering and professional pathways.



Photo: Keabetswe Pholo from ROMH Consulting

The session, attended by only Grade 12 learners concluded with an interactive question-and-answer segment, giving learners an opportunity to reflect on what they had heard. It also allowed them to engage directly with someone who had once sat in similar classrooms and as since built a career in the sector.

WHY IT MATTERS

For learners at a science-focused public school, the challenge is often not a lack of ambition, but a lack of clear visibility of the industries that need their skills and the pathways available to reach them. A direct conversation with a former student working in the field can make those pathways more tangible, while helping learners see themselves in future technical and professional roles.

For SABITA and the broader bituminous products industry, engagements of this nature are a practical investment in the future skills pipeline. By connecting with learners early, the industry can help build awareness, encourage informed study choices and support the next generation of professionals who will contribute to South Africa's road infrastructure sector.



Photo (above and below): Grade 12 Learners from Letsatsing Science Secondary School



BITUMEN BURNS:

A FAST RESPONSE CAN SAVE SKIN, SIGHT AND LIVES

Hot bitumen is an essential material in road construction and maintenance and when it contacts the skin or eyes it can cause serious burns within seconds. Because bitumen sticks to the body and retains heat, incorrect first-aid action can worsen the injury. The most important message for every worksite is simple: cool the burn immediately, do not pull bitumen off the victim, and get the person to a medical facility as quickly as possible.

THE PROBLEM: BITUMEN BURNS NEED SPECIAL FIRST AID

A bitumen burn is not an ordinary burn. The material may be extremely hot; it adheres to the skin and once cooled it can form a hard layer over the wound. Trying to remove it at the worksite can tear damaged tissue, increase pain, expose the wound to infection and make treatment more difficult. Eye contact is especially serious and must be treated as an emergency.

The Sabita Bitsafe training guides reinforces the key response: cool the affected area with water, do not remove the bitumen, use the correct burn dressings, attach the BitSafe Burns Tag, and ensure the victim is taken for medical treatment with the burn information clearly visible. Workers must also know where the emergency shower, first-aid kit and emergency numbers are located before an incident occurs.



THE SOLUTION: THE SABITA BURNS KIT

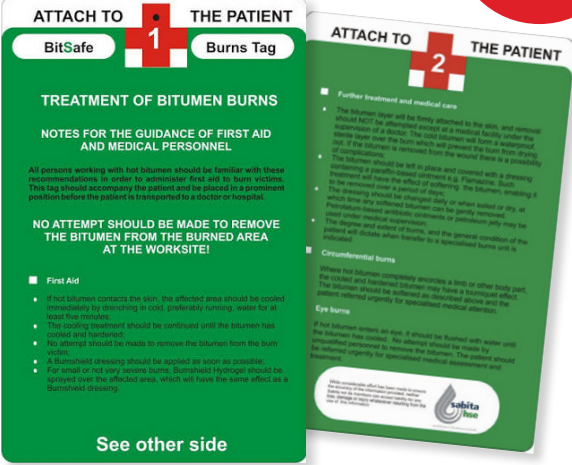
The kit is a practical, site-ready first-aid solution designed to support the correct initial treatment of bitumen burns. It brings together the essential items recommended in the training material, including burn dressings, non-adhesive dressings, eye pads, sterile eye irrigation solution, latex gloves, gauze swabs, scissors, wound dressings, a BitSafe Burns Tag and you would also require a minimum 5 litre container of water for cooling the burned area.

The kit does not replace trained first aiders or medical care. Instead, it helps workers take the right first steps immediately: cool the burn, protect the victim, avoid harmful removal of bitumen, manage exposed burns with suitable dressings, and send clear treatment guidance with the patient to the doctor, hospital or burns unit.

WHAT ARE THE BENEFITS?

- **Faster response:**
The right supplies are available on site when every second matters.
- **Reduced risk of further injury:**
Clear guidance helps prevent workers from pulling bitumen off the skin or using unsuitable treatment.
- **Better communication with medical personnel:**
The BitSafe Burns Tag travels with the patient and alerts medical staff to the special treatment required.
- **Improved workplace readiness:**
The kit supports the company's HSE responsibilities, emergency planning and training outcomes.
- **Greater worker confidence:**
Employees know where the kit is, what it contains and how it supports the emergency procedure.

Protect yourself Bitumen Burn Card



Personal
Protective
Equipment

IT'S THE RIGHT THING TO DO ✓

A PRACTICAL SAFETY MESSAGE FOR EVERY SITE

A Safety kit only delivers value when it is visible, stocked, checked and supported by training. Supervisors should include the kit in toolbox talks, emergency drills and site inspections. Workers should be able to answer three questions without hesitation:

- Where is the kit?
- Where is the emergency water or shower?
- Who must be called in an emergency?

Make bitumen burn readiness part of your safety culture today. Check that every bitumen handling site has a complete Sabita Safety Kit, a minimum 5 litre water supply or emergency shower, visible emergency numbers and trained personnel who understand the correct first-aid procedure. Do not wait for an incident to expose a gap: inspect the kit, brief the team and make sure every worker knows what to do.

For more information on how to order your Sabita Safety Kit, kindly contact us on info@sabita.co.za or email reception@sabita.co.za

TRAINING & EVENTS

Stay up to date with upcoming asphalt industry training, technical webinars and specialist modules designed to support skills development, safety awareness and best practice across the sector.

ASPHALT ACADEMY IN PARTNERSHIP WITH SARF

Course	Date	Format
Road Pavement Binders	31 August – 1 September	Online
Asphalt Overview	15 – 16 September	Online
Asphalt Overview	10 – 11 November	Online

HEALTH AND SAFETY

Event	Date	Format
14th Annual Health & Safety Webinar	22 September 2026	Online
Bitsafe Train-the-Trainer	27 – 29 October 2026	Online

MATERIAL TESTERS MODULES

Module	Date	Region
Bitumen Binder Testing	2 – 6 November 2026	KwaZulu-Natal
Bitumen Binder Testing	16 – 20 November 2026	Cape Region

WHAT ELSE IS AVAILABLE

Our readers are reminded that the Asphalt Academy offers a range of courses that can be scheduled **on request** for Material Testers. Courses can also be developed or adapted to meet specific needs and where preferred by clients, delivered on site.

MATERIAL TESTER MODULES	DURATION
Sampling of Materials	3 days
Aggregate Testing	4 days
Soils & gravels Testing	5 days
Concrete Testing	In cooperation with the Concrete Institute
Asphalt Testing	4 days
Nuclear Gauge Testing	In cooperation with SARF
OTHER TRAINING OFFERED	DURATION
Health & Safety	1 day
Working with Asphalt	1 day
Compaction Techniques	1 day
Transportation of Asphalt	1 day

GENERAL SUPERVISORY COURSES ARE BEING INVESTIGATED TO ASSIST WITH THE UPSKILLING THE COMPLEMENTARY ASPECTS TO GENERAL SUPERVISION, IN TEAMS, LABORATORY OR AT THE PLANT.

Ready to register or find out more?
Contact Lorraine Wagner for course details, availability and booking assistance:

lewagner@sabita.co.za | +21 5312718

We look forward to supporting your continued skills development.



**14th CONFERENCE ON
ASPHALT PAVEMENTS
FOR SOUTHERN AFRICA**

19 - 22 SEPTEMBER 2027 | SUN CITY | SOUTH AFRICA

Circularity and Resilience in African Roads
Engineering Practical Pathways to Sustainability

HERE'S EVEN MORE VALUE FOR YOUR SAT BINDERRR ENTRY FEE

The Society for Asphalt Technology thanks all its sponsors for their valuable support of what promises to be its best SATBinderrr conference so far on 2 and 3 September. SAT is excited to be hosting this year's conference at The Capital Zimbali in Ballito, KZN.

"Sponsorship support has far exceeded our expectations, and we are very grateful for the enormous interest shown in this conference across our industry,"
says SAT President Joanne Muller.

THANK YOU TO ALL OUR AMAZING SPONSORS!

						
GOLD SPONSOR						
FOCUS AREA SPONSORS		SILVER SPONSORS				
						
ASPHALT	SEALS	BINDERS	CONSTRUCTION & MANUFACTURING	CHEMISTRY		
						
BRONZE SPONSORS			MASTERCLASS		KICKOFF EVENING	
						
SAT GOLF DAY		WET HOLE SPONSORS		GOLF PRIZE SPONSORS		
						

The in-person conference is fully subscribed, but there is still time for delegates to enter for online attendance. The event will be preceded by a SAT Golf Day on Tuesday 1 September at the Zimbali Country Club, which is also very close to being fully subscribed.

Conference delegates are also invited to participate free of charge in two more very special events while you're with SAT at The Capital Zimbali.

MASTERCLASS

A one-of-a-kind Masterclass will be hosted by the conference keynote speaker, renowned asphalt and bitumen expert Dr Jean-Pascal Planche, on Friday 4 September 2026. SAT is delighted that Dr Planche has agreed to lead the Masterclass and end the conference on a high note.

Attendance at this hybrid half-day session will be free for SATBinderr conference delegates. It is also available in person or online at a fee to other interested asphalt and bitumen practitioners. The Masterclass will explore lessons learned in the field of modified binders from four decades of experience, research, development and practical application.

“Dr Planche will lead discussions including the ins and outs of feedstock selection, process parameter control, and bitumen-polymer stability, to name a few,” Joanne explains. **“This is truly a must attend session for all from the bitumen end-user to the binder modifier to the binder supplier, and all between.”**

This Masterclass starts at 08:00 at The Capital Zimbali conference centre and closes at 12:30. Registration will open at 07:00. Please book your place early to avoid disappointment as in-person seats are limited. Bookings can be made via the SAT website.

SATBinderr conference 2026

Registered for CPD points

MASTERCLASS *hybrid event*

Modified Binders: Four Decades of Innovation

Presented by Dr Jean-Pascal Planche

FRIDAY 4 SEPTEMBER | 8:00am - 12:30pm

The Capital Zimbali Conference Centre | Join Online via Zoom

Thank you to our Masterclass sponsors

SABITA **TEKFAALT** **Roadspan**

Dr Jean-Pascal Planche - PH.D, PE, France

KICK-OFF DINNER

The Actop Group will be hosting a complimentary dinner from 17:30 on Tuesday 1 September for in-person conference delegates and participants at the Golf Day. This relaxed social event will take place at the new Zimbali Golf Course Clubhouse, allowing guests to network and connect with colleagues prior to the conference while enjoying KwaZulu-Natal's special brand of hospitality and entertainment. **“We’re expecting it to be a fun start to our conference and thank Actop for helping us make it possible,”** says Joanne.

For catering purposes, SAT asks delegates to respond to this invitation as soon as possible. If you are an in-person delegate and have not received an invitation to the “kick-off dinner” on 1 September, please email info@socsat.co.za.



Get Our Latest Bitumen Rheology Book

Characterize particles with confidence—from size and stability to better material performance.

Understand material behaviour. Engineer better pavement performance.

From heat to load: understand every aspect of binder performance.

Quantify binder concentration in bitumen for optimised product composition.

SABITA MANUALS AND GUIDELINES

Withdrawn	Manual 3, 4, 6, 9, 11, 14, 15, 16, 21
Manual 1	Construction of Bitumen Rubber Seals
Manual 2 (PG)	Bituminous Products for Road Construction and Maintenance
Manual 5	Guidelines for the Manufacture and Construction of Hot Mix Asphalt
Manual 7	SurperSurf – Economic Warrants for Surfacing Roads
Manual 8	Guidelines for the Safe and Responsible Handling of Bituminous Products
Manual 10	Bituminous Surfacing for Low Volume Roads and Temporary Deviations
Manual 12	Labour Absorptive Methods in Road Construction using Bituminous Materials
Manual 13	LAMBs – The Design and Use of Large Aggregate Mixes for Bases
Manual 17	Porous Asphalt Mixes: Design and Use
Manual 18	Appropriate Standards for the Use of Sand Asphalt
Manual 19	Guidelines for the Design, Manufacture and Construction of Bitumen Rubber Asphalt Wearing Courses
Manual 20	Sealing of Active Cracks in Road Pavements
Manual 22	Hot Mix Paving in Adverse Weather
Manual 23	Code of Practice: Loading Bitumen at Refineries
Manual 24	User Guide for the Design of Asphalt Mixes
Manual 25	Code of Practice: Transportation, Off-Loading and Storage of Bitumen and Bituminous Products
Manual 26	Interim Guidelines for Primes and Stone Pre-Coating Fluids
Manual 27	Guidelines for Thin Hot Mix Asphalt Wearing Courses on Residential Streets
Manual 28	Best Practice for the Design and Construction of Slurry Seals
Manual 29	Guide to the Safe Use of Solvents in a Bituminous Products Laboratory
Manual 30	A guide to the Selection of Bituminous Binders for Road Construction
Manual 31	Guidelines for Calibrating a Binder Distributor to Ensure Satisfactory Performance
Manual 32	Best Practice Guideline and Specification for Warm Mix Asphalt
Manual 33	Design Procedure for High Modulus Asphalt (EME)
Manual 34	(A) Guidelines to the Transportation of Bitumen and (B) Bitumen Spill Protocol (booklets)
Manual 35	Design and use of Asphalt in Road Pavements
Manual 36	Use of Reclaimed Asphalt in the Production of Asphalt
Manual 37	Sampling Methods for Road Construction Materials
Manual 38	A Health and Safety Guide for Material Testing Laboratories in the Road Construction Industry
Manual 39	Laboratory Testing Protocols for Binders and Asphalt
Manual 40	Design and Construction of Surfacing Seals
Manual 41	Best Practice Guide for the Procurement and Importing of Bitumen
TG1	The Use of Modified Binders in Road Construction
TG2	Bitumen Stabilised Materials
TG3	Asphalt Reinforcement for Road Condition
TG4	Water Quality for Use in Civil Engineering Testing Laboratories

SABITA MEMBERSHIP

REASONS FOR JOINING SABITA

Join forces with other members in the road industry to form part of an organisation that has been pre-eminent in technology development and advancing the case for road provision and preservation.

Direct involvement with identified road authorities is pursued to develop appropriate bituminous product solution. It is recognised that productive relationships with key industry institutions and certain local government entities is beneficial to Sabita and its members. Continued linkage with intra-industry organisations locally and abroad, as well as contact through forums such as CAPSA, RPF, SAT and RMF provides for cost-effective exchange of information on the latest developments in the industry. For more information about the benefits of becoming a member, please go to the Sabita Web-site.

SABITA is pleased to welcome Continental Bitumen SA as a new Producer Member.

Continental Bitumen is part of the Colas Group, which remains a valued SABITA member through Colas SA. The new membership therefore builds on an established connection with the Association, while bringing Continental Bitumen SA into the SABITA community in its own right. Continental Bitumen operates across Europe, Africa, the Middle East and Latin America, with a focus on bitumen supply, terminals and logistics. The connection is also a familiar one: Continental Bitumen SA's Managing Director, Ricardo Louw, previously represented Colas within SABITA and has contributed to the Association over a number of years. We look forward to Continental Bitumen SA's continued participation as the industry strengthens supply-chain resilience, quality and technical collaboration.



HONORARY MEMBERS

Mr D G Green	Mr P A Myburgh	Mr D J Stiglingh
Mr D L Orton	Mr M D Winfield	

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8039338

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Sabita and the associations listed below have founded a global strategic alliance of asphalt pavement associations (GAPA) and are working jointly towards a full, open and productive partnership:

Australian Flexible Pavement Association (AFPA)
European Asphalt Pavement Association (EAPA)
Japanese Road Contractors Association (JRCA)
Mexican Asphalt Association (AMAAC)
National Asphalt Pavement Association (NAPA)
Civil Contractors New Zealand

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