

SANITATION

New construction standard paves the way for non-sewered sanitation

A successful workshop held in Pretoria last year drew much needed attention to a new standard, which is blazing a trail for non-sewered sanitation systems. Article by Akin Akinsete.



Delegates at the sanitation workshop, held in Pretoria in November last year.

The inaugural SANS 30500 awareness workshop was held on November 19, 2019 in Pretoria. The workshop targeted policymakers in the South African national government departments (including, among others, the Department of Water and Sanitation, department of trade and industry, and the Department of Health) as well as other national bodies such as the South African Bureau of Standards (SABS) and the national regulator for compulsory standards (NRC).

The purpose of the awareness workshops is to familiarise stakeholders within the sanitation sector with the SANS 30500 standard, provide insight into how the standard can impact and

benefit the sanitation value chain and industry, and to create a forum where the views and expectations of stakeholders can be shared and discussed. The Pretoria workshop is the first of many planned workshops, which will target other tiers of government, such as provincial, municipalities and metros, and other actors in the sanitation value chain, such as consulting engineers, manufacturers and suppliers, and held in different location across the country.

The workshops are aimed at fostering a better understanding and appreciation of the SANS 30500 standard, create an enabling environment for conversations around how the

standard can benefit the current sanitation landscape and most importantly provide a platform for inter-departmental and inter-governmental collaboration that will be required to promote non-sewer sanitation systems (NSSS) as a viable alternative to the current sanitation paradigm.

The workshop concept is a collaboration between the Water Research Commission (WRC)'s sanitation programme, the South African Sanitation Technology Evaluation Programme (SASTEP) and the South African Bureau of Standards (SABS). The Department of Water and Sanitation, as the sector leader, is also providing technical support. The workshops are framed to provide an overview of the standards and to sensitise the sanitation community on how the standard can contribute to alleviating current sanitation problems and challenges and enable a conducive environment for dialogue and the development of holistic approach that takes into account, available technologies, policies and regulatory framework that can be harnessed in providing dignified, clean, hygienic sanitation solutions for all.

The South African Sanitation Technology Evaluation Programme (SASTEP) is an initiative funded by the Department of Science and Innovation (DSI) and the Bill & Melinda Gates Foundation (BMGF), with the WRC providing the programme, implementation and support services. SASTEP is focused on the commercialisation, localisation and industrialisation of innovative sanitation technologies, including NSSS. The SASTEP model involves creating a platform that enables commercial partners

i.e. entrepreneurs, SMMEs and manufacturers in the sanitation sector bring innovative solutions to market.

The SASTEP platform, through research and its extensive WRC networks, looks to foster enabling policies and regulations, provide technology validation and advisory support and matchmaking with institutional investors such as the IDC, PIC and incentive programmes within the likes of the dti. The adoption and implementation of the SANS 30500 standard is central to the SASTEP initiative and considered a key strategic tool for enabling and regulating the new sanitation technology platforms. The inclusion of the standard in the national building regulation (NBR) and promulgation of enabling policy by relevant government department would galvanise manufacturers, suppliers and end-users and enable the adoption of NSSS, creating market access and eventual commercialisation and industrialisation of NSSS technologies in South Africa.

The standard is titled "SANS 30500 - Non-sewered sanitation systems – Prefabricated integrated treatment units – General safety and performance requirements for design and testing". It is a voluntary, international product standard, published in October 2018 and it was adopted "as-is" by the South African Bureau of Standards (SABS) on May 17, 2019. The second country to do so after Senegal. The standard specifies technical requirements, test methods, and sustainability considerations for NSSS. It outlines criteria for the safety, functionality, usability, reliability, and maintainability of the system, as well as its compatibility with environmental protection goals.



SASTEP Programme Manager, Akin Akinsete, addresses workshop delegates.



WRC Executive Manager, Dr Valerie Naidoo, provided an introduction to South Africa's move towards innovative non-sewered technologies.

The standard is comprehensive and written to ensure SANS 30500 NSSS certified technologies are robust and provide regulators and policy makers with assurance that they are safe and provide positive health and environmental outcomes. SANS 30500 certified technologies can meet basic sanitation needs and promotes economic, social, and environmental sustainability through strategies that may include minimising resource consumption (e.g. water, energy) and converting human waste to safe output. The standard provides safety and performance requirements for the following outputs:

- Safe solid discharge or reuse
- Safe liquid discharge or reuse
- Air emissions
- Odor
- Noise

The knowledge disseminated through the SANS 30500 workshops to various stakeholders in the sanitation value-chain, including policy makers, regulators, manufacturers, suppliers and end-users. will assist in creating consensus around sanitation products and solutions and an understanding of how they fit into solving current sanitation challenges.

Addressing the challenges of inadequate and unhygienic sanitation is a priority of the South African government and several subsidies are provided to ensure the provision of improved sanitation facilities in poor and disadvantaged communities. The ventilated improved pit (VIP) toilet or its equivalent is the most deployed solution due to its low capex, robustness, and environmental impact.

This system is not without problems that stem from misuse, high filling rate, lack of maintenance due to lack of ownership from communities and users as a result of low user acceptance by users, who aspire and clamour for waterborne sanitation. waterborne solutions connected to a city-wide reticulation network also poses a challenge due to its high implementation and operating cost as well as high resource intensity.

Next generation non-sewered sanitation systems (NSSS) therefore provides a bridge between the conventional pit latrine and waterborne solution. As many of the NSSS technologies are novel there is a need for standards, testing, and validation of these technologies. Therefore, to unlock the benefits of NSSS, there is a need to enhance local capacities and strengthening the skills and training on the next generation technologies, the workshops are therefore a much-needed platform for dialogue amongst relevant stakeholders.

The workshop commenced with Dr Valerie Naidoo from the WRC giving an introduction of SASTEP and South Africa's move towards innovative non-sewered technologies. In her presentation she laid out the objective of the programme, the benefits of including NSSS to the current sanitation technology toolbox and the desired policy and regulatory shifts required to unlock the benefits of the standard and NSSS technologies.

This was then followed by Iris Mathye from the Department of Water & Sanitation (DWS). She gave an overview of the South African sanitation legislative landscape and its relevance in supporting innovative technologies including NSSS. She further highlighted her department's commitment and strategies

towards the inclusion of improving non-sewered sanitation solutions in their technology mix. She also touched on the National water and Sanitation Master Plan, the Industrial Policy action Plan (IPAP), the National Sanitation Integrated Plan and the National Faecal Sludge Management (NFSM) Strategy, which if well managed and implemented would bring about much need shift in the sanitation realities in South Africa.

Mathye further reiterated how NSSS can play a crucial role in achieving the department's strategies. The DWS' National Sanitation Integrated Plan, a 10-year road map, includes a focus on acceptance of innovations and industrialisation of sanitation. The adoption and industrialisation of sanitation solutions will assist the DWS in responding and meeting its target for the United Nation's Social Developmental Goal (SDG) target 6.2 on safely managed sanitation on the entire sanitation service chain.

Dr Konstantina Velkushanova from the University of KwaZulu Natal, who was part of the team that developed the manuals and material for the workshop, gave an overview of the SANS:30500 standard. She reiterated the many benefits of the standards such as that policymakers can rely on global expert opinion to ensure safety of the product for its citizens without spending its own time and money. Secondly, manufacturers will have a blueprint to use to create a product that meets international guidelines, making market entry easier and lastly, the standard will increase user confidence in the product, since it reflects a consensus of regulators, manufactures, and users from across the world. She also illustrated the procedure for certification of the non-sewered systems using the SANS:30500.

A panel discussion was held at the workshop to address aspect of certification such local readiness for certification, availability of necessary infrastructure within South African to support testing and certification and the role of stakeholders in supporting the implementation of the standard. Also discussed were timeline for the testing and certification of new technologies, and their market availability in context of support and preparation of the local government bodies to facilitate and incorporate the certification processes.

The panel included Rudolph Opperman (NRCS), Reza Shah, (SABS), Valarie Naidoo (SASTEP) Tina Velkushanova (UKZN), and Iris Mathye (DWS), and it was moderated by Kay Naidoo (SABS). Rudolph Opperman from the national regulator for compulsory standard (NRCS) mentioned that they are currently working to get the standard incorporated into the national building regulation (NBR). This was followed by a question and answer session from the attendees to the panellists.

There was an agreement after the workshop that there should be an acceleration of the implementation of the certification plan by the SABS and that the sector, led by the DWS, should promote acceptance of the standards and the adoption of NSSS technologies. The recommendation made at the workshop was compiled by the SASTEP team who will engage with the relevant stakeholder on the next steps and actions.

The next workshops will be held in 2020 targeting other stakeholders. The stakeholder groups, dates and venues will be announced on the WRC and SABS' website and other platforms.

For more information on the workshops, contact the SASTEP Programme Manager, Akin Akinsete at Email: akina@wrc.org.za



Iris Mathye from the Department of Water and Sanitation.



WRC Research Manager, Dr Sudhir Pillay, SASTEP Commercialisation Manager, Charmaine Twala, and SASTEP Programme Manager, Akin Akinsete.



The discussion panel at the sanitation workshop included Dr Valerie Naidoo (Water Research Commission), Reza Shah, (SABS), Tina Velkushanova (UKZN), Rudolph Opperman (NRCS), and Iris Mathye (DWS).