NEWS FROM THE

PIPELINE

JUNE 2023

The official newsletter of the Southern African Plastic Pipe Manufacturers Association (SAPPMA)

FROM THE CEO'S DESK

Welcome to the June edition of SAPPMA's e-newsletter. As an industry dedicated to providing reliable and sustainable water infrastructure solutions, we recognise the growing importance of our products and services in societies around the world. With this in mind, it is vital for our members to adhere to our Association's Code of Conduct, which ensures ethical and responsible practices in all aspects of our operations.

In this month's newsletter, we would like to express our gratitude to all our members who continue to work tirelessly to uphold these high standards. Your commitment to excellence and dedication to the principles of our Association is crucial in maintaining our industry's reputation as a leader in the provision of plastic pipes and water infrastructure solutions.

We aim to keep our members up to date with the latest trends and innovations, as well as providing valuable insights into the future direction of our industry. For this reason, this month's newsletter features articles on the latest industry news and developments. We hope you find it interesting and engaging and we look forward to continuing to work together to promote sustainable and reliable plastic pipes and water infrastructure solutions throughout Southern Africa and beyond.

Yours sincerely

Jan Venter

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SAPPMA

southern african plastic pipe manufacturers association

CHOLERA OUTBREAKS: THE VITAL ROLE OF RELIABLE WATER INFRASTRUCTURE

SAPPMA'S COMMITMENT TO QUALITY PIPES AND INFRASTRUCTURE

The recent cholera outbreak in Hammanskraal in the Gauteng province, as well as in Limpopo and the Free State resulting in the tragic loss of 23 lives, serves as a stark reminder of the critical importance of reliable water infrastructure.

Access to clean and safe water is a fundamental human right, and a robust water infrastructure is vital in preventing the spread of waterborne diseases such as cholera. In this regard, the Southern African Plastic Pipe Manufacturers Association (SAPPMA) has been at the forefront of ensuring the use of quality pipes and pipe infrastructure to safeguard public health and prevent such outbreaks", explains Jan Venter, CEO of SAPPMA

The Threat of Cholera Outbreaks

Cholera is a highly infectious waterborne disease caused by the bacterium Vibrio cholerae. It spreads rapidly in areas with inadequate sanitation and poor water supply. Contaminated water sources and unhygienic sanitation facilities create a breeding ground for the disease. Once infected, individuals experience severe diarrhoea and vomiting, leading to dehydration and, if left untreated, death within a matter of hours.

As the death toll and reported cholera cases continue to rise, many residents are blaming the government for a lack of clean water for drinking and other household uses. "This dire situation once again highlights the urgent need to prioritize reliable water infrastructure to prevent future outbreaks," Venter stresses.

The Role of Reliable Water Infrastructure

Reliable water infrastructure encompasses a range of components, including pipes, treatment plants, distribution networks, and sanitation systems. High-quality pipes play a pivotal role in ensuring the safe and efficient conveyance of water from its source to communities. By using durable and well-maintained pipes, the risk of pipe bursts, leaks, and contamination is significantly reduced, thereby safeguarding public health.

>> cont.

CHOLERA OUTBREAKS (CONT.)

SAPPMA's Commitment to Quality Pipes and Pipe Infrastructure

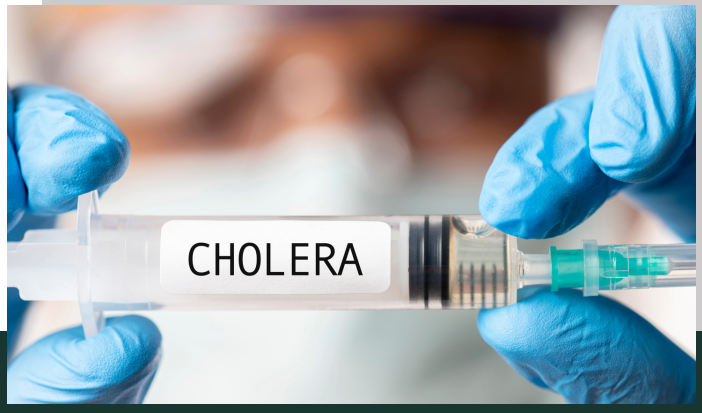
The Southern African Plastic Pipe Manufacturers Association (SAPPMA) has been actively involved in promoting the use of quality pipes. It formed the Installation and Fabrication Plastics Pipe Association (IFPA) in 2009 to expand regulation of the Plastic Pipe Industry in Southern Africa and pipe infrastructure across the region.

"SAPPMA is comprised of leading industry players who are consistently advocating for the use of correctly manufactured and installed plastic pipes that meet stringent quality standards. This commitment ensures the reliability and longevity of water infrastructure systems, minimizing the risk of waterborne disease outbreaks," Venter explains. He also emphasizes the dedication of this industry association to maintaining high standards.

"We believe that the use of quality pipes and pipe infrastructure is crucial in preventing waterborne diseases like cholera. We strive to create awareness about the importance of reliable water infrastructure and collaborate with industry stakeholders to ensure adherence to quality standards."

When quality is non-negotiable

SAPPMA actively works towards educating stakeholders, including government bodies, engineers, and contractors about the importance of using quality pipes for water infrastructure projects. Through regular conferences, webinars, technical manuals and interacting with the industry, SAPPMA provides valuable information on best practices for pipe selection, installation, and maintenance.



Moreover, SAPPMA frequently performs independent audits and tests on samples of plastic pipes manufactured by its members, thereby ensuring they meet the required industry standards. By promoting quality control and compliance, SAPPMA enhances the durability and reliability of water infrastructure systems.

Conclusion

"The cholera crisis serves as a tragic reminder of the critical importance of reliable water infrastructure in preventing waterborne diseases. To mitigate such risks, SAPPMA has been dedicated to advocating for the use of quality pipes and pipe infrastructure. However, we cannot do this alone. We urgently need the support and buy-in of politicians and industry stakeholders to prioritize public health. Only by investing in reliable water infrastructure, communities can ensure access to clean and safe water, reducing the risk of cholera outbreaks and other waterborne diseases", Venter concludes.

ENSURING WATER SAFETY, QUALITY AND RELIABILITY:

THE VITAL ROLE OF ENSURING HIGH MANUFACTURING STANDARDS IN PLASTIC PIPES

SAPPMA has once again highlighted the importance of maintaining high standards in the manufacturing of thermoplastic pipes.

The purpose or mission of SAPPMA is to create absolute customer confidence in the plastics pipe industry, thereby ensuring long term sustainability and dynamic growth in this all-important industry. To this end, it is voluntary, self-regulating, non-profit association that represents approximately 80% of the plastic pipe manufacturers and other stakeholders in the southern African plastic pipe industry. Membership comprises most of the major players in Southern Africa, and the SAPPMA brand is recognized by design engineers and customers as an additional safeguard against poor quality products.

“Plastic piping is used across the complete spectrum of many industries, including mining, civil, irrigation, industrial, telecommunication, and building. Around 150,000 tons of pipe (PVC and HDPE) are produced annually in South Africa, representing many thousands of kilometers,” says Jan Venter, CEO of SAPPMA. “Plastic piping networks form an integral, expensive, long term, and extremely important part of the infrastructure of this country. The integrity of these networks, built up over many years, is of critical importance, serving the water supply and sewage disposal needs of many millions of people. This clearly highlights the need for a responsible, ethical, and quality-conscious industry”.

Venter explains that SAPPMA is not in competition with any accredited certification organization but plays a crucial coordinating role between all stakeholders in this industry. ts sole focus is on a relatively small (but crucially important) sector of industry, and it is in a unique position to detect problems much earlier than any other organization. In addition, SAPPMA monitors its own members in terms of product quality and full adherence to all relevant national standards. This ensures that SAPPMA members meet the association's high standards that are based on international best practice and stipulated in its Code of Conduct.

“Plastic is clearly no longer an alternative pipe material, but has grown to a dominant position in piping systems worldwide, with an estimated share of more than 50%. Independent market surveys in South Africa indicate similar dominance in sizes up to 1,000mm diameter,” Venter explains.

“South Africa is a dry country, and water is increasingly becoming a scarce resource. With demand for clean drinking water and inconsistent rainfall, we can no longer afford the huge losses in pipelines (estimated to be of the order of 40%). The need is for piping systems that are leak-free and durable for extended lifetimes, up to 100 years. HDPE and PVC pipes answer this call with distinction. In addition, they are highly suitable for the rehabilitation of old pipelines,” Venter expounds.

SAPPMA's approach is based on international best practice and motivated by continuous improvement. Independent and unannounced factory audits are frequently done and samples tested to ensure that the association’s members continue to meet the high standards specified. Venter admits that this is a rigorous process, but adds that it that ensures that SAPPMA members are committed to delivering the highest quality products and services.

“The SAPPMA brand is well known and is recognized by design engineers and customers as an additional safeguard against poor quality products. This is because SAPPMA members are committed to maintaining the highest standards of quality, safety, and performance. This commitment is reflected in the quality of the products that SAPPMA members produce, and in the services that they provide to their customers. We will continue to be unwavering in our commitment to create absolute customer confidence in the plastics pipe industry, thereby ensuring long term sustainability and dynamic growth in this all-important industry,” Venter concludes.

SAFRIPOL RECEIVES INTERNATIONAL ISO APPROVAL FOR PE100 POLYETHYLENE RESIN

In a first for a South African Resin manufacturer, Safripol is proud to announce that it has achieved the globally recognised International Organisation for Standardisation (ISO) certification for PE100 polyethylene, branded as iMPACT100® and used in the manufacturing of pipes and pipe fittings for the supply of potable water and gaseous fuels.

This certification, issued by the independent European certification body AENOR, verifies that iMPACT100® pipe resin meets the ISO 4427-1:2019 and ISO 4437-1:2014 requirements for polyethylene piping systems. It further demonstrates Safripol's commitment to international benchmarking and product quality in line with providing its customers with best-in-class solutions.

This material is also certified by the SABS as being compliant to SANS 4427-1:2008 and SANS 4437-1:2014 requirements for water and gas pipe applications respectively. Safripol's flagship PE100 pipe resin is produced at its Sasolburg manufacturing facility and was developed in close collaboration with LyondellBasell and Qenos, who are world-class leaders in the manufacturing and technical application of PE100 resins.

According to George Diliyannis, Senior Application Engineer at Safripol, the ISO certification is a key milestone in Safripol's journey towards delivering high performance PE resins for advancing the plastic pipe industry in South Africa. With this international recognition, we can now work together with our customers to develop competitive localised solutions for both water and gas reticulation applications in South Africa and beyond.

Erratum:

Safripol recently published an article entitled, "*Polyethylene pressure piping a sustainable and durable alternative to legacy pipe materials*".
References to PVC as a legacy material were published in error and the article has been corrected; https://www.engineeringnews.co.za/article/polyethylene-pressure-piping-a-sustainable-and-durable-alternative-to-legacy-pipe-materials-2023-03-03

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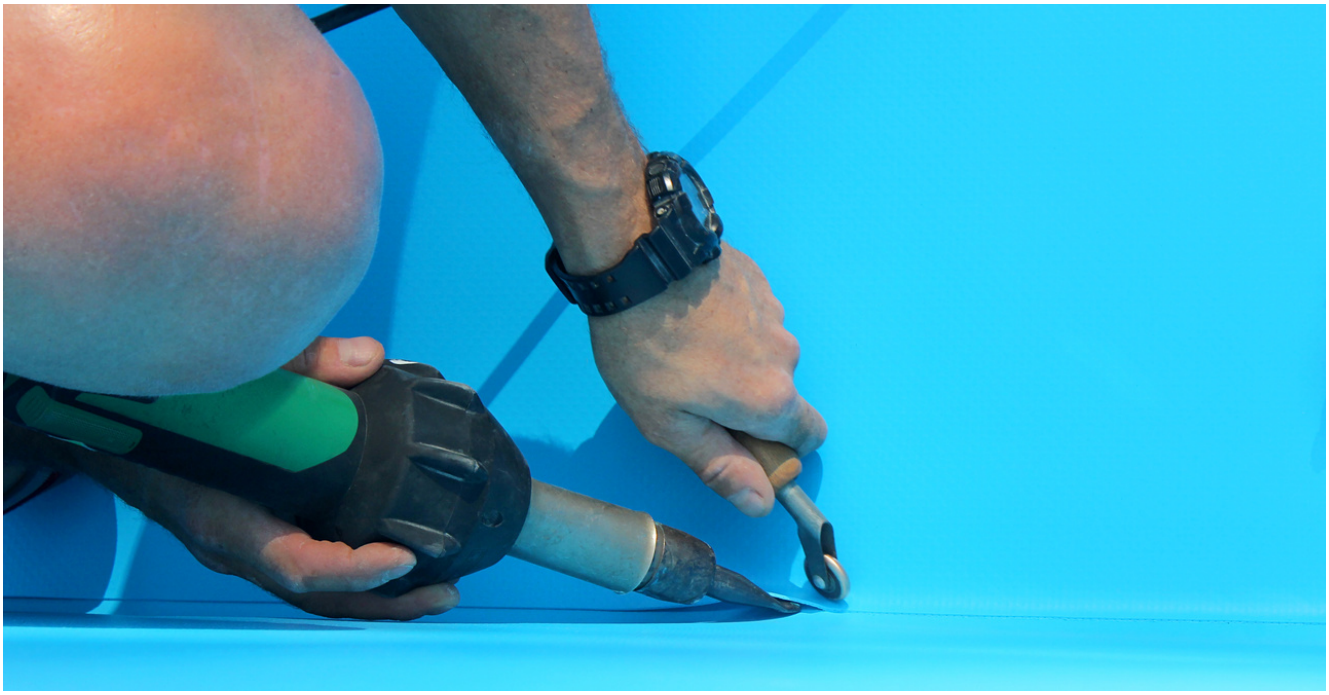
Let's plastic responsibly

RAISING THE BAR:
THE CRUCIAL ROLE OF HIGH STANDARDS IN PLASTIC WELDING



As the demand for plastic welding continues to rise in various industries, it is essential to emphasize the importance of quality and standards in plastic welding, particularly in plastic pipes and pipe infrastructure. Both the Southern African Plastic Pipe Manufacturers Association (SAPPMA) and Plastics SA, the umbrella body representing the South African plastics industry, recognize the need for high-quality welding techniques in ensuring the safety and durability of plastic pipelines.

Plastic welding involves joining two or more pieces of plastic using heat, pressure, or a combination of both. It is a preferred method for repairing and joining plastic pipes in various industries, including construction, mining, and agriculture, among others. Welding offers numerous benefits, such as providing a seamless and reliable joint, improving the pipe's strength and durability, and reducing the risk of leaks and failures.

"The quality of welding depends on the skill and expertise of the welder, the welding equipment, and the welding technique used. Poor welding practices can result in weak or faulty joints, leading to leaks, ruptures, and other structural failures.

These failures can have catastrophic consequences, resulting in environmental pollution, property damage, and even loss of life. It is therefore crucial to ensure that plastic welding is performed to the highest quality and standards possible.

This can be achieved through proper training, certification, and adherence to industry standards and regulations. Plastics SA is at the forefront of promoting high-quality plastic welding techniques through our various training programmes, which cover various thermoplastic welding methods," says Kirtida Bhana, Head of Plastics SA's Academy for Learning & Development.

Plastics SA provides welders with the necessary knowledge and skills to perform various plastic welding techniques, such as butt welding, electrofusion welding, and extrusion welding, among others. The programme also emphasizes the importance of adhering to industry standards and regulations.

>> cont.

PLASTIC WELDING (CONT.)

Venter emphasises that the importance of quality and standards in plastic welding cannot be overstated, particularly in the construction of plastic pipelines.

“The use of plastic pipes for infrastructure projects has increased significantly in recent years, thanks to the numerous benefits they offer, such as cost-effectiveness, ease of installation, and durability. However, the quality of the plastic welding used to join these pipes is crucial to their long-term performance and safety,” he explains.

In addition to Plastics SA's training programmes, the industry has various standards and regulations that must be adhered to in plastic welding. Adhering to these standards and regulations ensures that plastic welding is performed to the highest quality possible, reducing the risk of failures and environmental damage. It also promotes consistency and uniformity in plastic welding practices, making it easier for regulators and industry players to monitor and enforce compliance.

“Plastic welding is a critical process that requires high-quality and standardized techniques, particularly in the construction of plastic pipelines. By promoting high-quality welding practices, we can ensure the long-term performance and safety of plastic pipelines, reducing the risk of failures and environmental damage. We believe that the hands-on training provided by Plastics SA's Training Academy has contributed significantly to improving the quality of plastic welding in South Africa, ensuring the safety and reliability of plastic pipelines in various industries,” Venter concludes.

PEWeldBank: The Ultimate Solution for Poly Welding

PEWeldBank is making major inroads into South Africa, becoming the preferred Fusion Data recording system, and is a fully featured Productivity and Risk Management Tool.

PEWeldBank mobile app and data recording system replaces the need for manual paper records and ensures correct welding parameters are being adhered to by prompting the operator through each fusion welding step, whilst displaying timers, actual pressures and temperatures. All weld data is securely uploaded and stored in the online Fusion Management System (FMS) in real time, allowing you to review any weld, track welder and project productivity, and share reports with your clients. The small, lightweight sensor set is extremely robust and a must have for accurate weld (Heated Tool and Electro Fusion) protocol recording.

PEWeldbank is recommended for all projects were Heated Tool and Electro Fusion welding is required.

Please contact Avesco (info@avesco.co.za) for more information or to arrange a demonstration.

Plastics|SA and SAPPMA host workshops to discuss possible ways to refresh, align and elevate Thermoplastic Fabrication qualifications

Plastics|SA and SAPPMA jointly hosted two workshops facilitated by Kirtida Bhana of Plastics|SA to discuss the way forward to refresh, align and elevate Thermoplastic Fabrication qualifications for submission to the merSETA for development. The submission relates to the development of new Occupational Qualifications for the Thermoplastic Fabrication sector. The Department of Higher Education (DHET) is in the process of transitioning to Occupational Qualifications and all current qualifications based on NQF Certificates will expire. All SAPPMA Members were extended the invitation to participate in the initial workshop on 22 March 2023 which extended into a second workshop on 24 March 2023 for finalisation of the submission. The outcome of the discussions can be seen in the PDF Document and the qualifications for submission is found on the same document in the Table: 'Submission to merSETA'.

The submission has been made to merSETA and we will follow due processes of DHET. All current qualifications will remain in place during the transition period wherein work will begin on the development of the new qualifications.

Once qualifications are developed they are submitted by the Quality Council for Trades and Occupations (QCTO) to the South African Qualifications Authority (SAQA) for registration.

The next step after the registration of the qualification with SAQA is the development of a curriculum for all the newly registered qualifications. The newly developed curriculums are submitted to the QCTO for approval. Once a curriculum satisfies all the criteria, the provider is able to develop learning material content for that curriculum. The provider then needs to get accredited as a Trade Test Centre for the Trade as well as a provider for the Trade of which each have their own sets of stringent criteria. The provider will also need to get accredited to offer the other accredited qualifications. The timing of all these processes lies in the hands of DHET Structures which include the merSETA, QCTO and the National Artisan Moderation Body (NAMB) and thereafter in the hands of the provider.

Plastics | SA

ENVIRONMENTAL PRODUCT DECLARATION CONFIRMS SUSTAINABILITY, HEALTH AND SAFETY OF PVC PIPE

By Bruce Hollands

In the sustainability world, many manufacturers claim that their products are "green." Often the evidence supporting these claims is questionable at best. However, for municipalities to meet their green infrastructure goals, the most transparent, science-based, and accurate information is needed. This is what the 2015 Environmental Product Declaration (EPD) for PVC water and sewer pipe has done. The document was:

1. Developed in compliance with the International Organization for Standardization (ISO) 14025 standard, the most rigorous and transparent available.
2. Based on a Life Cycle Assessment (LCA) according to the ISO 14040 series standards that was peer-reviewed by an independent third-party panel of sustainability experts.
3. Certified by NSF Sustainability, a division of global health organization NSF International.

NSF Sustainability reviewed and verified the LCA (on which the EPD is based) as well as the EPD documents themselves. NSF ensured that all applicable rules were followed and that no unsubstantiated claims were made. Additionally, NSF confirmed the health and safety of PVC pipes:

The PVC pipe industry is proud of its NSF certifications. NSF International has been evaluating the safety of piping materials used in North America's water systems for almost 80 years. Unfortunately, a recent report by misinformed environmental groups attempts to disparage the impartiality and professionalism of NSF, including its testing protocols. NSF has responded to these unfounded allegations. See NSF's White Paper titled, "The Truth About NSF/ANSI/CAN 61 and PVC Pipes".

"PVC pipe and fittings are resistant to chemicals generally found in water and sewer systems, preventing any leaching or releases to ground and surface water during the use of the piping system. No known chemicals are released internally into the water system. No known toxicity effects occur in the use of the product."

To stay relevant, EPDs are required to be renewed periodically. This is why the PVC pipe industry updated its original document which was published in 2015. The second EPD was released on March 21, 2023. New data, analysis, and certification have confirmed what those of us in the industry have known all along – PVC pipe is a very environmentally friendly product:

- The 2023 EPD shows an overall 6% reduction of embodied carbon and most other environmental impacts compared to the 2015 EPD.
- There was a 20% reduction in electricity use during the extrusion process and a 66% reduction in water use during PVC pipe manufacturing.
- PVC water and sewer pipe continues to have the lowest carbon footprint and environmental impacts of all underground piping materials.

The PVC pipe industry continues to do it right by providing the most objective, transparent, and high-quality data on its health, safety, and environmental performance. Other pipe materials should follow suit.

SAVA TO HOST "INNOVATION IN PVC" CONFERENCE

The Southern African Vinyls Association (SAVA) is proud to announce its inaugural "Innovation in PVC" conference, which will take place on Wednesday, 30 August 2023 in the auditorium at Sasol Place in Sandton, Johannesburg. The one-day event will bring together approximately 200 delegates from across the vinyls industry in Southern Africa, including raw material and additive suppliers, manufacturers of vinyl products, importers, and recyclers.

About the event:
The conference will showcase the latest innovations and developments in the local vinyl industry, with a call for papers going out to all role-players. Speakers will have the opportunity to deliver a 30-minute presentation on any new product innovation or development that is impacting and benefiting the local vinyl industry.

Exhibitions:
The conference will also feature a dedicated exhibition space where companies can display their products and services for conference delegates. Major players in the local PVC industry and members of SAVA have agreed to donate cash prizes, which will be awarded to the best presentations, stands, or projects with the most potential for positively impacting the local industry. Sponsors wishing to come onboard to support the event and encourage innovation, closed-loop management and the growth of the industry, are also encouraged to make contact with SAVA as soon as possible.

Attendance fee:
The cost to attend the conference is R2 000 (excluding VAT) for SAVA members and R2 500 (excluding VAT) for non-SAVA members. The registration fee includes access to all presentations and the exhibition space, coffee & tea breaks, lunch and the cocktail function after the conference during which the prizes will be awarded. Presenters will be afforded access to the conference at no charge.

"We are thrilled to be hosting this ground-breaking event for the local vinyls industry and are hoping to make this an annual event that will grow both in size and impact," said Monique Holtzhausen, CEO of SAVA.

"This conference will provide a platform for local innovators to showcase their products and services, as well as an opportunity for delegates to network with other industry professionals.

This symposium is a unique chance for anyone interested in the vinyls industry to learn about the latest innovations and network with their peers. We encourage anyone with an interest in the industry to attend and submit a proposal to present their innovation," Holtzhausen concluded.

For enquiries. please email Conference@savinyls.co.za or call (071) 083-5219.

PLASTIC PIPES CONFERENCE ASSOCIATION

NEWSLINES ON REVIEW FROM PPXXI PIPELINES

Many developments and breakthroughs in the world of plastic pipes will be reviewed at PPXXI. Organizers of this event have posted the draft program with the complete collection of abstracts of papers to be delivered at this Conference and Exhibition hosted in Lake Buena Vista, Florida, during September 25 - 27 2023. The following synopsis offers only a short overview of the news content to be delivered during PPXXI.

Recycled pipes from waste packaging
The EU demands high standards for the re-use of waste plastic packaging whereas European converters supply high quality standards of pipe systems. Paul Freudenthaler, a scientist from the Austrian Johannes Kepler University of Linz has matched supply with demand.

His work on compounding virgin high-performance pipe grades with recyclates confirms sufficient long-term performance for the use in less demanding applications such as drainage pipes or fittings.

New resin for power and telecom
Olivera Bilic (Chevron Phillips Chemical Company LP) will announce that pipe production trials using a new high performance bimodal polyethylene resin were successful.

This resin developed for power and telecommunication applications is all the more important given that the global demand for such power conduit pipes is expected to surge annually by 5% over the next ten years.

These production runs have shown excellent processability (lb./hr and feet/min.) needed to maximize conduit production rates with or without the incorporation of post-industrial recycled content.

Innovative screw technology
Rainer Viessman from the German Hans Weber Maschinenfabrik will announce a new screw geometry for counter rotating twin screw PVC extruders.

His screw threads are wave-shaped in the circumferential direction. This creates a faster introduction of mechanical energy into the plastic. This system is thus more effective and the homogeneity of the melt is improved and also the so-called 'banana peel' effect is minimized. Plastification is accelerated and an additional positive effect on homogenization is achieved.

Polyamide gas pipes put to the test
Carine Lacroix (GRTgaz) will report on a recent trial to evaluate the robustness of polyamide gas network installations with a focus on installation and fusibility in harsh conditions. Future gas delivery systems may be required to transport new gases such as biomethane and hydrogen. Hence the interest in the use of Polyamide pipelines for natural gas transportation for pressures up to 16 bar. Recommendations regarding the fusion of such PA materials will be made.

In preparation for the seismic big one
Experience in Japan and from around the world demonstrates the seismic advantages of flexible plastic pipe systems. Professor Michael O'Rourke (ASCE Member) will provide guidelines for the required wall thickness for a fully fused HDPE water main that could be subject to an earthquake.

Included in the paper are the relationships for calculation of the required pipe wall thickness as well as a flow chart for ease of use.

Safe shores and electricity in Central Africa
An HDPE piping system will be used to extract methane and carbon dioxide trapped at the bottom of Lake Kivu in Central Africa. These gases produced by decomposing matter and volcanic activity pose a risk to lake village communities and livestock.

Richard Coombs (ISCO Industries) will describe how this project was designed to transport and separate these gases and to convert the methane into electricity by a local power generation facility.

PVC Pipes: lowest failure rate in North America
Research Associate Professor Steven Barfuss from the Utah State University will report on the largest water main break survey in North America.

800 utilities in the USA and Canada responded to his survey – representing 2.45 million miles of pipeline. Results continue to show that PVC water pipe has the lowest failure rate compared to traditional pipe materials commonly used in water systems.

Breakthrough in biaxially oriented pipes
A Dutch pilot plant has successfully produced biaxially oriented polyethylene and polypropylene pressure pipes in-line.

Ajay Taraiya (SABIC) will provide a detailed study of the orientation of 32- and 63-mm outer diameter pipes with the former having a wall thickness between 1.9 to 3 mm. All important pressure test results for pipes produced under these process conditions will be reported.

New resin designs for micro-irrigation sustainability
Rachel Anderson (DOW Inc) will introduce new resin designs for sustainability enhancements in polyethylene based micro-irrigation pipe systems.

Separate resins have been developed for thin walled MDPE tapes (4-25 mil) used in shorter life cycles for cultivation of high value crops for say, berries, and also thick walled LLDPE tubing (>25 mil) intended for more permanent installations such as orchards and vineyards.

The bimodal design results in irrigation tapes with higher production rates and environmental performance. The LLDPE resin was designed to make micro-irrigation tubing with 65% recycled content.

Closed loop recycling of PEX Pipes
Robin Bresser (Borealis) will show how four experienced companies have worked together to successfully recycle PE-X waste pipes back into high quality PE-X pipe systems.

PE-X pipe solutions have a successful 50 year track record in the heating and plumbing sector and the environmental benefits of this circulatory project will enhance their use.

Vast irrigation scheme in Egypt
The Egyptian government has initiated an irrigation pipe project to cultivate one million acres of land to boost food security. Thousands of meters of large diameter PE100 pipe systems will be supplied.

Ahmed Abd Allah Haroun (Al Amal Alsharif Co.) comments: ¨Production of PE100 pressure pipes of this size and scale has never been attempted before in the African Continent.¨

Close study of multifrequency microwave technology
The use of spoolable reinforced thermoplastic pipe (RTP) technologies in the onshore oil and gas industry has expanded significantly over the past decade. Chantz Denowh (ADV Integrity Inc) anticipates that such an interest will continue to grow as oil and gas operators transition to transporting alternative fuels such as hydrogen and carbon dioxide

One gap is the need for viable inspection technologies that pipeline operators can use for long-term integrity management. His study works to address this gap by progressing the multifrequency microwave technology and evaluating its accuracy against simulated defects that commonly occur to spoolable RTPs in the field..

Close review of tin stabilizers for PVC pipe systems
Tin mercaptide stabilizers have been used successfully in the US for the last fifty years as the dominant rigid stabilizing system for the manufacture of PVC and CPVC pipe systems. Robert Smith (PMC Organometallix) will closely examine how three primary systems ensure shear and static stability.

These stabilizer systems (2-EHMA, reverse-ester, and mixed mercaptan) will be assessed and include torque rheometer-based fusion (ASTM D-2538) and dynamic shear stability testing, 2-roll mill dynamic stability testing, static oven testing, and dehydrochlorination testing. Case studies will also be presented using the established criteria.

One small step for education...
White G. Jee (JEE Consulting Services) will underline the importance of education in the technical world of plastic pipes. ¨

The complete content of PPXXI abstracts are posted via https://ppxxi.com/wp-content/uploads/2023/03/Abstracts_2023_v11.pdf
Furthermore, the draft program is available on:
https://ppxxi.com/wp-content/uploads/2023/03/PPXXI-Draft-Timeline_v6_03.25_to-OC.pdf
Information, online registration, exhibition space and further sponsorship opportunities for PPXXI are available through: **https://ppxxi.com**

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