

Plastic Pipes Moscow 2013

International Conference
October 3 - 4
Hotel Nikol'skaya Kempinski Moscow

Organizers



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WELCOME

On behalf of the organizing committee of Plastic Pipes Moscow 2013, I welcome you all. Hotel Nikol'skaya Kempinski has an interesting history. It was formerly the home of count Orlov-Davydov. My name is also Davidov-ski. But we have no family connections - only pipe connections, plastic pipe connections...

When this hotel was renovated recently most pipes above ground were replaced by plastic pipes. From Moscow in the USA to Moskva in the Russian Federation, plastic pipes are improving our lives and the way we live. No more banging metal pipes – only quality performance that will outlive generations.

You may have recognised Tchaikovsky's Piano Concerto №1 in our introduction. It is the world's most famous piano concerto. Six months after Tchaikovsky composed this magnificent music, it was played in Boston, Massachusetts – half a world away.

Even with the internet, our pipe melodies do not travel so fast around the world. However, before we decided to hold this conference in Moscow, we were already impressed with the development of plastic pipe technology in the region. We have much expertise and experience to share over these next two days.

It is an exciting yet challenging time for our industry. Within four years, the world market for plastic pipes is projected to grow by at least six percent every year. In this region alone, annual market volume has reached over half a million tons. 85% of plastic pipes are made locally.

A Russian proverb says that «every road has two directions». What you see in this region is one trend that is leading towards greater quality production capacity and a second trend that is leading to a world of specialised pipe systems such as multilayer pipes. Today, both directions lead to Moscow.

They also lead to Sochi for next year's winter Olympic games where we expect record performances from competitors upon the ice and from plastic pipes below the ice.

Another record performance that I would like to mention is that of Anna Dautova and her team at Inventra. Their wonderful energy and inspiration have made this event possible. We thank them for their support and I thank all of you for being here. Our plastic pipe connections will last a hundred years. The human connections that we make today may not last as long. But they will be an equally good investment...

Dobro pozhalovat'!

Zoran Davidovski
Chairman of Organizing Committee
Plastic Pipes Moscow 2013



Plastic Pipes Moscow 2013

WELCOME

I am delighted to welcome you to the International Plastic Pipes Moscow 2013 Conference. The very fact that Moscow has been chosen as the venue for such a large-scale and important event indicates that the Russian market of plastic pipes is becoming a significant part of the global market. We are honored and proud to be the co-organizers of the Plastic Pipes Conference and Exhibition.

Over the last decade, the Russian plastic pipes market has made a giant step in its development and continues to move forward. Despite the heavy shortage of raw materials and the lack of proper regulatory framework, Russian converting companies have managed to achieve today's performance levels and to gain a competitive edge on the global level.

The Russian market of polyethylene pipes grew almost four-fold in the last 10 years, and has reached 330 thousand tons. Polypropylene pipes production increased by 15% in 2012, and will continue to grow as estimated by our experts, due to increased demand in the segment of construction and utilities modernization, where the share of worn-out metal pipes that need urgent replacement stands at over 65%.

Plastic Pipes Moscow 2013 Conference is a unique opportunity to learn about the latest developments in the industry, advanced technologies and modern trends in the industry, to share valuable international experience and to consider the mistakes of other countries. The audience today is the cornerstone of the industry; it consists of those who hold the future of the market in their hands: converting companies, producers and distributors of polymers, traders and leading importers, financial and service organizations, leading engineering companies and suppliers of world-class technology.

According to traditions of our conferences please let me encourage you to get involved in the open dialogue and lively discussion of important industry issues within the official program of the event.

Good Luck!

Dr. Fares N. Kilzie
Chairman of the Board of Directors
CREON Energy

ORGANIZED BY



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Plastic Pipes Moscow 2013

ORGANIZERS



CREON ENERGY

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History

CREON Energy, the premier Russian provider of advisory services to the Oil & Gas, Petrochemicals, Chemicals and related industries, was founded by Fares Kilzie, who had been involved in the international advisory business since 1993.

The history of CREON Energy is tightly linked with the development of the national petrochemical industry. In the past 20 years, the national oil, gas and petrochemical industries have achieved considerable progress, and CREON Energy is proud of its contribution and participation in shaping the innovation development vector in upstream, midstream and downstream sectors of the Russian economy.

International ties, nationwide geography, decades of experience, deep knowledge of markets and experienced staff, reputation of recognized leader in the advisory business – these are unique CREON Energy assets accumulated over the years and heavily invested in achieving success of our clients.

Mission

CREON Energy implements the hands-on approach in its advisory services, and believes that its core mission is to assist the clients in improving the business performance.

Practical recommendations provided by CREON Energy to assist the clients with strategic and commercial decisions, are based on research & analysis, constant interaction with industry experts, and vast experience in advisory services.

The leading Russian and international oil & gas, petrochemical and chemical companies, as well as government institutions are among the clients and partners of CREON Energy.

Goals

Achieving success for our clients and promoting dynamic growth in the Oil & Gas, Petrochemicals, Chemicals and related industries are the main goals set by CREON Energy.



INVENTRA

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INVENTRA was established in April 2012 on the basis of Plastics Department of CREON Group. Having adopted the huge experience gained by the Group since 2002, and having retained highly qualified experts with a deep understanding of real trends in the markets, INVENTRA is now a recognized successor with a deserved reputation as the leading Russian advisory firm in plastics.

Markets in focus:

Biopolymers	Plastics in cable industry	Polymer fibers and yarns
Composites and compounds	Plastics in packaging	Polymer foams
Engineering plastics	Plastics in road construction	Polypropylene
PET	Plastics Recycling	Polystyrene and ABS plastics
Plastic equipment	Polyamides	PU & TPU
Plastic films	Polycarbonate	PVC
Plastic pipes and fittings	Polyethylene	Rubbers and Tires
Plastic sheets	Polymer additives	Wood-plastic composites
Plastics in automotive industry		

Advisory services of the company include extensive expert approach to every individual client, elaboration of detailed research on the Russian plastics and plastics converting markets, and also annual conferences serving as a meeting point for the key players in markets and segments in focus.

The company has also been involved in developing market entry strategies for a number of international companies in the Russian market of plastic products, it has contributed to development of marketing policies and assisted in identifying distributors in Russia.



Plastic Pipes Moscow 2013

ORGANIZERS



PLASTIC PIPES CONFERENCE ASSOCIATION

The Plastic Pipes Conference Association (PPCA) was formed to organize and run the series of Plastic Pipes Conferences on behalf of the international plastics pipes industry.

Member associations of the PPCA are the PE 100+ Association, Plastics Pipe Institute, PVC4Pipes and The European Plastic Pipe and Fittings Association.

The mission statement of the PPCA is as follows: «PPCA is a global association dedicated to the ongoing creation and distribution of technical and application information on plastic pipes systems in order to educate and expand their safe, cost effective and sustainable use».



Chairman of Organizing Committee

Zoran Davidovski

Pipelife International GmbH

I have been working in the plastic industry for the last 15 years first as general manager and then as Vice President for Marketing & Innovation of the Pipelife Group in charge of Corporate RD and as well the CSR responsible. I am member of the MCM of the Pipelife group. Pipelife group is present in 27 countries, has sales of 900 mil euro and is the number 2 player in the European market

I have a master degree in mechanical engineering and I come from Croatia but have been working and living in Vienna, Austria for the last 12 years.

I represent Pipelife in Teppfa, where I am the chairman of WG HSE, and a member of WG civils and Utilities

I have been the chairman of the Plastic Pipes conference PPXIV in Budapest in 2008, and PPXVI in Barcelona 2012.



Dr. Fares Kilzie

CREON Energy

Dr. Fares Kilzie is the Chairman at CREON Energy, a Major Russian advisory firm dealing in management consulting covering the gas, chemicals, petrochemicals and related industries. Dr. Kilzie is responsible for strategic consulting, including business plans and production strategy development. He has over 17 years in providing exclusive consultations on Oil & Gas refinery, Chemicals and Petrochemicals industries in uniquely challenging situations in Russia and FSU states. He provides advisories for governmental and commercial entities that includes: in-depth strategic & commercial analysis, special financing plans, EPC analysis, projects funding, trade flows, and project planning including technology requirements evaluations.

Dr. Kilzie is also the founder of INVENTRA company - the leading consultancy firm in the industry of monomers, polymers and plastics of the Russian Federation.



Plastic Pipes Moscow 2013

ORGANIZING COMMITTEE



Sandjar Turgunov

CREON Energy

Born in 1974 in Moscow. In 1997 graduated from Moscow State Institute of International Relations (MGIMO), specialized in International Economic Relations. In 1998 he started his career at ITE company where led the conferences and international forum projects. Since 2004 holds the position of CREON's CEO. He is in charge of all marketing and conferences projects of the company including the hydrocarbon raw materials, agrochemicals and specialty chemicals directions. Also he participates in working groups on investment projects, Regional Development Strategies of Russian oil and gas companies, transnational corporation's investment in the Russian Federation and implementation of strategies in Western and Eastern Siberia and the Far East.



Anna Dautova

INVENTRA

Born in 1989 in Perm region. In 2010 graduated from Moscow State University of Economics, Statistics and Informatics (MESI), specialized in Management Consulting. As a student, led the conference unit at the university, and decided to link her further career with business events. In 2007 started from a position of conference sales manager at CREON. In 2011 was appointed Director of Plastics Department. In April 2012, with creation of INVENTRA, a subsidiary organization of CREON Group, was appointed CEO.



GENERAL INFORMATION

CONFERENCE LOCATION

Hotel Nikol'skaya Kempinski Moscow

109012, Nikol'skaya str. 12, Moscow, Russia

The recently opened Nikol'skaya Kempinski Moscow is located in the historic center of the city. Due to its upmarket entourage and the high level of service, hotel is the best place for business meetings and cultural events in the capital.

REGISTRATION

To register for the conference, participants should follow to the registration desk, located in front of «Kandinsky» hall before the start of sessions.

BADGE

Please, keep a name badge throughout the conference, including coffee breaks, lunches and evening event.

PAPER PRESENTATIONS

Speakers may check the technical aspects of their presentations by contacting the organizer during the breaks between sessions.

TIME LIMIT ON SPEECHES

In accordance with the program of the conference, each speech should not exceed 20 minutes time limit.

EXHIBITION AND LOTTERY

The exhibition is held at Vasnetsov Hall, where exhibitors will be happy to meet you at their stands. The exhibition is open on October 3-4 from 10.00 to 18.00

In addition, the iPad Lottery will be held at the exhibition hall. To participate in the drawing you need to drop your business card in a lottery drum.

COFFEE BREAKS AND LUNCHES

Coffee breaks area is located in the foyer in front of «Kandinsky» hall.

Lunch is held on the ground floor of the hotel at «MosaiK» restaurant.

INTERNET ACCESS

There is a wireless Internet Wi-Fi in the Hotel. In order to receive a password to the network you should contact organizers desk located in front of «Kandinsky» hall.

DRESS CODE

Business attire.

GALA DINNER

The welcome reception on the occasion of the opening of the conference will take place at «MosaiK» restaurant of Nikol'skaya Kempinski Moscow on October 3 at 18.30.



Plastic Pipes Moscow 2013

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BAERLOCHER

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www.baerlocher.com
Contact name: Dr. Udo Anders

The Baerlocher group of companies, privately owned, is one of the world's leading Plastics additive suppliers, drawing on experience from more than 185 years of company history.

Our expertise in the production and use of additives for plastics, is closely linked to the success story of plastic materials. We have sound experience in traditional stabilizers and are global leader in Ca-based systems. Our global presence and more than 1200 employees around the world ensure that we stay close to our customers.

Continuous investment in research and development combined with the extensive application know how of our technical experts, enables us to be a key partner worldwide. We actively support the VinylPlus European PVC sustainability initiative.



SPONSOR / EXHIBITOR



LYONDELLBASELL

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LyondellBasell is one of the world's largest plastics, chemical and refining companies. The company manufactures products at 58 sites in 18 countries. LyondellBasell products and technologies are used to make items that improve the quality of life for people around the world including packaging, electronics, automotive parts, home furnishings, construction materials and biofuels.

Our vertically integrated facilities, broad product portfolio, manufacturing flexibility, superior technology base and reputation for operational excellence enable us to deliver exceptional value to our customers across the petrochemical chain – from refining to advanced product applications. With the help of LyondellBasell materials, thousands of products are made safer, stronger, more affordable and more reliable.

Customers in the pipe industry are served by a dedicated team of LyondellBasell experts offering benefits that deliver a competitive advantage through:

- Strong market reputation
- More than 50 years of experience
- Quality products, services and people
- Leadership in technology and innovation
- Global Pipe & Infrastructure business unit with sales and technical service teams in Europe, North America and Asia-Pacific

For over 50 years, we have been providing high-quality resins to producers of pipe, fittings, sheet and profiles. Our advanced polyolefins – marketed as Hostalen and Lupolen PE, Hostalen PP, Moplen PP, Hifax PP and polybutene-1 (PB-1) - deliver the value and performance required for these demanding applications. LyondellBasell's advanced polyolefins can be processed using extrusion, thermoforming, compression moulding and blow moulding as well as injection moulding.



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ROLLEPAAL

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Contact name: Rob Spekrijse

Rollepaal is a producer of complete extrusion lines. They have production facilities in the Netherlands, USA and India.

Rollepaal produces extruders, dies and downstream equipment but also has a large amount of feeding equipment like gravimetric feeders etc. Rollepaal produces PVC, PE, PP and ABS extrusion lines.

The main driver for Rollepaal is sustainability. Sustainability is less material, less energy and more recycling. They have some interesting products doing this:

- OPVC, orientated PVC in which process you make the lightest pipe, the strongest pipe with the lowest energy consumption. Also the pipe has the lowest carbon footprint. Interesting in relation to PE is the wet-surface of transport ability for a pipe. The surface for transporting in a OPVC line is about 25% more, instead of a PE 250 you can transport the same amount in a material (assume a pressure pipe of 16 bars) than in an OPVC 200!
- Multi Layer technology, a technology in which a lot of post-consumer waste can be used in the core of the layers. This can be combined with high CaCO₃ fillers or foam.



COFFEE BREAK SPONSOR



RUSVINYL

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RusVinyl LLC is a 50/50 joint venture established by SIBUR Holding and SolVin for construction of a Polyvinyl Chloride (PVC) Integrated Plant in Kstovo of Nizhniy Novgorod region.

SIBUR is a unique vertically integrated gas processing and petrochemical company. SIBUR owns and manages the largest gas processing business in Russia in terms of volumes of associated petroleum gas (APG) processing and is the leader in the country's petrochemical sector. Further information is available on www.sibur.ru.

SolVin is a joint venture of Solvay (75%) and BASF (25%). SolVin is the second European producer of PVC resins with a production capacity of 1.3 million tons and 7 production sites spread all over Europe. Further information is available on www.solvinpvc.com.

Construction works for erection of the RusVinyl PVC integrated complex are in closing stage. The plant production capacity will be 330 kilotons of polyvinyl chloride and 225 kilotons of caustic soda per year. RusVinyl will use one of the best PVC production technologies in the world, the licensor of which is SolVin.



PARTNER / EXHIBITOR

M | O | L
get flexibility

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Contact Person : Daniel Sander,
Sales Director

M.O.L. is one of the leading international manufacturers of rubber sealing systems, lip seals, rubber sealings for corrugated pipes and many other rubber products for the plastic pipe industry. Furthermore M.O.L. is specialized in the production of customised extruded and injection moulded rubber products.



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PIOVAN

Customers. The core of our innovation.

PIOVAN

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www.piovan.com

Contact name: Mr. Giorgio Santella

Piovan, headquartered in Santa Maria di Sala, Venice was founded in 1934 as mechanical engineering company. In 1964 entered the plastics industry and specializes in the manufacturing of auxiliary equipment.

The product range includes: hoppers, dehumidifiers, crystallisers, dryers, mould dehumidifiers, volumetric, gravimetric and weight loss blenders, granulators, thermoregulators and chillers. The supervisory softwares, which allow the simple management of the plant from a remote position, complete the product range.

Piovan specializes in the following applications sectors: Packaging, Automotive, Industrial & Electronics, Building & Construction, Textile, Furniture -Toys - Housewares, Medical and Pharmaceutical, Recycling and Compounds.

Over the past ten years the company has become a multinational organization with production facilities in Italy, Germany, Brazil, China and USA, 21 subsidiaries and representatives for more than 70 countries and 900 collaborators worldwide.

With its sales and technical assistance network widespread globally, Piovan offers its contribution as engineering partner, by designing and creating turn-key centralised systems and innovative solutions in step with market demands and technological evolutions.

PIOVAN companies and manufacturing facilities

PIOVAN , Headquarters, Santa Maria di Sala (VE), Italy

Production of auxiliary equipment, production of chillers and cooling systems, Technical centre, Sales, Customer Service, R&D, Marketing, IT, Human Resources, Corporate Auditing & Controlling

PIOVAN do BRASIL, Osasco, Brazil

Production of auxiliary equipment and chillers, Sales&Service

PIOVAN China, Suzhou, China

Production of auxiliary equipment, Sales&Service

UNIVERSAL DYNAMICS , Woodbridge, Virginia, U.S.A.

Production of auxiliary equipment, Sales&Service

FDM, Königswinter, Germany

Production of blending solutions, Sales&Service.

PIOVAN subsidiaries

in Europe: Germany, France, Austria, Czech Republic, Hungary, United Kingdom, Turkey

in America: Canada, Mexico

in Asia: China (Shanghai, Beijing, Shenzhen), India, Thailand, Indonesia, Singapore, Vietnam

PIOVAN representatives in more than 70 countries worldwide



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Pipelife Russia started production of «Pragma®» plastic pipes and chambers for sewage and storm drain networks in 2007. Pipelife range of products considered to be one of the widest and most efficient on the market, and at the present day includes «Pragma®» line of doublewall plastic pipes and chambers, PVC sewage pipes, PVC and PE pipes for pressure water supply.



PARTNER / EXHIBITOR



POLYPLASTIC GROUP

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POLYPLASTIC Group is the recognized leading player of engineering thermoplastics' and PE pipes' market in Russia and CIS countries. POLYPLASTIC Group today comprises sixteen plastics processing enterprises and three compounding manufacturing plants in Russia, Belarus, Ukraine, Kazakhstan and UK, two R&D Centres, a number of joint ventures and trade houses. Annually the Group's manufacturing plants produced more than 350 KT of thermoplastic composites, polyethylene pipe systems and fittings. For more than 20 years of activity POLYPLASTIC Group has become as the symbol of reliability and the highest quality for thousands of Russian and foreign consumers.



Plastic Pipes Moscow 2013



WAVIN OVERSEAS

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PARTNER

Wavin Overseas B.V. is the central export organisation of the Wavin Group, representing the Group outside Europe. Wavin Overseas is licensing Wavin technologies to partners across the globe. Furthermore, we deliver systems for the supply of drinking water, waste water discharge and storm water management.

Global network

We sell our products and systems to customers outside of Europe, either directly to projects or through our distribution network. We are proud to work with a large global network of around 120 agents and distributors.

Wavin Group

Wavin Overseas is a member of the Wavin Group, a multinational with annual revenues of approximately €1.3 billion in 2011, approx. 6,000 employees and a presence in 24 European countries, with 42 manufacturing sites in 16 of those and one in China. You can learn more about the Wavin Group at www.wavin.com.



AKTIPLAST-T

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PARTNER

LLC «Aktiplast-T» pipe has its own production of PE 80 and PE 100, designed for gas (GOST 50838-95 rev. 1,2,3), pipelines, transporting water, including for drinking water at a temperature of 0 °C to +40 °C (GOST 18599-01 rev. 1), as well as pipes for drilling wells and gravity sewer «KORSIS».

The company has developed structure and years of experience in the production and sale of polyethylene pipe (HDPE) (over 10 years).

Through a combination of the following key factors LLC «Aktiplast-T» has earned a reputation among its customers:

- The use of the latest high-tech equipment of last generation, a recognized world leader firm «KRAUSS MAFFEL» (Germany) and the use of imported raw materials (Daelim, KPIC, Total Petrochemicals, BASIL);
- The plant has four extrusion lines with a range of manufactured diameters from 20 mm to 630 mm;
- One of the lines has a function «quick switch» (only Russian), which allows to produce pipes of any diameter in the range of 75 to 160 mm, with wall thickness from 2 to 20mm. Such capabilities allow the line to expand the degree of HDPE pipe in various sectors of industry and agriculture;
- Own research laboratory;
- Pipes are manufactured in straight lengths and coils (from 50-250 m), pipe diameter of 160 mm is only available in straight lengths. The length of pipe in straight from 0.5 to 13 m with a multiplicity of 0.5 m is permitted by agreement with the consumer making tubes of different lengths;
- Strict control: the quality of raw materials, subject to the process, the quality of the finished product;
- The availability of warehouse space and a permanent stock of finished goods;
- Providing road transport services (delivered directly to the object);
- The maximum vehicle loading (using the principle of «dolls»);
- All products are certified and have the appropriate permissions to use.



EXHIBITOR

AGRU KUNSTSTOFFTECHNIK GMBH

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Contact name: Mr. Kay Lugmayr

AGRU Kunststofftechnik GmbH is a potential Austrian company with worldwide activities in producing and distributing high-quality plastic products for piping systems and apparatus engineering, environmental technology as well as constructional engineering.

The family business is being managed by its owners Mr. Mag. Alois Gruber and Mr. Alois Gruber sen., who attach great importance to quality in the fields of products, service and processing.

The export rate of approx. 90 % documents the international sales policy and makes innovative products of Upper Austria well known around the world. AGRU products are successfully employed in various fields of industry and infrastructure and are often used for particularly critical applications.



EXHIBITOR

IPM S.R.L.

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Contact name: Mr. Claudio Lanconelli

Company IPM (Italian Plastic Machinery) designs and produces machines for downstream equipment for plastic pipes extrusion lines and for profiles. Haul-offs, cutting machines, beelling machines, packaging plants, threading and slotting machines for pipes for wells, bending machines, special machines on request. The whole process – starting from the design up to the machinery's production – is effected directly in the company, in security for quality and for its being totally made in Italy.

IPM skilled staff is always ready to provide new solutions and to give assistance to our customers.

The latest development of our technology for downstream equipment is our wide range of Automatic inline injection socketing machines for DW corrugated PP and PE pipes.



**IPT INSTITUT FÜR
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EXHIBITOR

IPT Institute of Testing Technology with headquarters in Southern Germany, is dedicated to the development, design and production of state-of-the-art test equipment and software for the plastics industry. With more than 40 years of experience and the emphasis on equipment for the requirements of the plastic pipe and fitting industry, IPT has become market leader in their field, with exports to 100 countries world-wide. The range of products available includes complete rigs for performance of

- Hydrostatic and Burst Tests,
 - Temperature Cycling,
 - Dynamic Pressure,
 - Resistance to Hot Chlorinated Water,
 - Falling Weight for Pipes + Profiles,
 - Rapid Crack Propagation (RCP-S4),
 - Slow Crack Growth (SCG),
 - Ring Stiffness / Ring Flexibility / Creep Ratio,
 - Melt Mass-Flow Rate (MFR) / Melt Volume-Flow Rate (MVR),
 - Carbon Black Content,
 - Full Notch Creep (FNCT),
 - CNC Test Rod Milling Machine,
 - Oxygen Permeability,
 - Resistance to Dichloromethane,
 - Dimensional Control,
- ...and many more!

Plastic Pipes Moscow 2013

PROGRAMME



Plastic Pipes Moscow 2013

PROGRAM

Thursday, October 3, 2013

9.00 – 10.00 Registration. Welcome Coffee Break

Session 1. CONFERENCE OPENING

10.00 – 10.10 Welcome Addresses

Zoran Davidovski, Chairman of Organizing Committee
Fares Kilzie, Chairman of the Board of Directors **CREON Energy**

10.10 – 10.35 **Noru Tsalic**, Senior Vice President

AMI Consulting Division, Applied Market Information Limited

«Plastic Pipes: Overview of the Plastic Pipes World Market. A Global Success Story»

10.35 – 11.00 **Kirill Trusov**, Head of Pipeline Systems Department **Polyplastic Group**

«PE Pipes Market in Russia, Ukraine, Belarus, Kazakhstan»

11.00 – 11.25 **Oleg Kozlov**, Technical Director **Alterplast, Russia**

«Plastic Pipes and Fittings. Overview of the Russian Market
(Reinforced Plastic Pipes, PPR, PEX and PERT)»

11.25 – 11.50 **Aleksandr Stepchenko**, Director,

Alina Hovanskikh, Deputy Director **Union KTI, Russia**

«Composite Pipes: Russian Market Overview»

11.50 – 12.00 Discussion, Q&A

12.00 – 12.30 Coffee Break

Session 2

12.30 – 12.50 **Mohana Murali Adhyatmabhatter**, Senior Technical Service Manager -

Marketing Centre Pipe **Borouge Pte Limited, United Arab Emirates**

«PE Pipes in the Oil and Gas Industry in the Middle East»

12.50 – 13.10 **Detlef Schramm**, Marketing & Asset Manager PE Pipe Europe **LyondellBasell**

«Innovative Polyethylene Grades for High Demanding Piping Applications»

13.10 – 13.30 **Christophe Salles**, Application Marketing Manager PE Infrastructure - Business Unit Pipe **Borealis**

«Stiff, Stiffer, PP3000 MPa – an Impressive Journey Through 30 Years of PP Development for Underground Sewage Applications»

13.30 – 13.50 **Michael Pluimer**, Director of Engineering - CPPA Division **PPI, USA**

«The Evolution of Corrugated HDPE Pipe Materials»

13.50 – 14.00 Discussion, Q&A

14.00 – 15.00 Lunch

Plastic Pipes Moscow 2013



PROGRAM

Thursday, October 3, 2013

Session 3

- 15.00 – 15.20** **Lola Ogrel**, Director of Analytical Department **Inventra**
«PVC Pipes Market Overview. Russia and CIS»*
**The paper prepared jointly with JSC «Chemkor»*
- 15.20 – 15.40** **Steve Tan**, Executive Director **PVC4Pipes, Brussels**
«How Much Recycled PVC in PVC Pipes?»
- 15.40 – 16.00** **Anders Udo**, Technical Product Manager PVC Additives for Pipes
Baerlocher, Germany
«Global PVC Stabilizers Trends for Pipes»
- 16.00 – 16.20** **Rob Spekrijse**, CEO **Rollepaal, The Netherlands**
«New Technology on Oriented PVC»
- 16.20 – 16.30** Discussion, Q&A
- 16.30 – 17.00** **Coffee Break**

Session 4

- 17.00 – 17.20** **Zoran Davidovski, TEPPFA**
«The CO2 Footprint of Plastic Pipe Systems (EPD, CO2 Footprint, LCA, Teppfa, Environmental Performance)»
- 17.20 – 17.40** **Sergei Skopintcev**, Head of the Technological Control Department
Mosvodokanal
«Application of Plastic Pipelines in Water-Supply and Drainage Systems of Moscow City»
- 17.40 – 18.00** **Marco Mekes**, Manager Testing & Certification **Kiwa Nederland BV**
«Plastic Pipework for Gas in Buildings and the Consequences of Fire»
- 18.00 – 18.20** **Steve Sandstrum**, Director Technical Services **ISCO Industries**
«PE Pipe and Hydroelectric Development»
- 18.20 – 18.30** Discussion, Q&A
- 18.30** **Plastic Pipes Moscow 2013 Gala Dinner at Hotel «Nicol'skaya Kempinski Moscow»**



Plastic Pipes Moscow 2013

PROGRAM

Friday, October 4, 2013

9.00 – 10.00 Welcome Coffee Break

Session 5

- 10.00 – 10.05** Opening Address
Zoran Davidovski, Chairman of Organizing Committee
- 10.05 – 10.25** **Tony Radoszewski**, President **PPI, US**
«Overview of the US PE Market»
- 10.25 – 10.45** **Rainer Kottmeier**, Managing Director **Battenfeld-Cincinnati, Germany**
«Large Pipes – Chances and Challenges»
- 10.45 – 11.05** **Alexander Shmelev**, General Director **Polymerteplo Group**
«Application of PEX Pipes in High-Temperature Hot-Water Transmission Lines»
- 11.05 – 11.25** **Ton Schoenmaker**, International Project Manager R&D **Pipelife Group**
«Chamber and Manhole System Development in Europe and Russia»
- 11.25 – 11.35** Discussion, Q&A
- 11.35 – 12.05** **Coffee Break**

Session 6

- 12.05 – 12.25** **Pavel Rodionov**, Sales and Marketing Director **RusVinyl**
«Raw materials supply of PVC pipes production in Russia»
- 12.25 – 12.45** **Ignacio Munoz**, CEO **Molecor Tecnologia S.L., Spain**
«New Developments in PVC-O»
- 12.45 – 13.05** **Jean-Francois Greiner**, Strategic Marketing & Business Development **Aliaxis, France**
«Обучение производителей ПВХ»
- 13.05 – 13.25** **Stephan Schuessler**, Head of R & D **Georg Fischer DEKA, Germany**
«Using PVC Pipes to Put Microalgae in the Right Light»
- 13.25 – 13.35** Discussion, Q&A
- 13.35 – 14.35** **Lunch**



Plastic Pipes Moscow 2013

PROGRAM

Friday, October 4, 2013

Session 7

- 14.35 – 14.55 Andre Nijland**, Area Manager Technology Licensing Asia Pacific, North-America
Wavin Overseas
«PVC-O BiAx: case studies of successful installations around the world»
- 14.55 – 15.15 Giorgio Santella**, Chief Marketing Officer **Piovan**
«Highest Energy Efficient Cooling Solutions for Plastic Pipes Production»
- 15.15 – 15.35 Peter Postma**, Consultant Piping Systems & Materials **Kiwa Technology**
«Suitability of Nondestructive Techniques for Testing Polyethylene Pipe Joints»
- 15.35 – 15.55 Andreas Frank**, Dipl.-Ing. Dr.mont.
Polymer Competence Center Leoben GmbH, Austria
«Comparison of Accelerated Tests for PE Grades Lifetime Assessment»
- 15.55 – 16.05** Discussion, Q&A
- 16.05 – 16.35 Coffee Break**

Session 8

- 16.35 – 16.55 Steven Folkman**, Associate Professor **Utah State University**
«Survey Results of Water Main Failures in the United States and Canada»
- 16.55 – 17.15 John Kurdziel**, P.E. **Advanced Drainage Systems, Inc. USA**
«Replacement Test for Current Buckling and Ring»
- 17.15 – 17.35 Tanja Piel**, Senior Scientist - PE Research **Borealis Polyolefine, Austria**
«Fast Small Scale Method»
- 17.35 – 17.45** Discussion, Q&A
- 17.45 – 18.00 iPad Lottery** **Blue Rollepaal**
- 18.00 Closing Coffee Break**



Session 1

Thursday, October 3, 10.10 – 10.35

Plastic Pipes: Overview of the Plastic Pipes World Market. A Global Success Story

Noru Tsalic

Senior Vice President

AMI Consulting Division, Applied Market Information Limited

After briefly introducing Applied Market Information Ltd. (AMI Consulting), the paper presents a concise history of pipes. Mankind's use of pipe systems dates to the early antiquity, when water and sewage pipes made of inorganic materials (stone, bricks, clay) were manufactured and installed. Next, use of natural organic materials and later metals constitute further historical milestones in a centuries-long process of designing better pipe systems. Finally, the modern era saw the use of pipes manufactured based on synthetic polymers and composites of synthetic polymers with other types of material.

The paper will then reviews and quantify the world market for pipes in 2012 and the share of plastic within the total market. The plastic pipes market will be analyzed by geographic region and pipe application. The market growth will be forecast and analyzed for the next few years.

The paper will end by pointing out the main challenges that the plastic pipes industry will be facing.



Session 1

Thursday, October 3, 10.35 – 11.00

Pe Pipes Market in Russia, Ukraine, Belarus, Kazakhstan

Kirill Trusov

Head of Pipeline Systems Department
Polyplastic Group

Utility infrastructure in Russian Federation is in the state of emergency. About 230,000 km, 42% of all water pipelines need replacement, as well as 39% of sewer and 29% of heating supply pipelines. Water loss and leakage has reach 27% of total water supplied to the networks, heat loss has reached 15%. Utility pipelines in rural communities are at lowest level.

The existing networks renovation rate only provides a fraction of minimal renovation required to postpone the infrastructural disaster. The spread of deteriorated networks grows each year. Plastic pipes could become a solution to this problem. They share less than a quarter of the total volume of pipelines. Growth potential is enormous. The existing production capacity of plastic pipes is, at least, two times greater than the actual demand.



Session 1

Thursday, October 3, 11.00 - 11.25

Plastic Pipes and Fittings. Overview of the Russian Market (Reinforced Plastic Pipes, PPR, PEX and PERT)

Oleg Kozlov

Technical Director
Alterplast

Oleg Kozlov will present the data on the Russian market of plastic pipes. The report provides quantitative data on trends in the market of plastic pipes, PPR, PEX and PER. From these data we can identify trends of Russia and Europe market development. In the report, Mr. Kozlov talks about the prospects for the development of the domestic market of plastic pipes.

The report presents data on consumption of up to 110mm plastic pipes (except for PVC and HDPE) in Russia since 2008 by 2012 with main brands.

The report shows the comparative curves for long-term strength of the pipe PEX, PERT, PPR.

“Alterplast” working on the Russian market since 2001 as a supplier of wide range of components for the engineering systems for water supply, heating and sanitation. The range of products include: pipes and fittings made of polypropylene Tebo technics and Master Pipe; equipment for the installation of pipes and Fora Candan; plastic and metal pipes, push-on, thread and compression fittings, etc.



Session 2

Thursday, October 3, 12.30 – 12.50

PE Pipes in the Oil and Gas Industry in the Middle East

Mohana Murali Adhyatmabhattar

Senior Technical Service Manager Marketing Centre Pipe
Borouge Pte Limited, United Arab Emirates

The Oil and Gas Industry uses many kilometers of pipe work to transport fluids from the wellhead to storage and processing units. These conventional steel pipes suffer from corrosion and other related problems and have to be replaced regularly to avoid spillage, but now some operators are considering more cost effective solutions using PE pipes. Clearly using PE pipes in various situations such as lining carbon steel pipes will eliminate corrosion and thereby eliminate the release of hydrocarbons to the environment. This paper presents a number of examples where PE pipes have been used as stand-alone pressure pipes or as liners for high pressure steel pipes in the Middle East.



Session 2

Thursday, October 3, 12.50 – 13.10

Innovative Polyethylene Grades for High Demanding Piping Applications

Detlef Schramm

Marketing & Asset manager PE Pipe Europe
LyondellBasell

Piping systems for the transportation of fluids have been used for thousands of years. Over time different materials have been used – and in the last 50 years plastic pipes – respectively, pipes made from high density polyethylene have been used. With more experience and more sophisticated methods for installation and construction, the expectations and number of application also grew. Many, varied solutions have been developed and implemented – especially when it comes to pressure pipe applications. This paper presents examples of these solutions and provides insight into the material science behind these solutions. Examples include the limitations of incumbent materials and highlight the advances of new grades developed in recent years.

With long service life requirements, durability and increased resistance to environmental factors are essential. The LyondellBasell pressure pipe portfolio is based on Hostalen CRP 100 black, a benchmark in the market with balanced properties for typical PE100 applications. Furthermore, modified PE100 grades are offered with specific focus on extreme requirements for slow crack growth resistance targeting alternative pipe laying techniques (RC) or excellent performance for the production of large bore pipes having large wall thickness (XL).

Driven by customer requests for materials with higher temperature resistance for industrial applications or resistance to disinfection for drinking water, the portfolio is now extended by two new grades.

Extended temperature window

Hostalen CRP 100 RT black enlarges the application temperature far beyond the typical limit of max. 40°C of regular HDPE pressure pipe resins. Derived from PERT Type II material Hostalen 4731 B the new grade combines temperature resistance up to 80°C and UV protection by a carbon black package homogeneously distributed according to PE100 standards. Customers already started using the new grade in industrial applications of hot fluids, thermal water pipes, desalination units and power cable conduits.

Increased Resistance to Disinfectants

Responding to customer needs, LyondellBasell developed Hostalen CRP 100 RD black, a PE 100 grade with improved resistance to disinfectants, such as chlorine for drinking water distribution systems. Hostalen CRP 100 RD black pipe resin offers a key component to pipe networks where elevated temperature and stringent disinfectant systems represent additional challenges to potable water distribution.



Session 2

Thursday, October 3, 13.10 – 13.30

Stiff, Stiffer, PP3000 MPa – an Impressive Journey Through 30 Years of PP Development for Underground Sewage Applications

Christophe Salles

Application Marketing Manager PE Infrastructure Business Unit Pipe
Borealis

Polypropylene has a track record of more than 30 years for non-pressure sewage applications due to the excellent performance in service and the continuous development seen in both material and pipe design, bringing additional benefits to the members of the value chain and to a sustainable society. Not only the inherent material properties and the energy and cost efficiency, but also a large number of new developments make PP a highly accepted material on the market. The traditional cornerstones of the requirements profile: mechanical properties, chemical resistance and ease of processing and installation, are increasingly being supplemented by demands for purity, sustainability and recyclability. The first generation of PP with higher modulus PP was introduced in 1998 and gave a major step forward with an optimized balance of the stiffness-impact properties. A few years later, this product was improved and an E-modulus of 1700 MPa was achieved, representing the first PP-HM to meet the requirements set in the modified EN1852 standard in 2002, adjusted based on the development of this new class of polypropylenes. This journey has continued and the present paper reflects on the recently introduced next generation PP for underground drainage and sewage. It presents the first PP-HM with an E-modulus of above 2000 MPa, achieved without the use of fillers, meeting and exceeding the requirements set in the recently - again - modified EN1852. Recent developments of PP for non-pressure pipe applications are reviewed demonstrating the contribution of PP systems to sustainable waste water management and to the reduction of material and energy consumption throughout the various stages of production, transportation and use. Is this the end of polypropylene development for sustainable underground sewage and drainage or just the beginning? An outlook on next development steps for PP is presented.



Session 2

Thursday, October 3, 13.30 – 13.50

The Evolution of Corrugated HDPE Pipe Materials

Michael Pluimer

Director of Engineering CPPA Division
PPI, USA

Corrugated high density polyethylene (HDPE) pipe has been used in various drainage applications in the United States for nearly 50 years. First developed in smaller diameters primarily for agricultural applications, the product quickly found its way into the highway industry as an edge drain to increase pavement performance. By the 1980s larger diameter pipes were being manufactured for culverts, storm sewers, and detention systems. Though many of the pipes produced in the 1980s are still functioning well today, the industry and products have continued to evolve to meet the increasing service life requirements of many state departments of transportation. While most of the manufacturing methods are still the same, the materials have significantly evolved over time. Of particular interest is the stress crack resistance properties of corrugated HDPE pipe materials, which have seen nearly a 10-fold increase over the past 30 years. Recent testing performed on early pipe materials shows Notched Constant Ligament Stress (NCLS) test results of around 10 hours, while many current materials test over 100 hours. This paper compares some of the early materials used to manufacture corrugated HDPE pipe with current materials, particularly focusing on stress crack resistance. It also details some of the standards and drivers in the corrugated HDPE pipe industry over the U.S. over the past 30 years that have led to this significant increase in performance properties of the product.



Session 3

Thursday, October 3, 15.00 – 15.20

PVC Pipes Market Overview. Russia and CIS

Lola Ogrel

Director of Analytical Department
INVENTRA

Currently, the proportion of PVC in the total consumption of plastic pipes in Russia is only 11%, while in Western Europe, the USA, Japan and China, PVC pipes dominate.

The Russian market of PVC pipe is developing rapidly. The increase in demand for pipes stimulates new domestic producers, while well-established players are expanding and modernizing their facilities too. In 5 years only, 42 extruders for production of PVC pipes were supplied to Russia, including 14 extrusion lines in the first half of 2013, worth \$ 1,210,000.

For the past 10 years, the volume of consumption of PVC pipes has increased 2.4 times, while production grew 3.3 times. Thus, the increase in consumption is covered by Russian producers, while the share of imports is gradually falling.

In other CIS countries the demand for PVC pipes is met by imports (including supplies from the Russian Federation). This is explained by the fact that local production of PVC pipe is available only in Ukraine and Uzbekistan.



Session 3

Thursday, October 3, 15.20 – 15.40

How Much Recycled PVC in PVC Pipes?

Steve Tan

Executive Director
PVC4Pipes, Brussels

Nowadays, more and more PVC is being recycled. The main source of rigid recycled PVC is from old window frames, but much of the use of this material is in the production of pipes.

Recycled PVC (R-PVC) can be introduced either in the homogenous layer of a compact pipe, or in the central layer of a multi-layer pipe. This layer can be compact or foamed, the latter in order to reduce the total weight of the pipe. The amount of R-PVC in the pipe can reach high levels - sometimes above 50% - if the grade and purity of the recycled material is good enough.

The presentation will examine the different possibilities and constraints on the use of high levels of R-PVC in pipe production.



Session 3

Thursday, October 3, 15.40 – 16.00

Global PVC Stabilizers Trends for Pipes

Anders Udo

Technical Product Manager PVC Additives for Pipes
Baerlocher, Germany

PVC is a well-established material used worldwide for different applications such as window profiles, technical profiles, cables and sheets.

In Pipes, PVC is used in pressurized potable water applications as well as sewerage systems, gas piping systems, gutters and fittings.

A Global analysis of PVC stabilizer systems in use, for pipe applications, indicated that except North America, where almost exclusively Sn-based stabilizers are used, Pb-based stabilizers have been the dominating system for the past several decades. During recent years, Ca-based stabilizers have been utilized in many regions. In Europe this has now become the most utilized system.

The path to where we have arrived involved significant challenges, and it is fair to say that new obstacles appear as the change becomes more advanced.

This presentation aims to give an overview of the story so far, recounting practical experience to highlight the challenges seen.



Session 3

Thursday, October 3, 16.00 – 16.20

New Technology on Oriented PVC

Rob Spekrijse

CEO

Rollepaal, The Netherlands

Although OPVC (equal to PVC-O) exists already for 4 decades, it is only the last 10 years beneficial for production due to better-developed technologies and widespread acceptance by different standards and norms. The rise of the environmental question to produce with lower material use, lower energy use and better carbon footprint, makes OPVC the solution for pipe in the coming years, especially pipes used for water transportation, potable water as well as waste water.

The advantages of OPVC compared to non-polymer solutions in pipe are fabulous. Not only the carbon footprint of OPVC is by far much better than traditional solutions like Ductile Iron, but also corrosion, a major problem in Ductile Iron piping, is history with OPVC. All other advantages of OPVC are listed and discussed. Newest information makes that OPVC, for water pipe installations, is even a better solution than PO solutions like PE100.

To produce OPVC, 4 different technologies are known. There are two off-line solutions and two in-line solutions developed in the last 40 years. The 4 different solutions are described and compared to each other.

OPVC is the sustainable and reliable solution with chances to be developed widely.



Session 4

Thursday, October 3, 17.00 – 17.20

The CO2 Footprint of Plastic Pipe Systems (EPD, CO2 Footprint, LCA, Teppfa, Environmental Performance)

Zoran Davidovski

TEPPFA

The development of EPDs allows a comprehensive insight in the environmental impact of plastic pipe systems over their entire life cycle.

The results of the LCAs indicate that the impact of plastic pipe systems on the environment is relatively lower compared to the environmental footprint of main non-plastic piping materials.

The contribution of plastic pipe systems to global warming (CO2 footprint) is for all plastic piping systems that have been studied lower in comparison of pipe systems made out of competing materials for the pipes.

The aim of this project is to carry out several life cycle assessments (LCA) studies from the cradle to the grave. The LCAs of several plastic pipe systems outline the various environmental aspects which accompany the pipe systems, from the primary extraction of raw materials up to and including the end of life (EoL) treatment after their reference service life time.

This paper reports on the LCA of some specific plastic pipe systems with the final aim of providing a clear environmental product declaration (EPD), thus raise the awareness amongst developers, installers and users, of the potential environmental impacts and benefits over the complete life cycle. In addition some comparisons for the environmental impact category global warming (CO2 footprint) are presented and discussed.



Session 4

Thursday, October 3, 17.40 – 18.00

Plastic Pipework for Gas in Buildings and the Consequences of Fire

Marco Mekes

Manager Testing & Certification
Kiwa Nederland BV

The application of plastic pipework for gas inside buildings is still restricted by national laws or local regulations in many countries, while other countries allow this application. The exclusion of plastics is in the main based on the supposed fear of the impact of a fire on the pipework and the escape of unburned gas with all its consequences.

Supporting data based on incident statistics will help to pave the road to more favorable legislation for plastic pipework inside buildings.

In many countries over the world gas incident data of gas installations have been collected for many years. In some of these countries incident data are confidential while in other they are published and may be used freely. The causes of incidents with pipework vary widely. Not only material failure and third party involvement are well known causes but also manipulation or suicide actions. It is obvious that the later two mentioned causes have to be removed from statistics because these are not material related. In view of statistical data, critical pipe failure due to fire impact is extremely seldom.

As a result a corrected overview of incidents will be presented and field experiences from The Netherlands will be reported. In this country the use of multilayer pipe in domestic pipework is very common for more than ten years.

The conclusion is that the incident rate (excluding manipulation and suicide) is very low and plastic pipework for gas in buildings does not contribute to an increase in failure statistics. The experiences with working with plastic installation pipework are excellent. Especially the tightness of the pipework has been mentioned as an advantage.

As soon as the road has been paved, the application of plastic pipework can be rolled out worldwide!

National and international regulations have to be modified in favor of Multilayer (ML) domestic gas pipework.



Session 4

Thursday, October 3, 18.00 – 18.20

PE Pipe and Hydroelectric Development

Steve Sandstrum

Director Technical Services
ISCO Industries

The term «hydroelectricity» conjures images of massive concrete dams and vast reservoirs that harness the power associated with moving water. More recently, however, technological advancements and environmental awareness have resulted in renewed interest in small-scale hydroelectric projects. These unique installations are often referred to as «mini», «micro», or «run of the river» hydroelectricity and they hold the potential to bring a clean, reliable and renewable source of electricity to developing countries and/or remote locations.

This paper will provide a brief overview of newly developing hydroelectric technologies and examine the role that plastic pipe, specifically high density polyethylene (HDPE) pipe, may play in the design, construction and operation of small-scale or low-head hydroelectric power plants. This paper will focus on the engineering properties of HDPE pipe and the potential advantages of these materials in hydroelectric applications. The discussion will then conclude on a case study involving the construction of the 10 megawatt Choloma hydroelectric power plant in the remote reaches of Guatemala. The advantages of HDPE pipe ranging in sizes from 18" to 48" for this specific project will be examined in detail. From this, a more comprehensive understanding of HDPE pipe in the development and expansion of these cost-effective, environmentally-friendly hydroelectric applications will result.



Session 5

Friday, October 4, 10.05 – 10.25

Overview of the US PE Market

Tony Radoszewski

President
PPI, US

An overview of the Plastics Pipe Institute, who it is, mission and structure. The presentation will also include an overview of the general economic conditions of United States, an overview of the polyethylene pipe market and projections for growth opportunities. Lastly, there will be a brief introduction regarding the PPXVII conference to be held September 22-24, 2014 in Chicago, IL, USA.



Session 5

Friday, October 4, 10.25 – 10.45

Large Pipes – Chances and Challenges

Rainer Kottmeier

Managing Director

Battenfeld-Cincinnati, Germany

Plastic pipes have continuously grown in diameter and wall thickness. This holds true for PVC and even more for polyethylene. With each growth step new applications and markets have been conquered. Those include e.g. marine and drinking water as well as mining. Also each step presented its specific new challenges. Especially for solid pipes, the main topic of this paper, the weight and size increases call for ever growing machine dimensions. Also the extruder output needs to go up significantly as the cross sections of solid pipes grows by the power of two. Amazing gains were made especially in PE extruders. Starting up large pipes requires specific measures as the length of the line can easily represent several hundred thousand Euro of material value. Wall thickness and ovality are the key parameters to control material usage. Sagging in large wall pipes is the greatest challenge. It can be countered with newest extrusion technology in combination with special low sagging polymers.



Session 5

Friday, October 4, 11.05 – 11.25

Chamber and Manhole System Development in Europe and Russia

Ton Schoenmaker

International Project Manager R&D
Pipelife Group

Manholes have been a vital part of sewer systems around the world since 3500 B.C. The 18th century brought major redesigns in sewage systems with the use of more efficient materials and installation techniques. Those “efficient” and commonly used materials were for a long time bricks and later on concrete.

This lasted until the 80’s when the first Plastic Inspection chambers were introduced.

The first Inspection Chambers were made out of PVC pipes and soon afterwards the rotomoulded Polyethylene versions came on the market. The injection moulded PE and Polypropylene versions are considered to be the latest technology in our industry and are now widely available.

Plastic inspection chambers have now dominated the market for all inspection chambers up to DN600 with nearly 100% market share, since the early 2000’s.

The plastic manhole (sizes 800mm and 1000mm) were introduced in the late 90’s. The majority of plastic manholes are now produced out of HDPE and PP. These plastic manholes did not penetrate the market nearly as fast as the plastic Inspection chambers; however, the current market share of plastic manholes in Europe has grown to about 10%.

The main reason for the moderate market share growth is the conservative approach of the designers and installers. Plastic Manholes are still often seen as inferior when compared to the concrete versions, even when they are completely tested according EN 13598-2. Last but not least; the average purchase price of a standard concrete Manhole could be 30% percent lower than plastic alternatives.

What could persuade a potential customer to specify or purchase plastic manholes?

This presentation will show the progress of the plastic manholes and inspection chambers throughout Europe and Russia over the last few years. More importantly, we will present tools that can convince the customer to choose plastic as a dependable and long lasting alternative to concrete material for today’s manholes installations.



Plastic Pipes Moscow 2013

ABSTRACTS

Session 6

Friday, October 4, 12.25 – 12.45

New Developments in PVC-O

Ignacio Munoz

CEO

Molecor Tecnologia S.L., Spain

The present global crisis has pushed the need for efficient, reliable and affordable solutions for water transportation. The interest of pipe manufacturers in PVC-O as one of the most cost effective solutions has increased, but at the same time new demands for widening the range of applications and overcoming traditional weak points in PVC-O pipes have arisen. New challenges for PVC-O pipe technologies that have been solved with the new air systems.

The first challenge has been to design a system to produce pipes above the traditional limit of 400mm (16") , under the following conditions:

- Not increasing the difficulties of manufacturing
- Not lowering the orientation degree and decreasing the material quality
- Applicable for any pressure range.

The second challenge has been to upgrade the socketing systems to adapt to new market trends and solutions. New trenchless applications, self-restrain systems, etc, require different ways of making sockets, and a more sophisticated variety of solutions. At the same time, where the usual way of socketing pipes is the "rieber" system, (integral system where the seal makes its own groove) , this has constituted a deterrent for the PVC-O implementation. A new system for socketing, flexible and able to incorporate any kind of joint in an automatic way has been developed and integrated with the new water free systems, without any kind of orientation lose or brittle effect on the socket. These new developments open the door for the next PVC-O pipes expansion.



Session 6

Friday, October 4, 12.45 – 13.05

Training Toolkit for PVC Manufacturers

Jean-Francois Greiner

Strategic Marketing & Business Development
Aliaxis France

A lot of incorrect or imprecise information is going around in the market regarding PVC. A great deal of effort has been made by the Plastic Pipe Industry over many years to steadily raise the Quality of PVC-U pipe systems and to address the sustainability challenge.

All the above is not well known by the market. Our building partners, in particular the Contractors/Installers, the Specifiers, the Architects, etc. receive information from various sources, among which the strongest and most direct is constituted by the sales forces of the pipe manufacturers. It has been widely identified that, for various reasons, the sales promoters and sales engineers are not always well trained about the properties of PVC and pipe systems made using it and are thus not always able to properly inform the market.

In order to make it easy for the PVC pipe manufacturers to train their sales forces in a professional and consistent way across Europe and to give them a set of clear reference data, PVC4Pipes has developed a Training Toolkit, a set of Power Point slides, which provide information about PVC-U and PVC-C Pipe Systems, both on General Aspects and on key Application Sectors. This Training Toolkit has been handed over to National Associations for adaptation for the local market and for circulation to their local member PVC pipe manufacturers.

The presentation will give a brief overview of the origin of this initiative, describe the toolkit as well as the way it will be rolled out in the market.



Session 6

Friday, October 4, 13.05 – 13.25

Using PVC Pipes to Put Microalgae in the Right Light

Stephan Schuessler

Head of R & D

Georg Fischer DEKA, Germany

The development of plant-based raw materials instead of using crude-oil is about to develop to one of the most relevant trends in global chemical industry. In addition to that, concepts integrating the biomass-generation using so-called bioreactors into a closed loop together with a biogas-generator and a combined heat- and power plant under intelligent utilization of mass- and energy streams are gradually stimulating the interest of both investors and various industrial branches. Using microalgae grown in such bioreactors as a feedstock for pharmaceuticals, nutraceuticals, food and feed products, fertilizers as well as an option to produce biofuels has turned out as a very promising technology to tackle the respective markets without competing with the conventional agriculture. The extent to what this approach will be able to support the global energy and food supply will critically depend on the reduction of investment costs for such bioreactors / plants as well as a significant increase of the durability and efficiency of the bioreactors. This presentation summarizes the basic concepts of the technology and describes the status of the actual development. A particular focus is set on the potential and the benefits of especially formulated transparent PVC-U pipes as the core-component of such so-called photo-bioreactors (PBR). The technical features and hurdles to overcome of first commercially available PBR-systems being based on very thin-walled transparent PVC-U tubes will be presented as well emphasizing how well this material can match with the technical and economic demands for such systems.



Session 7

Friday, October 4, 14.35 – 14.55

PVC-O BiAx: case studies of successful installations around the world

Andre Nijland

Area Manager Technology Licensing Asia Pacific, North-America
Wavin Overseas

PVC-O BiAx pipes are globally used for potable water supply, irrigation applications and for pumping sewer mains. Next to these applications, the pipes are also used where a high impact resistance is required for both, pressure and gravity pipes.

The first part of the presentation deals with the different technical aspects of PVC-O BiAx. At first the parameters that determine the long term strength and the quality of the pipe will be explained. The ultra-high strength of PVC-O BiAx material makes it possible to manufacture very strong pipes.

In this respect also the limitations of utilizing the full strength of the material will be explained. In general the advantages during installation will be highlighted. Furthermore the ecological advantages of using a high strength material resulting in lower usage of raw material will be addressed.

The second part of the presentation informs the audience about the PVC-O BiAx pipe manufacturing process: pipe orientation using an in-line process brings an additional advantage: the process acts as a continuous quality control test.

The quality of the feedstock pipe as well as the orientation process itself, is automatically and continuously controlled, which is a solid basis for a good PVC-O BiAx pipe.

Finally cases from PVC-O BiAx installations around the globe will be reported:

Why did contractors and water companies select PVC-O BiAx and which arguments did they consider in this selection process.



Session 7

Friday, October 4, 14.55 – 15.15

Highest Energy Efficient Cooling Solutions for Plastic Pipes Production

Giorgio Santella

Chief Marketing Officer

Piovan

The process of producing plastic pipes requires a considerable quantity of cooling capacity.

On average, the production of each kilo of pipe needs some 700 Watts of cooling.

Pipes can be made of different materials, that are PVC, HDPE, LDPE, PA or PEX, however, one common element for all is that cooling must be performed within a temperature of 12°C, meaning they all require chilled water.

The technology that chillers utilize is very common, that is the circulation of a refrigerant gas in a closed circuit made of one compressor, one condenser, one expansion valve and one evaporator.

This is a basic approach that has never changed with time, as it has proven to be very reliable and adequate, particularly for an industrial application.

An "industrial application" is very different from a "civil application" and is key to the process of selecting the chilled water system to allow constant and qualitative production.

The main elements driving the selection of a chilled water systems are the product to produce, the material utilized, the rate of production (kg/h) and the geographical location.

These are common elements that lead to a very conventional solution that is one chiller, using the technology described here above, one water circulation pump set, one buffer tank and one process water pump set.

In addition, when speaking of industrial applications, the selection of the entire system is always to be done by sizing every single element considering some spare capacity, i.e. a factor that will ensure cooling capacity readily available in the critical periods of the year, when ambient temperatures rise.

Conventional solutions coupled with spare capacity needs do not represent the formula for efficiency, a further element that today is more and more required and that, in several cases, has already become mandatory.

To support today's modern needs of the industry Piovan has developed a new innovative line of chillers namely Ecosmart.

Efficiency of cooling is measured by the EER (energy efficiency ratio).

Conventional cooling systems have EER equal to 2 to 3.

Ecosmart cooling systems have EER equal to 6 and more.

In simple words, for those 700 Watts of cooling capacity that pipe production requires, one conventional cooling system will utilize from 250 to 300 Wh of energy per kilo of pipe produced, while Ecosmart will utilize a little more than 100 Wh, representing the most energy efficient solution for the industry.

Ecosmart is the only auto adaptive cooling system available in the market today, and allows highly efficient operation at full or partial loads, maintaining the EER values to the highest possible levels.

In an arena where production requirements are pushed to the limit, Piovan introduces its high performance and energy efficient solutions to guarantee constant uptime, utmost productivity and highest profitability.



Session 7

Friday, October 4, 15.15 – 15.35

Suitability of Nondestructive Techniques for Testing Polyethylene Pipe Joints

Peter Postma

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The suitability of non destructive techniques for testing polyethylene pipe joints are investigated in a GERG (European Gas Research Group, www.gerg.eu) project. The results show that:

- Both Ultrasonic and Microwave techniques have developed to a mature level.
- For electrofusion joints good results are obtained with Ultrasonic Phased Array techniques. These techniques are ready for practice, and in some cases already applied as such.

For butt fusion joints CHORD Ultrasonic testing is showing good results, but this method is only tested to a limited extent in this project. Both Ultrasonic TOFD and Microwave techniques show some indication on the joint quality but both techniques need further development.

- The Bead Bend Back test that is used in the UK to examine butt fusion joints shows good results. This technique is quite simple and can be considered as an NDT technique as well.

The different techniques have been assessed on their maturity and suitability to be used in practice. The techniques have been tested on both laboratory made joints and excavated joints, about 180 different joints in total. The laboratory joints are a mix of good joints and joints with certain type of errors introduced deliberately. The joints have been sent to NDT companies for blind testing (without any knowledge about the introduced errors). Afterwards the joints have been destructively tested in accordance with ISO standards. The results of the Non Destructive Techniques have been compared with the introduced errors and the results of destructive tests . This GERG investigation shows the possibilities and performance of current techniques, and what further steps need be to taken to use the techniques in practice.



Session 7

Friday, October 4, 15.35 – 15.55

Comparison of Accelerated Tests for PE Grades Lifetime Assessment

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The lifetime performance of pressurized Polyethylene (PE) pipes for gas or water distribution highly depends on the material resistance against crack initiation and slow crack growth (SCG). The traditional method to assess pipe lifetimes is based on hydrostatic pressure testing. Due to time and cost expenses of this methodology, high effort of researchers has been dedicated to create alternative accelerated tests. Considering the responsible fracture mechanics failure mechanisms several tests have been developed and standardized which are focusing on a material ranking by SCG resistance. Today methods like the Full Notch Creep Test (FNCT) or the Pennsylvania Notch Test (PENT) are frequently used. However, continuous developments of the raw material suppliers have led to modern PE pipe grades with significantly improved crack resistance (PE 100-RC). Consequently, existing test methods still require unpractical long testing times for such materials and often don't give sufficient information in terms of material ranking as they are often aborted after 104 hours. In 2011 the Cyclic Cracked Round Bar (CRB) Test was standardized by the Austrian Standards Institute in ONR 25194. This fracture mechanics test allows a characterization of the SCG resistance within only a few days, even for modern PE 100 and PE 100-RC pipe grades. In the current presentation material rankings by Cyclic CRB Tests are compared with results of Full Notch Creep Tests (FNCT), Pennsylvania Notch Tests (PENT) and Strain Hardening Test which is another novel accelerated test method. Results of a Round Robin Test of the Cyclic CRB Tests will demonstrate a high reproducibility and reliability in terms of qualitative and quantitative material ranking which emphasizes the potential of the Cyclic CRB Test as a modern accelerated method for a material ranking at pipes relevant application conditions.



Session 8

Friday, October 4, 16.35 – 16.55

Survey Results of Water Main Failures in the United States and Canada

Steven Folkman

Associate Professor
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During 2011 Utah State University conducted a survey of utilities across the USA and Canada to obtain data on water main failures of municipal and private water supply systems. A total of 1,051 surveys were distributed and there were 188 respondents. The total length of pipe covered by the survey is 189,264 km (117,603 miles). The focus of this survey was to examine the number of failures utilities were experiencing and how those failures related to the pipe materials used. A goal of this survey was to look at which materials were performing best at the current time and to track how pipe age affects failure rates. The results show that PVC pipe failure rate being approximately one half that of ductile iron and one tenth that of cast iron. The survey also looks at other aspects including current pipe inventories that are in use, how inventories vary on a regional basis, operating parameters, failure modes, and which pipe materials are allowed at utilities.



Session 8

Friday, October 4, 16.55 – 17.15

Replacement Test for Current Buckling and Ring

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Major standards organizations, such as ASTM International, ISO (International Standards Organization) and AASHTO (American Association of State Highway and Transportation Officials), have a test method for evaluating a plastic pipe's wall stability and load capacity. The name of the performance test may be called buckling, ring flexibility, failure point or ultimate load. The specific value for the design limit may vary, but in all cases, the test apparatus used is a parallel plate test. This test method, however, is inherently flawed for determining the actual wall stability or profile capacity.

The parallel plate provides an accurate assessment of pipe stiffness at 5 percent deflection, but the test's applicability drops precipitously as the deflection value exceeds 10 percent. Depending on the pipe's profile geometry, stiffness and material composition, the load application dramatically changes negating the validity the test. A pipe with a higher stiffness, profile height, and modulus will provide greater resistance to bending resulting in severe reverse curvature at a lower deflection than a solid wall pipe with a low stiffness and modulus. Structurally, the higher stiffness pipe will likely have significantly better in-field performance. The parallel plate test, however, would show otherwise as the load points move from a two point load configuration to four points as reverse curvature occurs at the crown and invert changing both the failure mode and increasing the overall stress on the now shorter vertical arch section.

The new test protocol presented in this paper eliminates the four point loading condition and maintains a uniform two point load, which is also more indicative of field conditions. The maximum strain obtained at the crown, invert and springline can be directly correlated to the structural design evaluations required for buckling and maximum strain evaluations. While a standard parallel plate machine may be used with an adaptor plate, a revised test apparatus may also be used which is also portable and much less expensive than the current parallel plate machine.



Session 8

Friday, October 4, 17.15 – 17.35

Fast Small Scale Method

Tanja Piel

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In Rapid Crack Propagation (RCP) a strong impact initiates a crack which propagates axially at high speed destroying a piping network in a large area. RCP resistance is an important property of a pipe material especially in the countries with low outside temperatures i.e. if the operating temperature is low enough RCP failures can be initiated at pressures well below the design stress of the pipe.

There are two standardized methods to test the RCP resistance of a pipe. The full-scale test (ISO 13478) is done in the field and a small scale steady state test, S4 (ISO13477), is carried out in laboratory environment. Even the S4 test needs a large amount of material for pipe extrusion and the actual testing itself is time consuming due to the long conditioning time of pipes (16 hours) at each test temperature.

A new practical small scale method to test RCP resistance was developed using instrumented Charpy. A series of 14 bimodal polyethylene resins with different polymer design resulting in a large variation of critical temperatures in the S4 was tested with the new method. Regarding the testing conditions, the notch, its depth and the velocity of the pendulum were optimized first using a commercial standard material. The instrumented Charpy test was carried out over a temperature range from -60°C to 60°C to see how the material's breaking behavior changes at different temperatures. The area where the first partial break occurred was studied more accurately at 2°C temperature steps. The temperature where the first partial break was found in the Charpy specimen was taken as Charpy critical temperature. Good correlation was found between the instrumented Charpy critical temperature and the S4 critical temperature.

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