

June 2022 Vol. 5

Author : PPN

PPN- The Leading Source of Industry News on Polymer Pipes and Plastic Pipe Testing

Global News on Plastic Piping and Fittings in Real-Time

NEWSMAKERS: * AMWI * Borealis * Borneables™ * Butt Welds * Carbon Black * EPA * ExcelPlas * Failure Analysis * GF Piping * GRP Piping * John Guest * Microwave Inspection * NDE * Non-Destructive Examination * NUPI * PEX Pipe Failures * PE100 * PIPA * Polypipe Building Products * PPI * PPN * PP-R Pipe Failures * PP-RCT * PVC-O * Rehau * Rautitan™ * Reliance Worldwide Corp. * RWC * Slurry Pipes * Supply Chain Disruptions * TWI * UHMWPE * Uponor

BREAKING NEWS

Borealis Borneables™ help Uponor Create the World's First PE-X Pipes Based on Renewable Feedstock

<https://www.borealisgroup.com/news/borealis-borneables-help-uponor-create-the-worlds-first-cross-linked-polyethylene-pe-x-pipes-based-on-renewable-feedstock>

Borealis Partners with NUPI for High-Performance Polypropylene (PP-RCT) Pipes Based on the Borneables™

<https://www.borealisgroup.com/news/borealis-partners-with-nupi-for-high-performance-pipes-based-on-the-borneables>

Carbon Black Suppliers Raise Carbon Black Prices and Tighten Payment Terms

<https://www.european-rubber-journal.com/article/2091587/cabot-orion-raise-carbon-black-prices-reduce-payment-terms>

Supply Chain Disruptions & Rising Costs Hit Plastic Pipe Industry [PDF]

<https://cloud.excelplas.com/s/kNsWrv3Oe2S7S6g#pdfviewer>

INDUSTRY NEWS

Microwave Imaging NDT Now Available for GRP Pipes [PDF]

<https://cloud.excelplas.com/s/kMZn6zunD6mFzwg#pdfviewer>

Rehau Publish New Rautitan™ PEX Pipe Brochure [PDF]

<https://www.rehau.com/downloads/1060230/rautitan-plumbing-and-drinking-water.pdf>

Uponor Pipe Cutting Ceremony Celebrates PEX-a Pipe Production Expansion

<https://www.tradelinkmedia.biz/publications/6/news/3836>

The PE100+ Association is Sponsoring and Presenting at the UKSTT No-Dig Roadshow

<https://www.pe100plus.com/PE-Pipes/news/The-PE100-association-is-sponsoring-and-presenting-at-the-UKSTT-No-Dig-Roadshow-i2351.html>

New Abrasion Resistance Poly Piping for Tailings Transportation

<https://www.slurrypipes.com.au/>

RWC Launches a New Reliance Valves Website to Further Unite Their Family of Brands and Enhance User Experience

<https://www.johnguest.com/gb/en/resources/news/rwc-launches-reliance-valves-website>

Plastic Piping for Heat Networks Explained

by Stuart Wood, Product Manager for Heat Networks at Polypipe Building Products

<https://www.hvpmag.co.uk/Piping-for-heat-networks-explained/13207>

Experimental Study of Damage of the Weld Bead in High-Density Polyethylene (HDPE) Pipe Butt Weld Using NOL-ring Tests [PDF]

<https://cloud.excelplas.com/s/Dor8BVrwuVw3WGr#pdfviewer>

Ultrasonic Array Imaging to Determine Structural Integrity of HDPE Pipe Materials

<https://www.sciencedirect.com/science/article/abs/pii/S0041624X22000749>

Vulnerability Analysis of Underground HDPE Gas Pipeline System After Hurricanes Using LiDAR Data

https://www.sciencedirect.com/science/article/abs/pii/S0964569121001782?fr=RR-2&ref=pdf_download&rr=71ced4febb1a5ab4

Russia Debuts New HDPE Pipe Grade (PE2NT11-9)

<https://www.macaubusiness.com/sibur-expands-offering-of-low-carbon-durable-polymer-materials/>

PVC-O and PE Joint Procedures

<https://molecor.com/en/pvc-o-and-pe-joint-procedures>

New Smart Coating for Pipelines

<https://www.iom3.org/resource/smart-coatings-in-the-pipeline.html>

PIPE FAILURE

'The Canary in the Coal Mine' – 2005 German Insurance Magazine Article Reports on Early PP-R Pipe Failures

<https://cloud.excelplas.com/s/wupxo3cl7OOpa9V#pdfviewer>

India Replacing HDPE Pipes with Steel Ones Due to Frequent Pipe Leaks and Pipe Bursts

<https://timesofindia.indiatimes.com/city/thiruvananthapuram/kwa-on-a-mission-to-replace-old-pipelines-with-new-ones/articleshow/92309570.cms>

Predicting the Risk of HDPE and PVC Pipe Failure Using Gradient Boosted Decision Trees and Weighted Risk Analysis [PDF]

<https://www.nature.com/articles/s41545-022-00165-2.pdf>

Review on Lifetime Predictions of Polyethylene Pipes: Limitations and Trends [PDF]

<https://cloud.excelplas.com/s/5U7EKgKUI487Fk7#pdfviewer>

Use of OIT to Assess the Effectiveness of Stabilizers in PP-R Pipes [PDF]

<https://cloud.excelplas.com/s/EozcaXBMWGMO3Y0#pdfviewer>

PEX-a Pipes Shown to Prematurely Degrade due to Hot-Water Breakdown of Stabilizing Additives [PDF]

Quantifying stabilizing additive hydrolysis and kinetics through principal component analysis of infrared spectra of cross-linked polyethylene pipe

<https://cloud.excelplas.com/s/49DbfF5FpYKP7e4#pdfviewer>

Extrusion Defects on the Inside Wall (Bore) of PEX Pipes Shown to Initiate Brittle Failure [PDF]

<https://cloud.excelplas.com/s/Fp3o4zW6JPKS217#pdfviewer>

PLASTIC PIPE FAILURE ANALYSIS

Failure Analysis of Plastic Pipes

If you are looking for an expert for your case involving plastic pipe failure analysis, then you

can't beat the team at ExcelPlas Consulting. Our team is setting a new standard for excellence in failure analysis of plastic articles but especially plastic pipe. For plastic pipe, this includes HDPE, PVC & CPVC pipe as well as other plastic piping systems like Hobas GRP pipe, PP-R Pipe, and spoolable composite pipe. When a plastic pipe fails to perform as intended, our team can determine the root cause (chemical failure, oxidative failure, creep failure, overstress failure, fatigue failure, design failure, etc). We are experts in HDPE water pipe failures, CPVC sprinkler pipe failure, PVC pipe failure analysis and PP-R Oxidation/Degradation investigations.

<https://www.excelplas.com/wp-content/uploads/2020/01/Excelplas-A4-Brochure-4pp-Plastic-Pipe-Testing-NTs.pdf>

ExcelPlas Investigating Poly Pipe Failures

Through failure analysis & forensic chemistry, we help clients improve product performance, increase profits, & resolve product liability claims with plastic pipes and fittings.

We are dedicated to unmatched excellence in failure analysis, investigative chemistry, material testing, and expert witnessing for plastics, polymers and composites.

With over 25 years of investigative experience, the staff at ExcelPlas are uniquely positioned to help clients resolve the most challenging performance and processing issues related to materials and plastic pipes and fittings.

<https://www.excelplas.com/contact-us/>

Cautionary Warning: Some PEX Piping is Prone to Development of Cracks Due to Early Oxidation

ExcelPlas Labs have developed a three-step testing program to detect early failure of **PEX** pipe and their expected service lifetime.

The 3 Step Testing is based on:

- Oxidative Induction Time (OIT) testing to determine the residual level of oxidative stability (i.e. thermal stability)
- Quantitative Additive Analysis (QAA) to determine the type and level of protective antioxidants and stabilizer present.
- Scanning Microscopy on inner surface after bend back to image developing microcracks

Samples of **PEX** pipe just 10 cm long are needed for the analysis. 7 Day turnaround on test reports.

<https://www.excelplas.com/wp-content/uploads/2020/01/Excelplas-A4-Brochure-4pp-Plastic-Pipe-Testing-NTs.pdf>

MORE POLY PIPE NEWS

PPN the Digital News Platform for Communicating to the Global Plastic Pipe Industry

Send Us Your News!!! PPN Publishes weekly.

<https://www.youtube.com/watch?v=eUKxWbOZY10>

ExcelPlas Labs Pipe Failure Investigations

ExcelPlas Labs have created a new benchmark in failure analysis of HDPE, PP-R, PB and PEX pipes in addition to PVC & CPVC pipes as well as composite GRP and GRE pipes. When a plastic pipeline fails to perform as intended, our team can determine the root cause of failure (e.g. oxidative failure, chemical failure, creep failure, over-stress failure, fatigue failure, design failure, etc). ExcelPlas are experienced with all plastic piping failure modes and mechanisms including Slow Crack Growth (SCG) Rapid Crack Propagation (RCP), Environmental Stress Crack Resistance (ESCR), Oxidative Stress Cracking (OSC), cyclic fatigue, manufacturing defects, and polymer material problems.

<http://www.excelplas.com/>

ExcelPlas Strain Hardening Test (SHT) for HDPE Pipes

The SHT in accordance with ISO 18488 is a relatively new, but excellent way to obtain a rapid indication of the Stress Crack Growth (SCG) resistance of your piping material. This tensile test performed at 80°C has become in just a few years the new standard for Batch Release Testing (BRT). And not without reason. The test requires only a very small amount of material, the results are very reliable with a very low inter-laboratory scatter and the results are available within a few days, regardless of the PE grade. The SHT is usually performed on resin material but it can also be performed on samples taken directly from pipes or sheets. As accredited lab, EXCELPLAS is happy to discuss the possibilities with you, whether it is for BRT, benchmarking, quality control of your (high performing) PE grade or for polymer compliance/ validation.

<http://www.excelplas.com/>

Australia's Plastic Pipe Testing Laboratory

ExcelPlas Laboratories provides a comprehensive plastic pipe joint testing service and is equipped with a state-of-the-art laboratory to test a range of polymer materials including polyethylene and polypropylene. ExcelPlas can carry out testing on plastic tube and pipe ranging in wall thickness from 3mm to 1200mm. ExcelPlas Laboratories provide a comprehensive service to Industrial & commercial companies, environmental consultants,

Government bodies, and local Authority customers throughout Australia and Asia. All testing is carried and out in accordance with ASTM, ISO & WIS methods and is fully accredited to ISO 17025 by NATA.

- Butt Fusion Weld Testing
- Weld Testing
- Testing of Electro-fusion Welds
- Tear on saddle joints
- Crush De-cohesion of Electro-fusion welds
- Polymer & Plastics Identification
- Chemical & Thermal Testing
- Site Audits

<http://www.excelplas.com/>

ExcelPlas - the Australian Pipes & Fittings Testing Laboratory

- Accredited to ISO 17025 by the National Association of Testing Authorities (NATA) Australia, and is Australia's largest laboratory dedicated for the testing of plastic pipes and fittings to various Standards which include Australian, European and International Standards.
- The staff employed at the laboratory have a combined experience of more than 85 years within the plastics industry specifically with manufacturing, quality control and the research and development of plastic piping systems including HDPE, PEX, PP-R, PVC, U-PVC, M-PVC, O-PVC, ABS, GRP, GRE and PB.
- Services provided include conformance testing, compliance testing, batch release testing, root cause analysis for field failures and non-destructive testing of samples.
- <http://www.excelplas.com/>

ExcelPlas Lab Specialising in HDPE Pipe Condition Monitoring, Failure Analysis and Testing

In the event of a HDPE butt weld or electrofusion weld failing during initial testing, or in service, we can conduct investigations to assist in identifying the root cause of the failure.

This service also extends to the premature failure of the pipe or fitting itself.

<http://www.excelplas.com/plastic-pipes>

ExcelPlas Pipe Testing is a Leader in the Field of Polyethylene (PE) and High-Density Polyethylene (HDPE) Testing

ExcelPlas is accredited with the National Association of Testing Authorities (NATA) for butt weld tests, bend and tensile tests, peel decohesion tests on electro fusion sockets and failure mode determination

<http://www.polypipetesting.com.au/butt-fusion-welds/>

New UHMWPE Pipe for Tailing Offers Greater Than 4X the Abrasion Resistance of PE100 (Australia wide)

<http://slurrypipes.com.au/>

ExcelPlas Poly Pipe Weld Inspection Lists Top 7 Causes of Weld Failure:

- Lack of scraping
- Inaccurate scraping
- Contamination from dirt, water, oil or clays
- Lack of Paralell-ness of fusion faces
- Misalignment of surfaces
- Time, temperature and pressure deviations
- Not adhering to cool times

We have extensive experience in inspection of poly pipe welds for assuring welded joint quality. Direct Poly Pipe Inspection ensures that operators are following the proven welding procedure; this reduces the occurrences of operational errors which lead to defects such as inclusions, lack of fusion (LoF), porosity and misalignment.

More information, contact john@excelplas.com

Get Your HDPE Pipe Products or Services Noticed – Advertise in Poly Pipe News (PPN) Australia

<https://www.polypipenews.com.au/advertise/>

This Newsletter is brought to you by Excelplas Labs, Australia's Largest group of Poly Pipe Testing Labs.

Pipe Poly News (PPN) is now Australia's most current and comprehensive source of news on Polyethylene pipes and Poly Pipe Welding;

Poly Pipe News is now sent to over 4500 Poly Pipe Industry Members every week.

Any news requests should be sent to john@excelplas.com
To subscribe, visit <https://www.polypipenews.com.au/subscribe/>

2022 Copyright ExcelPlas Labs

PPN is owned and operated by ExcelPlas Pty Ltd. By subscribing to PPN you agree to receiving regular PPN newsletters as well as the PPN platform using your email contact details to enhance the performance and functionality of PPN and its analytics reports. These email contact details allow PPN to track page views and create more targeted and relevant content. PPN provides an unsubscribe link on the bottom of each PPN newsletter.