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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: * Aliaxis * Ashirvad Pipes * Braskem * ExcelPlas * Failure Analysis * GF Piping * Hydrogen Transmission Risks * PE100RC * PEX Pipe Failures * Plastic Pipe Institute * PPI * PPN * Pre-insulated Pipes * Purdue University * Microplastics * NIBCO * Qenos * Water Corporation * Virginia Tech * Welsh Water * WPS Global

INDUSTRY WARNINGS

Industry Warning – Researchers Find Prolific Growth of Legionella in the Presence of Cross-linked Polyethylene (PEX) Pipe
https://pubs.acs.org/doi/abs/10.1021/acsestwater.2c00182

Fire Safety Warning Issued Over Pre-insulated Pipes
https://constructionmanagement.co.uk/fire-safety-pre-insulated-pipes/

Risks Associated with the Use of Hydrogen as an Energy Carrier or Source [PDF]
A HDPE gas transmission pipe with an outer diameter of 110 mm and a wall thickness of 10 mm, filled with hydrogen at 10 bars, has a permeation rate for one kilometer of 70 liters per 24 h. This permeation rate increases with hydrogen pressure and decreases with the wall thickness.

https://www.lidsen.com/journals/jept/jept-04-03-029/jept.2203029.pdf

Purdue University Study Finds Microplastics in Plastic Pipes
The study found that microplastics (MP) have likely reached building faucets for decades but have received no characterization until recently. Bench-scale testing using two MPs, of different density, in copper and crosslinked polyethylene (PEX) pipes revealed size influenced the amount of MPs retained in a pipe.
https://hammer.purdue.edu/articles/thesis/Stagnation_Impacts_on_Building_Drinking_Water_Safety_The_Pandemic_and_Microplastics/20388876

INDUSTRY NEWS

Legal Judgement on Failed PEX Pipe Manufactured by NIBCO [PDF]
https://law.justia.com/cases/alabama/supreme-court/2022/1210066.html

Review on Lifetime Predictions of Polyethylene Pipes: Limitations and Trends
https://www.sciencedirect.com/science/article/abs/pii/S0308016122000540?via=ihub

Pipe Webinar Series – PE100RC and relevance to the Future AS/NZ PE Pressure Pipe Product Standards (PRESENTATION)
https://alkadyne.com.au/wp-content/uploads/2022/08/rc-specification-slide-deck-25-aug-22-compressed.pdf

Pipe Webinar Series – PE100RC and relevance to the Future AS/NZ PE Pressure Pipe Product Standards (VIDEO)
https://youtu.be/TnOwdfh2YqE

New HDPE and PE100 Resin Plant to be Operational Soon in Mexico
https://mexiconewsdaily.com/news/5bn-polyethylene-plant-operational-soon/

Water Corporation Issues Strategic Products Register for Pipes and Fittings (Declassified) [PDF]
https://pw-cdn.watercorporation.com.au/-/media/WaterCorp/Documents/About-us/Suppliers-and-contractors/Resources/Design-standards/Strategic-Products-Register.pdf?la=en&rev=346bcf910e194a0c80039de2b0f57769&hash=0C0552DEA9CFCB1D1406BF77D344186F

The Lord of the O-Ring: One O-Ring to Seal Them All
Most recorded O-Ring failures are a consequence of poor installation or a lack of knowledge about the product. Installers following best practice guidance will know to avoid sharp edged pipes, as they can cut or displace the O-Ring during installation. Leaks can also be caused by inserting a poorly scored pipe into the fitting, while scoring damage can act as a miniature trench underneath the O-Ring, creating recesses where water ingress occurs.
https://www.johnguest.com/gb/en/resources/blog/become-lord-o-ring-five-facts

Investigation of Mechanical Properties High Density Polyethylene (HDPE-PE100) Using Novel Catalyst
https://www.ije.ir/article_154997.html

Video Presentation by Ashirvad Pipes by Aliaxis
https://m.youtube.com/watch?v=SvGMlPpCles

Welsh Water Infrastructure Supply in Safe Hands, with Aliaxis Protecta-Line®
https://www.aliaxis.co.uk/en/News/details/1101189/welsh-water-infrastructure-supply-in-safe-hands-with-aliaxis-protecta-line

SWOT and PESTLE Analysis for WSP Global
https://www.swotandpestle.com/pdf/index.php?id=9950/2048/2049

Why Use Polymer Testing Services from ExcelPlas?
Our polymer material testing services help you to:

- Identify the characteristics, properties and flaws of your plastic piping materials
- Comply with all relevant national and international standards(ISO,ASTM,..)
- Ensure that your polymeric materials meet your clients' safety, environmental and requirements

Composition of a Plastic Material or Compound

By combining different analysis techniques, we can obtain the composition of an unknown plastic material or compound, thus identifying which polymer or polymers, mineral fillers and reinforcements are present. Likewise, the percentage of these mineral fillers. This information is very useful to ensure compliance with the requirements needed to obtain the technical data sheet of a material, to understand the possible causes of failure in manufacturing or service, etc.

Verification of Specifications in Pipes and Their Raw Materials

With extensive experience in testing for the plastic pipe industry (PE, PP, PVC, PEX, GRP pipe..)

In this regard, we perform carbon black content tests, carbon black dispersion tests, Oxidation Induction Time (OIT), Tensile, Vicat, among others, all aimed at ensuring minimum values that enables compliance with the required technical specifications.

In addition, we determine the degree of cross-linking and the gel content in PE-X pipes, as well as in any other cross-linked materials.

Some of our testing capabilities include:

- Thermal Anaylsis (DSC, TGA, ASH content)
- FTIR
- XRF
- XRD
- SEM,TEM,AFM
- HDT-VICAT Test Instrument
- UL94 Flammabilitty
- Rheometry (Melt Flow Inedex, Capillary Rheometer)
- Universal Testing Machines
- Shore A&D
- Density
- ESCR
- Twin screw extruder for R&D activity
- Hydrostatic test for plastic pipe

FAILURE ANALYSIS

HDPE PIPE JOINT FAILURE EXPERTS

The failure of electrofusion or butt fusion joints in polyethylene gas pipework can be due to several factors including incorrect alignment, contamination, incorrect temperature or the duration of joint fusion.

If a joint failure occurs, investigations are important to help identify modifications to procedures or training that can help you minimise the occurrence of future failure. This is where we can help.

We provide a detailed PE joint failure investigation service which typically include:

- Digital inspection of the received sample, including dimension measurements of sizes and ovality
- Segmenting the joint for visual and microscopic investigation
- Elemental analysis of any contamination found in the joint
- Peel decohesion testing

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

Plastic Pipeline Expert Witness

If you require expert witness or legal consulting assistance in pipeline failure analysis, plastic pipeline joining methods, plastic piping welding, or associated technical areas please contact us.

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

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 finished pipes and fittings.

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

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 buttweld 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.

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