

August 2021 Vol. 2

Author : PPN

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

Global News on Plastic Piping and Fittings

NEWSMAKERS: * AWWA * ExcelPlas * Failure Analysis * GFR Pipe * HDPE * Jacobs * Nanotubes * PE100 * PENT Model * PEX Piping * PPN * PVC Pipe * Uponor * Wavin

INDUSTRY NEWS

Let's Take a Second Look: HDPE Piping for Large Diameter Applications (by Jacobs Consultants)

<https://ascelibrary.org/doi/abs/10.1061/9780784483619.039>

Uponor Releases 2021 Product Catalogue for PEX Plumbing (August 2021)

<https://www.uponor.com/getmedia/55441152-2201-47f7-a389-e9feded7880a/uponor-20product-20catalog-20us.pdf?sitename=USA>

Wavin Group Publish Instructional Video Tutorial on How to Work with Electrofusion Couplers and Butt Welding in PE Systems

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

Use of Glass-Fibre Reinforced HDPE for a Large Diameter Discharge Pipeline for Coal Fired Generation Plant in Japan

<https://ascelibrary.org/doi/abs/10.1061/9780784483619.033>

NEW RESEARCH

Pressure Effects on the Lifetime of Gas High Density Polyethylene Pipes

<https://asmedigitalcollection.asme.org/pressurevesseltech/article-abstract/doi/10.1115/1.4051615/1114103/Pressure-Effects-on-the-Lifetime-of-Gas-High>

Photo?Oxidation Aging Performance and Life Prediction for High?Density Polyethylene Pipe (HDPE)

<http://www.plaschina.com.cn/EN/abstract/abstract3439.shtml>

Life Cycle Assessment of PVC-a Polymer Alloy Pipes for the Impacts Reduction in the Construction Sector [PDF]

<https://www.cetjournal.it/cet/21/86/121.pdf>

Use of Polyethylene–Nanotubes Nanocomposites for PE Pipe Applications

<https://onlinelibrary.wiley.com/doi/abs/10.1002/pc.26220>

Updated and Advanced 3rd Edition of AWWA’s Manual 23 Provides Consensus Guidance for Designing and Installing PVC Pipe

<https://ascelibrary.org/doi/abs/10.1061/9780784483619.049>

Study on Improving the Processability and Properties of Mixed Polyolefin Post-Consumer Plastics for Piping Applications [PDF]

<https://www.mdpi.com/2073-4360/13/1/71/pdf>

Environmental Impact Assessment of Trenchless Cured-in-Place Pipe Renewal Method

for Sanitary Sewer Applications

<https://ascelibrary.org/doi/abs/10.1061/9780784483619.002>

Experimental Investigation of the Effect of Diameter upon Low Velocity Impact Response of Glass Fibre Reinforced Composite Pipes

<https://www.sciencedirect.com/science/article/abs/pii/S0263822321008904>

Calculation of the Timelife in HDPE Pipe With a Crack [PDF]

<http://www.ieomsociety.org/singapore2021/papers/837.pdf>

Reliability of a Polyethylene Pipe on the Basis of the PENT Model [PDF]

<http://www.ieomsociety.org/singapore2021/papers/57.pdf>

Evaluation of Mechanical Properties of Carbon-Reinforced HDPE composites for Pipe Applications

<https://www.sciencedirect.com/science/article/pii/S2214785321036956>

Stress Crack Resistance of Recycled and Virgin HDPE Corrugated Pipe for Transportation Infrastructure Applications

https://login.easychair.org/publications/preprint_download/BK26

The Effect of Post-Consumer Recycled Polyethylene (PCRPE) on the Properties of Polyethylene Blends of Different Densities

<https://www.sciencedirect.com/science/article/pii/S0141391021001476>

Measurement of Structural Performance of Fusion Weld with Change of Welding Parameters in High-Density Polyethylene

https://www.astm.org/DIGITAL_LIBRARY/JOURNALS/TESTEVAL/PAGES/JTE20200273.htm

Research on a Strengthening Method and Mechanism of Expanding Polypropylene Pipe

<https://onlinelibrary.wiley.com/doi/abs/10.1002/pen.25749>

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

New 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/>

Australian 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 3 mm to 80 mm. ExcelPlas Laboratories provide a comprehensive service to Industrial & commercial companies, environmental consultants, Government bodies and local Authority customers throughout Australia & NZ. All testing is carried and out in accordance with ISO & ASTM methods and is fully accredited to ISO 17025 by NATA.

<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 20mm 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/>

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