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

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Effect of Insufficient Homogenization During the Extrusion of Polyethylene Pipes on Butt Fusion Joint Integrity

<https://link.springer.com/article/10.1007/s40194-020-00948-6>

PP-R Piping Erodes in Hot Chlorinated Water Systems and is Susceptible to Oxidative Stress Cracking Causing Pieces of the Pipe to Flake Off and Clog Plumbing Systems

Overtime, the system will lose its ability to hold pressure, resulting in leaks and sometimes system failure.

<https://tctoancau.com/en/cpvc-vs-ppr-2/>

Investigation of Hindered Phenol Antioxidant Effects on the Aging Performance of PEX in the Presence of Copper

<https://www.nature.com/articles/s41598-020-67131-1#article-info>

How to Optimize High Density Polyethylene (HDPE) Ultrasonic Inspections

<https://eddyfi.com/en/blog/how-to-optimize-high-density-polyethylene-hdpe-ultrasonic-inspections>

Investigation of Failure of Welded HDPE Joints by ExcelPlas Labs

Defects for Butt Fusion welds include planar flaws due to poor welding processes, cold fusion welds caused by incorrect welding procedures, inclusion of particulates and weld mismatch (fusion incompatibility). In comparison, common problems with Electrofusion welds during manufacturing include vapour voids, lack of fusion (LoF) and an incorrect heating cycle resulting in a weak joint.

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

Release of Toxic Species from Plastics Pipes after Combination of Environmental Exposure of Polymer-based Products to Induce Aging Processes

<https://www.mdpi.com/1996-1944/13/12/2709/pdf>

New Vacuum Fusion Method Patented for Joining Plastic Pipes

<http://www.freepatentsonline.com/10612710.pdf>

Borealis Patent New Process for Producing Multimodal HDPE blends for Pipes

<http://www.freepatentsonline.com/10669410.pdf>

New Patent for Deploying Spoolable Plastic Pipe

<http://www.freepatentsonline.com/10670167.pdf>

Experimental and Numerical Assessment of Water Leakages in a PVC-A Pipe

<https://www.mdpi.com/2073-4441/12/6/1804/pdf>

Stored Energy in Poly Pipes - Safety Alert

<https://www.amsj.com.au/stored-energy-in-poly-pipes-safety-alert/>

Aliaxis Protecta-Line PE-Al-PE Composite Piping to Prevent Contamination of Drinking Water Mains

<https://www.youtube.com/watch?v=EcJRD2toBao>

Rehau Presentation on PEX Piping for Radiant Heating Systems

<https://www.youtube.com/watch?v=Q9mwcrwyAYE>

Development of Advanced Materials Guided to Improve Performance and Cost-Efficiency of Borehole Heat Exchangers (BHEs)

<https://www.sciencedirect.com/science/article/pii/S0360544220307350>

Laboratory Evaluations of Corrugated HDPE Pipes Containing Postconsumer Recycled Material under Constant Deflection Conditions

The oxidation induction time (OIT) decreased with the addition of the recycled material, because the polymer materials were heated and thermally processed repeatedly.

<https://ascelibrary.org/doi/10.1061/%28ASCE%29PS.1949-1204.0000476>

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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