

# July 2020 Vol. 5

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

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NEWSMAKERS: \* AGRU \* Borealis \* Dow \* ExxonMobil \* ExcelPlas \* GRP Piping \* Iplex \* PE100 \* PP-R \* SABIC

### **Largest Diameter Solid Wall HDPE Pressure Pipe Project in North America Completed**

<https://www.waterworld.com/wastewater/article/14179862/largest-diameter-solid-wall-hdpe-pressure-pipe-project-in-north-america-completed>

### **Microplastic Acts as a Vector for Contaminants: the Release Behavior of Dibutyl Phthalate from PVC Pipe Fragments in Water Phase**

<https://link.springer.com/article/10.1007/s11356-020-10136-0>

### **SABIC Patents New PE100 Resin for Pressure Pipe**

<http://www.freepatentsonline.com/10696826.pdf>

### **Borealis Patents New Process for Producing Multimodal Polyethylene In-situ Blends Including Ultra-high Molecular Weight Fractions**

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

### **Dow Patents New Polyethylene Pipe Resin**

<http://www.freepatentsonline.com/10696828.pdf>

### **The Effect of High-temperature Annealing on Thermal Properties and Morphology of Polyethylene Pipes**

<https://www.sciencedirect.com/science/article/abs/pii/S0032386120306005>

### **Modelling and Application of Discontinuous Slow Crack Growth Behaviors of HDPE Pipe with Various Geometries and Loading Conditions**

<https://www.sciencedirect.com/science/article/abs/pii/S0013794420307888>

### **Effects of Defect Size on Crush Test Load of Butt Fusion Welded MDPE Pipes**

<https://www.koreascience.or.kr/article/JAKO201509757435751.pdf>

### **New PP-R Pipe Resins**

Compared to pipes made of other highly effective materials, like PE-X or PB-1, pipes made of PP-R have historically required higher wall thickness, due to their intrinsic pressure resistance characteristics. The opportunity for reduction in wall thickness has been the key driver to seeking improvements in the polymerization process and product development that has resulted in this next generation of PP-R resins, called the XN Series. This is the next step in advancing polyolefin technology used by the pipe industry. The first new benchmark products, Hostalen PP XN125-P and Hostalen PP XN112-I resins have shown high temperature performance and excellent pressure resistance in customers' applications, providing opportunities for weight reduction and material savings.

<https://www.lyondellbasell.com/globalassets/documents/polymers-technical-literature/hostalen-pp-xn-series-pipe-brochure.pdf?id=13927>

### **Field Joint Testing for GRP Pipes**

<https://topfibra.eu/an-amazing-solution-for-the-grp-industry-in-the-making/>

### **New Tender - Installation and Commissioning of Approximately 12km of 600mm Diameter RRJ Rubber Ring Joint GRP pipe**

<https://www.tenders.vic.gov.au/tender/view?id=226533>

### **ExxonMobil Qualifies Airborne Oil & Gas' Thermoplastic Composite Pipe**

<http://www.jeccomposites.com/knowledge/international-composites-news/exxonmobil-qualifies-airborne-oil-gas%E2%80%99-thermoplastic>

### **Environmental Assessment of Construction and Renovation of Water Distribution Networks**

<https://www.tandfonline.com/doi/full/10.1080/1573062X.2020.1783326>

### **Effect of Integrating Polymeric Pipes on the Pressure Evolution and Failure Assessment in Cast Iron Branched Networks**

<https://www.sciencedirect.com/science/article/abs/pii/S0013794420307414>

### **Plastics Company Receives Certification, Improves HDPE Pipe Product Quality**

[https://www.engineeringnews.co.za/article/company-receives-certification-improves-product-quality-2020-06-11/rep\\_id:4136](https://www.engineeringnews.co.za/article/company-receives-certification-improves-product-quality-2020-06-11/rep_id:4136)

### **Effects of Defect Dimensions and Putty Properties on the Burst Performances of Steel Pipes Wrapped with CFRP Composites**

[https://www.sciencedirect.com/science/article/abs/pii/S0308016120301174?dgcid=rss\\_sd\\_all](https://www.sciencedirect.com/science/article/abs/pii/S0308016120301174?dgcid=rss_sd_all)

### **PPN Now Reaching Over 10,000 Readers in the Plastic Pipe Industry Worldwide (Free Subscriptions)**

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

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### **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](mailto:john@excelplas.com)

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

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

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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](mailto:john@excelplas.com)

To subscribe, visit <https://www.polypipenews.com.au/subscribe/>

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