

# September 2020 Vol. 4

Author : PPN

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

*Keep Up-to-Date During Corona Isolation with PPN*

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NEWSMAKERS: \* Borealis \* ChemChina \* CPVC \* ExcelPlas \* Fletcher Building \* Iplex \* ISCO \* LyondellBasell \* MPC Kinetic \* PPFA \* PE100-RC \* PPN \* QENOS \* TUBI \* Uponor

### INDUSTRY NEWS

#### **TUBI Reports \$4.7 Million Loss for the Year 30 June 2020 (compared with 30 June 2019: Profit of \$1.5 million)**

During the first half of the year the Group completed the building, commissioning, and delivery of a Mobile Plant to Iplex Pipelines NZ Limited. The decline in investment activity in the upstream oil and gas industry, caused by the decline in oil prices, led to exclusivity restrictions and a reduction in orders, selling prices and margins. The Group also incurred significant operating costs in 1H FY20 due to a series of operator failings, resulting in approximately six weeks of lost production.

<https://www.asx.com.au/asxpdf/20200831/pdf/44m4wjs8tqpf6w.pdf>

#### **Qenos Parent ChemChina labeled by the U.S. Defense Department as a “Communist Chinese Military Company” Selling Billions of Dollars in Bonds with the Help of Western Banks (Wall Street Journal)**

<https://www.wsj.com/articles/chinese-companies-in-pentagon-spotlight-hire-global-banks-to-sell-dollar-bonds-11600165226>

**Tubi's (ASX:2BE) Share Price has had Significant Negative Movement Since the March Stock Market Crash in March Caused by Coronavirus**

<http://cloud.excelplas.com/s/cERXboEHEG7DwCz>

**More HDPE Pipes Fusions, more Natural Gas - Poly Welders Mark Cassidy and Kris Tattam of MPC Kinetic**

<https://www.mining-technology.com/contractors/cables/mcelroy/pressreleases/more-fusions-more-natural-gas/>

**Borealis PEX-a Pipe Resin Achieves Highest Available Chlorine Resistance Rating**

Borealis HE1878E-C2 for crosslinked pipes in plumbing applications has now achieved Class 5 listing corresponding to the highest chlorine resistance rating in accordance with ASTM F876. Its state-of-the-art stabilisation package also opens it up for use in certain industrial applications.

<https://www.borealisgroup.com/news/borealis-he1878e-c2>

**Tackling Non-Revenue Water with HDPE Pipes**

<https://cceonlinenews.com/2020/09/17/tackling-non-revenue-water-with-hdpe-pipes/>

**PE100-RC, for Pipes with Even Higher Performance**

<https://elydan.eu/en/pe100-rc-for-pipes-with-even-higher-performance/>

**Iplex Parent Fletcher Building Limited advises that its 2020 Annual Shareholders' Meeting will be held on Wednesday 25 November 2020**

<https://www.marketscreener.com/quote/stock/FLETCHER-BUILDING-LIMITED-6492649/news/Fletcher-Building-2020-Annual-Shareholders-Meeting-and-Director-Nominations-31302561/>

**PIPE FAILURE**

**Investigation of Premature Failure of CPVC Drainpipes**

<http://cloud.excelplas.com/s/reOIFI9WkayEzRF#pdfviewer?>

## PEX PIPES

### **Answering Questions and Myths about PEX Pipes**

What wholesale-distributors should know about PEX for hydronic piping applications.

<https://www.supplyht.com/articles/103280-answering-customer-questions-and-myths-about-pex>

### **How a Combination of Planning, Prefabrication and PEX Can Produce a Successful Piping Project**

<https://www.plumbermag.com/how-to-articles/plumbing-commercial-pex-uponor/how-a-combination-of-planning-prefabrication-and-pex-can-produce-a-successful-project>

## NEW RESEARCH

### **Borealis Patents Method for Producing Multimodal Polyethylene Blends Containing Ultra-High Molecular Weight Components for Pipe Applications**

<https://www.freepatentsonline.com/10774202.pdf>

### **Investigation of Polyethylene Pipeline Behaviour after 30 Years of Use in Gas Distribution Network**

PLEASE <http://cloud.excelplas.com/s/BeUFZoixyGVOR4Y#pdfviewer?>

### **Long-term Mechanical Performance of Polyethylene Pipe Materials in Presence of Carbon Black Masterbatch with Different Carriers**

<http://cloud.excelplas.com/s/VZ5n1XIV08RWqZY#pdfviewer?>

### **Basalt Fibre-reinforced HDPE Composite Development Using the Twin Screw Extrusion Process**

The use of basalt fibres as reinforcement of high-density polyethylene increases the mechanical performance of up to 400%

<https://www.sciencedirect.com/science/article/abs/pii/S0142941819323797>

**Basalt Fibre-Reinforced HDPE Composite Development Using Twin Screw Extrusion**  
<https://www.x-mol.com/paper/1304864622384484352>

**Numerical Modelling of Unreinforced and Geosynthetic-Reinforced Sandy Soil Cover over Large-Diameter HDPE and PVC Pipes**  
<https://link.springer.com/article/10.1007/s10706-020-01548-3>

**Study on the Influence of Recycled Material on the Tensile Strength of HDPE Products**  
<https://iopscience.iop.org/article/10.1088/1757-899X/916/1/012119/pdf>

**Numerical Simulation of Pipeline-Pavement Damage Caused by Explosion of Leakage Gas in Buried PE Pipelines**  
<http://downloads.hindawi.com/journals/ace/2020/4913984.pdf>

**Welded Construction Design of Transition Fittings from Metal Pipes to Plastic Pipes**  
<https://www.mdpi.com/2075-4701/10/9/1231/pdf>

**Numerical and Experimental Analyses of the Hoop Tensile Strength of Filament-Wound Composite Tubes**  
<https://link.springer.com/article/10.1007/s11029-020-09894-2>

LEGAL

### **Law Firm Commissioned to Check Cancer Risk from ABS, PVC and CPVC Pipes Containing Titanium Dioxide**

The Plastic Pipe and Fittings Association (PPFA) recently commissioned the law firm of Keller and Heckman LLP (K&H) to develop and coordinate testing on acrylonitrile butadiene styrene (ABS), polyvinyl chloride (PVC) and chlorinated PVC (CPVC) pipes for the purpose of supporting their members efforts to comply with California's Proposition 65 warning requirements.

At PPFA's direction, K&H coordinated screening-level air-sample testing to determine whether

the ABS, PVC and CPVC pipes included in the test emitted or generated airborne and respirable particles of TiO<sub>2</sub> or carbon black when cut by various power tools under conditions similar to the typical installation process for such pipes. As expected, the test results did not reveal airborne, unbound particles of carbon black or TiO<sub>2</sub> of respirable size.

<https://www.ppfahome.org/news/483759/PPFA-Commissions-Prop-65-Testing.htm>

## UPCOMING WEBINARS

### **Installation of PVC Water and Sewer Piping Systems (October 21, 2020)**

<https://www.uni-bell.org/Events/Educational-Webinars>

## JOBS

### **Seeking Poly Pipe Welders with Experience Utilising McElroy & Dixon Machines**

<https://www.seek.com.au/job/50570933?type=standout>

### **Iplex Pipelines hiring Distribution Load Planner in Albury**

<https://au.linkedin.com/jobs/view/distribution-load-planner-at-iplax-pipelines-2004865632>

## TESTING

### **Testing and Compliance of Thermoplastic and GFRP Pipes**

ExcelPlas has a wide experience in the field of plastic pipes and helps to detect failure causes in the behaviour of pipes in service and to prepare technical sheets both of a finished product and a raw material.

The ExcelPlas Laboratory has developed a series of procedures to identify failure and breakage causes that can appear during the use of structures designed with plastic pipes, corrugated pipes and/or GFRP, combining both analysis and tests on the material and the pipe as well as the knowledge acquired from the point of view of pipe installation. We check that the requirements are met following the standards EN 1796, EN 16422 and EN 13476-6, among many others. Some of the tests in which we are specialised are:

\* Identification of polymer materials by DSC and FTIR

- \* Determination of the degree of curing by DSC
- \* Stress-strain tests: tensile, flexural and rigidity, with testing equipment up to 250kN.
- \* Circumferential rigidity and geometric control
- \* Calculation of densities and k values.
- \* Resistance to hydrostatic pressure
- \* Failure cause analysis

<https://www.excelplas.com/wp-content/uploads/2020/01/Excelplas-A4-Brochure-2pp-Composite-NTs.pdf>

### **Oxidative Resistance Testing of Plastic Pipes**

ExcelPlas' Advanced Pipe Test Facility (APTF) has introduced new oxidative resistance testing capacity, providing the unique ability to quickly and effectively measure and evaluate material performance over time. Our capabilities include accelerated testing of the potential impact of disinfectants (chlorine, chlorine dioxide, chloramines) on the long-term performance of materials in potable water applications (most commonly PE, PEX, PE-RT and PP-R) as well as proprietary testing methodologies and leading edge proprietary analysis methodologies.

We currently test to:

- ASTM F2023 – Standard Test Method for Evaluating the Oxidative Resistance of Crosslinked Polyethylene (PEX) Tubing and Systems to Hot Chlorinated Water
- ASTM F2263 – Standard Test Method for Evaluating the Oxidative Resistance of Polyethylene (PE) Pipe to Chlorinated Water

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

### **Experts in Forensic Failure Analysis of Polymer Pipes and Fittings**

<https://www.excelplas.com/wp-content/uploads/2020/01/Excelplas-A4-Brochure-2pp-Mechanical-Testing-NTs.pdf>

### **Australia's State-of-the-Art 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.

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

## **ExcelPlas Labs - for Testing Times**

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

## **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/>

**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](mailto:john@excelplas.com)  
To subscribe, visit <https://www.polypipenews.com.au/subscribe/>

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