



# Vinidex – we make life flow

EcologiQ VIC  
September 2023

Joe Barresi



# Who we are.

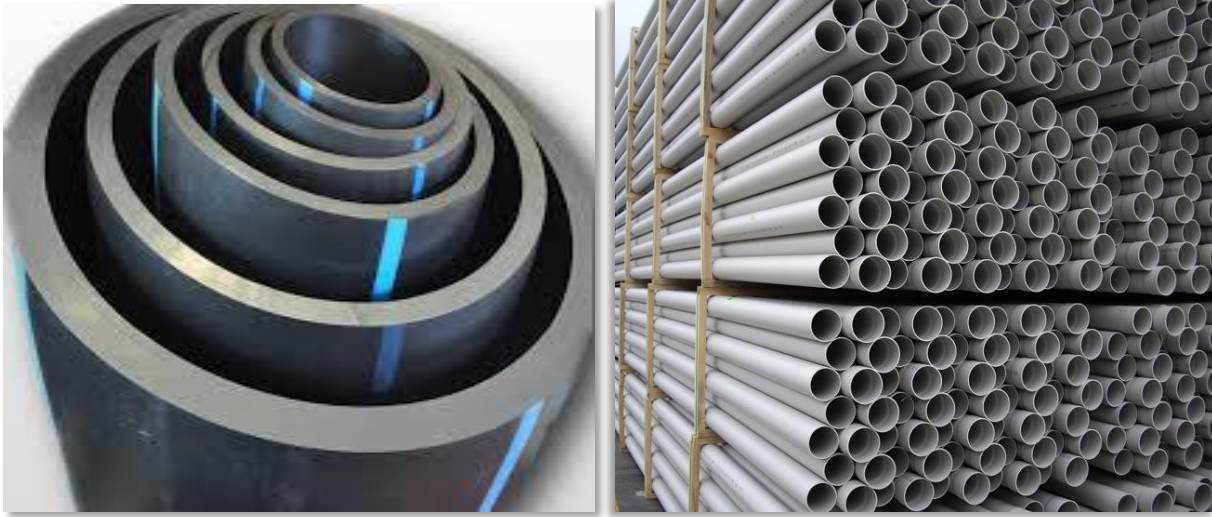


## Who is Vinidex?

- Australian manufacturer and supplier of advanced plastic pipe systems and solutions
- Connecting Australians to water and energy
- Over 60 years experience
- Providing innovative solutions for our customers and Australian communities.
- Backed by the strength of Aliaxis – a global leader in advanced fluid management

**Vinidex is committed to being a leader in Sustainability in the manufacture of Australian pipe systems**

# What we make.



## Plastic Pipes and Fittings

- Transportation of water, gas and air
- Encasement of electrical and communication cables
  - HDPE – 20 to 1200mm
  - PVC – 32 to 575mm
  - PP – 150 to 900mm





# Vinidex Markets



Infrastructure

Plumbing,  
electrical,  
residential and  
commercial  
including  
high rise



Building

Water, sewer,  
stormwater, gas,  
electrical and  
telecommunications  
projects, roads, railways  
and  
bridges



Irrigation & Rural

Irrigation and agricultural  
water supply, rural water  
and drainage



Mining & Industrial

Mining and  
resource development,  
specialised  
industrial applications



Gas

Gas gathering networks  
including natural gas

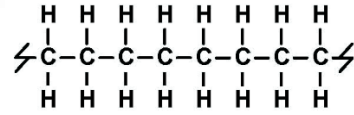
# HDPE



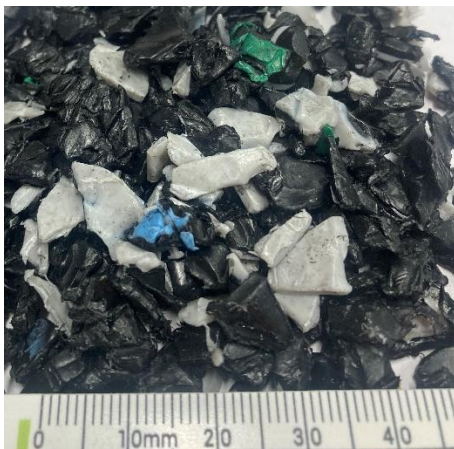
HDPE



Linear



Virgin HDPE



Shredded Pipe



Pelletised Recycled

# PVC



PVC



Virgin PVC

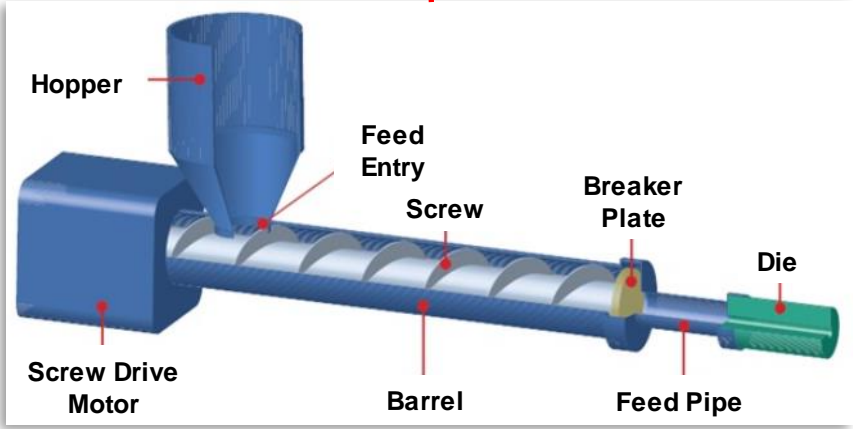
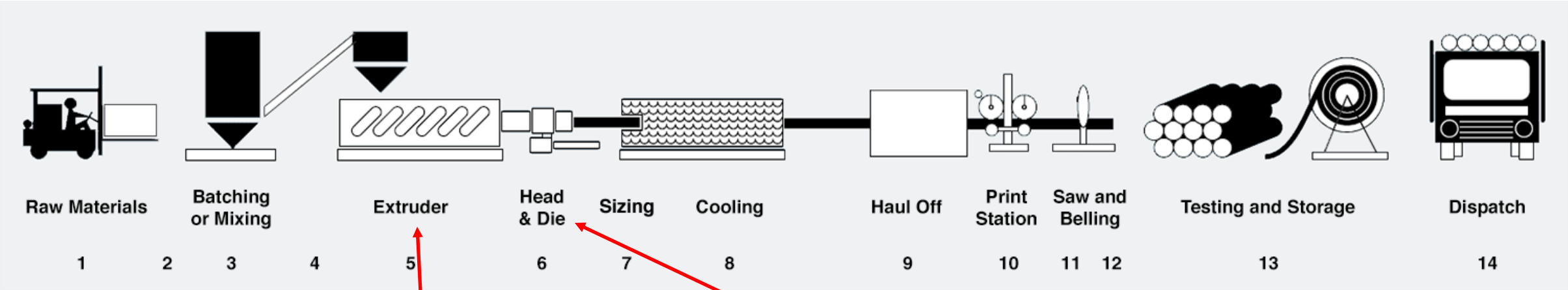


Granulated PVC

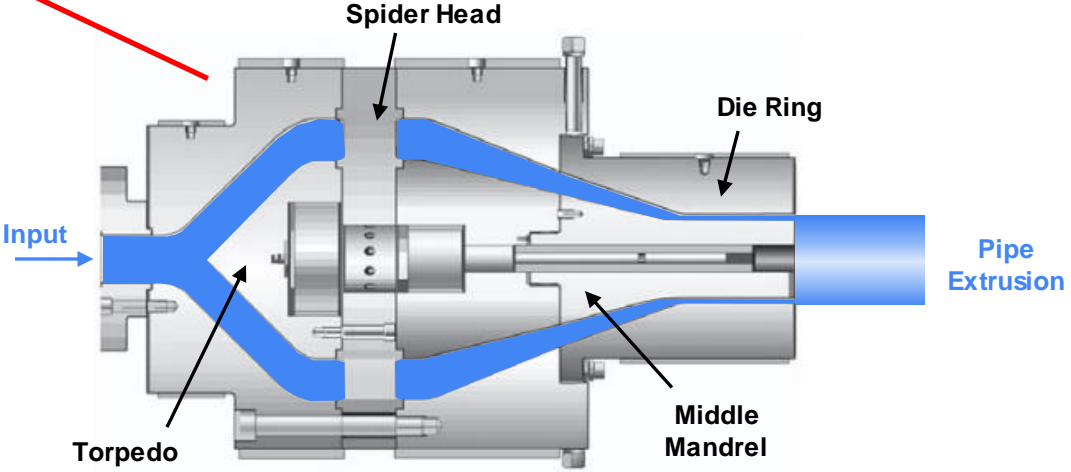


Micronised PVC

# HDPE and PVC Pipe Manufacture



Mixing/Heating Barrel



Extrusion Die



# Draincoil®



- > **Manufactured from 100% PCR/PIR recycled PE**
- > Stiffness rated to SN8 Class 400
- > DN50 to DN160
- > **Manufactured in Sunshine Victoria**
- > Approved for Subsoil drainage applications

# Vinidex PVC – Recycled Electrical Conduit



- > Meet the requirements of AS/NZS 2053
- > **Contains 65-75% recycled PVC**
  - > **100% Recycled core**
- > Impact Tested to AS/NZS 2053.1:2001 Appendix B
- > Ovality Tested as per VRIOGS 012.2.1 Standard for Construction of Cable Route and Signaling Civil Works
- > **Approved for VIC Roads – DPT, V-Line**



- > Used for stormwater and drainage applications
- > **Manufactured using recycled HDPE in outer shell**
- > **100% recyclable.**
- > **Manufactured to AS/NZS 5065**
- > **100-year design life, made for a long service life**
- > Recycled plastic tested to rigorous standards (US standards AASHTO M294R)
- > **Lightweight and easy to handle, compared to concrete whilst resisting cracking and corrosion**
- > Approved for use by MTM, V-Line, VicRoads (under pavements) and IDM.

## Drain Waste Vent Pipe (DWV)



- Used for Non-pressure sewer, drain, waste and vent pipe systems applications
- > **Manufactured using Virgin and PIR (currently up to 15%)**
- > **100% recyclable.**
- > **Manufactured to AS/NZS 1260**

# Our sustainability targets

# Aliaxis Sustainability Targets

Reduce carbon emissions

**-75%**

Renewable electricity

**100%**

Recycled material

**X 4**

Address the world's  
**water challenges**



## Progress as of the end of 2022

Aliaxis carbon intensity decreased by 12% in a year

Nearly a quarter (22%) of our operations globally are powered by renewable electricity

An increase of 22% externally sourced recyclate material, compared to prior year.

Over \$60M slated to be invested in new businesses globally to tackle:

- How to manage water sustainably
- How to build resilient infrastructure
- How to continue to grow enough food for our growing population whilst using less water.



# Vinidex 2025 Sustainability targets

Renewable electricity

100%

The aim to transition to completely renewable energy sources by 2025.

Water & Energy usage



The aim is for year-on-year improvement of energy usage during the manufacturing process.

Improvement of water usage in high water-stress sites, by 50%.

Recycled material



The aim is to use more externally sourced recycled material in our products to reach a minimum of 50% of what is permitted under current standards.

Waste-to-Landfill

0

The aim to transition to zero-waste-to-landfill and close the loop.

Carbon footprint of packaging



The aim is to transition to zero packaging where possible, and to increase usage of recycled or sustainable packaging solutions

# Vinidex 2022/23 progress

Renewable electricity



Ahead of target

- Solar installations at sites

Water & Energy usage



On Track

- Water usage in high water-stress sites, by 50%.

Recycled material



On Track

- Material capture streams being set up
- Products redesigned to contain higher recycle
- In plant processing installed

Waste-to-Landfill



On Track

- In plant processing equipment
- Recycling products rather than landfill

Carbon footprint of packaging



On Track

- Customer reviews to identify opportunities
- Trial on reusable PVC pipe frames rather than timber



# Environmental Product Declarations (EPDs).

Vinidex recently renewed our suite of EPDs to cover our range of locally manufactured pipes and fittings.

These EPDs have been produced and independently verified in accordance with ISO 14025 and EN 15804 and are registered with the Australasian EPD Programmed.

The 4 EPDs cover:

- StormPRO® Polypropylene Pipes
- PVC Non-Pressure Pipes and Conduits used in Buildings
- PVC Pressure Pipes
- Polyethylene Pipes



## Sustainable packaging initiative

- Trial using PVC frames for product transportation rather than timber
- Fully recyclable at end of life
- Collection and return streams being developed
- Positive feedback from customers





## Customer Recycling Bin

- Recycling bins placed at customer sites
- Selected products accepted
- Placement and collection systems being developed

# A case study –StormPRO

# Storm Water Piping Systems

## StormFLO vs RCP

	Vinidex StormFLO (Flexible Pipe)	Reinforced Concrete Pipe (Rigid Pipe)
<b>Classification</b>	<ul style="list-style-type: none"> <li>Classified as a flexible pipe</li> <li>Trench for support</li> <li>Stiffness rating SN8</li> </ul>	<ul style="list-style-type: none"> <li>Rigid pipes resist deformation</li> <li>Standard Strength (Class 2 -4)</li> <li>Super Strength – (Class 6 – 10)</li> </ul>
<b>Manufacturing Standard</b>	<ul style="list-style-type: none"> <li><b>AS/NZS 5065:2005</b> Polyethylene and polypropylene pipes and fittings for drainage and sewerage applications</li> </ul>	<ul style="list-style-type: none"> <li><b>AS/NZS 4058:2007</b> Precast concrete pipes (pressure and non-pressure)</li> </ul>
<b>Design &amp; Installation Standards</b>	<ul style="list-style-type: none"> <li>Installation of a Flexible Pipe                             <ul style="list-style-type: none"> <li>Structural Design - AS/NZS 2566.1:1998 Part 1</li> <li>Installation - AS/NZS 2566.2:2002 Part 2</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>AS/NZS 3725:2007 Design for installation of buried concrete pipes</li> </ul>
<b>Load distribution</b>	<ul style="list-style-type: none"> <li>Soil loading carried by embedment material rather than pipe</li> </ul>	<ul style="list-style-type: none"> <li>Soil load carried by pipe wall</li> </ul>
<b>Hydraulic Performance</b>	<ul style="list-style-type: none"> <li>Smooth pipe wall with minimal friction</li> <li>K = 0.015mm</li> </ul>	<ul style="list-style-type: none"> <li>Smooth Cement finish</li> <li>K = 0.15 mm</li> </ul>
<b>Resistance</b>	<ul style="list-style-type: none"> <li>High abrasion resistance</li> <li>High chemical resistance in particular acid sulfates</li> <li>Resistance to UV - Carbon additives</li> </ul>	<ul style="list-style-type: none"> <li>Risk of acidic corrosion attack                             <ul style="list-style-type: none"> <li>Acid Sulphate Soils</li> <li>H<sub>2</sub>S involvements</li> </ul> </li> </ul>
<b>Weight</b>	<ul style="list-style-type: none"> <li>Lightweight – majority of sizes can be carried easily manually</li> <li>DN600 SN8 pipe – approx. <b>20kg/m</b></li> </ul>	<ul style="list-style-type: none"> <li>Heavy : requires machinery to maneuver mechanically</li> <li>DN600 – Standard Strength Class 2 pipe - approx. <b>255kg/m</b></li> </ul>





# Benefits of Recycled Materials for HDPE

Turning a **single use plastic** into a pipe that has a **100-year design life**.

- More sustainable alternative
- Diverts materials from landfills
- Reduces pollution
- Cost benefits
- Life Cycle Assessment benefits
- Performance benefits





Designation: F3181 – 16

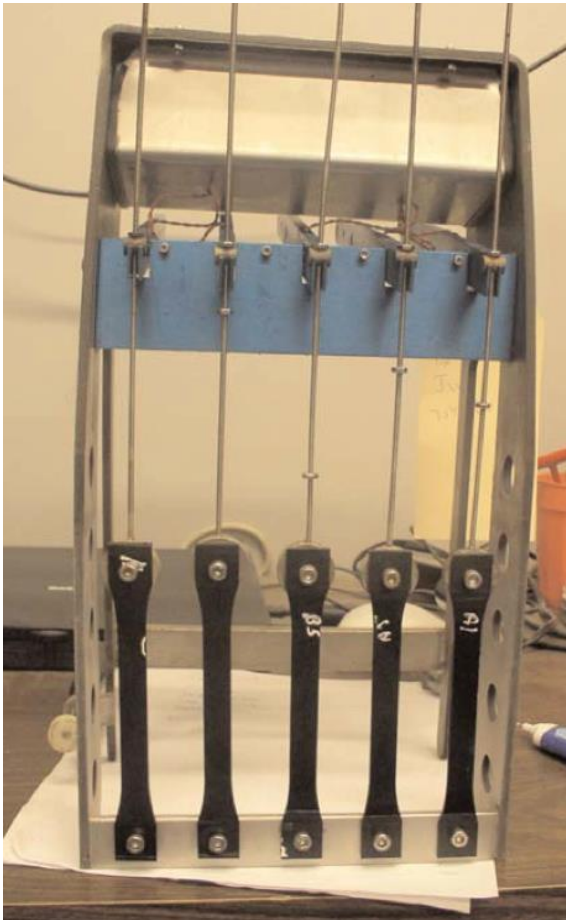
## Standard Test Method for The Un-notched, Constant Ligament Stress Crack Test (UCLS) for HDPE Materials Containing Post- Consumer Recycled HDPE<sup>1</sup>

This standard is issued under the fixed designation F3181; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

# Recycled Plastic Material Testing

**Not all Recycled Plastic materials are the same**

- Used to assess the crack initiation and growth
- Accelerated performance test
- ASTM Standard test – used extensively in the USA
- Establishes the life of a product in application
- Test method has been added to PIPA INDUSTRY GUIDELINES POP208 as a requirement non pressure pipe containing recycled materials



# Vinidex UCLS testing facility Smithfield

Plaque



Compression Moulded Material.

Dog Bone Test Sample



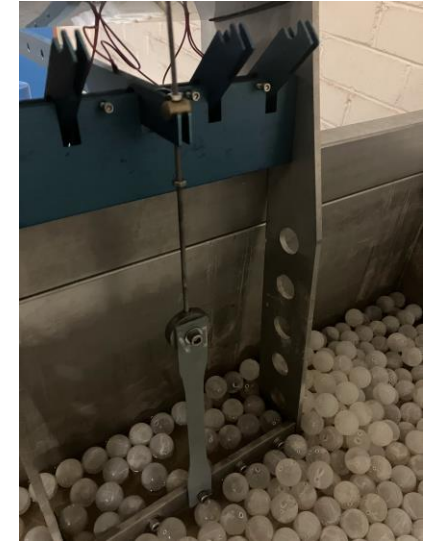
Manufacture of Test Samples

UCLS Test Bath



Testing Equipment

Testing of Specimen



Sample Under Test

# Vinidex Support.



### StormPRO® Installation Guide



### StormPRO® Twin-Walled Corrugated Polypropylene Pipe and Fittings System for Non-Pressure Applications

- Light weight
- Easy to handle - cost effective
- Simple and effective joints
- Adapts to soil movement
- Domestic or industrial applications
- Used in aggressive or saline soils

- Lightweight
- Superior performance/material - compared to traditional pipe material
- Easy to handle - Cost effective to install
- Simple & effective joints
- Adapts to soil movement
- Domestic or industrial applications
- Used in aggressive or saline soils
- High chemical resistance



**Vinidex**  
by allaxis

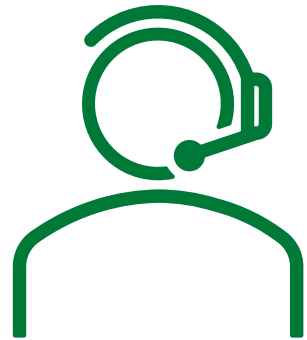
**StormFLO Civil**  
Installation Guide

**Vinidex**  
by allaxis

**StormFLO Civil**  
The environmental choice for stormwater and drainage installations

- Land development – residential and industrial
- Roads – infrastructure, stormwater, asset renewal
- Rail – stormwater run-off
- Mining – stormwater and aggressive ground
- Rural – culverts and land drainage

**AUSTRALIAN MADE**  
SINCE 1970



# Technical Support

## On-line support

[www.vinidex.com.au](http://www.vinidex.com.au)

- > Installation Videos
- > Technical Data sheets
- > Product information

## Phone Support & On-site support

- > [13 11 69](tel:131169)
- > Technical Engineers
- > Product Managers and support staff
- > Call Centre Support

## Brochures

- > Product Information
- > Installation Guides



# Questions