



Case Study

UPCLOSE

Zero Waste SA Industry Program



fibrelogic™

## Turning a waste problem into an environmental solution

In just 12 months Fibrelogic Pipe Systems has transformed an industrial waste stream from an expensive environmental obligation into a valuable resource.

A range of improved environmental and operating measures – some based on common sense and improved workplace practices, others using cutting edge technologies – are helping turn the pipe manufacturer into a star performer.

Adelaide-based Fibrelogic estimates that a continued focus on resource efficiency will improve production and decrease downtime. The rapidly expanding business has already seen significant savings and in 2009 recruited an additional 100 employees.

As part of the company's long-term focus on sustainable manufacturing, Fibrelogic joined the Zero Waste SA Industry Program in 2008. The program helps identify and achieve environmental performance and sustainability management targets.

The most dramatic improvement has been to reduce waste by turning it into new revenue streams.

“ We find that implementing sustainable manufacturing helps to substantially control costs as well as improve quality, safety and reduce negative environmental effects. An added motivation is that customers are now asking for our environmental credentials. ”

**Martyn Manuel**

Managing Director  
Fibrelogic Pipe Systems



Government of South Australia

Zero Waste SA

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Fibrelogic Pipe Systems' Peter Manuel

“ Ideally Fibrelogic will reach the stage where no out-of-specification product goes to landfill. ”

**Martyn Manuel**  
Managing Director  
Fibrelogic Pipe Systems

## Company sustainability objectives

Capitalising on opportunities to reduce, reuse and recycle waste to further improve profits.

## Annual savings

**Solid waste** – 2000m<sup>2</sup> of yard space and approximately \$75,000 of annual landfill fees

**Solid waste** – \$50,000 reduction in waste removal costs for cardboard, plastic, timber

**Energy costs** – planning to significantly reduce greenhouse gas emissions by utilising heat from after-burner

## Outcomes

- cost savings in waste to landfill
- developing customer recognition of environmental credentials
- meeting market expectations
- water conservation
- operational cost savings

## Zero Waste SA support

- funded sustainability diagnostic (a software based tool for assessing, benchmarking and managing sustainability within organisations)
- funding support for an eco-efficiency review
- funding support for a waste review
- development of a case study
- EMS development support

### PATH TO SUSTAINABILITY CREATES EFFICIENCIES

Fibrelogic produces glass reinforced plastic (GRP) pipes using advanced manufacturing technology developed by Norway's Flowtite™, which has licensee agreements with more than 20 producers around the world.

From the iconic purple pipes carrying nearly 4 billion litres of treated wastewater into the city of Adelaide, to the desalination plants of Sydney and Perth, Fibrelogic pipes are rapidly becoming part of Australia's infrastructure response to climate change and water security.



## Tackling the waste mountain

The Flowtite™ GRP manufacturing process, one of the most advanced in the world, produces pipes of exceptionally high quality. As with most mass production techniques there is a small percentage of the product that does not conform to the high quality specifications for the intended use. This is due primarily to start-up and shut-down processes.

These non-conforming pipes could be downgraded and classed as seconds. These seconds were destined for landfill, however Fibrelogic in its commitment to have minimal impact on the environment and ongoing sustainability has developed a market for the seconds pipes.

The solution was simple but incredibly effective – the company supplies the reject pipe to Peter Manuel who locates alternative applications for it. The reject product may be unsuitable for intended applications, such as sewer and water pipelines, but it is ideally suited to many other uses.

Today the pipe seconds – no longer referred to as waste – are being sold to other industries and transformed into products as diverse as dog kennels, boat pontoons, linings for old wells, water storage and feeding troughs on farms.

In one of the most exciting developments, kilometres of pipe seconds are being used in mines as potential escape routes for miners in the event of an accident. The Terramin zinc mine at Strathalbyn in South Australia is one of the first to realise this potential. Peter's efforts have shrunk the waste stockpile to a small fraction of its original size. Fibrelogic has identified that the sale of the seconds at cost is not the ideal situation. Therefore Fibrelogic is committed to continuous improvement to further reduce the quantity of seconds product.

## More than a pipe dream

Finding markets for reject pipes is just one of many initiatives introduced by Fibrelogic as part of its environmental program.

A priority is keeping waste to a minimum and the company is succeeding on various fronts. Fibrelogic recognises that waste can be a resource and is implementing changes to significantly reduce the roughly 200 tonnes of annual waste that previously went to landfill. Through training, and improving management and manufacturing processes, Fibrelogic is further reducing waste output with initiatives introduced in recent months. These initiatives include recycling and removing fumes and lowering carbon emissions.

“Fibrelogic is introducing these measures to protect the environment because it makes good business sense.”

**Martyn Manuel**  
Managing Director  
Fibrelogic Pipe Systems

## Recycling

A waste management review commissioned by Zero Waste SA helped Fibrelogic identify waste streams for recovery.

Existing recycling of materials such as paper, cardboard and metals was diverting about 10% of Fibrelogic's total solid waste from landfill. Initiatives introduced as a result of the review are expected to increase this to 25% and achieve annual savings of about \$50,000.

Segregated collection bins have been installed for different waste streams, including bins for cans and other recyclable containers which are now donated to the Scouts. A recycling rather than disposal option has also been identified for high density cardboard tubes used for rolls of fibreglass mat. Previously about 100 tubes went to landfill every week.

Even employee clothing is being reassessed, with a move from disposable coveralls to laundered cotton. Recycling and more efficient management practices has reduced general waste collection from daily to 3 times a week, and further savings are being realised by ensuring the bins are full. The review also raised the benefits of recording volumes and tonnages to track improvements; information that can be useful when negotiating new agreements with waste contractors.

## Removing fumes and lowering carbon emissions

With resource efficiency now a main driver, Fibrelogic is investigating technology to capture heat from burning and scrubbing of waste styrene fumes produced during manufacturing. The company is refurbishing a volatile organic compound burner from the former Mitsubishi car factory in Adelaide. It aims to engineer continuous self-combustion of the styrene vapours (after initial ignition) and is considering using the by-product heat for warming the 5000 square metre factory. The warming would help ensure optimum production temperatures and maintain comfortable working temperatures for staff in winter in the currently unheated factory.

### Tony Caristo

Managing Director  
Fibrelogic Pipe Systems  
8329 1111  
[www.fibrelogic.com](http://www.fibrelogic.com)

### Andrew Hutcheon

Principal Adviser, Industry Sustainability  
8204 8143  
[andrew.hutcheon@zerowaste.sa.gov.au](mailto:andrew.hutcheon@zerowaste.sa.gov.au)

### Tawni Jones

Manager, Industry Program  
8204 1706  
[tawni.jones@zerowaste.sa.gov.au](mailto:tawni.jones@zerowaste.sa.gov.au)

### [www.zerowaste.sa.gov.au](http://www.zerowaste.sa.gov.au)

Level 8, Statewide House  
99 Gawler Place  
Adelaide SA 5001

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## Fibrelogic Pipe Systems Pty Ltd

Fibrelogic Pipe Systems Pty Ltd is a wholly owned Australian company founded in 2006 to produce GRP pipes. Based at Lonsdale in South Australia, the company has licensed manufacturing technology developed by Flowtite™ in Norway for the production and sale of Flowtite™ GRP pipe across Australia. Annual turnover is currently more than \$60 million a year.

[www.fibrelogic.com](http://www.fibrelogic.com)

## Zero Waste SA

A South Australian Government agency that advances improved waste management policies and the development of resource recovery and recycling. The Zero Waste SA Industry Program advises and supports companies to achieve sustainability goals in waste, water and energy.

[www.zerowaste.sa.gov.au](http://www.zerowaste.sa.gov.au)



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