

Executive Summary

“Green Pipe” is a product of Recycled Plastic Technology Ltd., Australia. It is formed using a newly developed manufacturing technique and made out of 100% recycled / kerbside collection of HDPE containers (mainly milk bottles). Presently it is popular in both rural and urban applications as a non-pressure drainage pipe.

To expand the range of applications of the Green pipe, material properties and design parameters need to be established. This project aims to establish these properties and parameters by investigating the physical characteristics of the Green Pipe, and comparing them with those of pipes made from virgin material.

Specimen Type	Physical / Design Property	Value	Test Method
MGP 300mm	Density	906 Kg/m ³	N/A
	Stress at yield	7 MPa	Determination of Tensile Properties AS 1145.1 – 2001 AS 1145.2 - 2001
	Strain at yield (%)	3	
	Stress at ultimate	13 MPa	
	Strain at ultimate (%)	8	
	Stiffness Number	4	
	Initial Ring Bending Modulus	1005 MPa	Determination of Initial Ring Bending Modulus AS/NZS 2566.1:1998 AS 3572.10:2002
	Long-term Ring Bending Modulus	243 MPa	Determination of Long-term Ring Bending Modulus AS/NZS 2566.1:1998 AS 3572.8:2002

This report presents results from testing the original and improved versions of the Green Pipe. This summary however only shows the properties of the New Green Pipe, which was introduced to the market in 2004 as a standard upgrade.

The New Green Pipe showed better ductility compared to the original Green Pipe. The initial ring bending modulus (E_b) for the New Green Pipe is slightly higher than that of PE 80. When compared with the long-term ring bending modulus (E_{bL}), the 50-year value is comparable to that of PE 80.