



Introducing **PLASDRAIN™**



Australian Made Stormwater Drainage Pipe



PLASDRAIN™



INTRODUCTION

Plasrain™ is a stormwater drainage system for critical infrastructure projects.

Plasrain™ pipes are dual-walled, corrugated polypropylene pipes in non-pressure applications, manufactured in accordance with AS/NZS 5065.

The unique extrusion process offers the ability to utilise recycled material of varying sources and quantities.

Utilising the latest co-extrusion techniques, Plasrain™ is manufactured with a smooth bore for the highest hydraulic performance and a corrugated outside wall for the highest stiffness to weight ratio.

The in-line bell and spigot joint, paired with light weight design provides for quick installation.

Polypropylene ensures high strength to weight ratio, high stiffness and toughness.

Plasrain™ can be installed in trafficable areas including under road pavements and non-trafficable areas. Plasrain™ is sensitive to the environment, for firstly utilising recycled polypropylene raw material and secondly through efficient design by using less material than comparable drainage pipes, long life cycle and light weight reducing the CO² emissions from plant and heavy vehicles to transport and install.

Plasrain™ is less likely to crack than rigid pipe, resulting in less leakage and consequential environmental issues. Rigid pipes that do crack require plastic lining to reseal.

KEY ADVANTAGES:

- Smooth inner skin for optimum hydraulic performance
- Surface is resistant to build up
- Pipes are easy to cut and simple to join
- Very high stiffness
- Can be used in aggressive or saline soils, sensitive to the environment
- Light internal colour to facilitate CCTV video inspection

Why Choose Plasrain™ Corrugated Polypropylene Pipes?



Australian made and owned



Recycled plastic



Light Weight - Easy to handle



Strong - due to corrugations



Long lengths



Simple to install - Easy to join and cut



Fast installation



Sealed joints - Advanced rubber seals tested extensively



Excellent abrasion and chemical resistance





PRODUCT RANGE

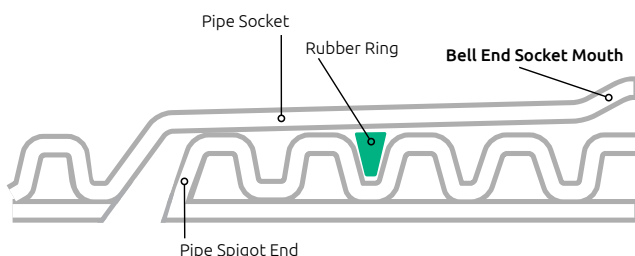
Plasdrain™ pipes are designed for stormwater drainage applications. Plasdrain™ pipes have a black coloured corrugated outer surface with a smooth green interior. Each length of pipe has a nominal length of 6m, has a spigot end and a socket end for simple joining. Each pipe is supplied with rubber rings required to seal joins.

Nominal Diameter DN (mm)	Mean Pipe Outside Diameter Do (mm)	Mean Pipe Internal Diameter Di (mm)	Maximum Overall Socket Diameter DEC (mm)	Socket Insert Length Si (mm)	Profile Pitch Pp (mm)	Effective Length (6m nominal length) (mm)	Approx. Pipe Mass (kg/m)
225	258	225	265	120	26.5	5880	4
300	343	300	355	150	31.3	5850	5
375	431	375	343	180	43.0	5820	9
450	515	450	536	210	57.3	5790	12
525	604	525	625	241	57.3	5780	17
600	686	600	714	276	68.8	5690	22
750	852	750	890	345	86.0	5560	32

CROSS SECTION OF WALL PROFILE:

The image below details the cross section of the wall profile showing a spigot and socket connection.

To seal a join, a rubber ring is inserted in the second valley in from the spigot end for optimum sealing performance.



CHEMICAL RESISTANCE

Plasdrain™ polypropylene pipes are resistant to corrosion by aggressive soils and substances that can wash through the stormwater drainage system. Polypropylene resins are highly resistant to solvents and chemicals. They are resistant to weak inorganic acids, organic acids such as fuming nitric acid at room temperature and 98% sulfuric acid at 600°C, both of which are highly unlikely to pass through the stormwater system. Chemical resistance is affected by concentration, temperature, period of contact and stress.

TEMPERATURE

Plasdrain™ pipes have a high range of thermal resistance due to the inherent durability of polypropylene material ranging from -20°C to 90°C for short term exposure.

DURABILITY

Polypropylene is an extremely tough material that can withstand construction impacts and loading during installation. Key benefits of Polypropylene and its suitability for stormwater drainage pipes are:

- wider thermal resistance; stable from -20°C to 90°C
- high chemical resistance; pH 2-pH 12 (acidic-alkali) stable against biogenic sulphuric acid corrosion
- high abrasion resistance, which ensures durability and operational reliability
- excellent impact resistance and durability
- does not tend to crack and spread cracks
- robust under mechanical stress (eg: high-pressure flushing)
- smooth surfaces, optimum hydraulics
- no incrustation, deposits cannot build up
- self-cleaning, requires less maintenance

WEATHER RESISTANCE

Base polypropylene raw materials lacks additives to resistant weathering. Dependent on the source of raw material, some additives may be present. To ensure weathering resistance, Plasdrain™ pipes are manufactured with additives to improve performance and ensure resistance to ultraviolet light and weathering during handling and storage.

MANUFACTURE

Plasdrain™ pipes incorporate the latest manufacturing technology using continuous polypropylene dual extrusion combined with a vacuum controlled corrugating process. The dual wall structure consists of simultaneously extruded smooth inner and corrugated outer wall. Even though the corrugations are hollow, at the valley of each corrugation, all layers are fused together for the full circumference of the pipe to create one continuous pipe post production.

VICROADS APPROVAL

VicRoads has moved from a product specific specification to performance specification whereby they no longer grant approval for specific products nor manufacturers and instead require products to meet the necessary Australian Standards. When it comes to stormwater drainage pipes, AS/NZS 5065 is the appropriate standard, Plasdrain™ pipes conform to this standard thereby, excluding any other project specific requirements, can be permitted for use on VicRoads projects.

STANDARDS

Plasdrain™ pipes are manufactured to AS/NZS 5065: "Polyethylene and Polypropylene pipes and fittings for drainage and sewerage applications" and achieves the properties as set out below as required by AS/NZS 5065.

TYPICAL PROPERTIES OF PLASDRAIN™

PROPERTY	VALUE	STANDARD
Polypropylene pipe compound	Block copolymer	
Mass of carbon black	2 – 2.5% by mass	ISO 964
Particle size of carbon black	20 -25 nm	ASTM D3849
Toluene extract of carbon black	<0.1%	AS/NZS 4131 Appendix B
Melt mass-flow rate	1.4g/10min @ 230°C and 5kg	ISO 1133 Condition 12
Tensile properties		AS 1145.2
Internal pressure resistance of PP	>140hours at 80C and 4.2MPa Hoop Stress	ISO 8773
Thermal stability of pipes and fittings	>40minutes OIT	ISO/TR 10837
Stiffness of pipes	>8,000N/m.m	AS/NZS 1462.22
Ring flexibility of pipes	no cracking at 30% deflection	AS/NZS1462.23
Hydrostatic pressure resistance of elastomeric seal joints	no leakage	AS/NZS 1462.8
Liquid infiltration of elastomeric seal joints	no leakage	AS 1462.8
Contact width and pressure of elastomeric seals	>0.47MPa	AS/NZS 1462.13 (Int)



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