


*i*PLEX

Pipelines

BlackMAX™

- 
- ✓ Lightweight for ease of installation
 - ✓ Smooth bore for hydraulic performance
 - ✓ Low embodied energy for environmental benefits
 - ✓ Effective rubber ring joint system
 - ✓ No detrimental impact on stormwater pH
 - ✓ Abrasion and corrosion resistant
 - ✓ Cost effective



Stormwater drainage pipes and fittings

BlackMAX™ is a cost-effective alternative to rigid stormwater drainage pipes providing exceptional performance and durability.

Manufactured from polypropylene, BlackMAX™ pipes are resistant to corrosive and aggressive ground conditions, such as acid sulphate soils or saline ground waters; resulting in increased longevity of the pipeline.

BlackMAX™ pipes are manufactured with a profile wall structure (smooth inner and profiled outer wall) which provides high stiffness (SN8) for structural performance in deep and shallow trenching.

BlackMAX™ pipes are a fraction of the weight of conventional pipe materials and can be easily manoeuvred in confined areas by hand or with light lifting equipment, improving site handling, installation and providing potential cost savings.

The smooth inner bore of BlackMAX™ pipes, combined with its high resistance to abrasion and sediment build up, provides excellent hydraulic performance.

The BlackMAX™ rubber ring joint has been designed and tested to the requirements of AS/NZS 5065 and AS/NZS 1260 providing a high performance leak tight joint for resistance to infiltration and root intrusion.

The BlackMAX™ joint has also been designed for ease of assembly and jointing in the trench.

APPLICATIONS

BlackMAX™ pipes and fittings are suitable for:

- Stormwater drainage
- Estuarine and ocean outfalls
- Road culverts
- Low head irrigation
- Slip lining
- Leachate collection
- Stormwater retention



STANDARDS

BlackMAX™ is manufactured to AS/NZS 5065 “Polyethylene (PE) and polypropylene (PP) pipes and fittings for drainage and sewerage applications” and has StandardsMark third party certification under this standard.

BlackMAX™ pipes and fittings have been appraised by WSAA (Water Services Association of Australia) for performance compliance with AS/NZS 5065. For further information refer to WSAA Appraisal 03/05.

JOINTING

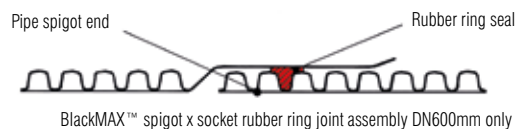
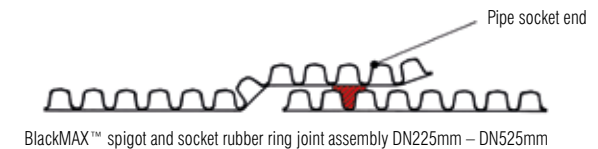
BlackMAX™ pipes are manufactured with a high performance spigot and socket rubber ring joint system.

The elastomeric seal is placed in the second last trough from the spigot end and is compressed as the spigot enters the socket.

This system allows the installer to cut the pipe on site anywhere along the pipe barrel and make the joint.

STRUCTURAL DESIGN

BlackMAX™ pipes have a relatively high stiffness of not less than 8000 N/m.m (SN8) and are suitable for buried applications up to 6 metres under normal installation conditions. For critical infrastructure projects, deep installations and where BlackMAX™ is intended to be used in low strength soils, a full structural analysis should be performed.



Minimum cover heights for BlackMAX™ (from AS/NZS 2566 .1 ‘Buried flexible pipelines Part 1: Structural design’)

Location	Minimum height of cover F (m)*
Not subject to vehicular loading	0.30
Subject to vehicular loading	
– not in roadways	0.45
– in sealed roadways	0.60
– in unsealed roadways	0.75
Pipes in embankment conditions or subject to construction equipment loading	0.75

* Subject to variation by the regulatory authority. Refer to the ‘Critical dimensions for design and installation’ diagrams.

For more information on the hydraulic performance and structural design of BlackMAX™ please refer to the Engineering Design and Installation Guide on the iPLEX website www.iplex.com.au and PIPA guideline POP015, Design Guidance for Polypropylene Structured Wall Pipes.

INSTALLATION

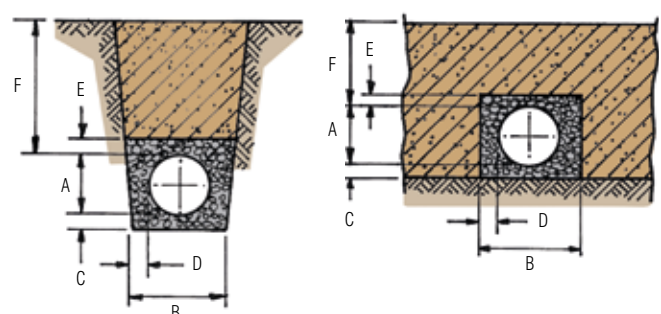
BlackMAX™ is a flexible pipe and is therefore designed for controlled deflection under vertical soil loads. These loads are then transferred to the soil in the side support zone. AS/NZS 2566.2 ‘Buried flexible pipelines – Part 2 Installation’ provides detailed information on appropriate methods for ensuring the side support zone in particular is correctly constructed.

The most critical aspect for the successful installation of these pipes is the selection and compaction of the embedment, i.e. the material in contact with the pipe. Embedment material should be of a granular nature, which is readily compactable. Crushed rock, aggregate and graded sand are commonly used. Appendices ‘G’ and ‘H’ of AS/NZS 2566.2 provide extensive guidance on the selection and use of a wide range of embedment materials.

Critical dimensions for design and installation

DN	Dimensions				
	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)
225	259	560	100	150	150
300	344	645	100	150	150
375	428	830	100	200	150
450	514	915	100	200	150
525	600	1200	150	300	150
600	682	1285	150	300	150

• Dimension ‘F’ refers to the table in Structural Design section ‘Minimum cover heights for BlackMAX™’



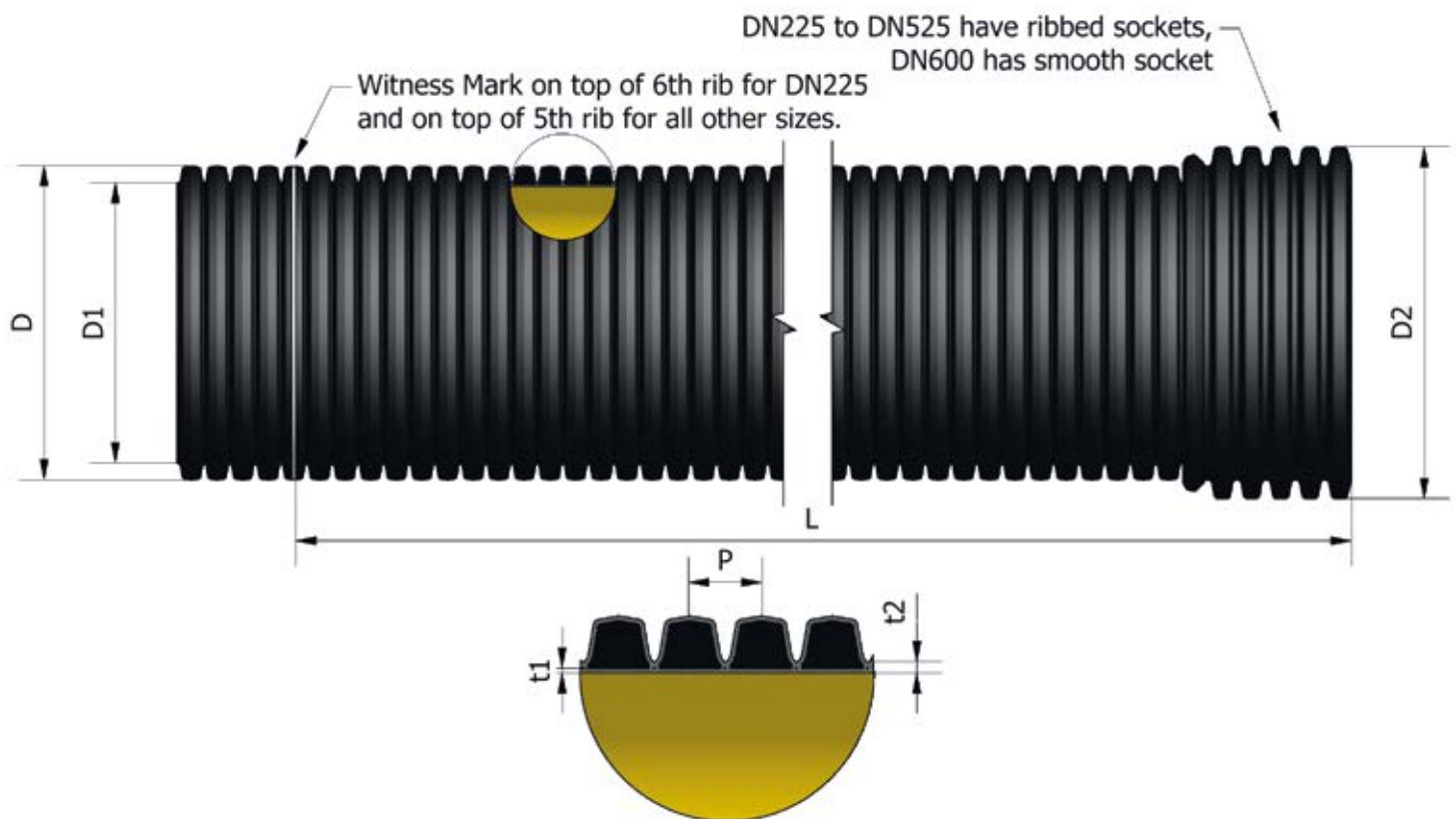
PIPE

BlackMAX™ pipes are manufactured in standard 6 metre nominal lengths. Standard 3 metre lengths are also available upon request.

BlackMAX™ Pipes

Nominal Diameter DN	Product Code	Mean Pipe OD D (mm)	Mean Pipe ID D1 (mm)	Max Overall Socket Diameter D2 (mm)	Nominal Lengths (mm)	Profile Pitch P (mm)	t1 (mm)	t2 (mm)	Approx. Pipe Mass (kg/m)
225	GR8225	259	225	300	6010	24.9	1.4	1.7	4
300	GR8300	344	300	400	6020	33.2	1.7	2.0	7
375	GR8375	428	373	500	6025	39.8	2.1	2.4	11
450	GR8450	514	447	595	6030	49.8	2.8	2.8	14
525	GR8525	600	522	705	6015	56.9	3.2	3.2	19
600	GR8600	682	596	725	5910	66.4	3.5	3.5	25

Note: All diameters except for DN600 are supplied with ribbed sockets. L = Standard nominal effective lengths.



FITTINGS

A range of standard fittings in all sizes is available for use with BlackMAX™ pipes providing the complete system.

BlackMAX™ stormwater drainage fittings in sizes DN225, DN300 and DN375 are generally fabricated from PVC pipe with moulded socketed ends suitable for rubber ring jointing. DN450, DN525 and DN600 fittings are fabricated from BlackMAX™ (PP) pipe sections and are generally supplied with socketed ends suitable for rubber ring jointing. Other configurations, such as spigotted ends, are also available upon request with separate pipe couplings for jointing.

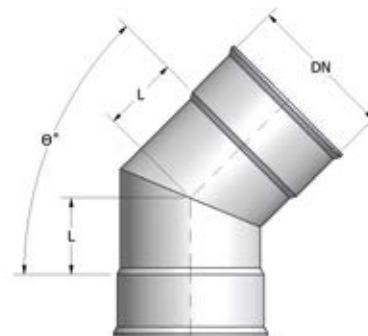
Repair clamps and jointing clamps are available from Iplex Pipelines providing a quick and permanent solution for repairing damaged BlackMAX™ pipes or for pipe jointing.

BlackMAX™ BENDS

PVC: Socket x Socket

Product Code	Angle \varnothing°	Dimensions	
		DN	L (mm)
GWR0222515	15	225	60
GWR0230015	15	300	125
GWR0237515	15	375	143
GWR0222530	30	225	77
GWR0230030	30	300	147
GWR0237530	30	375	170
GWR0222545	45	225	96
GWR0230045	45	300	169
GWR0237545	45	375	200

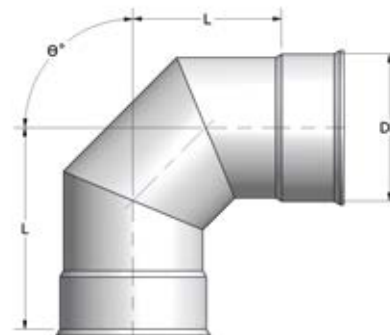
Note: • Other sizes are available upon request, subject to availability at time of ordering.



PVC X 90°: Socket x Socket

Product Code	Dimensions	
	DN	L (mm)
GWR0222590	225	204
GWR0230090	300	311
GWR0237590	375	373

Note: • Other sizes are available upon request, subject to availability at time of ordering.



PP: Socket x Socket (one cut / two segment)

Product Code			Dimensions	
Angle $\varnothing^\circ = 15^\circ$	Angle $\varnothing^\circ = 30^\circ$	Angle $\varnothing^\circ = 45^\circ$	DN	L (mm)
GR0245015	GR0245030	GR0245045	450	360
GR0252515	GR0252530	GR0252545	525	428
GR0260015	GR0260030	GR0260045	600	473

Note: • Other sizes are available upon request, subject to availability at time of ordering.



PP X 90°: Socket x Socket (two cut / three segment)

Product Code	Dimensions	
	DN	L (mm)
GR0245090	450	568
GR0252590	525	607
GR0260090	600	644

Note: • Other sizes are available upon request, subject to availability at time of ordering.

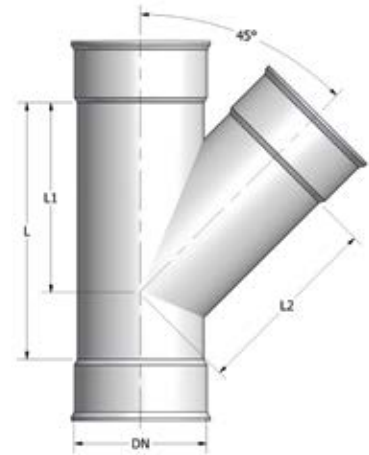


BlackMAX™ EQUAL JUNCTIONS

PVC x 45°: Socket x Socket x Socket

Product Code	Dimensions			
	DN	L (mm)	L1 (mm)	L2 (mm)
GWR2422545	225	521	386	386
GWR2430045	300	714	514	514
GWR2437545	375	816	600	600

Note: • Other sizes are available upon request, subject to availability at time of ordering.



PP x 45°: Socket x Socket x Socket

Product Code	Dimensions			
	DN	L (mm)	L1 (mm)	L2 (mm)
GR2445045	450	1042	748	748
GR2452545	525	1158	838	838
GR2460045	600	1356	956	956

Note: • Other sizes are available upon request, subject to availability at time of ordering.



BlackMAX™ REDUCING JUNCTIONS

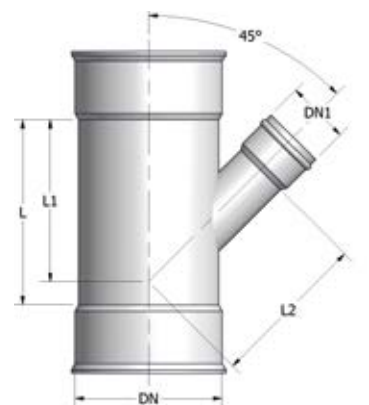
PVC x 45°: Socket x Socket x RRJ (DWV)

Product Code	Dimensions				
	DN	DN1 ¹	L (mm)	L1 (mm)	L2 (mm)
GWR25221045	225	100	362	306	315
GWR25221545	225	150	393	321	324
GWR25301045	300	100	394	354	361
GWR25301545	300	150	365	390	378
GWR25302245	300	225	640	483	481
GWR25371045	375	100	530	468	412
GWR25371545	375	150	530	463	451
GWR25372245	375	225	630	527	531
GWR25373045	375	300	730	573	590

Note: • ¹ DN100 & DN150 branches are generally supplied as DWV RRJ. A branch connection with a SWJ is also available on request.

Add an 'S' at the end of the product code when ordering.

• Other sizes are available upon request, subject to availability at time of ordering.



BlackMAX™ REDUCING JUNCTIONS

PP x 45°: Socket x Socket x Socket

Product Code	Dimensions				
	DN	DN1	L (mm)	L1 (mm)	L2 (mm)
GR25452245	450	225	725	590	604
GR25453045	450	300	831	643	678
GR25453745	450	375	925	684	700
GR25522245	525	225	732	635	658
GR25523045	525	300	838	688	732
GR25523745	525	375	941	741	753
GR25524545	525	450	1048	793	820
GR25602245	600	225	735	686	725
GR25603045	600	300	841	739	800
GR25603745	600	375	953	791	820
GR25604545	600	450	1048	834	887
GR25605245	600	525	1422	1090	906

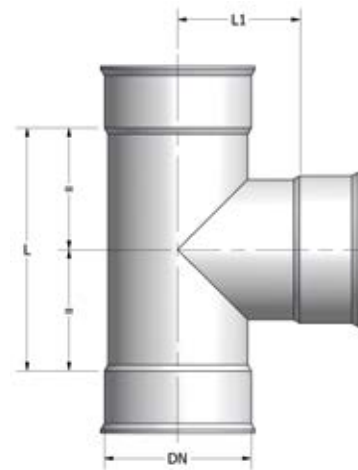


BlackMAX™ EQUAL TEES

PVC x 90°: Socket x Socket x Socket

Product Code	Dimensions		
	DN	L (mm)	L1 (mm)
GWR2422590	225	416	208
GWR2430090	300	564	282
GWR2437590	375	660	330

Note: • Other sizes are available upon request, subject to availability at time of ordering.



PP x 90°: Socket x Socket x Socket

Product Code	Dimensions		
	DN	L (mm)	L1 (mm)
GR2445090	450	810	405
GR2452590	525	930	465
GR2460090	600	1008	504

Note: • Other sizes are available upon request, subject to availability at time of ordering.

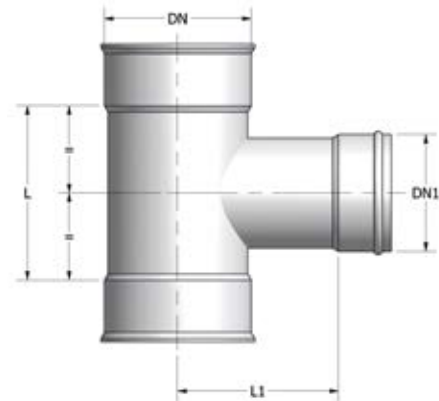


BlackMAX™ REDUCING TEES

PVC x 90°: Socket x Socket x Socket

Product Code	Dimensions			
	DN	DN1	L (mm)	L1 (mm)
GWR25221090	225	100 ¹	265	189
GWR25221590	225	150 ¹	163	193
GWR25301090	300	100 ¹	174	241
GWR25301590	300	150 ¹	199	245
GWR25302290	300	225	244	261
GWR25371090	375	100 ¹	265	274
GWR25371590	375	150 ¹	265	288
GWR25372290	375	225	265	323
GWR25373090	375	300	464	442

Note: • ¹ DN100 & DN150 branches are generally supplied as DWV RRJ. A branch connection with a SWJ is also available on request. Add an 'S' at the end of the product code when ordering.
• Other sizes are available upon request, subject to availability at time of ordering.



PP x 90°: Socket x Socket x Socket

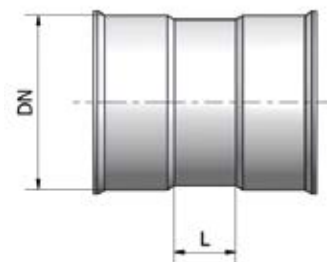
Product Code	Dimensions			
	DN	DN1	L (mm)	L1 (mm)
GR25452290	450	225	630	527
GR25453090	450	300	704	427
GR25453790	450	375	778	427
GR25522290	525	225	630	465
GR25523090	525	300	650	465
GR25523790	525	375	778	465
GR25524590	525	450	854	465
GR25602290	600	225	624	514
GR25603090	600	300	720	514
GR25603790	600	375	780	514
GR25604590	600	450	856	514
GR25605290	600	525	932	514



BlackMAX™ COUPLINGS

PVC: Socket x Socket

Product Code	Dimensions	
	DN	L (mm)
GWR57225	225	116
GWR57300	300	148
GWR57375	375	149



PP: Socket x Socket

Product Code	Dimensions	
	DN	L (mm)
GR57450	450	400
GR57525	525	400
GR57600	600	400

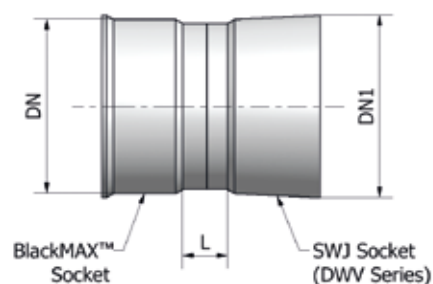


Note: • Other sizes are available upon request, subject to availability at time of ordering.

BlackMAX™ ADAPTORS

PVC: Socket x SWJ (DWV)

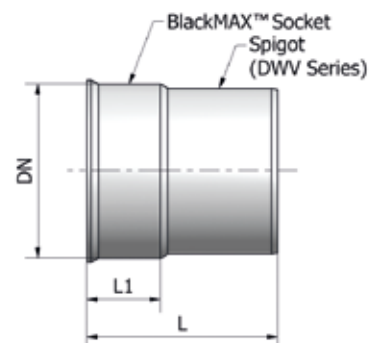
Product Code	Dimensions		
	DN	DN1	L (mm)
GWR622222	225	225	65
GWR623030	300	300	140
GWR623737	375	375	95



Note: • Also available PVC (Socket x RRJ DWV, use Product Code GWR61...)
• Other sizes are available upon request, subject to availability at time of ordering.

PVC: Socket x Spigot (DWV)

Product Code	Dimensions		
	DN	L (mm)	L1 (mm)
GWR602222	225	375	145
GWR603030	300	470	150
GWR603737	375	450	185

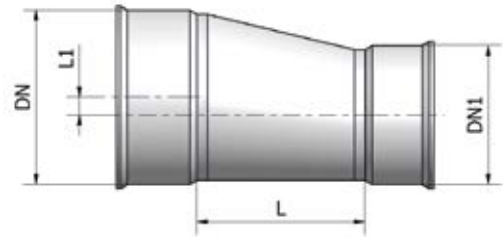


Note: • Other sizes are available upon request, subject to availability at time of ordering.

BlackMAX™ LEVEL INVERT TAPERS

PVC: Socket x Socket

Product Code	Dimensions			
	DN	DN1	L (mm)	L1 (mm)
GWR722215	225	150 ¹	460	41
GWR723015	300	150 ¹	108	69
GWR723022	300	225	234	33
GWR723715	375	150 ¹	168	110
GWR723722	375	225	203	65
GWR723730	375	300	405	43



Note: • ¹ DN100 & DN150 branches are generally supplied as DWV RRJ. A branch connection with a SWJ is also available on request. Add an 'S' at the end of the product code when ordering.
• Other sizes are available upon request, subject to availability at time of ordering.

PP: Socket x Socket

Product Code	Dimensions		
	DN	DN1	L (mm)
GR724522	450	225	400
GR724530	450	300	400
GR724537	450	375	400
GR725245	525	450	400
GR726045	600	450	400
GR726052	600	525	400

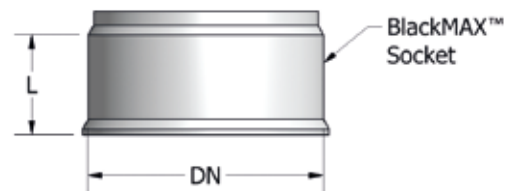


Note: • Other sizes are available upon request, subject to availability at time of ordering.

BlackMAX™ END CAPS

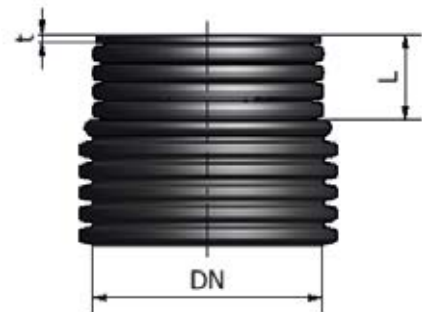
PVC: End Caps

Product Code	Dimensions	
	DN	L (mm)
GWR105225	225	145
GWR105300	300	150
GWR105373	375	185



PP: End Caps

Product Code	Dimensions		
	DN	L (mm)	t (mm)
GR105450	450	200	15
GR105525	525	200	20
GR105600	600	200	20

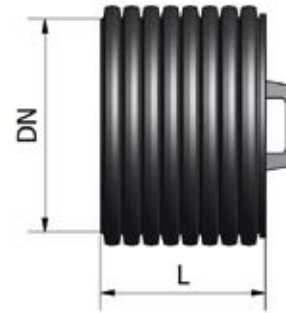


BlackMAX™ PLUGS

PP

Product Code	Dimensions	
	DN	L (mm)
GR106225 ¹	225	160
GR106300 ¹	300	180
GR106375 ¹	375	215
GR106450	450	270
GR106525	525	310
GR106600	600	360

Note: • ¹ These sizes are POA only, subject to availability at time of ordering.

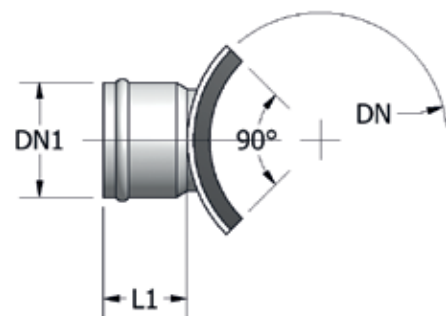
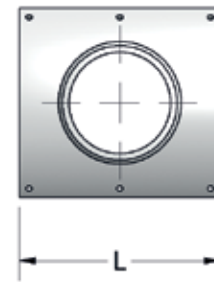


BlackMAX™ STORMWATER SADDLES

PVC x RRJ (DWV)

Product Code	Dimensions			
	DN	DN1 ¹	L (mm)	L1 (mm)
GWR50221090	225	100	255	80
GWR50221590	225	150	225	120
GWR50301090	300	100	275	80
GWR50301590	300	150	275	120
GWR50371090	375	100	315	80
GWR50371590	375	150	315	120
GWR50451090	450	100	390	80
GWR50451590	450	150	390	120
GWR50521090	525	100	360	80
GWR50521590	525	150	360	120
GWR50601090	600	100	410	80
GWR50601590	600	150	410	120

Note: • ¹ DN100 & DN150 branches are generally supplied as DWV RRJ. A branch connection with a SWJ is also available on request. Add an 'S' at the end of the product code when ordering.



TRANSPORTATION & STORAGE

Although BlackMAX™ pipes are notably resistant to impact, they should not be rolled, dropped or allowed to come into contact with sharp objects likely to cause damage. When pipes are unloaded they should be kept in their packs until required. If pipes are not crated they should be placed on horizontal supporting timbers at approximately 2 metre centres. These timbers can also be used to separate layers when pipes are stacked individually.

Sockets should be protected from distortion during storage by ensuring all the sockets are placed at alternative ends protruding from the stack and raised clear on the ground.

Pack Details

Nominal pipe diameter DN	Approximate pack sizes			Pipes per pack	Approximate mass of pack without timbers (kg)	Number of pipes per semi-trailer
	Width (mm)	Height (mm)	Length (mm)			
225	1090	630	6300	8	192	128
300	1090	770	6330	6	262	72
375	920 or 1340	950 or 940	6400	4 or 6	246 or 369	60
450	1080	610	6500	2	176	32
525	1890	690	6500	3	307	18
600	2130	770	6500	3	406	18

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