

GRAVITY DRAINAGE SYSTEMS

SPECIFICATION AND INSTALLATION GUIDE





The Iplex® vision is to be the leading manufacturer and supplier of plastic building materials in New Zealand.

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Iplex Novadrain®

- AS/NZS 1260
- Solvent Cement Joint and Rubber Ring Joint product offers
- Available in a range of pipe stiffnesses classes



Iplex Novadrain® DWV Fittings

- AS/NZS 1260
- Solvent Cement Joint and Rubber Ring Joint product offers
- Fittings suitable for use with systems using up to class SN16 pipe

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Iplex Restrain®

- AS/NZS 1260
- SN16 in all sizes
- Restrained (threaded) rubber ring joint
- Suitable for trenchless applications

SECTION 3 - STORMWATER

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Iplex Stormfit Fittings®	DN90 - DN150 PVC-U gravity stormwater fittings	21



Iplex Superstorm®

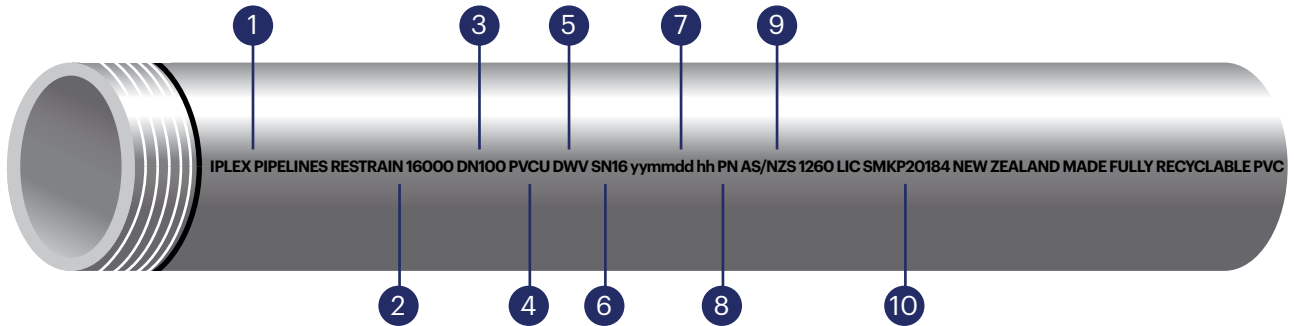
- AS/NZS 1254
- Solvent Cement Joint and Rubber Ring Joint product offers



Iplex Stormfit® Fittings

- AS/NZS 1254
- Solvent Cement Joint PVC-U fittings

UNDERSTANDING PIPE CODES - EXAMPLE



- | | |
|--------------------|---|
| 1 Company name | 6 Nominal Stiffness Class |
| 2 Brand Name | 7 Date and Hour of Manufacture |
| 3 Nominal Diameter | 8 Location of Manufacture (PN = Palmerston North) |
| 4 Material Type | 9 Manufacturing Standard |
| 5 Application | 10 3rd Party Certification Licence |

DRAIN, WASTE & VENT

SECTION 1

DRAIN, WASTE & VENT

IPLEX NOVADRAIN® PVC-U GRAVITY DRAINAGE PIPE

Iplex Novadrain® is a solid wall PVC-U pipe, which may be manufactured either as plain solid wall pipe or sandwich construction (SC) solid wall pipe. SC solid wall pipe technology is able to effectively utilize recycled PVC-U as permitted by the AS/NZS 1260 standard.

Iplex Novadrain® is available in both Solvent Cement Joint and Rubber Ring Joint configurations. Solvent Cement Joints are available in size DN100 SN6 and DN150 SN4. Rubber Ring Joints are available in all sizes DN100 to DN600 inclusive.

Product Code:

- 100 Series

Specification

Iplex Novadrain® pipes are manufactured in accordance with AS/NZS 1260, PVC-U pipes and fittings for drain, waste and vent applications.

(StandardsMark Licence number SMK20184 and SMK20185)

AS/NZS 1260 is an acceptable Standard in NZS 4404:2010 Appendix A—Land Development and Subdivision Infrastructure.

AS/NZS 1260 Class SN4 or SN6 is an acceptable Standard is NZTA F/3 - Specification of Pipe Culvert Construction.

DWV pipes and fittings are coloured light grey as specified in AS/NZS 1260. SN stiffness class represents values in N/m/m eg: SN6 pipe has a stiffness of 6000 N/m/ m; SN16 pipe has a stiffness of 16000 N/m/m.



Iplex Novadrain® PVC-U Solvent Cement Joint (SCJ).



Iplex Novadrain® PVC-U Rubber Ring Joint (RRJ).

SECTION 1

DRAIN, WASTE & VENT

IPLEX NOVADRAIN® PVC-U GRAVITY DRAINAGE PIPE

Applications

Iplex Novadrain® can be used for the following applications:

- Above ground waste and vent applications
- Domestic house drains
- Urban gravity sewer mains
- Industrial gravity discharge lines.

Installation

Iplex Novadrain® should be designed and installed in accordance with the following standards:

Joining:

- Solvent cement joints are available in sizes DN32 to DN80, DN100 SN6 and DN150 SN4.
- Rubber ring joints available in all sizes DN100 to DN600 inclusive.

General Installation:

AS/NZS 2032, "Installation of PVC pipe systems".

Buried Structural Design:

AS/NZS 2566 Part 1 and supplement 1. "Buried Flexible Pipelines - Structural De-sign".

Detailed Installation and Site Pressure Testing:

AS/NZS 2566 Part 2 "Installation".

For more information on best practice installation, consult the Iplex Plumbing Drain, Waste and Vent Pipe and Fittings Systems Guide (refer to www.iplex.co.nz/iplex-resources/).



Installation of DN 600 Iplex Novadrain® PVC-U pipe for trunk sewer in Mangere, Auckland.

SECTION 1

DRAIN, WASTE & VENT

IPLEX NOVADRAIN® PRODUCT RANGE

IPLEX NOVADRAIN® Pipe Dimensions						
Stiffness Classes		SN4	SN6	SN8	SN10	SN16
Nominal Size DN	Mean O.D. (mm)	Mean I.D. mm (min)	Mean I.D. mm (min)	Mean I.D. mm (min)	Mean I.D. mm (min)	Mean I.D. mm (min)
100*	110.2	-	103.8	-	103.0	101.6
150*	160.3	152.1	-	150.5	-	147.9
175	200.3	190.4	-	187.9	-	184.9
225	250.4	237.9	-	235.1	-	231.3
300	315.4	299.7	-	296.8	-	290.8
375	400.5	380.7	-	375.9	-	370.1
475	500.5	475.9	-	468.8	-	460.7
500#	560.3	530.0	-	524.8	-	-
600	630.5	-	-	591.1	-	-

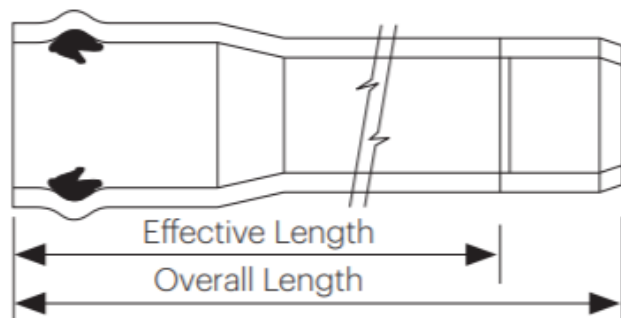
Minimum order quantities may apply

*These pipe sizes may be manufactured as either plain solid wall pipe or sandwich construction (SC) solid wall pipe

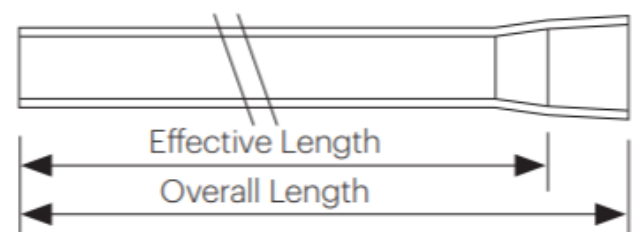
#This size not included in AS/NZS 1260 but has the mechanical performance capability of AS/NZS 1260

Length: 6 metre effective length. Length of the witness mark is added to give the overall length.

Rubber Ring Joint



Solvent Cement Joint



SECTION 1

DRAIN, WASTE & VENT

IPLEX NOVADRAIN® DWV FITTINGS

The Iplex Novadrain® DWV fittings range covers both Solvent Cement Joint (SCJ) and Rubber Ring Joint (RRJ) fittings and are manufactured to AS/NZS 1260.

- Solvent Weld Joint (Coded '100' Series) Injection Moulded fittings DN100 - DN150* Suitable for SN16 application
- Rubber Ring Joint (Coded '1500' Series) Injection Moulded fittings DN100 - DN150* Suitable for SN16 application

Iplex injection moulded plain wall fittings to AS/NZS 1260 are suitable for use in DWV systems using SN classes up to and including SN16 pipe.

For the full range of Iplex Novadrain PVC-U DWV Fittings please refer to the Iplex Product Catalogue (refer to www.iplex.co.nz/iplex-resources/).



Iplex Novadrain® DWV Solvent Cement Joint configuration.

Iplex Novadrain® DWV Rubber Ring Joint configuration.

NOTES



IPLX RESTRAIN

SECTION 2

IPLEX RESTRAIN

IPLEX RESTRAIN® PVC-U TRENCHLESS GRAVITY SEWER PIPE

Iplex Restrain® PVC-U sewer pipe has been designed specifically for gravity sewer applications using trenchless techniques for the installation, repair or replacement of underground infrastructure.

Iplex Restrain® is a rubber ring jointed, SN16 PVC-U sewer pipe, utilizing a threaded spigot and “low profile” threaded socket, which provides axial end load restraint.

Iplex Restrain® sewer pipe is available in nominal diameters DN100, DN150, DN225 and DN300. Iplex Restrain® is available in lengths ranging from 1m to 6m to suit project specific and/or site requirements. The length of the pipe is generally a function of the method of installation and site space requirements.

Product Code:

- RESTRAIN

Specification

Compliance:

Iplex Restrain® is a DWV sewer pipe with a threaded spigot and socket assembly, with a rubber sealing ring. Restrain® is manufactured in accordance with AS/NZS 1260 “PVC-U pipe for drain, waste and vent applications”.

(StandardsMark licence number SMKP20184)

AS/NZS 1260 is an acceptable Standard in NZS 4404:2010 Appendix A—Land Development and Subdivision Infrastructure.

Iplex Pipelines NZ Limited satisfies the requirements of ISO 9001 “Quality Management Systems - requirements”. (Licence No. QEC4169).



Iplex Restrain® being installed using static pipe bursting method.

SECTION 2

IPLX RESTRAIN

IPLX RESTRAIN® PVC-U TRENCHLESS GRAVITY SEWER PIPE

Applications

- Horizontal Directional Drilling (HDD)
- Pipe Reaming (PR) or Pipe Eating (PR-PE)
- Pipe Bursting Static (PB-ST)
- Pipe Bursting Hydraulic (PB-HY)
- Pipe Bursting Slitting (PB-SL)
- Pilot Tube Micro Tunnelling (PTMT)
- Horizontal Auger Boring (HAB)

Iplex Restrain® PVC Sewer Pipe is not suitable for use with pneumatic or concussive pipe bursting equipment. It is also not suitable for pipe ramming or impact moleing.



Iplex Restrain® PVC-U Threaded Socket



Iplex Restrain® PVC-U Threaded Spigot with seal ring

Installation

Iplex Restrain® pipes should be designed and installed in accordance with the following standards:

General Installation:

AS/NZS 2032 "Installation of PVC Pipe Systems" Restrain® Installation Guide available from Iplex Pipelines Technical Centre on request."

Buried Structural Design:

AS/NZS 2566 Part 1 and supplement 1. "Buried Flexible Pipelines - Structural Design".

Detailed Installation and Site Pressure Testing:

AS/NZS 2566 Part 2 "Installation".

Iplex Restrain® sewer pipe can be installed by a number of trenchless methods.

Each installation method has its own unique installation technique. For more information on best practice installation Iplex Restrain®, consult the Iplex Restrain® Design and Installation Guide which can be found at www.iplex.co.nz/iplex-resources.

SECTION 2

IPLEX RESTRAIN

IPLEX RESTRAIN® FEATURES AND BENEFITS

Features	Benefits
Threaded socket & spigot joint	Allows axial restraint during installation using trenchless methods.
Pipe lengths can be customised to suit the installation or project requirements	Enables use with a range of installation technologies or site requirements.
Compatible with standard DWV PVC Sewer fittings to AS/NZS 1260	Allows connection to maintenance chambers and service laterals.
Bi-directional installation capability	Pipe can be pushed or pulled into place to suit installation methodology.
Elastometric seal ring performance conforming to AS/NZS 1260	Designed to prevent leakage and root intrusion.
Manufactured in accordance with AS/NZS 1260 (StandardsMark licence number SMKP 20184)	Product meets industry manufacturing and performance standard.
Manufactured from PVC-U	Compatible with standard PVC-U drainage fittings to AS/NZS 1260.
Manufactured in stiffness class SN16	Provides the structural performance of SN16.

SECTION 2
IPLEX RESTRAIN

IPLEX RESTRAIN®
PRODUCT RANGE

Pipe DN	Mean Pipe O.D. (mm)	Socket O.D. (mm)	SN	Mean ID (mm)	Socket length
100	110.2	115	115	16	70mm
150	160.3	160.3	170	16	90mm
225	250.4	250.4	260	16	140mm
300	315.5	315.5	330	16	140mm



Iplex Restrain® PVC-U gravity sewer pipe.

NOTES



IPLX STORMWATER

SECTION 3

IPLEX STORMWATER

IPLEX SUPERSTORM® NON-PRESSURE PVC-U PIPE

Iplex Superstorm® stormwater pipes are PVC-U (Unplasticised PVC) pipe that are suitable for a wide range of non-pressure roading stormwater applications.

Iplex Superstorm® PVC-U pipes are available in both solvent cement joint (SCJ) and rubber ring joint (RRJ). Sizes in a SCJ configuration are available from DN90 to DN225mm and sizes in a RRJ configuration are available from DN150 to DN757mm.

Iplex Superstorm® has a stiffness rating of SN4 and is available in 6m lengths.

Product Codes:

- 700 Series

Nb. If a higher stiffness rating is required e.g. SN10 or SN16, Iplex Novadrain® DWV pipe may be substituted.

Specification

Iplex Superstorm® is manufactured in accordance with AS/NZS 1254 - PVC pipes and fittings for stormwater and surface water applications.

(StandardsMark Licence number SMKP20126 and SMK20180.)

AS/NZS 1254 is an acceptable Standard in NZS 4404:2010 Appendix A—Land Development and Subdivision Infrastructure.

Applications

Iplex Superstorm® PVC-U pipes are suitable for a range of applications including:

- Stormwater culverts used in roads including connections to intakes and outlet structures, aprons, head-walls and wingwalls
- Stormwater laterals
- Stormwater mains
- Stormwater access culverts used adjacent to the road carriageway under access ways

Installation

Iplex Superstorm® pipe should be designed and installed in accordance with the following Standards:

General Installation:

NZTA (TRANSIT NZ) Specification TNZ F/3: 2010
AS/NZS 2032 "Installation of PVC Pipe Systems".

Buried Structural Design:

AS/NZS 2566 Part 1 and supplement 1. "Buried Flexible Pipelines - Structural Design".

Detailed Installation:

AS/NZS 2566 Part 2 "Installation".

Jointing:

Superstorm® pipes are supplied socketed one end, suitable for solvent cement joint (DN90 to DN225) or rubber ring joint (DN150 to DN600).

For more information on best practice installation and field testing please consult the following guides:

- Iplex Pipeline Percy - "How I Solvent Cement Joint PVC Pipes"
- Iplex Pipeline Percy - "How I Install PVC Pipes"
- Iplex Pipeline Percy - "How I Field Test PVC Pipes"
- Iplex Plumbing Drain, Waste and Vent Pipe and Fittings systems Guide

(refer to www.iplex.co.nz/iplex-resources/).

SECTION 3
IPLEX STORMWATER

IPLEX SUPERSTORM®
PRODUCT RANGE

IPLEX SUPERSTORM® Pipe Dimensions			
Nominal Size DN	Stiffness Classes	SN4	
	Mean O.D. (mm)	Mean Wall (mm)	Mean I.D.
225	250.4	6.5	237.4
300	315.4	8.2	299.0
375	400.5	10.3	379.9
475	500.5	12.7	475.1
500*	560.3	-	524.6
600*	630.5	-	591.4

Minimum order quantities may apply

*This size not included in AS/NZS 1254 but has the mechanical performance capability of AS/NZS 1254

#This size is SN8



Iplex Superstorm® being installed on the Mackays to Peka Peka Expressway project, Kapiti Coast

SECTION 3

IPLEX STORMWATER

IPLEX STORMFIT® PVC-U STORMWATER FITTINGS

701/101 Plain Bend F&F	Product Code	Size (mm)
	701.90.15	90mm x 15°
	701.90.22	90mm x 22°
	701.90.45	90mm x 45°
	701.90.88	90mm x 88°
	101.100.5	100mm x 5°
	101.100.15	100mm x 15°
	101.100.30	100mm x 30°
	101.100.45	100mm x 45°
	101.100.88	100mm x 88°
	701.150.45	150mm x 45°
	701.150.90	150mm x 90°

771 Plain Bend M&F	Product Code	Size (mm)
	771.90.45 M&F	90mm x 45°

103 Access Bend	Product Code	Size (mm)
	103.100.45	100mm x 45°
	103.100.88	100mm x 88°

704/104 Plain Junction	Product Code	Size (mm)
	704.90.45**	90mm x 45°
	704.90.88*	90mm x 88°
	104.100.45***	100mm x 45°
	104.100.88**	100mm x 88°
	704.150.45	150mm x 45°
	704.150.90***	150mm x 90°

*Threaded on Branch socket

** Threaded on one main way socket

*** Threaded on one main way socket and branch socket

704 Reducing Junction	Product Code	Size (mm)
	704.150.100.45	150mm x 100mm x 45°

105 Inspection Junction	Product Code	Size (mm)
	105.100.45 LH	105mm x 45°
	105.100.45 RH	105mm x 45°

710/110 Straight Coupling	Product Code	Size (mm)
	710.90*	90mm
	110.100	100mm
	110.150	150mm

*Threaded Fitting

711S Slip Repair Coupling	Product Code	Size (mm)
	711S.90	90mm

711R Repair Coupling	Product Code	Size (mm)
	711R.90	90mm

724 Socket Reducer	Product Code	Size (mm)
	724.100.90	100mm x 90°

724 Adapter	Product Code	Size (mm)
	724.90.100	90mm x 100°

129 Inspection Pipe M&F	Product Code	Size (mm)
	129.100	100mm

SECTION 3

IPLEX STORMWATER

IPLEX STORMFIT® PVC-U STORMWATER FITTINGS

736/136 Screw Cap & Base	Product Code	Size (mm)
	736.90*	90mm
	136.100	100mm
	736C.90**	90mm
	136C.100**	100mm
	736G.90***	90mm

*Gasket sold separately

**Cap only

***Gasket

737/137 Push On Cap	Product Code	Size (mm)
	737.90	90mm
	137.100	100mm
	137.150	150mm

140 Pipe Clip	Product Code	Size (mm)
	140.90	90mm

765 Kerb Outlet	Product Code	Size (mm) x BSP
	765.90	90mm
	765.100	100mm

728 Stormwater Grate	Product Code	Size (mm) x BSP
	728.90	90mm

769 Stormwater Grate	Product Code	Size (mm)
	769.90	90mm
	769.150.100	150mm x 100°

IPLEX QUALITY MANAGEMENT SYSTEMS

Quality Assurance

Creating products of consistently high quality is at the forefront of the Iplex® manufacturing process, and central to the customer promise that Iplex® product quality meets or exceeds standards claimed.

All Iplex® manufacturing plants operate under a strict ISO 9001 Quality Management System (QMS). External certifying bodies carry out regular audits to provide third-party certification of the Company's QMS. Continue third-party product certification of Iplex® plastic pipeline products to relevant Australian & New Zealand standards, is also provided by these bodies.

The Iplex® mechanical testing laboratory in Palmerston North is an IANZ accredited facility, providing added assurance that any measurement and testing is carried out professionally and in a technically reliable manner in accordance with international standards.



APPLICABLE STANDARD	LICENCE TYPE	LICENCE NUMBER	CONFORMITY ASSESSMENT BODY
ISO 9001:2015	QMS Accreditation	QEC4169	SAI Global
ISO/IEC 17025:2017	IANZ Accreditation	ACCREDITATION NUMBER 61	IANZ
BEST ENVIRONMENTAL PRACTICE-PVC	BEP-PVC	SPROD40057	SAI Global
AS/NZS 1254:2010	StandardsMark™	SMKP20126 & SMKP20180	SAI Global
AS/NZS 1260:2017	StandardsMark™	SMKP20184, SMKP20185 & SMK1305	SAI Global
AS/NZS 1260:2017	WaterMark	WM 74530	ApprovalMark International
AS/NZS 1477:2017	StandardsMark™	SMK02569 & SMKP20181	SAI Global
AS/NZS 1477:2017	WaterMark	WM 74868	ApprovalMark International
AS/NZS 4130:2018	StandardsMark™	SMKP20400	SAI Global
AS/NZS 4441:2017	StandardsMark™	SMKP20682	SAI Global
AS/NZS 4765:2017	StandardsMark™	SMK02570	SAI Global

IPLEX PIPELINES NZ THE COMPANY

Iplex is one of New Zealand's leading manufacturers and suppliers of plastic pipeline systems. Iplex provides products and services throughout New Zealand and to export markets around the Pacific and other international markets. Iplex has manufacturing operations in Palmerston North, Christchurch and Ashburton, as well as access to the Iplex Australian network.

Iplex have been manufacturing plastic pipelines since 1938 and with over 80 years of industry service and technical experience.

Civil: Iplex provides a wide range of solutions for wastewater, drainage and potable water pipeline projects. Manufacturing both PE (Polyethylene) & PVC (Polyvinylchloride) for both pressure and non-pressure (gravity fed) pipeline systems including civil infrastructure, drainage systems and roading systems.

Iplex also services the following industry sectors:

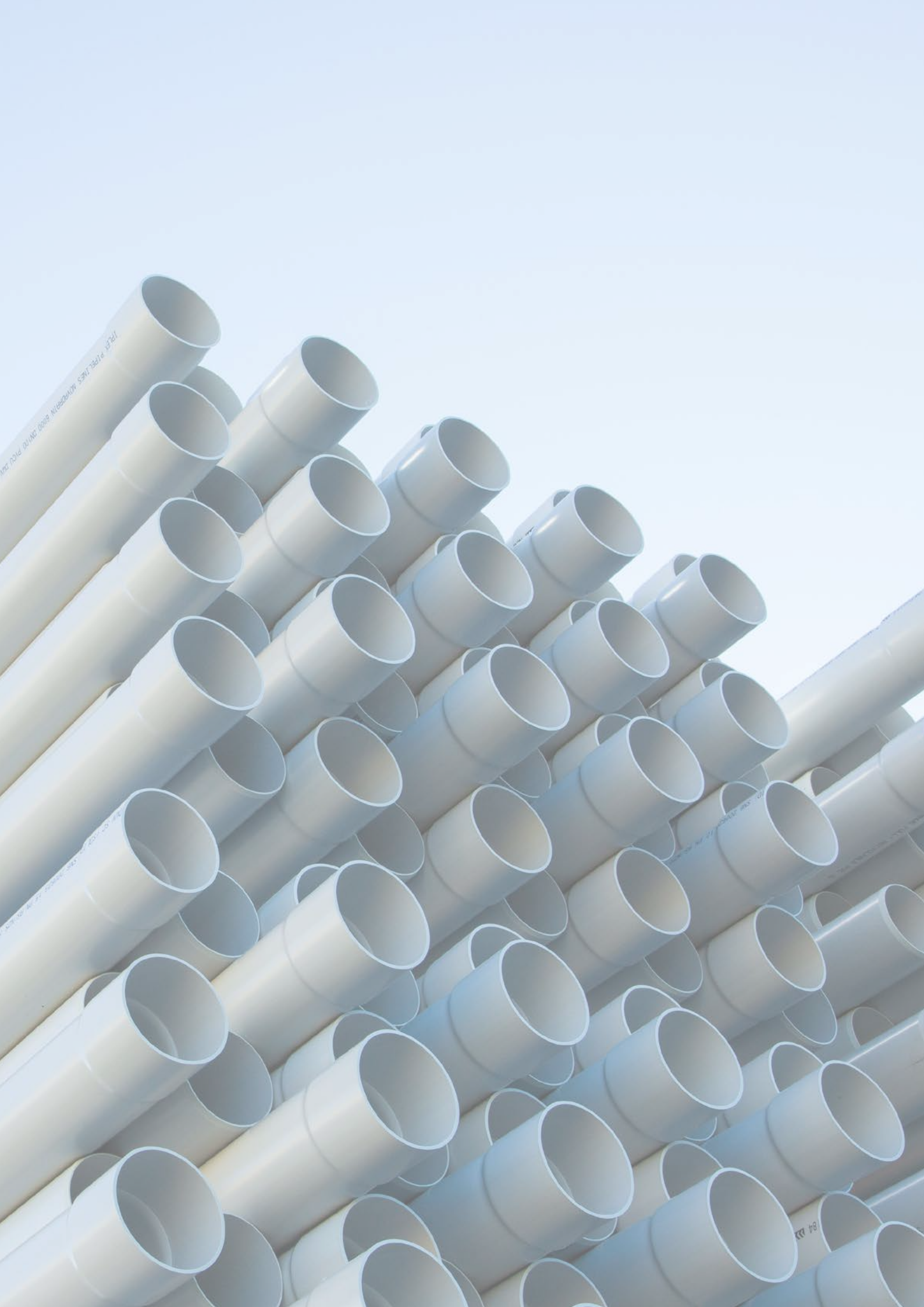
Energy and Communications: an important sector for Iplex NZ and there is a wide range of conduits, ducts and fittings available for new development and maintenance projects. The range covers electrical, communication and gas.

Plumbing: The Iplex plumbing sector covers pipes and fittings used within the property boundary. This includes reticulation of potable and non-potable water, sanitary plumbing, wastewater, drainage and gas reticulation. Iplex have the capabilities of supplying drain, waste and vent pipes and fittings, rainwater systems, traps and accessories.

Rural: Iplex also service the rural market providing pipes and fittings for rural use. Iplex provide systems for irrigation, stock water, land drainage, culverts and farm dairy effluent.



Iplex Pipelines manufacturing plant and distribution hub in Palmerston North, New Zealand.



GRAVITY DRAINAGE SYSTEMS SPECIFICATION AND INSTALLATION GUIDE, AUGUST 2020

LIMITATIONS

The information contained in this document is current as at October 2022 and is based on data available to Iplex Pipelines NZ Ltd at the time of going to print.

All photographic images are intended to provide a general impression only and should not be relied upon as an accurate example of Iplex Pipelines NZ Ltd products installed in accordance with this document or the referenced compliance documents.

This publication replaces all previous Iplex Pipelines NZ design information and literature relating to Iplex Pipelines NZ Ltd Gravity Drainage products. Iplex Pipelines NZ Ltd reserves the right to change the information contained in this document without prior notice. It is your responsibility to ensure that you have the most up to date information available. You can call toll free on 0800 800 262 or visit www.iplex.co.nz to obtain current information.

Iplex Pipelines NZ Ltd has used all reasonable endeavours to ensure the accuracy and reliability of the information contained in this document. However, to the maximum extent permitted by law, Iplex Pipelines NZ Ltd assumes no responsibility or liability for any inaccuracies, omissions or errors in this information nor for any actions taken in reliance on this information. Pipes and fittings have been shown as typical configurations, however, in some cases product dimensions may vary or be changed without notice. In all instances, the reader should contact Iplex Pipelines for clarification that the specific product is appropriate for their circumstance.

TRADEMARKS

The name Iplex, Iplex Superstorm, Iplex Novadrain and Iplex Restrained are registered trade-marks of Fletcher Building Holdings Limited.

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Iplex Pipelines NZ Ltd retain the intellectual property rights for Restrained™ pipe; New Zealand Patent No. 561752.



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