

# **ROADING 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 Nexus® Hi Way

- Heavy duty
- Complies with NZTA Specification TNZ F/2: 2000
- Twin wall
- Smooth bore and punched
- Red stripe identification
- Available with or without pre-fitted filter sock



### Iplex Nexusflo™

- Complies with NZTA Specification TNZ F/5: 2000
- Twin wall
- Smooth bore and punched
- Blue stripe identification
- Available with or without pre-fitted filter sock

## SECTION 2 - STORMWATER & ROAD CULVERTS

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### Iplex Superstorm®

- Polyvinyl chloride (PVC)
- Complies with NZTA Specification TNZ F/3: 2010
- Complies with AS/NZS 1254
- Smooth bore

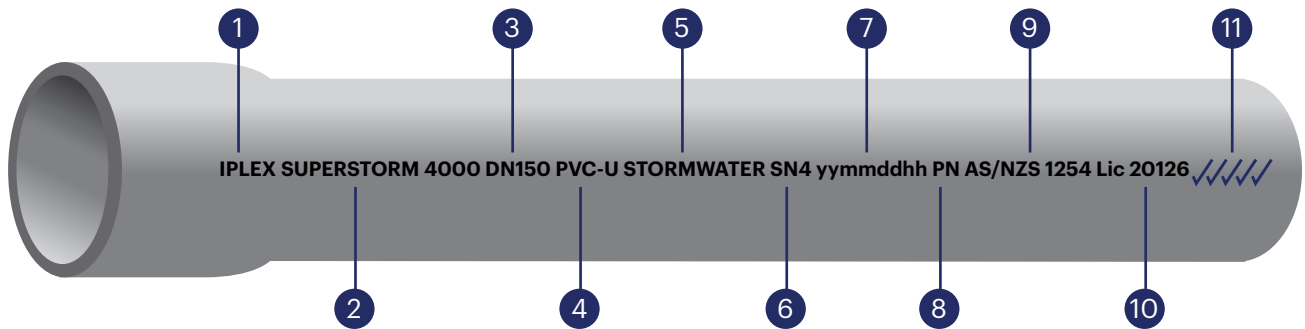


### Iplex Nexus® Culvert

- Polyethylene (PE)
- Nexus Culvert pipe complies with NZTA Specification TNZ F/3: 2000
- Twin wall
- Smooth bore
- Brown or Green stripe identification

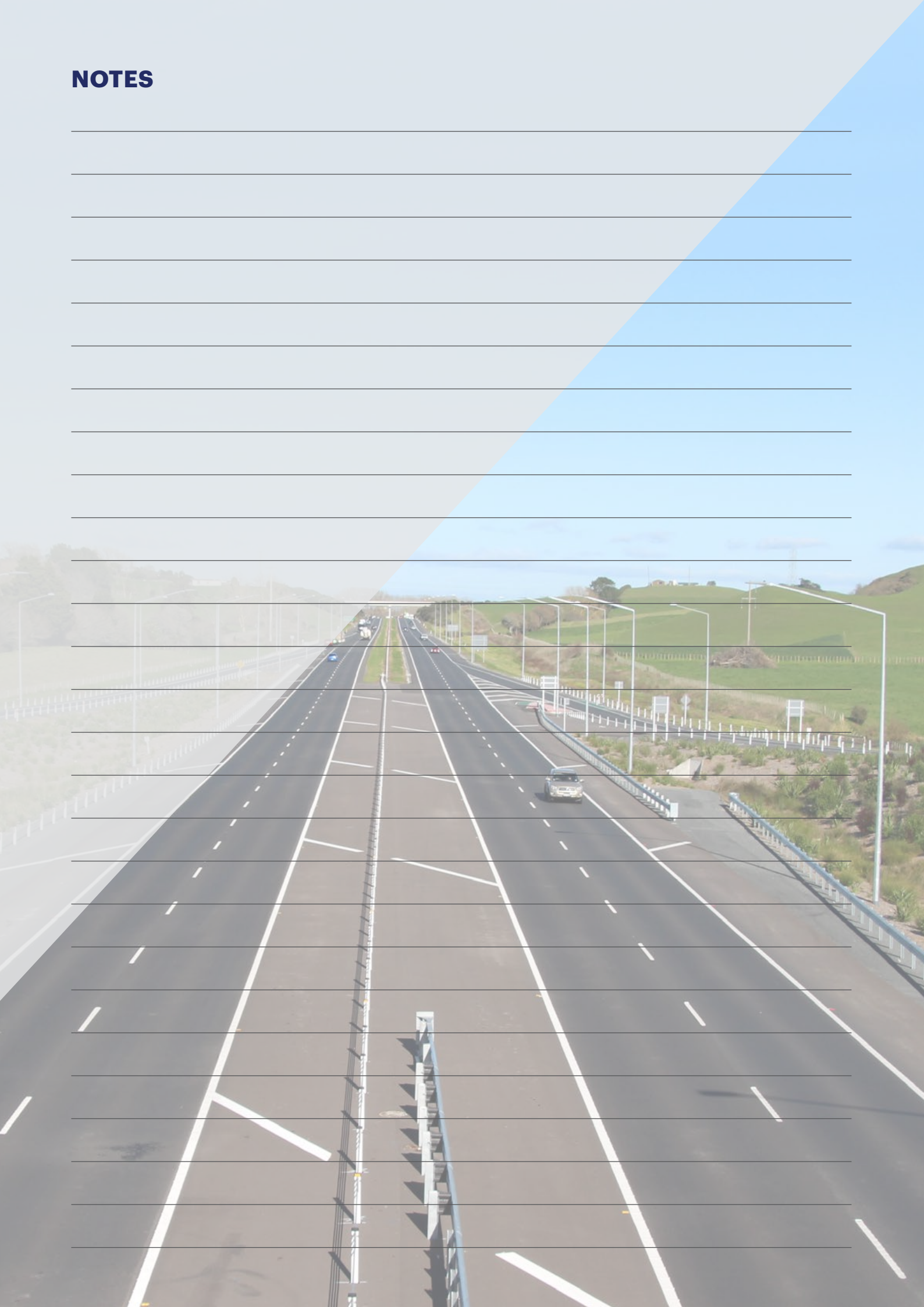
## UNDERSTANDING PIPE CODES - EXAMPLE

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- |                    |                                                   |
|--------------------|---------------------------------------------------|
| 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                 |
|                    | ⑪ 3rd Party Certification Body Logo               |

NOTES



# **SUBSOIL DRAINAGE**

# SECTION 1

## SUBSOIL DRAINAGE

### IPLEX NEXUS® HI-WAY SUBSOIL DRAINAGE PE PIPE

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Iplex Nexus® Hi-Way pipe is a double wall polyethylene (PE) pipe combining a smooth inner wall with a corrugated outer wall. The two walls are welded together during manufacture resulting in a high stiffness wall section with smooth-bore hydraulic performance.

Iplex Nexus® Hi-Way has an unpunched invert as specified in NZTA TNZ F/2. A permanent visible **red stripe** appears approximately opposite this unpunched invert. This red stripe is for visual identification as Iplex Nexus® Hi-Way, but DOES NOT indicate the top of the installed pipe.

Iplex Nexus® Hi-Way offers a minimum pipe stiffness for structural performance in ground and is supplied in DN110, DN160 and DN200 diameters in a range of coil lengths.

#### Product Codes:

- NEXUSHD – Nexus® Hi-Way Heavy duty road subsoil drainage pipe system
- NEXUSHDFS – Nexus® Hi-Way Heavy duty road subsoil drainage pipe system with pre-fitted filter sock (DN 110 and DN 160 only)

#### Specification

- **Iplex Nexus® Hi-Way**  
Complies with NZTA Specification TNZ F/2: 2013
- (DN110 SN10, DN160 SN10, DN 200 SN5)
- **Nexus® Hi-Way with Filter Sock** Complies with NZTA Specification TNZ F/2: 2013
- (DN110 SN10, DN160 SN10,)

### IPLEX NEXUSFLO™ SUBSOIL DRAINAGE PE PIPE

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Iplex Nexusflo™ is double wall, perforated polyethylene (PE), subsoil drainage pipe, punched around the full circumference, designed to capture and remove excess subsurface ground water in the soil. Iplex Nexusflo™ pipe combines a smooth inner wall with a corrugated outer wall. The two walls are welded together during manufacture resulting in a high stiffness wall section with smooth-bore hydraulic performance.

Iplex Nexusflo™ has a permanent visible **blue stripe** This blue stripe is for visual identification as Iplex Nexusflo™, but DOES NOT indicate the top of the installed pipe.

Iplex Nexusflo™ offers a minimum pipe stiffness of SN6, for structural performance in ground and is supplied in DN110, DN160 and DN200 diameters in a range of coil lengths.

#### Product Codes:

- NEXUS – Nexusflo™ subsoil drainage pipe
- NEXUSFS – Nexusflo™ subsoil drainage pipe with pre-fitted filter sock

#### Specification

- **Nexusflo™**  
Complies with NZTA Specification TNZ F/5: 2000
- (DN110 SN6, DN160 SN6, DN 200 SN4)



## SECTION 1

### SUBSOIL DRAINAGE

## IPLEX NEXUS® HI-WAY & IPLEX NEXUSFLO™ SUBSOIL DRAINAGE PIPE

### Applications

Iplex Nexus® Hi-Way is constructed in accordance with NZTA Specification TNZ F/2, or Iplex Nexusflo™ constructed in accordance with NZTA Specification TNZ F/5 may be used for the following applications:

- Construction work-site drainage
- Subsoil drainage under carriage ways or driveways
- Drainage or rubbish tips and public landfills.

### Installation

Iplex Nexus® Hi-Way and Nexusflo™ pipes should be designed and installed in accordance with the following standards:

#### Jointing:

Pipe supplied with a factory fitted, pull-out resistant coupler for easy, reliable jointing.

#### Installation Nexus Hi Way

Nexus® Hi-Way products should be installed in accordance with NZTA specification TNZ F/2.

#### Installation Nexusflo™

Nexusflo™ products should be installed in accordance with NZTA specification TNZ F/5.

For more information on best practice installation, consult the Iplex Nexusflo Specification & Installation Guide which can be found at [www.iplex.co.nz/iplex-resources](http://www.iplex.co.nz/iplex-resources).



*Iplex Nexus® Hi-Way subsoil drainage PE pipe.*



*Iplex Nexusflo™ subsoil drainage PE pipe.*

# SECTION 1

## SUBSOIL DRAINAGE

### IPLEX NEXUS® HI-WAY & IPLEX NEXUSFLO™ PRODUCT RANGE

**IPLEX NEXUS® Pipe Data: Available Lengths (m)**

| Nominal Size DN | NEXUS HD<br>(Nexus® Hi-Way ) | NEXUSHDFS<br>(Nexus® Hi-Way with filter sock) | NEXUSFS<br>(Nexusflo® with Filtersock) | 400FS<br>(Novaflo® with Filtersock) |
|-----------------|------------------------------|-----------------------------------------------|----------------------------------------|-------------------------------------|
| 110             | 5m & 100m                    | 100m                                          | 100m                                   | 30 & 100m                           |
| 160             | 5m & 45m                     | 45m                                           | 45m                                    | 45m                                 |
| 200             | 5m                           | -                                             | -                                      | -                                   |

### IPLEX NEXUSFLO™

Iplex Nexusflo™ pipe coils are supplied with factory-fitted couplers. Additional couplers and other fittings designed for use with Iplex Nexus® pipes are available as follows:

| Product                                                                                                    | Product Code   | Size (mm)      |
|------------------------------------------------------------------------------------------------------------|----------------|----------------|
| <br><b>45° Junction</b> | 104.100.45     | 110 x 45       |
|                                                                                                            | 704.150.45     | 160 x 45       |
|                                                                                                            | 704.150.100.45 | 160 x 110 x 45 |
| <br><b>Level Invert</b> | 123.150.100S   | 160 x 110      |
| <br><b>Coupler</b>      | 410.065        | 65             |

| Product                                                                                                 | Product Code | Size (mm) |
|---------------------------------------------------------------------------------------------------------|--------------|-----------|
| <br><b>Coupler</b>  | 420.110      | 110       |
|                                                                                                         | 420.160      | 160       |
|                                                                                                         | 420.200      | 200       |
|                                                                                                         | 420.250      | 250       |
| <br><b>End Plug</b> | 430.110      | 110       |
|                                                                                                         | 430.160      | 160       |



*Iplex Nexus® Hi-Way subsoil drainage PE pipe fitted with a coupler.*



*Iplex Nexusflo™ with Filterstock, fitted with coupler.*



## SECTION 1

### SUBSOIL DRAINAGE



*Iplex Nexusflo™ interceptor drain.*



NOTES





# ROAD CULVERTS

## SECTION 2

### ROAD CULVERTS

#### IPLEX SUPERSTORM® NON-PRESSURE PVC-U PIPE

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

**Product Code:**

- 700 Series

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

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#### 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)**

Iplex Superstorm® PVC-U pipes also comply with NZTA (TRANSIT NZ) Specification TNZ F/3: 2010 "Specification for pipe culvert construction".

#### 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, headwalls and wing-walls
  - 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 - DN225) or rubber ring joint (DN225 - DN600).



# SECTION 2

## ROAD CULVERTS

### IPLEX SUPERSTORM® PRODUCT RANGE

| IPLEX SUPERSTORM® Pipe Dimensions |                   |                   |           |
|-----------------------------------|-------------------|-------------------|-----------|
| Nominal Size DN                   | Stiffness Classes | SN4               |           |
|                                   | Mean O.D.<br>(mm) | Mean Wall<br>(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     |

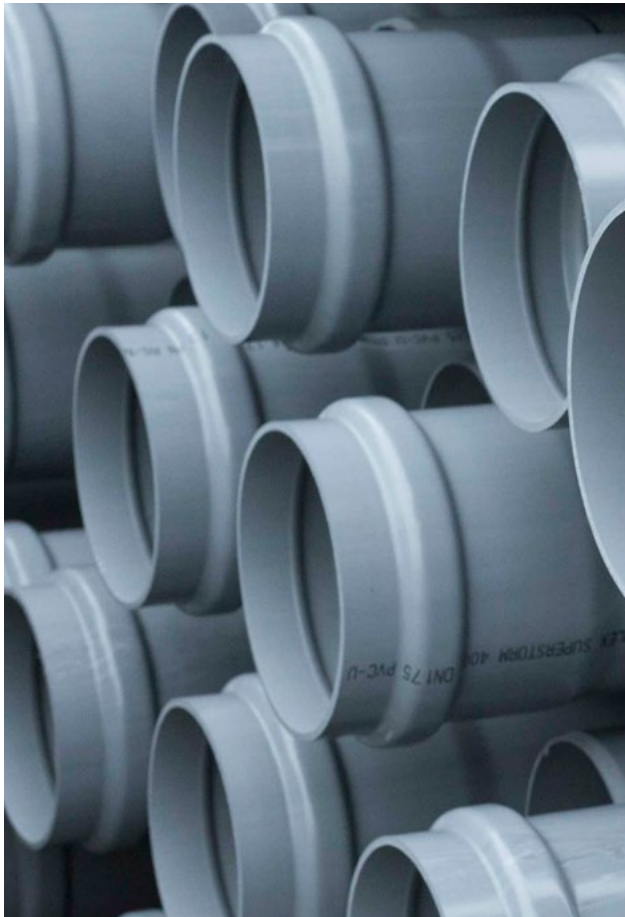
Minimum order quantities may apply

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

\*\*This size is SN8



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



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

## SECTION 2

### ROAD CULVERTS

## IPLEX NEXUS® CULVERT NON-PRESSURE PE CULVERT PIPE

Iplex Nexus® Culvert is a double wall polyethylene culvert pipe. Iplex Nexus® Culvert pipe combines a smooth inner wall with a corrugated outer wall. The two walls are welded together during manufacture resulting in a high stiffness wall section with smooth-bore hydraulic performance.

Iplex Nexus® Culvert is supplied in a range of nominal sizes from DN110 to DN500 in straight lengths. Iplex Nexus® Culverts nominal sizes DN250—DN 500 have a minimum pipe stiffness of SN6.

#### Product Code:

- NEXUSCULVERT

### Specification

#### Compliance:

Nexus® Culvert pipe complies with NZTA (TRANSIT NZ) Specification TNZ F/3: 2000.

### Applications

Iplex Nexus® Culvert 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 wing-walls
- Stormwater access culverts used adjacent to the road carriageway under access ways

### Installation

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

#### General Installation:

NZTA (TRANSIT NZ) Specification TNZ F/3: 2010  
Specification for pipe culvert construction.

#### Buried Structural Design:

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

#### Detailed Installation:

AS/NZS 2566 Part 2 "Installation".  
AS/NZS 2032 "Installation of PVC Pipe Systems".

#### Joining:

Pipes are supplied with a factory applied coupler or formed socket for push-fit jointing.

For more information on best practice installation with Iplex Nexus® Culvert, consult the Iplex Precision Farming Solution Guide (refer to [www.iplex.co.nz/iplex-resources/](http://www.iplex.co.nz/iplex-resources/)).



Double Wall PE Culvert pipe.

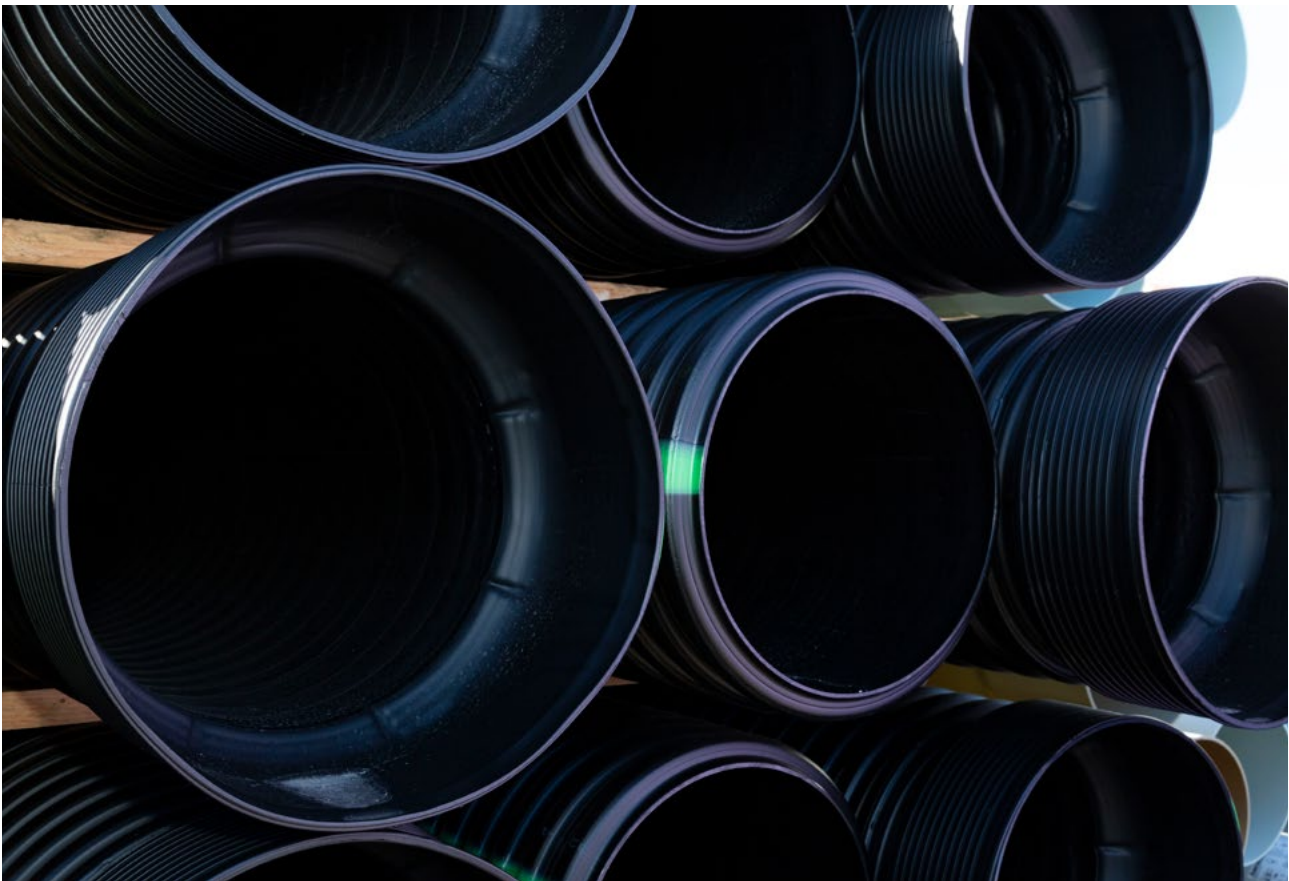


# SECTION 2

## ROAD CULVERTS

### IPLEX NEXUS® CULVERT PRODUCT RANGE

| Colour of pipe and stripe                                                                                    | Product Code       | Nominal Size (mm) | Length (m) | Coupling             |
|--------------------------------------------------------------------------------------------------------------|--------------------|-------------------|------------|----------------------|
| <br>Black with brown stripe | NEXUS CULVERT 1105 | 110               | 5          | c/w Push fit coupler |
|                                                                                                              | NEXUS CULVERT 1605 | 160               | 5          | c/w Push fit coupler |
|                                                                                                              | NEXUS CULVERT 2005 | 200               | 5          | c/w Push fit coupler |
| <br>Black with green stripe | NEXUS CULVERT 2506 | 250               | 6          | Socketed             |
|                                                                                                              | NEXUS CULVERT 3156 | 315               | 6          | Socketed             |
|                                                                                                              | NEXUS CULVERT 4006 | 400               | 6          | Socketed             |
|                                                                                                              | NEXUS CULVERT 5006 | 500               | 6          | Socketed             |



Iplex Nexus® Culvert black with green stripe.

## 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

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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.

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**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.

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





# ROADING DRAINAGE SYSTEMS SPECIFICATION AND INSTALLATION GUIDE, AUGUST 2020

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## 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.

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This publication replaces all previous Iplex Pipelines NZ design information and literature relating to Iplex Pipelines NZ Ltd Roothing 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](http://www.iplex.co.nz) to obtain current information.

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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.

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## TRADEMARKS

The name Iplex, Iplex Superstorm, Iplex Nexus, Iplex Nexus Hi-Way are registered trademarks of Fletcher Building Holdings Limited.

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