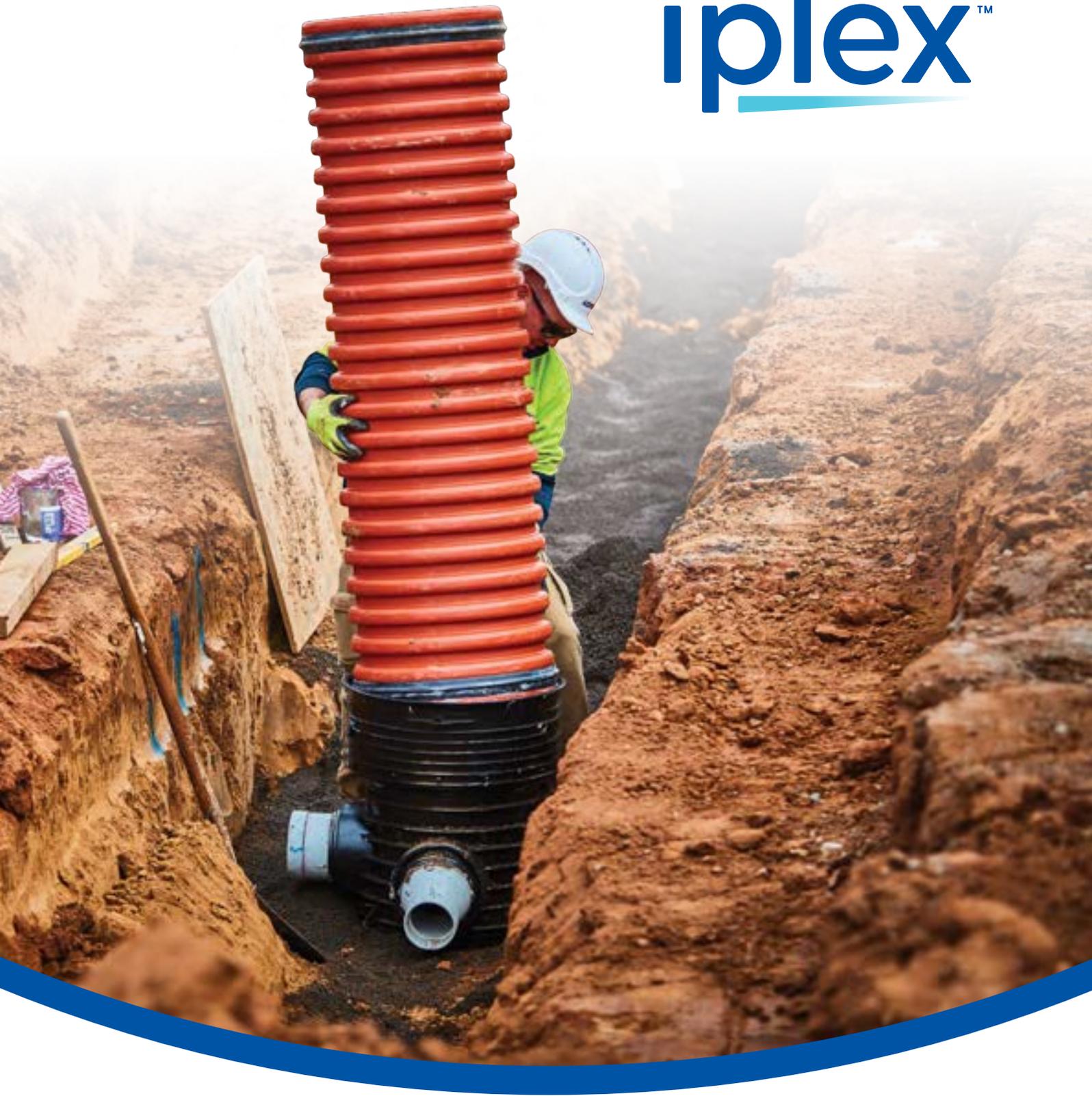


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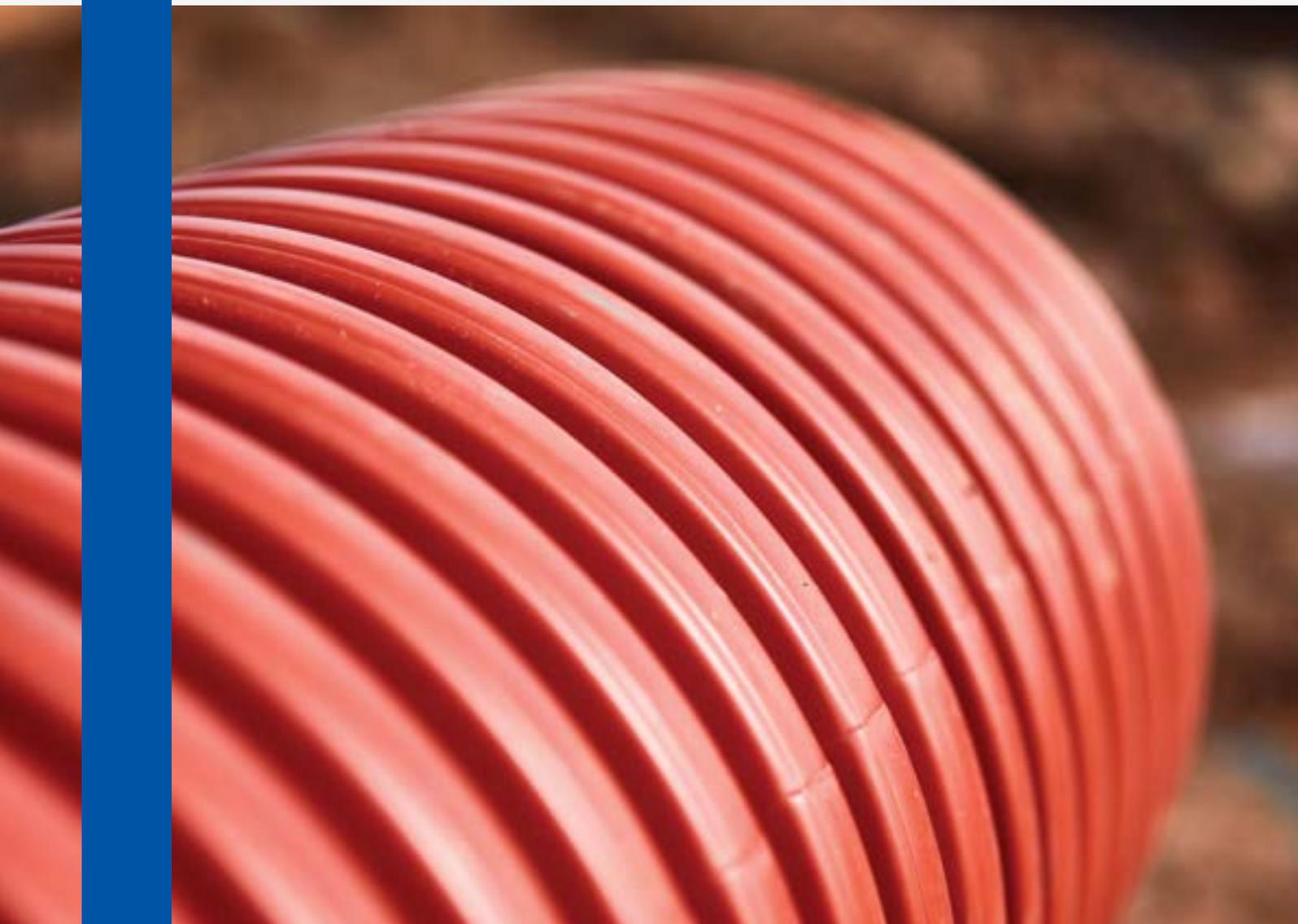


## TECHNICAL GUIDE

**EZIPIT™**

Polypropylene maintenance structures for gravity sewer applications

Version 10 - October 2022



## EZIPIT® DELIVERS PIPELINE SOLUTIONS IN



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POLYPROPYLENE MAINTENANCE STRUCTURES FOR GRAVITY SEWER APPLICATIONS

## INTRODUCTION

### 1.0 PLASTICS IN SEWERAGE SYSTEMS

#### POLYPROPYLENE MATERIALS FOR NON-PRESSURE SEWERAGE SYSTEMS

Over 150 years ago, it was established that a piped sewerage system provided a major improvement in public health. Today, most sewer pipes are made of plastics because of their durability, low cost and ease of installation. Conventional maintenance holes have been known to fail due to corrosion and ground movement (Figure 1 & 2). Tree root intrusion is also a common cause of failure in sewerage systems.

Polypropylene (PP), like polyethylene (PE), is a polyolefin material that is easily processed to form pipes and fittings. Polypropylene is stiffer than polyethylene and is therefore ideal for producing non-pressure pipes and fittings.

The benefits of polypropylene in gravity sewage systems are numerous. For example:

### CHEMICAL RESISTANCE

Polypropylene provides excellent resistance to sulphuric acid erosion common in gravity sewer systems. The material is also resistant to aggressive ground conditions, such as acid sulphate soils or saline ground conditions.

### SPECIFIC WEIGHT

Polypropylene has a low specific weight and high modulus, producing a stiff, lightweight maintenance structure that is easy to install.

### HYDRAULIC FLOW

Polypropylene provides smooth surfaces and low friction factors, which resists blockages and the accumulation of solids even at low fluid flows.

### ABRASION RESISTANCE

Notably resistant to abrasion, polypropylene reduces surface wear, enabling low operational costs due to optimal flow performance.

### FLEXIBILITY

A tough and flexible material, polypropylene will not crack or break even at moderate levels of deformation. The material has a high tolerance to deformation and impact damage.

### DURABILITY

Polypropylene can withstand chemicals that normally occur in sewers without any adverse effects.

### SERVICE LIFE

Polypropylene profile wall pipes and maintenance structures have a service history of approximately 40 years. Polypropylene is an inert material that will not corrode or readily abrade in service and is not affected by high or low pH soils or salt water environments. The polypropylene compound used for the manufacture of the EZIpit® polypropylene components will not break down in the presence of most strong acids. The physical and chemical properties of polypropylene suggests the EZIpit® will provide years of corrosion free service during the life of the structure.



Figure 1: Corroded iron steps in a conventional maintenance hole.

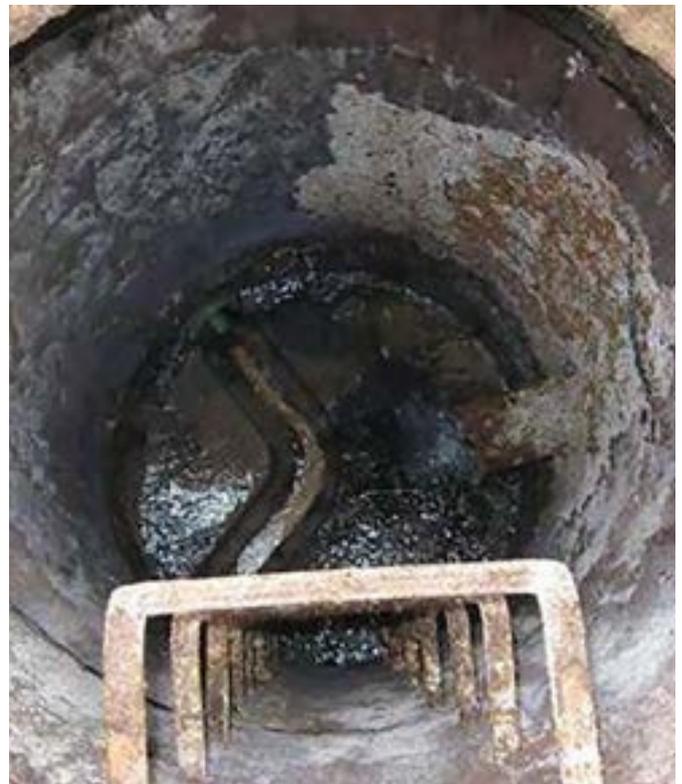


Figure 2: Sulphuric acid corrosion in a conventional maintenance hole.



Figure 3: Iplex EZIpit® 425 MS base with 4 way 'x' profile channel and PVC DWV pipe.

## 1.1 PLASTIC MAINTENANCE STRUCTURES IN SEWERAGE SYSTEMS

Maintenance structures are essential elements in a sewerage system. Fundamentally, they are introduced at regular intervals to facilitate cleaning and maintenance, and accommodate changes in the direction of flow or where different sewer streams converge.

The use of plastic maintenance structures provide significant benefits. They are cost effective, watertight (even under severe loading conditions) and corrosion resistant in sewer environments.

Plastic maintenance structures are lightweight, modular and easy to handle, reducing the need for specialised lifting equipment. These benefits can significantly reduce installation times and costs during construction.

Plastic maintenance structures are made of four basic components; the base with internal benching and flow channels, the riser, which can vary in length, the reducing Cone for the maintenance hole and the cover. The design and

plastic materials used in the manufacture of these components can vary. In Europe polypropylene materials have become popular due to their high stiffness to weight ratio and ease of processing.

Overall, the main requirements of maintenance structures are as follows:

- To redirect the flow at a change of direction in the pipeline
- To provide smooth flow conditions with no sharp corners or discontinuities
- To enable cleaning and inspection equipment to enter the sewer system
- To resist the loading exerted by groundwater, soil-pressure and traffic loads
- To maintain leak tight connections between connecting pipes and the structure.

Following many years of research and development in Europe, these requirements have been embodied into the European Standard EN13598-2. This Standard covers shallow chambers in traffic areas and deep underground installations and provides a matrix of tests designed to demonstrate that the products are fit for purpose.

## 1.2 INTRODUCTION TO THE EZIPIT® SYSTEM

The EZIpit® is a polypropylene inspection and maintenance structure (Maintenance Shaft, Maintenance Chamber or Maintenance Hole) designed for buried gravity sewer applications. It supplements our plastic pipeline systems and is used for inspecting and maintaining sewer network systems. It consists of a base, a single wall corrugated riser, a reducing cone for maintenance holes and a range of covers designed for trafficable and non-trafficable areas. The design allows safe access to the sewer from the surface.

The EZIpit® base reduces operational problems to a minimum by providing optimal flow conditions. Bases are available with a range of flow channels, allowing flexibility in design and installation. The standard range of profiles are 30°, 60°, 90°, 180°(straight), double sweep 90° and 45° junction (4 way) and tee profile.

The base also incorporates adjustable sockets with an encapsulated SBR rubber ring seal. The sockets allow a deflection of up to 7.5° per joint from the centre line in any direction, giving the pipe installer the flexibility to adjust either the angle or grade of the pipe or both during installation.

The EZIpit® adjustable sockets are an integral part of the base and are compatible with smooth wall PVC sewer pipes complying with AS/NZS1260 'PVC-U pipes and fittings for

drain, waste and vent applications' in sizes DN150 (160mm OD), DN225 (250mm OD), DN300 (315mm OD) and DN375 (400mm OD).

The EZIpit® can be installed to a depth of 6m with a maximum water table of 5m. *(Note: some water authorities may limit the depth. Designers and installers should investigate local requirements prior to specification or installation.)*

### ADVANTAGES

The EZIpit® provides considerable benefits, especially where access is difficult:

#### Ease of Installation

Light-weight modular components, which can be easily manoeuvred in confined areas by hand or with light lifting equipment<sup>1</sup>.

#### Safety

The EZIpit® can be assembled and backfilled at the same time as the sewer pipe, reducing costs in plant, labour and risks associated with open excavation.

#### In-Ground Performance

The EZIpit® is resistant to external loads and watertight to 5m of water, providing environmental benefits and cost savings in sewage treatment and disposal.



<sup>1</sup> EZIpit®425 MS and EZIpit®600 MC only

TABLE 1: OVERVIEW OF EZIPIT® PLASTIC MAINTENANCE STRUCTURES

Structure components	EZIpit® 425 Maintenance Shaft (MS) (non-entry)	EZIpit® 600 Maintenance Chamber (MC) (non-entry)	EZIpit® 1000 Maintenance Hole (MH)
Base	Black polypropylene base	Black polypropylene base	Black polypropylene base
Base flow profiles	Straight (180°), 30°, 60°, 90°, Double sweep 90° Junction (4 way), Tee	Straight (180°), 30°, 60°, 90°, Double sweep 90° Junction (4 way), Tee	Straight (180°), 30°, 60°, 90°, Tee, Double sweep 45° Junction (4 Way), Double sweep 90° Junction (4 Way)
Riser	Orange, corrugated riser SN4 (4000N/m/m). Standard lengths, 2m, 3m and 6m with plain ends	Grey, corrugated riser SN8 (8000N/m/m). Standard lengths, 1m, 1.5m, 2m, 3m, 4m, 4.5m and 6m with plain ends	Orange corrugated riser SN4 (4000N/m/m). Standard lengths 1.2m, 2.4m, 3.6m and 6m with plain ends
Riser diameter	DN425 (476mm OD, 425mm ID)	DN600 (683mm OD, 602mm ID)	DN1000 (1103mm OD, 1000mm ID)
Height adjustment	Corrugated riser can be cut in 35mm increments. Covers allow further height adjustment	Corrugated riser can be cut in 33mm increments. Covers allow further height adjustment	Corrugated riser can be cut in 50mm increments. Cover arrangements allow further height adjustment
Cone	–	–	DN1000 x DN600 Reducing Cone. Black polypropylene with Grey corrugated riser
Riser inflow connection	<ul style="list-style-type: none"> <li>PP moulded 4 Way Riser Junction# with DN150 Spigot (160 OD) in-take branches</li> <li>For DN150 RRJ connection, add a DN150 DWV PVC Coupling F&amp;F</li> <li>For DN100 DWV (110mm OD) connection add a DN150 x DN100 PVC DWV Level Invert Taper (LIT) M&amp;F with a DWV PVC Coupling (F&amp;F)</li> </ul>	<ul style="list-style-type: none"> <li>PP moulded 4 Way Riser Junction# with 3 x DN150 (PP) Spigot (160 OD) and 1 x DN225 (250OD) in-take branches</li> <li>For RRJ connection, add a DWV PVC Coupling F&amp;F</li> <li>For DN100 DWV (110mm OD) connection add a DN150 x DN100 PVC DWV Level Invert Taper (LIT) M&amp;F with a DWV PVC Coupling (F&amp;F)</li> </ul>	<ul style="list-style-type: none"> <li>PP corrugated riser prefabricated with DN225 (250mm OD) or DN150 (160mm OD) PP spigot in-take branch suitable for either internal or external drops</li> <li>For DN100 DWV (110mm OD) connection add a PVC DWV Level Invert Taper (LIT) M&amp;F with a DWV PVC Coupling (F&amp;F)</li> </ul>
Covers	GATIC® Ductile iron covers Class B or D to AS3996 'Access covers and grates'	GATIC® Ductile iron covers Class B or D to AS3996 'Access covers and grates'	GATIC® Ductile iron covers Class B or D to AS3996 'Access covers and grates'
Pipe types and sizes	DWV PVC Smooth wall pipe to AS/NZS1260 <ul style="list-style-type: none"> <li>DN150 DWV PVC (160mm OD)</li> <li>DN225 DWV PVC (250mm OD)</li> </ul>	DWV PVC Smooth wall pipe to AS/NZS1260 <ul style="list-style-type: none"> <li>DN150 DWV PVC (160mm OD)</li> <li>DN225 DWV PVC (250mm OD)</li> <li>DN300 DWV PVC (315mm OD)</li> <li>DN375 DWV PVC (400mm OD)</li> </ul>	DWV PVC Smooth wall pipe to AS/NZS1260 <ul style="list-style-type: none"> <li>DN150 (160mm OD)</li> <li>DN225 (250mm OD)</li> <li>DN300 (315mm OD)</li> <li>DN375 (400mm OD)</li> </ul>
Rubber ring seals	SBR (Styrene Butadiene Rubber)	SBR (Styrene Butadiene Rubber)	SBR (Styrene Butadiene Rubber)
Minimum and maximum depth of structure*	From 0.95m <sup>1</sup> up to 6m	From 1.2m <sup>1</sup> up to 6m	From 1.37m <sup>1</sup> up to 6m
Maximum height of groundwater	5m above the Base inflow pipe connection	5m above the Base inflow pipe connection	5m above Base inflow pipe connection
Standards	EN13598-2, WSA137, AS3996, AS1646	EN13598-2, WSA137, AS3996, AS/NZS5065, AS1646	EN13598-2, WSA137, AS3996, AS1646



EZIpit® 425 Maintenance Shaft (MS)



EZIpit® 600 Maintenance Chamber (MC)



EZIpit® 1000 Maintenance Hole (MH)

\* Maximum depth may be subject to local water authority approval.

<sup>1</sup> Minimum depth is dependant on the type of base and cover selected and if inflows are required via the riser.

The minimum depth of the EZIpit1000 MH can be further reduced by modifying the Cone. Contact Iplex for information.

Refer to the Product Range sections in this guide for dimensions.

#PP moulded Couplings limited to a maximum depth of 3m from FSL.

## DESIGN AND STANDARDS

# 2.0 GENERAL INFORMATION

Access Shafts, Chambers and Maintenance Holes are used (where practicable) at every:

- Change of alignment
- Junction
- Change in the size of a sewer

In addition they are used at specified intervals for inspection and maintenance. National Sewer Standards and Codes specify requirements for the location and spacing of Access Shafts, Chambers and Maintenance Holes.

### TYPES OF MAINTENANCE STRUCTURES (GENERAL)

#### Maintenance Shafts

Maintenance shafts (MS) can vary in size from DN300 to DN450 and allow access to the sewer system for equipment. Maintenance Shafts (MSs) are generally not permitted on sewers with inflows > DN225 (250mm OD).

#### Maintenance Chambers

Maintenance Chambers (MCs) can vary in size up to DN600 and allow access to the sewer system for equipment. Maintenance Chambers (MCs) are generally not permitted on sewers with inflows > DN375 (400mm OD).

#### Maintenance Holes

Maintenance Holes (MHs) are generally DN1000 (minimum ID of 1000mm) or greater and allow personnel and equipment access to the sewer system. DN1000 Maintenance Holes (MHs) are not permitted on sewers with inflows > DN375 (400mm OD).

*Note: These limitations are general only and may vary between water authorities. Designers and installers should investigate local water authority requirements prior to specifying the EZIpit®.*

### SPACING OF MAINTENANCE STRUCTURES (GENERAL)

The spacing of maintenance structures are governed by site conditions, sewer layout and future maintenance access requirements. Where sewers are located within easements or reserves and remote from direct vehicular access, additional maintenance structures may be required.

The design shall ensure that access to every part of the sewer is achievable by using equipment to the nearest boundary of the nearest road or readily accessible public property.

Acceptable Maintenance Structure Options for reticulation and property connection sewers can be obtained from WSA-02 'Gravity Sewerage Code of Australia'.

### MAXIMUM ALLOWABLE DEPTH FOR EZIPIT® MAINTENANCE STRUCTURES (GENERAL)

The maximum allowable depth of cover from the pipe invert to the surface is 6m in both trafficable and non-trafficable areas.

The design is based on AS/NZS 2566.1 and takes into consideration the following assumptions:

1. Effective soil Modulus  $E' \geq 3\text{MPa}$
2. External water pressure or vacuum  $\leq 50\text{ kPa}$
3. Riser stiffness, minimum SN4 (4000N/m/m).

The structural design considers the buckling stability of the riser with different soil types and water table to full installation depth. A granular embedment compacted in uniform layers around the EZIpit® structure and across the trench is included in accordance with the requirements in AS/NZS 2566.2, the WSAA Sewer Code WSA 02 and the installation guidelines in this manual.

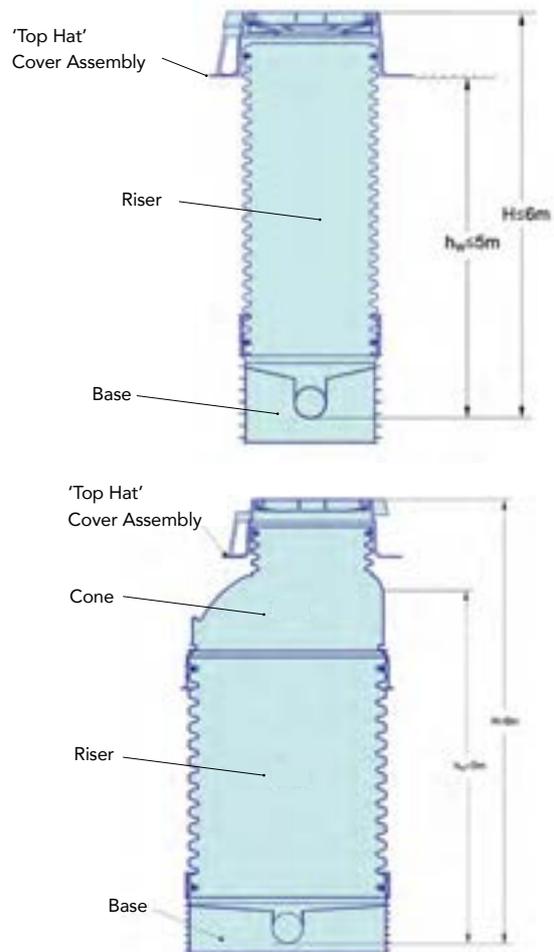


Figure 4 (illustrations only - not to scale)

## 2.1 MANUFACTURE AND QUALITY

All plastic components of the EZIpit® maintenance structure are manufactured using state-of-the-art plastic processing moulding and extrusion technologies.

To ensure product components are free from defects, the raw materials and products undergo strict quality control through all stages of production. In accordance with the Standards requirements, a series of type tests and batch control tests are performed to ensure the quality of the EZIpit®. These tests demonstrate the durability and strength of the EZIpit® with on-site static and dynamic loads.

## 2.2 STANDARDS

All components of the EZIpit® range comply with the following Standards:

- **WSA 137** 'Industry Standard for Unplasticised poly (vinyl chloride) (PVC-U), Polypropylene (PP) and Polyethylene (PE) maintenance shafts, maintenance chambers and maintenance holes for sewerage'
- **I.S.EN 13598-2** 'Plastics Piping Systems for Non-pressure Underground Drainage and Sewerage – Un-plasticised Poly (vinyl Chloride) (PVC-U), Polypropylene (PP) and Polyethylene (PE) - Part 2: Specifications for Manholes and Inspection Chambers in Traffic Areas and Deep Underground Installations'
- **ISO 13272** 'Plastics piping systems for non-pressure underground drainage and sewerage – Un-plasticised poly (vinyl chloride) (PVC-U), Polypropylene (PP), Polypropylene with mineral modifiers (PP-MD) and Polyethylene (PE) - Specifications for manholes and inspection chambers in traffic areas and underground installations'
- **EN14396** 'Fixed ladders for manholes'
- **AS/NZS 5065** 'Polyethylene and polypropylene pipes and fittings for drainage and sewerage applications'
- **AS 3996** 'Access covers and grates'
- **AS 1646** 'Elastomeric seals for waterworks purposes'

These Standards specify the material, performance and design requirements for plastics maintenance Holes, Shafts and Chambers, ensuring adequate resistance to site loadings and durability in operation. The structural strength of the EZIpit® is sufficient to deal with 6m depth of cover and tightness is ensured to withstand a pressure of 0.5 Bar vacuum or 5m water column.

The following Product Specifications are also relevant:

- **WSA PS-315** Fixed Ladders for Man Entry Structures - water supply and sewerage

- **WSA PS-337** Maintenance Chambers (MC) – Polypropylene (PP) for Non-Pressure Applications – Gravity Sewerage
- **WSA PS-341** Maintenance Shafts (MS) - Polypropylene (PP) for Non-Pressure Applications – Gravity Sewerage
- **WSA PS-340** Maintenance Holes (MH) - Polypropylene (PP) for Non-Pressure Applications – Sewerage
- **WSA PS-290** Access Covers and Frames for Water Supply and Sewerage to WSA 132
- **WSA PS-230** Polyvinylchloride, Unplasticised (PVC-U) Pipes and Fittings for Non-Pressure Applications – Sewerage and Drainage.

## COMPLIANCE

Iplex Pipelines maintains NATA registered laboratories and testing facilities. All Iplex pipe manufacturing sites in Australia operate a Quality Management System, which complies with AS/NZS ISO 9001 'Quality management systems – Requirements'.

EZIpit® components are manufactured under a third party certified management system complying with AS/NZS ISO 9001 and have ISO Type 5 product certification in accordance with the relevant international and Australian Standards in Section 2.2.

## INDEPENDENT PRODUCT APPRAISAL

The Water Services Association of Australia (WSAA) provides a national focus for the provision of information on the urban water industry and represents the major water agencies and authorities throughout Australia.

The EZIpit® has been appraised by WSAA and the product appraisal report No 09/01 Issue 5, 'EZIpit® Polypropylene (PP) maintenance shafts, maintenance chambers and maintenance holes for sewerage' was published in January 2020. The WSAA Appraisal has been extended to include EZIpit® Maintenance Holes.

Provided the design and installation is in accordance with the relevant standards, the report concludes the EZIpit® has a life expectancy in excess of 100 years before rehabilitation. This rating is only a general guide and may increase or decrease as a result of the system operating conditions, environment and other geographical and site-specific factors.



Figure 5: EZIpit® base and corrugated riser under vacuum test with smooth wall PVC pipes

## 2.3 MECHANICAL PROPERTIES

**TABLE 2: PHYSICAL PROPERTIES OF POLYPROPYLENE**

Polypropylene Property	Description/ Value	Relevant Standard/ Reference
Density of Pipe Compound	900 kg/m <sup>3</sup>	ISO 1183
EZIpit® 425 & 1000 Riser - Ring Bending Stiffness	4000 N/m/m	AS/NZS 1462.22
EZIpit® 600 Riser - Ring Bending Stiffness	8000 N/m/m	AS/NZS 1462.22
Flexural Yield Stress	24.5 MPa	ISO 178
Tensile Yield Stress (50mm/min)	28 MPa	ISO 527-2
Tensile Yield Strain (50mm/min)	6%	ISO 527-2
Poisson's Ratio	0.45	ISO 527-2
Thermal Co-efficient of Linear Expansion	150 x 10 <sup>-6</sup> / K	DIN 53752

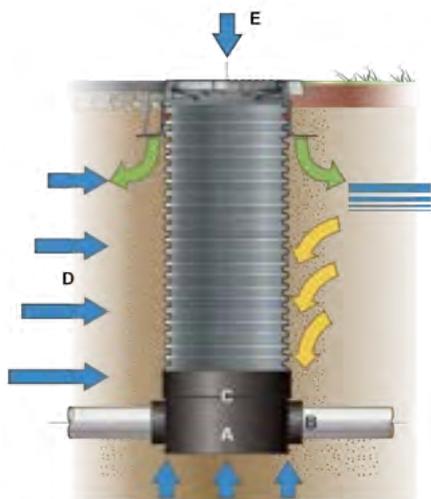
*Note: These are typical values, which can be used for buried flexible design purposes. Actual values may vary slightly for different sources of polymer.*

## 2.4 PERFORMANCE AND DEVELOPMENT

The actual loading and functional performance of the chamber is used as the basis to determine the integrity of the structure. This approach has been adopted in Europe and reflected in drafting the European standards. For example, the cover load test, the ring stiffness test, the shear load test and the base buckling and durability tests are all included.

### STRUCTURAL PERFORMANCE

An important function of the maintenance structure is to ensure it can withstand the loads exerted upon it. Figure 6 is a schematic overview of the typical loads exerted on the EZIpit® structure.



**Figure 6: The flexible nature of the EZIpit® corrugated riser allows a robust structure.**

**TABLE 3: TYPE TESTS USED FOR EZIPIT® STRUCTURES**

Figure	Description	Test	Method
A	Stability of flow profile	Vacuum test on the base which relates to the allowable ground water depth	EN14830
B	Tightness	Normal joint tightness requirements with additional joint tightness under shear load	EN1277 and EN295-3
C	Impact resistance	Impact test	EN13598-2
D	Riser stiffness	Minimum 2000N/m/m (SN2)	EN14982
E	Cover load test	Load based on type of road	EN14802

Thermoplastics deform under load and this should be limited to avoid losing the functional purpose of each component. For example, if the flow channel in the base deforms too much, then it may affect the flow performance or limit access for inspection and cleaning equipment. Compressive, tensile and bending stresses will develop in the base as a result of creep and relaxation.

Full scale field tests in Europe have shown that ground water is one of the severest loads for a buried shaft or chamber (Figure 9 & 10). Tests were developed to determine the stability and durability of the base. Both vacuum and external water pressure was applied and the horizontal and vertical deformation was recorded. The results confirmed the bases were compliant with the standard.

The most important parameter for the corrugated riser is the stiffness. Structures with a ring stiffness of 2000N/m/m were buried in both cohesive and non-cohesive soils with ground water close to surface. The structures did not buckle or collapse under load.

Tests also considered radial and axial loads on the riser. Full scale site tests demonstrated the riser was safe up to 6m with compacted granular embedment.

### EZIPIT® BASE FLOW TESTS

Hydraulics of waste water flow is important when considering the operational costs of the sewerage system over the life of the sewer. Hydraulic tests have demonstrated the EZIpit® base fulfilled all of the hydraulic requirements in Danish Standard DS 2379 'Inspection chambers of PVC-U, PE and PP for buried pipelines for transport of sewage and rain water – Specifications and test methods'. During testing the flow of sewage at low discharge capacity was monitored and recorded. The test required the sewage to move through the base without back flow. Poorly designed flow profiles showed that the sewage stayed in the flow profile at spots where the flow was multi-directional or the energy of the flow was consumed by the resistance in the chamber.

### EZIPIT® CORRUGATED RISER

The EZIpit® single wall corrugated Riser facilitates the settlement of the surrounding soil without resulting in either high loads to the base or a poor fit between the finished surface and cover arrangement. When installed in accordance with AS/NZS 2566, the corrugated riser provides a high degree of strength and structural performance in depths up to 6 meters in both cohesive and non-cohesive soils.

The corrugated wall structure of the EZIpit® also prevents buoyancy and eliminates the use of anchoring, even with high groundwater levels. The installation guidelines presented in this manual are sufficient to prevent any displacement of the shafts and chambers by groundwater.

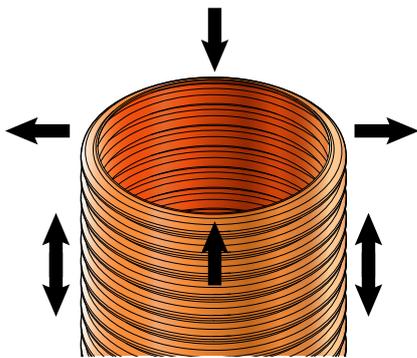


Figure 7: The flexible nature of the EZIpit® corrugated riser allows a robust structure.

### GATIC® EZIPIT® COVER ARRANGEMENTS

The ductile iron cover arrangements are purpose designed with the corrugated riser and are compliant to AS 3996 'Access covers and grates'. The EZIpit® covers are suitable for both trafficable (Class D load) and non-trafficable (Class B load) installations.

### GATIC® EZIPIT® COVER VACUUM TESTS

GATIC® EZIpit® ductile iron frames and covers are gas and water tight in accordance with the requirements in AS 3996 'Access covers and grates'.

Additional tests also confirmed the EZIpit® Cap and lid and 'Top Hat' Covers exceeded the vacuum test requirements in AS/NZS 2566.2 'Buried flexible pipelines Part 2: Installation' and WSAA, WSA - 02 'Sewerage Code of Australia'



Figure 8: GATIC® EZIpit® 600 'Top Hat' Cover under vacuum test.

## 2.5 PERFORMANCE FIELD TESTS (INSITU)

In 1980, a series of polypropylene inspection chambers with corrugated risers were launched in Scandinavia. Real-scale resistance tests were performed for the pilot system in Luleå, Sweden (in addition to laboratory analyses). The objective of these tests was to confirm the performance of the adopted chamber design based on the corrugated riser and its resistance to changing ground conditions during the year (vertical ground movements).

On the basis of these tests the polypropylene maintenance structures, with flexible corrugated risers, demonstrated their resistance to high loads and functional requirements as defined by the standards and water agencies.

### FIELD TESTS

The following components of the EZIpit® have been tested in various types of soils:

- Single wall corrugated riser
- Ribbed surface structure of the base
- Covers
- Flexible sockets for sewer pipe connectors
- Double bottom.

### RESISTANCE TO FLOTATION

Iplex EZIpit® shafts and chambers were installed with compacted sands and gravel, and filled with water. The field tests confirmed the security of the structure against flotation.



Figure 9



Figure 12: EZIpit® 1000 MH under load in accordance with ISO Standard 13266

### ROBUSTNESS OF THE FLEXIBLE POLYPROPYLENE RISER

The robust, tough, ductile nature of the EZIpit® riser is demonstrated in the 'run over' test. The riser did not crack or break under the extreme loads encountered on site. (Figures 13, 14 and 15).



Figure 10



Figure 13

### LOAD BEARING CAPACITY

EZIpit® inspection and maintenance structures have been tested for high load bearing capacity under traffic loading. Field trials tested the behaviour of the EZIpit® under extreme static and dynamic loads and passed all of the test requirements, as specified in the standard.



Figure 14



Figure 11



Figure 15

## 2.6 INSTALLATION OF EZIPIT® MAINTENANCE STRUCTURES

### GENERAL

EZIpit® maintenance structures consist of light weight modular components. The installation is therefore considered to be relatively easy and hardly any heavy equipment is required. In most cases, they may be installed without the need of further widening the trench.

In-service performance of the EZIpit® is strongly dependent on a supportive embedment. It should be recognised that it is extremely difficult to anticipate soil types, soil loadings and future soil movement in all possible locations and conditions. Specific types of embedment and backfill materials, and compaction standards for various depths and soil types should be adopted in order to minimise the risk of long-term failure. Thus the installation conditions will have a significant influence on the long-term performance of Maintenance Holes, Shafts and Chambers.

The design and installation criteria in AS/NZS 2566.1 'Buried flexible pipelines, Part 1: Structural design' and AS/NZS 2566.2 'Buried flexible pipelines, Part 2: Installation' provides guidance. Installation should be in accordance with the design drawings and WSA-02 'Gravity Sewerage Code of Australia'.

This Standard adopts the same means of determining the structural integrity of maintenance structures and durability of materials as ISO 13272. The elastomeric seal joint requirements are also in accordance with ISO 13272, except that the base-to-pipe and base-to-riser joints are required to additionally comply with the interface pressure and contact width as specified in AS/NZS 1260 'PVC pipes and fittings for drain, waste and vent applications'.

The stiffness of the EZIpit® riser (SN4 or SN8) is supported by structural analysis based on AS/NZS 2566.1, which considers the buckling stability of the riser in different soil types and with the water table to full installation depth.



## 2.7 INSPECTION AND TESTING

Leakage testing is used to reveal locations of potential infiltration and exfiltration between the PVC pipe and the base and the base and riser.

Inspection and testing can be limited to a CCTV inspection or a visual inspection during installation. The CCTV and/or visual inspection should focus on the correct assembly of the EZIpit® components, for example checking the insertion depth in the sockets. A visual CCTV inspection is more than sufficient, as leak tightness and structural issues are well secured by the system and product standards.

Leak tightness testing is normally done with air. Adequate care shall be taken to ensure that the ends and connections are properly sealed off before the test is started.



Figure 16: Vacuum test with EZIpit® test Lid assembled on the Cap and sealed with GATIC® Sealing Compound.

### TESTING

Leakage testing between the base and PVC pipe connections and the base and riser shall be in accordance with AS/NZS 2566.2 'Buried flexible pipelines Part 2: Installation' and WSAA 'WSA-02 - Sewerage Code of Australia'.

**NOTE: THE EZIPIT® CAP AND LID IS NOT DESIGNED FOR PRESSURE TESTING AND MUST NOT BE USED FOR THIS PURPOSE. COMPRESSED AIR CONTAINS SUBSTANTIAL STORED ENERGY, WHICH, IF RELEASED SUDDENLY, COULD CAUSE INJURY.**

Before testing ensure the embedment around the riser and in the trench has been compacted and the trench has been backfilled.

### VACUUM TESTING

Where the test method is not specified, undertake a vacuum test. A purpose designed Vacuum Test lid can be used to seal against The EZIpit® Cap or 'Top Hat' Cover. Remove the lid from the EZIpit® cap (Figure 17) or the ductile iron cover from the 'Top Hat' and apply a bead of GATIC® sealing compound to all mating surfaces. Assemble the Vacuum Test Lid on the cap or Cover (Figures 18 and 19).

Apply a test vacuum (negative pressure) as specified by the regulatory authority. Observe all safety practices and requirements during the vacuum test.

**NOTE: THE VACUUM TEST LID IS NOT DESIGNED FOR PRESSURE TESTING AND MUST NEVER BE USED FOR THIS PURPOSE.**

Vacuum Testing the EZIpit®

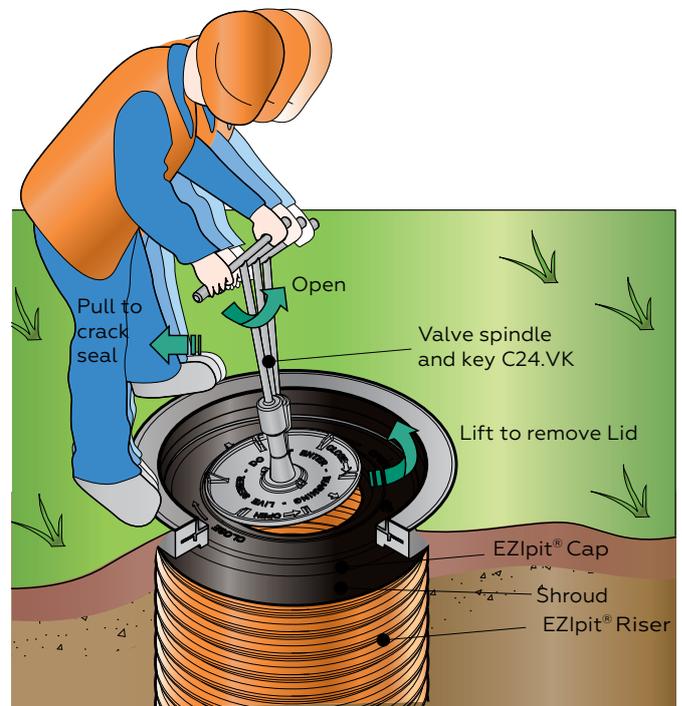


Figure 17: Removing the EZIpit® Lid from the Cap for Sewer Inspection or Vacuum Testing.

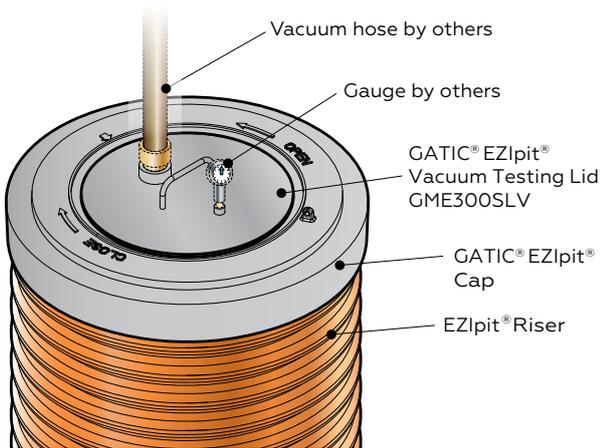


Figure 18: Vacuum testing using DN300 GATIC® EZIpit® lid with 'cap'.

## LOW - PRESSURE AIR TESTING

Alternatively, a purpose designed inflatable test plug can be used for testing.

Plug all inlets and outlets in the test section of the sewer. Place the test plug inside the EZIpit® riser above the base. Ensure the test plug is appropriately secured and sealed against the wall of the EZIpit® riser in accordance with the manufacturer's recommendations.

Observe all safety practices and requirements during the pressure test.

Gradually apply pressure as specified by the regulatory authority.

Upon completion of testing, remove the test plug and assemble the cap and lid or cover on the top of the Riser. Refer to 'Assembly and Installation Guidelines' for instructions.

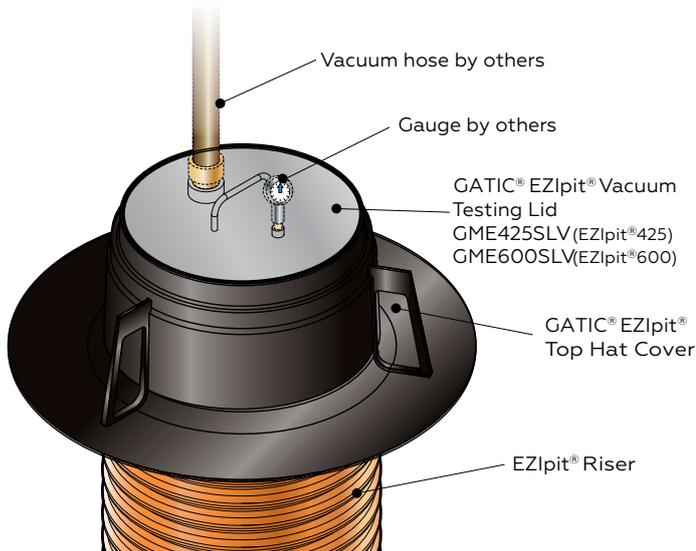


Figure 19: Vacuum Testing using DN425 or 600 GATIC® EZIpit® Lid with 'Top Hat' Frame.

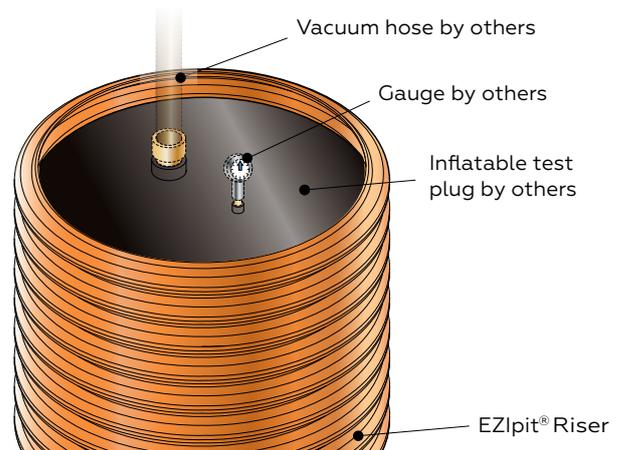


Figure 20: Test plug assembled in EZIpit® Riser ready for test.

**Note:** All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.



TECHNICAL GUIDE

**EZIPIT**<sup>™</sup>

Polypropylene Maintenance Shafts

PRODUCT RANGE

3.0 EZIPIT® 425 SEWER MAINTENANCE SHAFT (MS)

The EZIpit® 425 (MS) is a gravity sewer maintenance shaft with a nominal inside diameter of 425mm. It is suitable for installation depths up to 6m. It consists of a polypropylene base, corrugated riser and ductile iron cover arrangement.

The EZIpit® 425 maintenance shaft permits safe access for cleaning and inspection equipment from the surface, but restricts man entry.

The EZIpit® 425 (MS) consists of the following components:

1. DN425 polypropylene bases with integral benching and flow channels. All bases include adjustable rubber ring joint sockets compatible with smooth wall DWV PVC-U pipes manufactured to AS/NZS 1260. The sockets allow the installer to adjust the grade or angle by up to 7.5° in any direction in the trench.
2. DN425 polypropylene corrugated riser. The riser is available in a range of lengths which can be cut on site to adjust the height of the shaft. The riser is orange/brown in colour.
3. DN425 SBR seals for the base to riser and riser to cover elastomeric joint.
4. GATIC® DI Cover arrangements suitable for both trafficable (Class D) and non-trafficable conditions (Class B).
5. SBR seals for the base to pipe connection.

The GATIC® EZIpit® covers are available in a number of arrangements to suit different installation requirements. They are comprised of the following components:

**Class B or D GATIC® 'Top Hat' cover arrangement Options 1 and 2 (Flat finished surface). Refer to Figures 23 and 24.**

- Ductile iron GATIC® 'Top Hat' Frame with 360 circular cover. The 'Top Hat' is assembled on top of the riser and sealed with an EZIpit® 425 rubber ring. The frame is designed with a 300mm clear opening for safety purposes and is available in Class B (non-trafficable) or D (trafficable) with solid top or concrete in-fill covers. (Note: For concrete in-fill covers, concrete is cast insitu.)

**Class B cover arrangement Option 3 (Flat or sloped finished surface). Refer figure 25.**

- GATIC® Cap and lid with 300mm clear opening for safety purposes. The cap seals against the top of the riser with the EZIpit® 425 rubber ring seal.
- DN560 PE Shroud (allows further height and slope adjustment).
- GATIC® DN600 ductile iron circular frame and cover (Class B) concrete encased. The cover is assembled above the cap and is available with either a solid top or concrete in-fill cover.

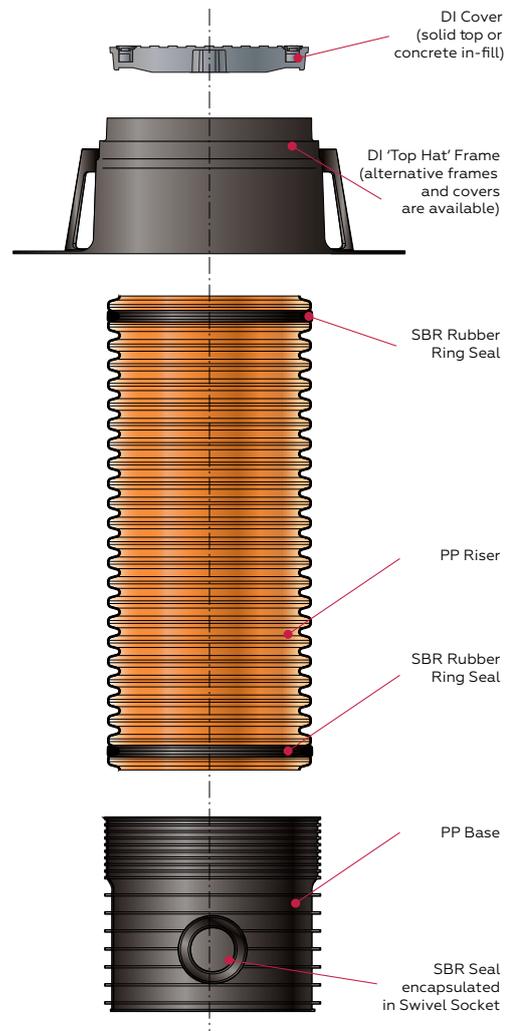


Figure 21: EZIpit® 425 Maintenance Shaft assembly.

**Note:** All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.

**TABLE 4: EZIPIT® 425 MS (PP) BASE CONFIGURATIONS**

	Type I				Type T	Type X
	180°	30°	60°	90°	90° (3 way)	90° (4 way)
DN150						
DN225						

**Note:** Illustrations only. Not to scale.  
 90° base may be subject to approval. Check with local Authority prior to use.



### 3.1 EZIPIT® 425 MS WITH DIFFERENT COVER OPTIONS

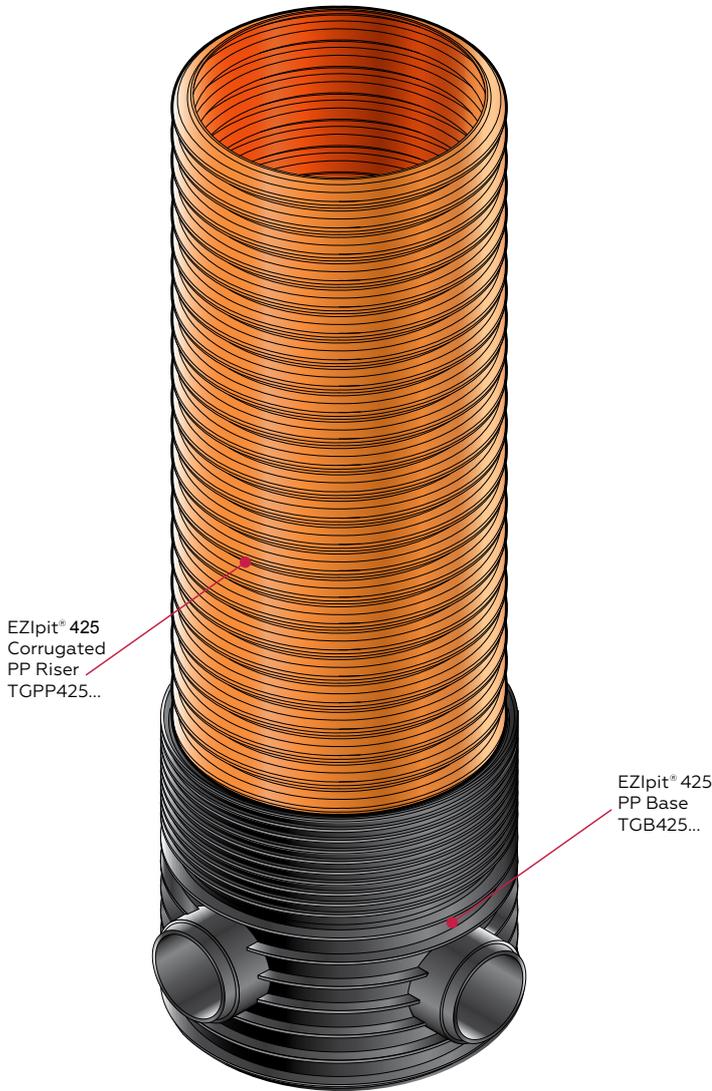


Figure 22: EZIpit® 425 Base & Riser assembly.

#### OPTION 1: EZIpit® 425 MS with GATIC® 'Top Hat' cover arrangement Class B



Figure 23: EZIpit® 425 Class B 'Top Hat' Cover arrangement.

#### OPTION 2: EZIpit® 425 MS with GATIC® 'Top Hat' cover arrangement Class D



Figure 24: EZIpit® 425 Class D GATIC® 'Top Hat' Cover arrangement.

#### OPTION 3: EZIpit® 425 MS with GATIC® 600 concrete encased cover arrangement Class B

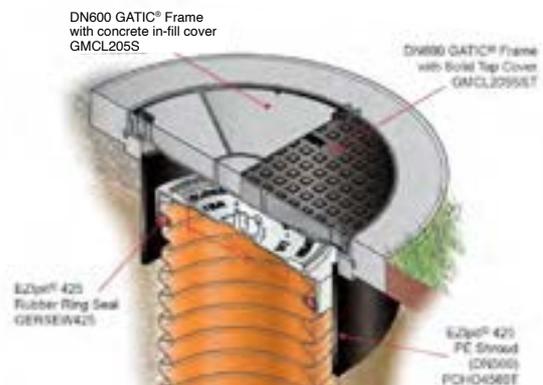


Figure 25: EZIpit® 425 Cover arrangement (Sloped surfaces).

\*'Top Hat' concrete in-fill covers to be filled with concrete insitu.

**Note:** All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.

### 3.2 EZIPIT® 425 MS - LATERAL CONNECTIONS FOR INCOMING SEWERS

Gravity sewerage systems are designed to carry sewage and wastewater from toilets, dishwashers, kitchen sinks, washing machines and showers in houses and businesses.

There are two options when designing lateral connections for incoming sewers with the EZIpit® 425 MS.

The first option is via the EZIpit® 425 Base. The '4 way' x 90° sweep flow profile allows up to two side connections with PVC DWV smooth wall pipes. Pipes can be directly connected with the swivel joint (RRJ).

The second option is via the corrugated riser. Up to four property connections are possible using the PP 4 Way Riser Junction with Spigot branches at 0°, 90°, 180° and 270°. A standard PVC DWV RRJ coupling and Level Invert Tapers (LIT) provides an effective joint with the PP spigot branch.

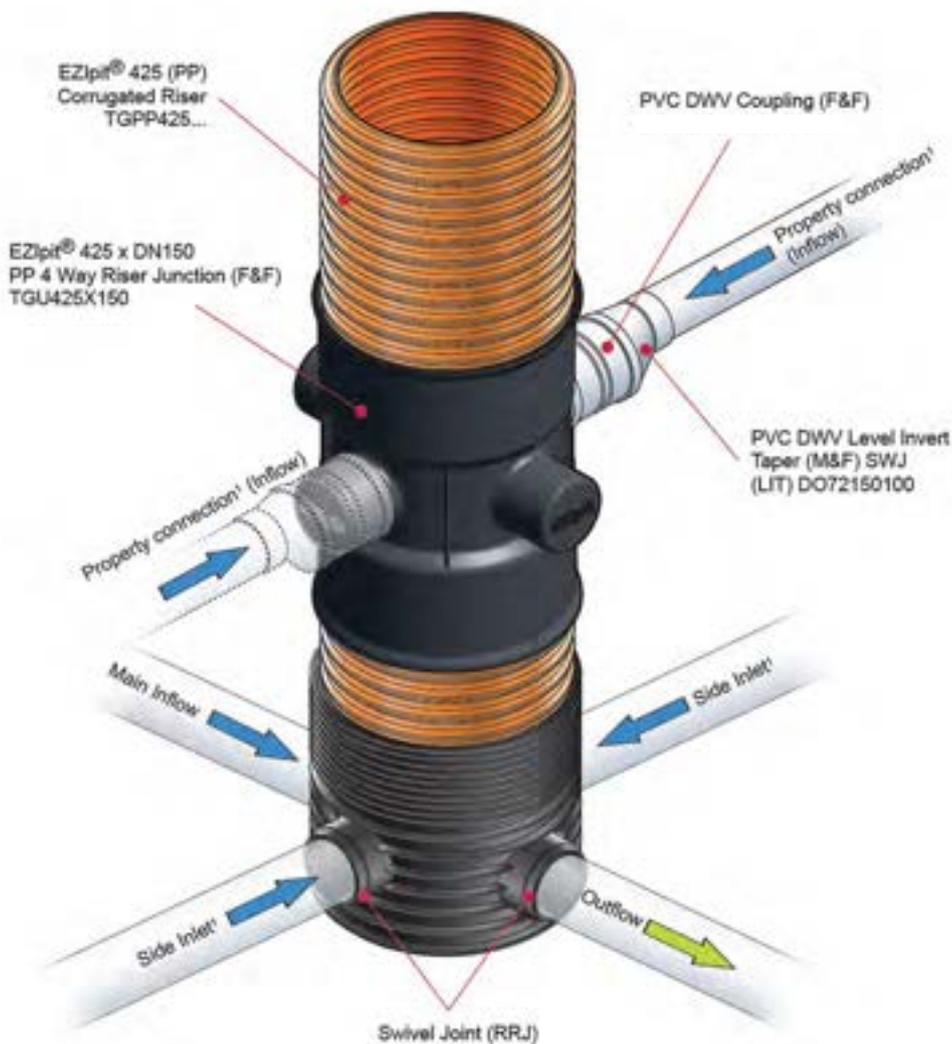


Figure 26: EZIpit® 425 Maintenance Shaft with lateral sewer connections via the base and the riser.

**Note:**

- All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.
- Inflows (subject to water authority) should match the invert of the property connection and reducer. For reticulation sewers the reducer and/or bend should match the invert of the sewer.
- PP moulded Riser Junction is limited to maximum 3m depth from FSL.

### 3.3 TYPICAL INSTALLATION – EZIPIT® 425 MS WITH OPTIONAL COVERS

**OPTION 1 AND 2:**

**EZIpit® 425 Maintenance Shaft with GATIC® 'Top Hat' cover arrangement Class B or D**

**OPTION 3:**

**EZIpit® 425 Maintenance Shaft with GATIC® 600 concrete encased cover arrangement Class B (sloped surfaces)**

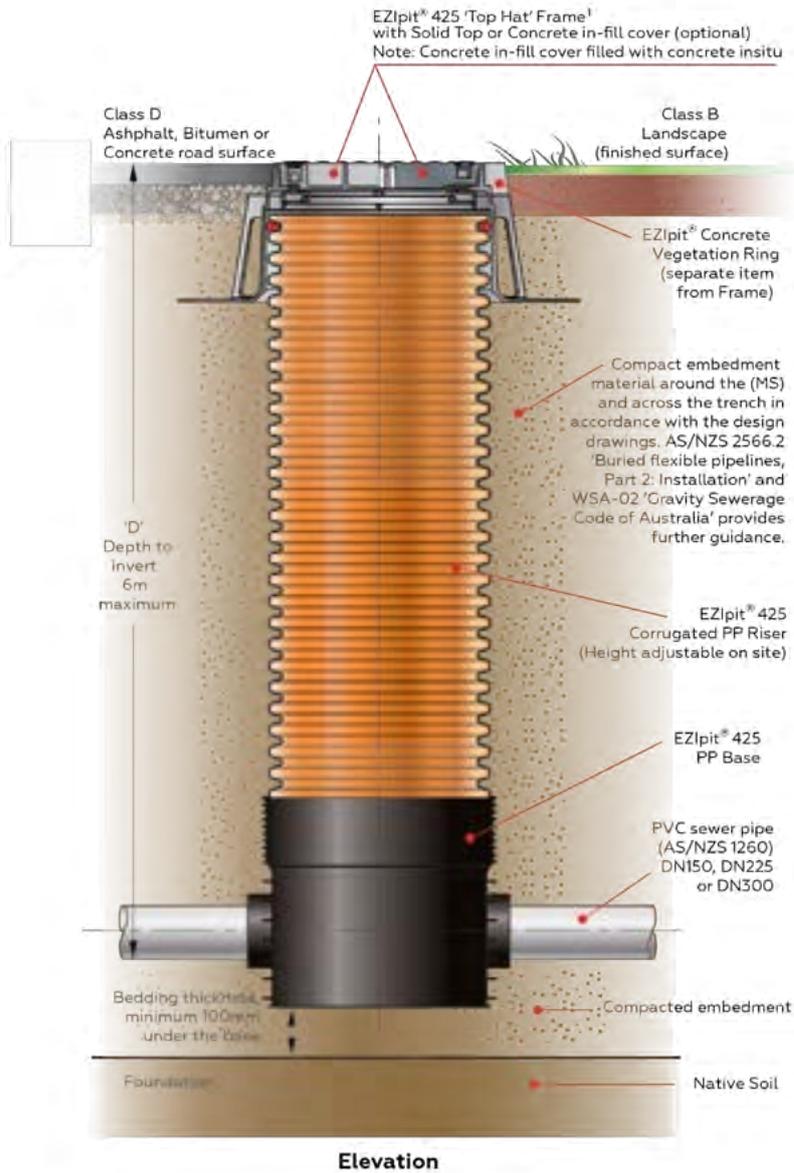


Figure 27: Typical Installation EZIpit® 425 Maintenance Shaft (MS).

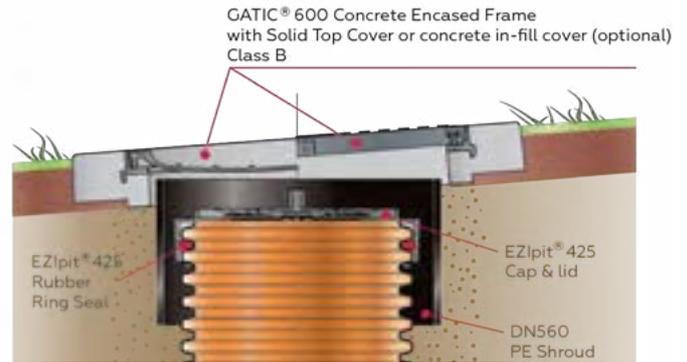


Figure 28: EZIpit® 425 Cover arrangement (sloped surfaces).



*'If specified, tilt 'Top Hat' cover to the required fall (Typically 1:50).*

**Note:** All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.

### 3.3.1 ASSEMBLY AND INSTALLATION OF THE EZIPIT® 425 MS BASE AND CORRUGATED RISER

**01** Level the bottom of the trench with a suitable bedding material and ensure a minimum thickness of 100mm. **(Note: The trench level for the base is lower than the level for the pipe).**



**02** Position the base on the bedding material with a spirit level. Apply Iplex pipe seal lubricant to the pipe spigot and base socket seal for ease of assembly. Connect the base to the pipe by pushing it onto the pipe spigot end.



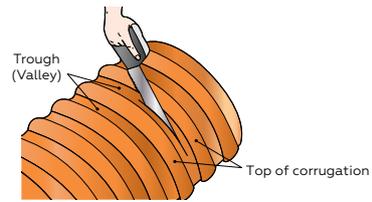
**03** Adjust the pipes to the required position. The adjustable pipe connector enables an angular deflection of 7.5° from the centre line in all directions.



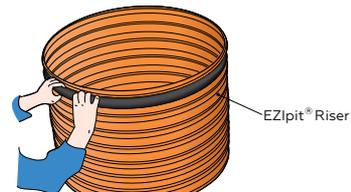
**04** Place the laser inside the base to check the level.



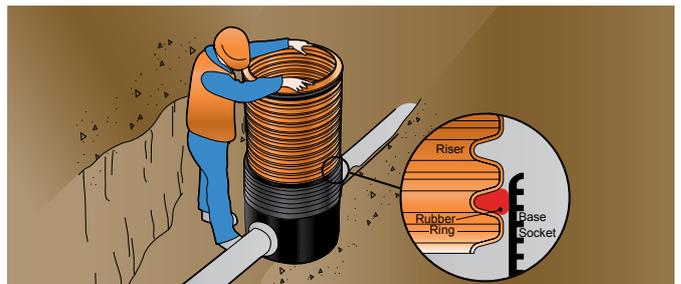
**05** Cut the riser to the required length (refer to 'field height adjustment' Sections 3.4 and 3.5). This is easily performed with a circular saw or handsaw. Cut at the top of the corrugation or in the valley. Remove swarf.



**06** Assemble the sealing rings in the 1st valley at each end of the riser. Ensure the sealing ring is sitting correctly in the valley of the corrugation.



**07** Assemble the sealing rings in the 1st valley at each end of the riser. Ensure the sealing ring is sitting correctly in the valley of the corrugation.



For cover selection and assembly options refer to Section 3.3.2.

**Note:** All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.

### 3.3.2 EZIPIT® 425 MS COVER SELECTION AND ASSEMBLY (GENERAL)

#### CLASS B COVER ARRANGEMENTS (NON TRAFFICABLE CONDITIONS)

- Private properties
- Domestic driveways
- Footpaths
- Nature strips

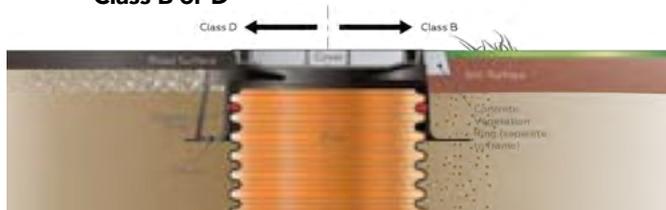
#### CLASS D COVER ARRANGEMENTS (TRAFFICABLE CONDITIONS)

- Roadways
- Carparks
- Commercial / industrial driveways
- Parklands, reserves
- School grounds

After assembling the EZipit® 425 base and riser (Section 3.3.1 Steps 01 to 07), select the appropriate cover as specified and install as follows:

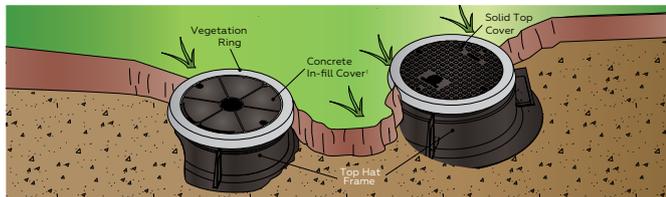
#### OPTIONS 1 AND 2:

##### 08 EZipit® 425 MS with GATIC® 'Top Hat' cover Class B or D<sup>1</sup>



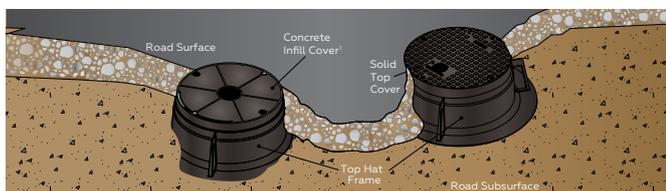
##### 09 Class B GATIC® 'Top Hat' Cover with Vegetation Ring

Finish off with soil as specified, to the finished surface level.



##### 10 Class D GATIC® 'Top Hat' Cover

Finish off with a top layer, as specified, to road surface.



#### OPTION 3:

##### EZipit® 425 MS with GATIC® 600 concrete encased frame and cover Class B (sloped surfaces)

##### 08

Apply Iplex pipe seal lubricant to the inside of the cap for ease of assembly. Place the EZipit® cap on top of the riser. Push the cap down past the rubber ring. Remove the lid from the cap and apply GATIC® sealing compound liberally to all vertical and horizontal seating surfaces of the lid and assemble on the cap.



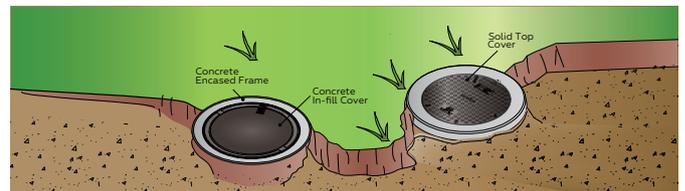
Remove the lid from the cap and apply GATIC® sealing compound liberally to all vertical and horizontal seating surfaces of the lid and assemble on the cap.

##### 09



##### 10

Finish off with soil, as specified, to the finished surface level.



Note: Concrete in-fill or Solid Top covers are optional and can be specified in accordance with local requirements. <sup>1</sup>Top Hat in-fill covers are concrete encased insitu.

#### CONCRETE IN-FILL AND CURING

With the exception of solid top covers, all GATIC® 'Top Hat' covers must be filled with structural grade concrete. Refer to AS 3996 for additional information. This is essential if the full strength potential of these covers is to be realised. Concrete in-fill must be poured and allowed to cure with covers installed in the frame. Refer to GATIC® Product Catalogue, 'Access covers, grates and accessories for installation guidelines'.

<sup>1</sup> If specified, tilt 'Top Hat' cover to the required fall (typically 1:50).

**Note:** All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.

### 3.4 EZIPIT® 425 MS FIELD HEIGHT ADJUSTMENT

The length of the corrugated riser 'L' can be calculated using the following formulae and critical dimensions.

**OPTIONS 1 AND 2:**

**EZIpit® 425 MS with GATIC® 'Top Hat' cover arrangement Class B or D**

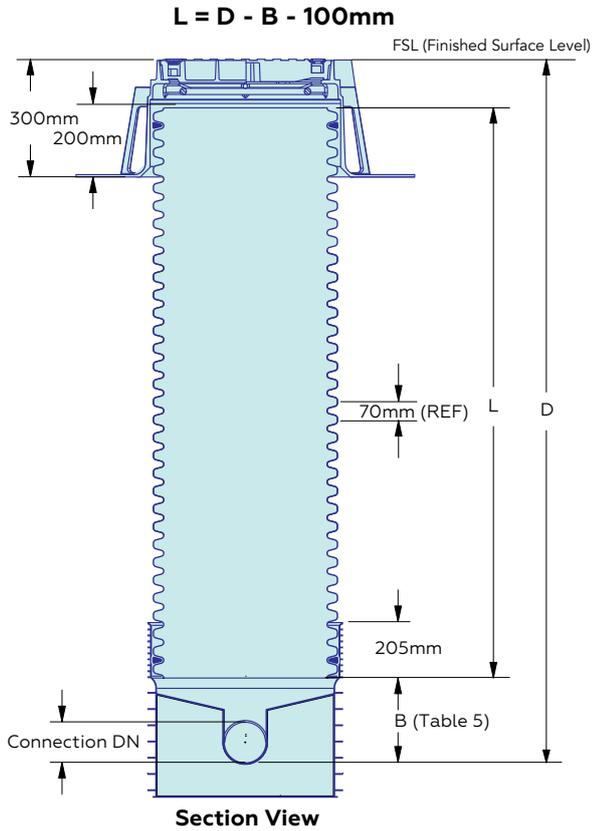


Figure 29

**OPTION 3:**

**EZIpit® 425 MS with GATIC® 600 concrete encased frame and cover (sloped surfaces) Class B**

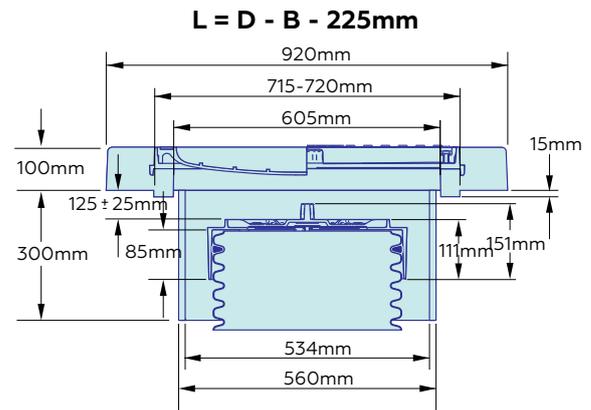


Figure 30

TABLE 5: EZIPIT® 425 BASE DIMENSIONS

Connection (DN)	Base Height B (mm)
DN150	320
DN225	326



### 3.5 EZIPIT® 425 MS RISER INFLOW FIELD HEIGHT ADJUSTMENT (CONNECTION VIA CORRUGATED RISER)

#### EZIpit® 425 Sewer Maintenance Shaft Assembly with Riser Junction (Branch Connection)

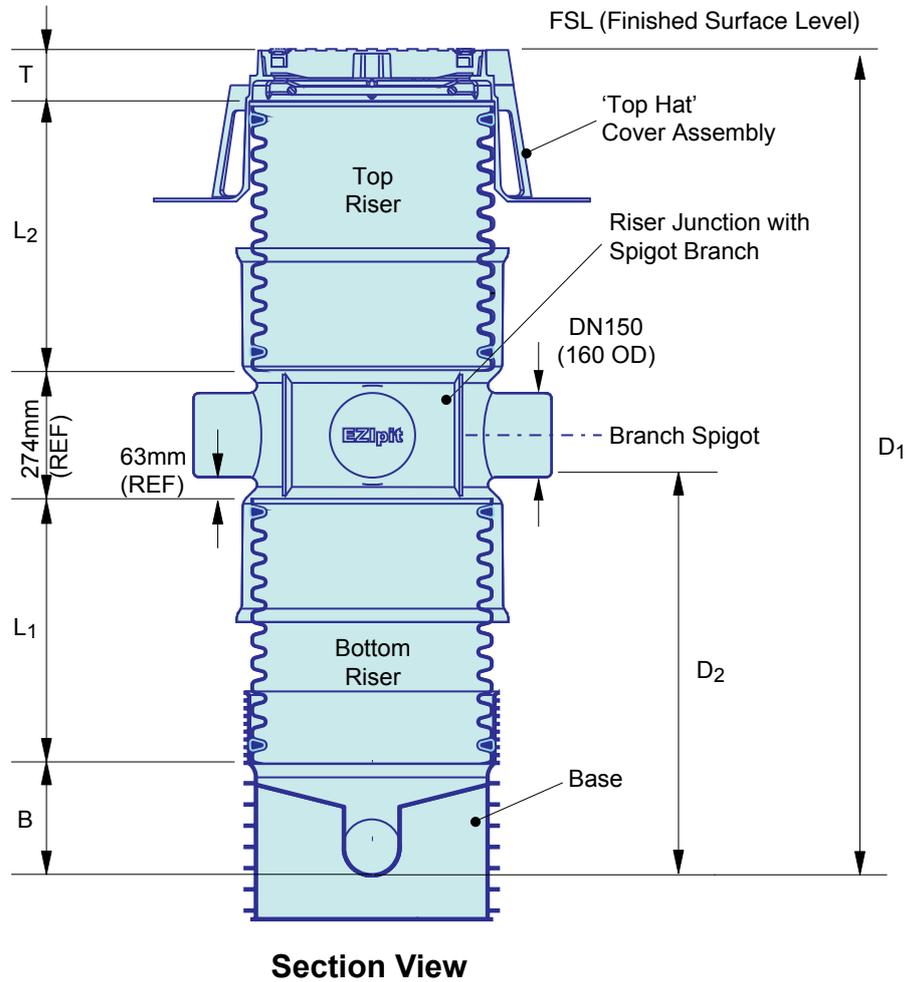


Figure 31

**Guidelines for Assembly:**

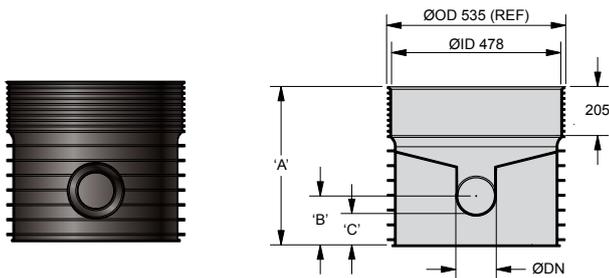
- a) Determine the depth to invert from the surface to the base ( $D_1$ ) and the Branch Spigot ( $D_2$ )
- b) Determine the height of the Base (B). (Ref Table 5)
- c) Determine the length of the Bottom Riser ( $L_1$ )
 
$$L_1 = D_2 - B - 63\text{mm}$$
- d) Determine length of the Top Riser ( $L_2$ )
 
$$L_2 = D_1 - B - L_1 - 274\text{mm} - T$$
- e) Cut the Bottom and Top Risers to length. Step **05** (Section 3.3.1)
- f) Repeat Steps **06** and **07**
- g) Assemble Riser Junction on the Bottom Riser and push down
- h) Assemble the Top Riser on the Riser Junction and push the Riser down into the socket
- i) Assemble the cover assembly on the Top Riser. **08, 09** and **10** (Section 3.3.2)



**Note:**

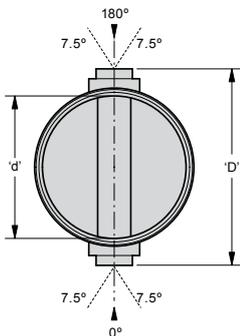
- All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.
- PP moulded Riser Junction is limited to maximum 3m depth from FSL.

### 3.6 EZIPIT® 425 MS PRODUCT RANGE



ØDN150 = 160mm OD PVC smooth wall DWV pipe  
 ØDN225 = 250mm OD PVC smooth wall DWV pipe

#### EZIPIT® 425 PP BASE (F&F): STRAIGHT THROUGH (180°) CHANNEL WITH RRJ ADJUSTABLE CONNECTIONS<sup>1</sup> SUITABLE FOR PVC DWV PIPE

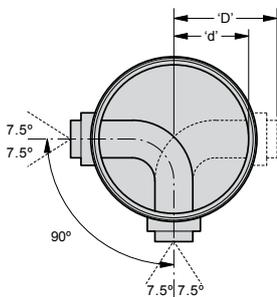


Product Code	Description	Mass (kg)	ØDN	'A' (mm)	'B' (mm)	'C' (mm)	'D' (mm)	'd' (mm)
TGB425150180	EZIpit® 425 x DN150 PP Base x 180° (Straight through) F&F	16	150	611	115	85	570	425
TGB425225*	EZIpit® 425 x DN225 PP Base x 180° (Straight through) F&F	16	225	611	121	80	909	425

\*Subject to availability.

Note: No fall through flow channel.

#### EZIPIT® 425 PP BASE (F&F): BEND (90°) CHANNEL WITH RRJ ADJUSTABLE CONNECTIONS<sup>1</sup> SUITABLE FOR PVC DWV PIPE



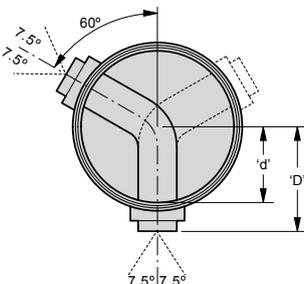
Product Code	Description	Mass (kg)	ØDN	'A' (mm)	'B' (mm)	'C' (mm)	'D' (mm)	'd' (mm)
TGB42515090*	EZIpit® 425 x DN150 PP Base x 90° (F&F)	16	150	611	115	85	376	283

\*Subject to availability.

Note: No fall through flow channel.

90° Channel may be subject to Approval. Check with local Authority prior to use.

#### EZIPIT® 425 PP BASE (F&F): BEND (60°) CHANNEL WITH RRJ ADJUSTABLE CONNECTIONS<sup>1</sup> SUITABLE FOR PVC DWV PIPE



Product Code	Description	Mass (kg)	ØDN	'A' (mm)	'B' (mm)	'C' (mm)	'D' (mm)	'd' (mm)
TGB425150120*	EZIpit® 425 x DN150 PP Base x 60° F&F	16	150	611	115	85	285	213

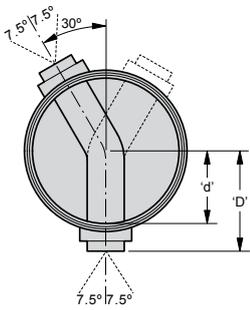
\*Subject to availability.

Note: No fall through flow channel.

**Note:**

- <sup>1</sup> Each adjustable socket allows up to 7.5° deflection from the centreline in any direction.
- All dimensions and masses are approximate only. If critical contact Iplex Pipelines.
- Unless otherwise stated all dimensions are in mm.
- Illustrations are not to scale.

**EZIPIT® 425 PP BASE (F&F): BEND (30°) CHANNEL WITH RRJ ADJUSTABLE CONNECTIONS<sup>1</sup> SUITABLE FOR PVC DWV PIPE**

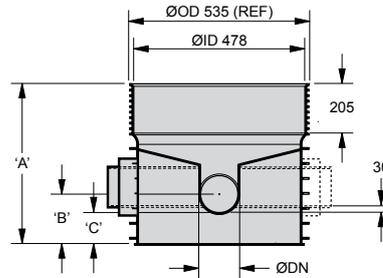
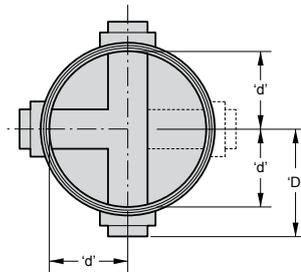


Product Code	Description	Mass (kg)	ØDN	'A' (mm)	'B' (mm)	'C' (mm)	'D' (mm)	'd' (mm)
TGB425150150*	EZIpit® 425 x DN150 PP Base x 30° (F&F)	16	150	611	115	85	285	213

\* Subject to availability.

Note: No fall through flow channel.

**EZIPIT® 425 PP BASE (F&F): TEE CHANNEL WITH RRJ ADJUSTABLE CONNECTIONS<sup>1</sup> SUITABLE FOR PVC DWV PIPE**

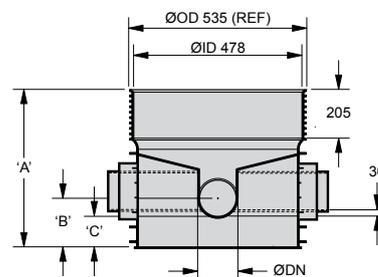
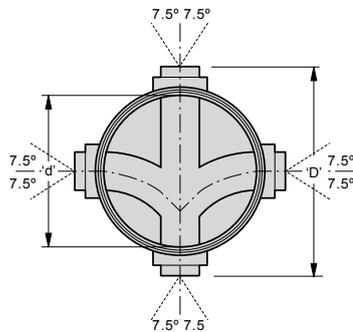


Product Code	Description	Mass (kg)	ØDN	'A' (mm)	'B' (mm)	'C' (mm)	'D' (mm)	'd' (mm)
TGB425T150*	EZIpit® 425 x DN150 PP Base x Tee (F&F)	16	150	611	115	85	285	213

\*Subject to availability

Note: Side inlets with slight slope (1°) and sockets positioned 30mm higher. No fall through the main flow channel.

**EZIPIT® 425 PP BASE (F&F): DOUBLE SWEEP JUNCTION CHANNEL WITH RRJ ADJUSTABLE CONNECTIONS<sup>1</sup> SUITABLE FOR PVC DWV PIPE**

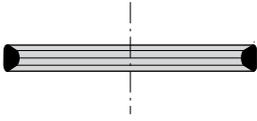


Product Code	Description	Mass (kg)	ØDN	'A' (mm)	'B' (mm)	'C' (mm)	'D' (mm)	'd' (mm)
TGB425X150	EZIpit® 425 x DN150 PP Base x 90° Double sweep Junction (F&F)	17	150	611	115	85	570	425

**Note:**

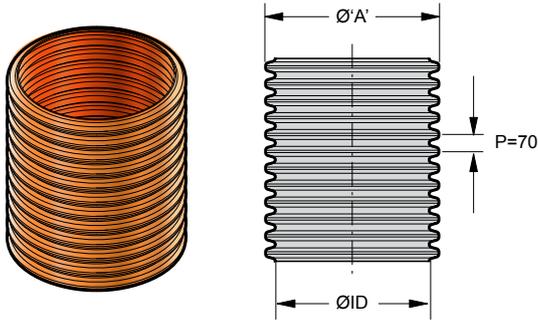
- All dimensions and masses are approximate only. If critical contact Iplex Pipelines.
- Unless otherwise stated all dimensions are in mm.
- Illustrations are not to scale.

## EZIPIT® 425 RISER RUBBER RING SEAL (SBR)



Product Code	Description	Mass (kg)
GERSEW425	EZIpit®425 Rubber ring seal	1

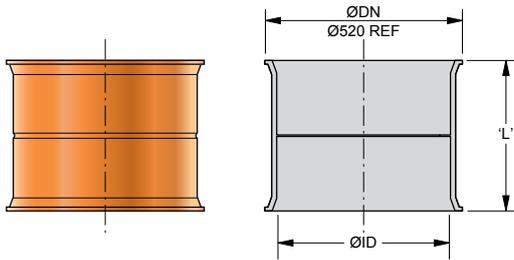
## EZIPIT® 425 PP CORRUGATED RISER (M&M)



Product Code	Description	Mass (kg)	Ø'A' (mm)	ØID (mm)
TGPP425B	EZIpit® 425 x 2000mm PP Riser (M&M)	20		
TGPP425C	EZIpit® 425 x 3000mm PP Riser (M&M)	30	476	425
TGPP425F	EZIpit® 425 x 6000mm PP Riser (M&M)	60		

Note: effective length of the riser is determined by the pitch 'P'.

## EZIPIT® 425 SOCKET (F&F)



Product Code	Description	Mass (kg)	ØDN	ØID (mm)	'L' (mm)
TGU425*	EZIpit® 425 Double socket (F&F)	4	425	480	400

\*Subject to availability.

## EZIPIT® 425 X DN150 (160MM OD) 4 WAY PP BRANCH RISER JUNCTION (F&F)



Product Code	Description	Mass (kg)	ØOD (mm)	ØID (mm)	'L' (mm)	'L <sub>1</sub> ' (mm)
TGU425X150	EZIpit®425 Riser Junction (F&F) x DN150 (160mm OD) Spigot branch	7	513	480	710	355

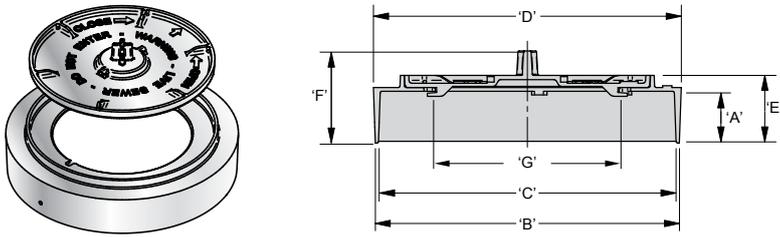
Note:

- Use DN150 DWV F&F Coupling (Iplex Code:DR57150 or DR64150) for rubber ring connection with PP spigot branch and DWV pipe.
- PP moulded Riser Junction is limited to maximum 3m depth from FSL.

### Note:

- All dimensions and masses are approximate only. If critical contact Iplex Pipelines.
- Unless otherwise stated all dimensions are in mm.
- Illustrations are not to scale.

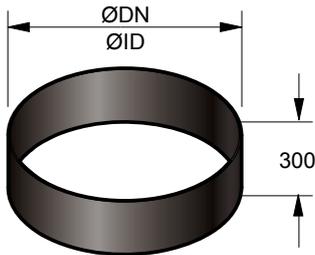
**GATIC® EZIPIT® 425 DI CAP AND LID**



Product Code	Description	Mass (kg)	'A' (mm)	'B' (mm)	'C' (mm)	'D' (mm)	'E' (mm)	'F' (mm)	'G' (mm)
GME300S42C*	EZIpit® 425 DI Cap and Lid	21	85	494	484	500	111	151	300

\*Subject to availability

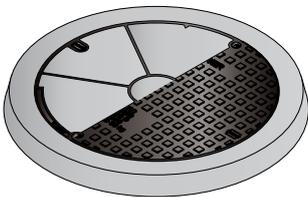
**EZIPIT® 425 PE SHROUD (CLASS B ONLY)**



Product Code	Description	Mass (kg)	ØDN (mm)	ØID (mm)
POH04560T*	EZIpit® 425 PE shroud 560mmOD x 300mm	7.2	560	534

\*Subject to availability

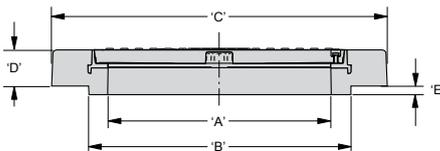
**DN600 GATIC® CONCRETE ENCASED DI FRAME AND CIRCULAR COVER (CLASS B)**



Product Code	Description	Mass* (kg)	'A' (mm)	'B' (mm)	'C' (mm)	'D' (mm)	'E' (mm)
GMCL205S*	DN600 Class Circular Cover 'sewer' concrete in-fill and frame assembly class B	140	605	715 to 720	920	100	15
GMCL205SST*	DN600 Class Circular Cover 'sewer' solid top and frame assembly class B	135					

\*Subject to availability

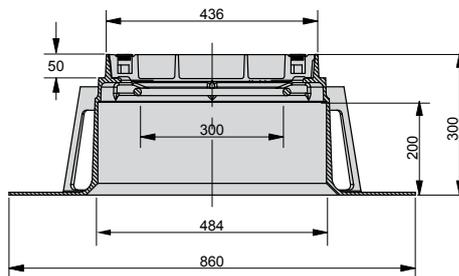
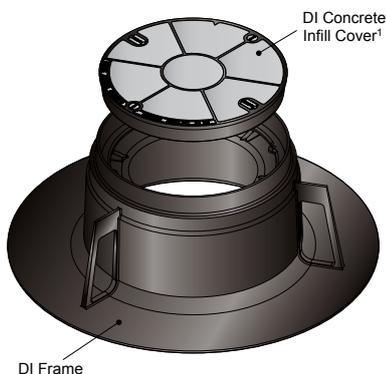
Mass excludes concrete.  
Concrete in-fill or Solid Top cover (optional).



**Note:**

- All dimensions and masses are approximate only. If critical contact Iplex Pipelines.
- Unless otherwise stated all dimensions are in mm.
- Illustrations are not to scale.

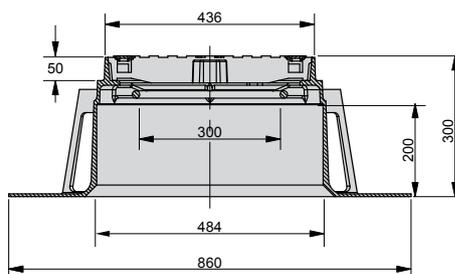
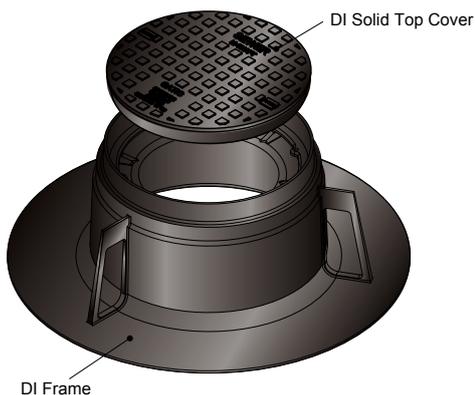
## GATIC® EZIPIT® 425 DI CLASS B OR D 'TOP HAT' FRAME WITH CONCRETE IN-FILL COVER



Product Code	Description	Mass (kg)
GMMS300C3B2S4*	EZIpit® 425 MS 'Top Hat' Frame with Concrete In-fill Cover Class B	67
GMMS300C3D2S4	EZIpit® 425 MS 'Top Hat' Frame with Concrete In-fill Cover Class D	69

\*Subject to availability

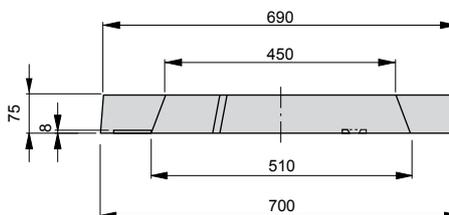
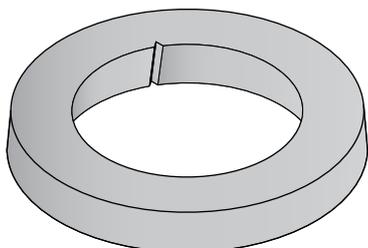
## GATIC® EZIPIT® 425 DI CLASS B OR D 'TOP HAT' FRAME WITH SOLID TOP COVER



Product Code	Description	Mass (kg)
GMMS300S3B2S4*	EZIpit® 425 MS 'Top Hat' Frame with Solid Top Cover Class B	68
GMMS300S3D2S4	EZIpit® 425 MS 'Top Hat' Frame with Solid Top Cover Class D	70

\*Subject to availability

## GATIC® EZIPIT® 425 DI CLASS B CONCRETE VEGETATION RING

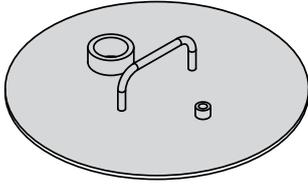


Product Code	Description	Mass (kg)
GME300VEGRINGMS	EZIpit® 425 Concrete Vegetation Ring ('Top Hat' cover, Class B only)	39

### Note:

- All dimensions and masses are approximate only. If critical contact Iplex Pipelines.
- Unless otherwise stated all dimensions are in mm.
- Illustrations are not to scale.

## EZIPIT® VACUUM TESTING LID



Product Code	Description	Mass (kg)
GME300SLV	DN300 EZIpit® Vacuum Testing Lid	6
GME425SLV	DN425 EZIpit® Vacuum Testing Lid	7
GME600SLV	DN600 EZIpit® Vacuum Testing Lid	21

## GATIC® SEALING COMPOUND



Product Code	Description
GM37504	GATIC® Sealing Compound 4kg

Note: Allow 1kg of GATIC® sealing compound for every 2 x 600 EZIpit® covers supplied

## IPLEX PVC PIPE LUBRICANT



Product Code	Description
JL010500	0.5kg Pipe Lubricant
JL011000	1kg Pipe Lubricant
JL014000	4kg Pipe Lubricant

**Note:**

- All dimensions and masses are approximate only. If critical contact Iplex Pipelines.
- Unless otherwise stated all dimensions are in mm.
- Illustrations are not to scale.



TECHNICAL GUIDE

**EZIPIT**<sup>™</sup>

Polypropylene Maintenance Chambers

PRODUCT RANGE

## 4.0 EZIPIT® 600 SEWER MAINTENANCE CHAMBER (MC)

The EZIpit® 600 (MC) is a gravity sewer maintenance chamber with a nominal inside diameter of 600mm. It is suitable for installation depths up to 6m. It consists of a polypropylene base, corrugated riser, and ductile iron cover arrangement.

The EZIpit® 600 maintenance chamber permits safe access for cleaning and inspection equipment from the surface, but restricts man entry.

The EZIpit® 600 (MC) consists of the following components:

1. DN600 polypropylene bases with integral benching and flow channels. All bases include adjustable rubber ring joint sockets compatible with smooth wall DWV PVC-U pipes manufactured to AS/NZS 1260. The sockets allow the installer to adjust the grade or angle by up to 7.5° in any direction in the trench.
2. DN600 polypropylene corrugated riser. The riser is available in a range of lengths which can be cut on site to adjust the height of the chamber. The DN600 riser is light grey in colour.
3. DN600 SBR seals for the base to riser and riser to cover elastomeric joint.
4. GATIC® DI 600 Cover arrangements suitable for both trafficable (Class D) and non-trafficable conditions (Class B).
5. SBR seals for the base to pipe connection.

The GATIC® EZIpit® 600 covers are available in a number of arrangements to suit different installation requirements. They are comprised of the following components:

**Class B or D GATIC® 'Top Hat' cover arrangement Options 1 and 2 (Flat finished surface). Refer to Figures 34 and 35.**

- Ductile iron 'Top Hat' Frame with 600 circular cover. The 'Top Hat' is assembled on the top of the riser and sealed with an EZIpit® 600 rubber ring. The frame is designed with a 300mm clear opening for safety purposes and is available in Class B (non-trafficable) or D (trafficable) with solid top or concrete in-fill covers. (Note: For concrete in-fill covers, concrete is cast insitu).

**Class B GATIC® cover arrangement Option 3 (flat or sloped finished surface). Refer to Figure 36.**

- GATIC® Cap and lid with 300mm clear opening for safety purposes. The cap seals against the top of the riser with the EZIpit® 600 rubber ring seal.

- DN800 PE Shroud (allows further height and slope adjustment).
- GATIC® DN600 ductile iron circular frame and cover (Class B concrete encased). The cover is assembled above the cap and is available with either a solid top or concrete in-fill cover.

**GATIC® Class B or D Conventional cover arrangement Options 4 and 5. Refer figures 38 and 39.**

- GATIC® Ductile iron frame with 600 circular cover. The riser is sealed with the EZIpit® 600 cap and lid and EZIpit® 600 rubber ring seal. (Options 4 & 5)
- DN800 PE shroud Option 4 (Allows further height or sloped adjustment Class B only)
- For Class D, the GATIC® EZIpit pre-cast concrete ring is assembled above the cap and the frame and cover is assembled on top of the concrete ring. (Option 5).

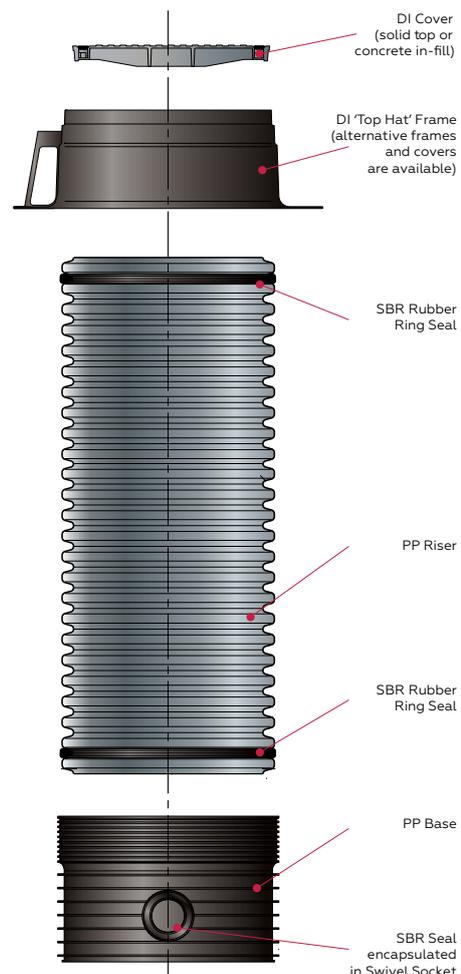


Figure 32: EZIpit® 600 Maintenance Chamber assembly.

**Note:** All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.

**TABLE 6: EZIPIT® 600 MC (PP) BASE CONFIGURATIONS**

	Type I				Type T	Type X
	180°	30°	60°	90°	90° (3 way)	90° (4 way)
DN150						
DN225						
DN300						

**Note:** Illustrations only. Not to scale  
 90° bases may be subject to Approval. Check with local Authority prior to use.



## 4.1 EZIPIT® 600 MC WITH DIFFERENT COVER OPTIONS

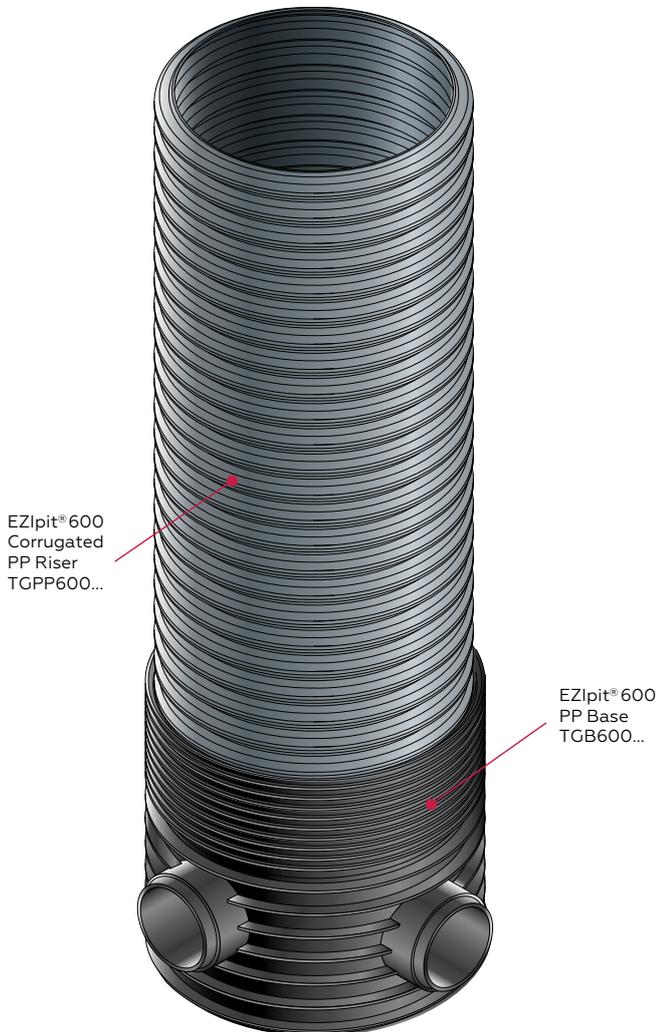


Figure 33: EZIpit® 600 Base & Riser assembly.

### OPTION 1:

#### EZIpit® 600 MC with GATIC® 'Top Hat' cover arrangement Class B



Figure 34: EZIpit® 600 Class B GATIC® 'Top Hat' cover arrangement, assembled with riser.

### OPTION 2:

#### EZIpit® 600 MC with GATIC® 'Top Hat' cover arrangement Class D

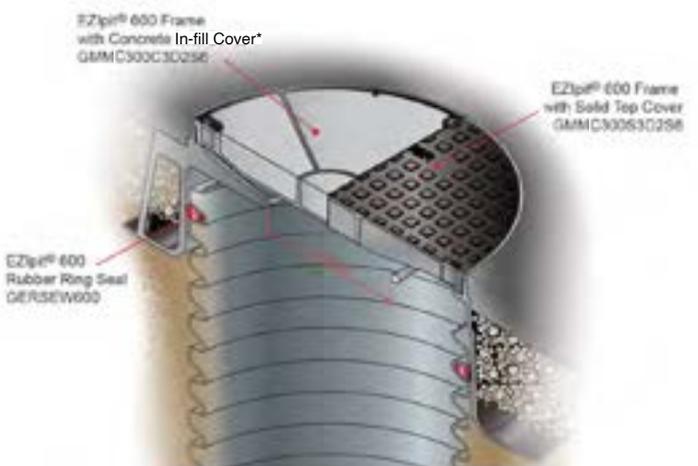


Figure 35: EZIpit® 600 Class D GATIC® 'Top Hat' cover arrangement, assembled with riser.

\*'Top Hat' concrete in-fill covers to be filled with concrete insitu.

**Note:** All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.

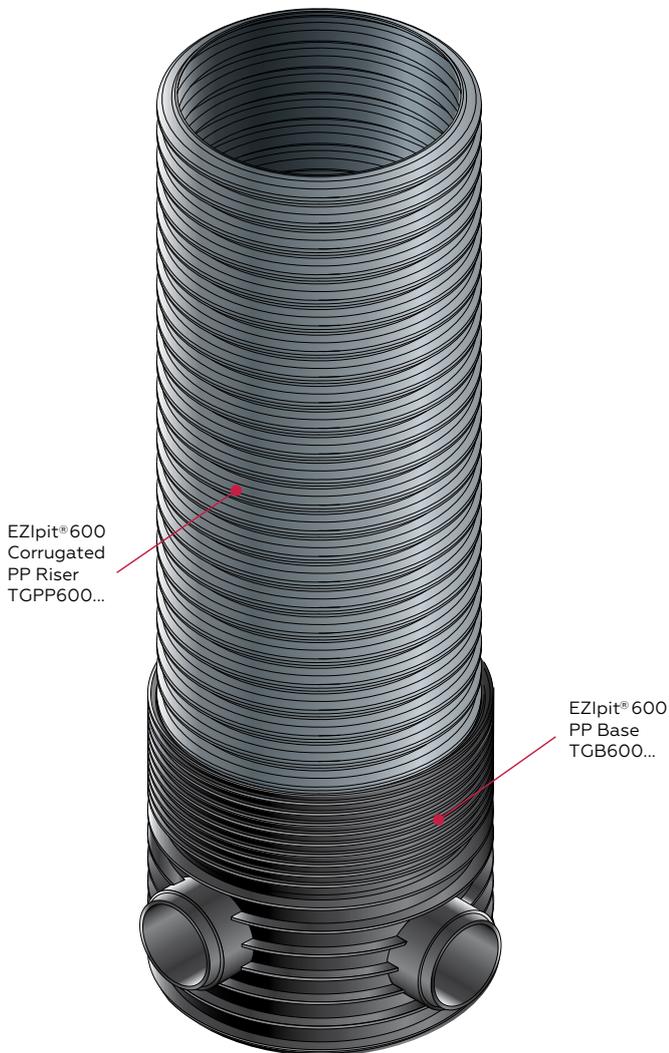


Figure 36: EZIpit® 600 Base & Riser assembly.

**OPTION 3:**  
**EZIpit® 600 MC with GATIC® 600 concrete encased cover**  
**arrangement**  
**Class B**

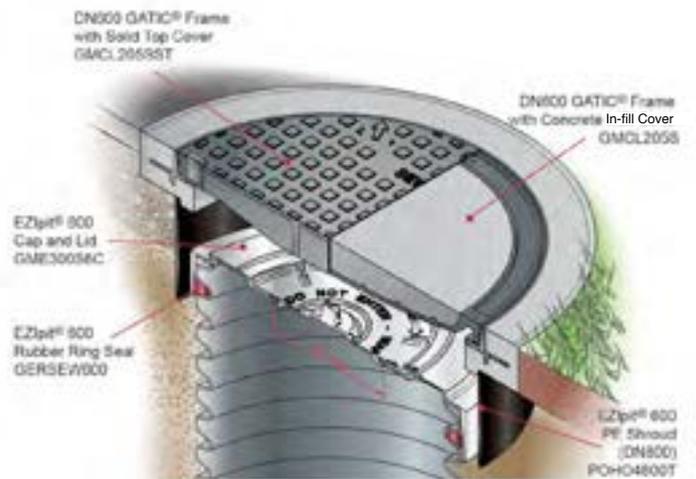


Figure 37: GATIC® EZIpit® 600 Class B Conventional cover arrangement, assembled with riser.

**Note:** All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.

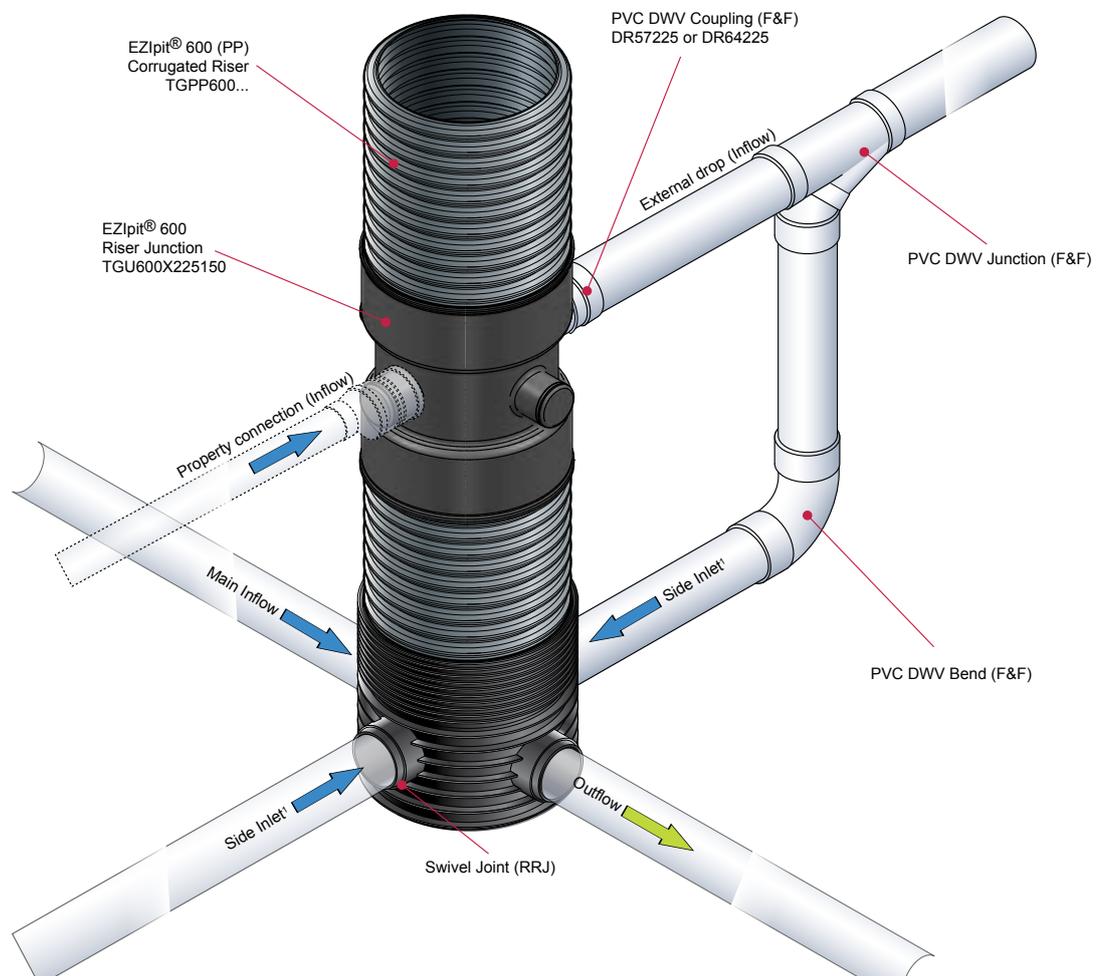
## 4.2 EZIPIT® 600 MC - LATERAL CONNECTIONS FOR INCOMING SEWERS

Gravity sewerage systems are designed to carry sewage and wastewater from toilets, dishwashers, kitchen sinks, washing machines and showers in houses and businesses.

There are two options when designing lateral connections for incoming sewers with the EZIpit® 600 MC.

The first option is via the EZIpit® 600 Base. The '4 way' x 90° sweep flow profile allows up to two side connections with PVC DWV smooth wall pipes. Pipes can be directly connected with the swivel joint (RRJ).

The second option is via the corrugated riser. Property connections and external drops (up to DN225) are possible using the (PP) 4 Way Riser Junction with spigot branches at 0°, 90°, 180° and 270°. Standard PVC DWV RRJ couplings and Level Invert Tapers (LIT) provide an effective joint with the PP spigot branches.



**Figure 38: EZIpit® 600 Maintenance Chamber with Inflow assemblies via the base and the riser. (External Drop) and property connections**

**Note:**

- All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.
- <sup>1</sup>Inflows (subject to water authority) should match the invert of the property connection and reducer. For reticulation sewers the reducer and/or bend should match the invert of the sewer.
- PP moulded Riser Junction is limited to maximum 3m depth from FSL.

Contact Iplex Pipelines for further information.

## 4.3 TYPICAL INSTALLATION – EZIPIT® 600 MC WITH OPTIONAL COVERS

### OPTIONS 1 AND 2:

**EZIpit® 600 Maintenance Chamber with GATIC® 'Top Hat' cover arrangement Class B or D**

### OPTION 3:

**EZIpit® 600 MC with GATIC® concrete encased cover arrangement Class B (sloped surfaces)**

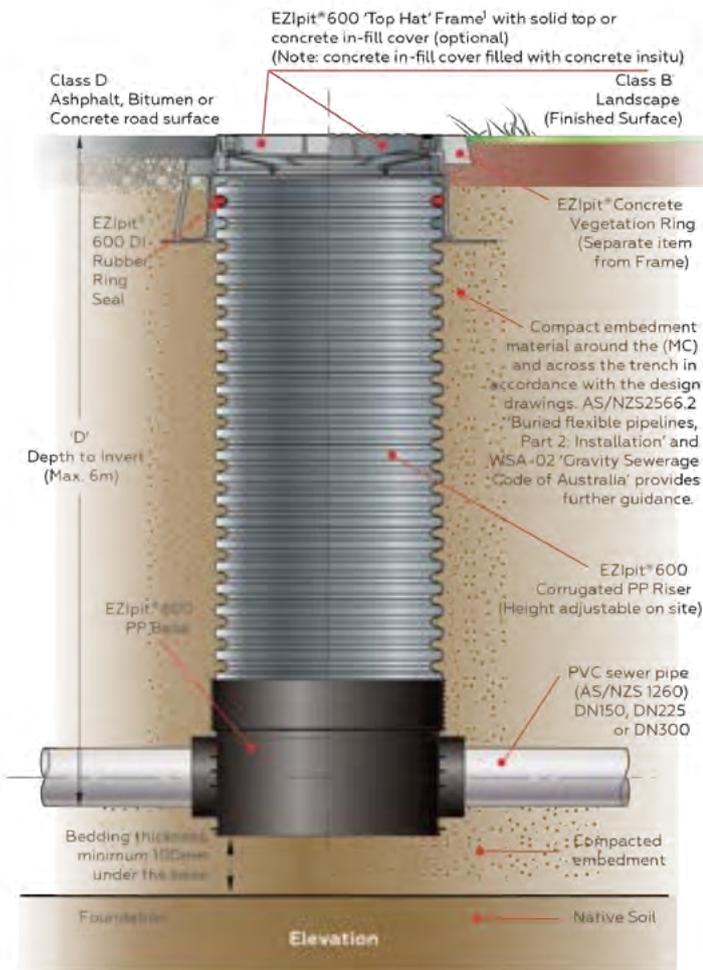


Figure 39: Typical Installation EZIpit® 600 Maintenance Chamber (MC).

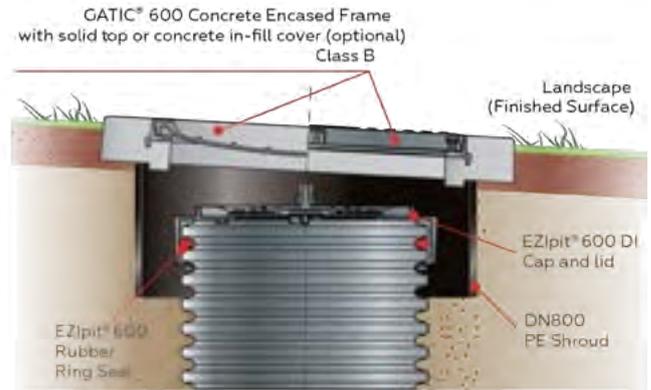


Figure 40: EZIpit® 600 Cover arrangement (sloped surfaces).

<sup>1</sup>If specified, tilt 'Top Hat' cover to the required fall (typically 1:50).

**Note:** All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.

### 4.3.1 ASSEMBLY AND INSTALLATION OF THE EZIPIT® 600MC BASE AND CORRUGATED RISER

**01** Level the bottom of the trench with a suitable bedding material and ensure a minimum thickness of 100mm. *(Note: The trench level for the base is lower than the level for the pipe).*



**02** Position the base on the bedding material with a spirit level. Apply Iplex pipe seal lubricant to the pipe spigot and base socket seal for ease of assembly. Connect the base to the pipe by pushing it onto the pipe spigot end.



**03** Adjust the pipes to the required position. The adjustable pipe connector enables an angular deflection of 7.5° from the centre line in all directions.



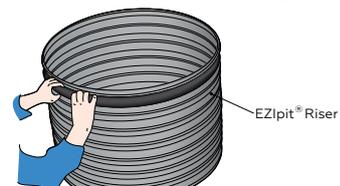
**04** Place the laser inside the base to check the level.



**05** Cut the riser to the required length (refer to 'field height adjustment' Sections 4.4. and 4.5). This is easily performed with a circular saw or handsaw. Cut at the top of the corrugation or in the valley. Remove swarf.



**06** Assemble the sealing rings in the 1st valley at each end of the riser. Ensure the sealing ring is sitting correctly in the valley of the corrugation.



**07** Assemble the sealing rings in the 1st valley at each end of the riser. Ensure the sealing ring is sitting correctly in the valley of the corrugation.



For cover selection and assembly options refer to Sections 4.3.2.

**Note:** All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.

## 4.3.2 EZIPIT® 600 MC COVER SELECTION AND ASSEMBLY (GENERAL)

### CLASS B COVER ARRANGEMENTS (NON TRAFFICABLE CONDITIONS)

- Private properties
- Domestic driveways
- Footpaths
- Nature strips

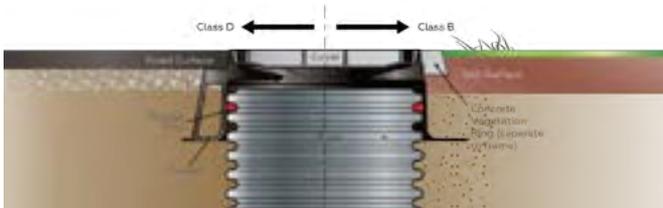
### CLASS D COVER ARRANGEMENTS (TRAFFICABLE CONDITIONS)

- Roadways
- Carparks
- Commercial / industrial driveways
- Parklands, reserves
- School grounds

After assembling the EZIpit® 600 base and riser, (Section 4.3.1 Steps 01 to 07) select the appropriate cover as specified and install as follows:

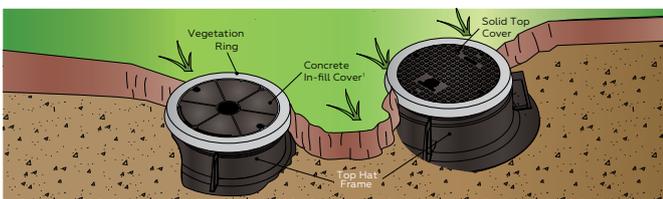
#### OPTIONS 1 AND 2:

### 08 EZIpit® 600 MC with GATIC® 'Top Hat' cover Class B or D<sup>1</sup>



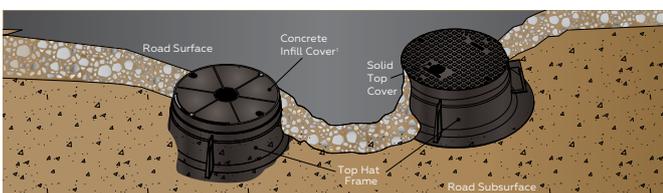
### 09 Class B GATIC® 'Top Hat' Cover with Vegetation Ring

Finish off with soil as specified, to the finished surface level.



### 10 Class D GATIC® 'Top Hat' Cover

Finish off with a top layer, as specified, to road surface.



#### OPTION 3:

### EZIpit® 600 MC with GATIC® 600 concrete encased frame and cover Class B (sloped surfaces)

### 08

Apply Iplex pipe seal lubricant to the inside of the cap for ease of assembly. Place the EZIpit® cap on top of the riser. Push the cap down past the rubber ring. Remove the lid from the cap and apply GATIC® sealing compound liberally to all vertical and horizontal seating surfaces of the lid and assemble on the cap.

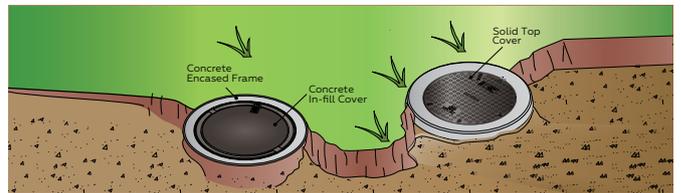


ring. Remove the lid from the cap and apply GATIC® sealing compound liberally to all vertical and horizontal seating surfaces of the lid and assemble on the cap.



### 10

Finish off with soil, as specified, to the finished surface level.



Note: Concrete in-fill or Solid Top covers are optional and can be specified in accordance with local requirements. <sup>1</sup> 'Top Hat' in-fill covers are concrete encased insitu.

## CONCRETE IN-FILL AND CURING

With the exception of solid top covers, all GATIC® 'Top Hat' covers must be filled with structural grade concrete. Refer to AS 3996 for additional information. This is essential if the full strength potential of these covers is to be realised. Concrete in-fill must be poured and allowed to cure with covers installed in the frame. Refer to GATIC® Product Catalogue, 'Access covers, grates and accessories for installation guidelines'.

<sup>1</sup> If specified, tilt 'Top Hat' cover to the required fall (typically 1:50).

**Note:** All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.

## 4.4 EZIPIT® 600 MC FIELD HEIGHT ADJUSTMENT

The length of the corrugated riser 'L' can be calculated using the following formulae and critical dimensions.

### OPTIONS 1 AND 2:

EZipit® 600 MC with GATIC® 'Top Hat' cover arrangement  
Class B or D

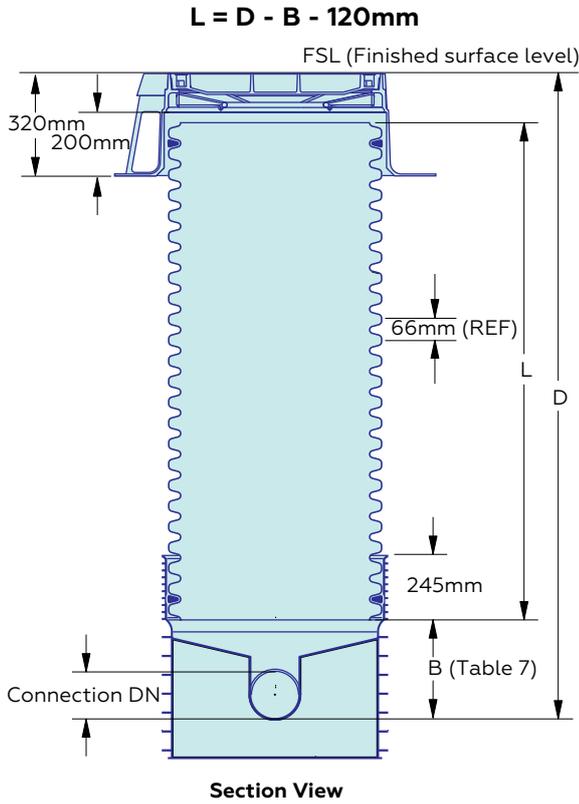


Figure 41

### OPTION 3:

EZipit® 600 MC with GATIC® 600 Concrete Encased Frame and Cover (sloped surfaces) Class B

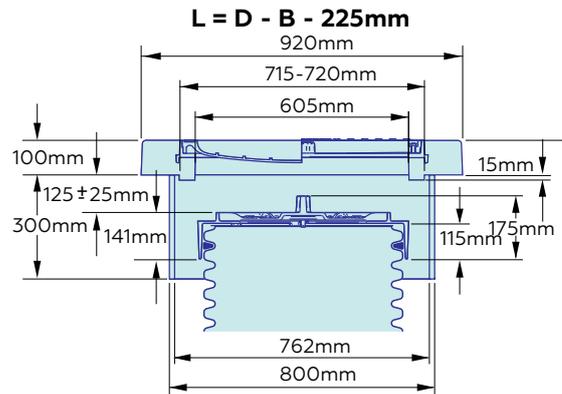


Figure 42

TABLE 7: EZIPIT® 600 BASE DIMENSIONS

Connection (DN)	Base Height B (mm)
DN150	346
DN225	390
DN300	419

**Note:** All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.

## 4.5 EZIPIIT® 600 MC RISER INFLOW FIELD HEIGHT ADJUSTMENT (CONNECTION VIA CORRUGATED RISER)

### EZIPIIT® 600 Sewer Maintenance Chamber Assembly with Riser Coupling (Branch Connection)

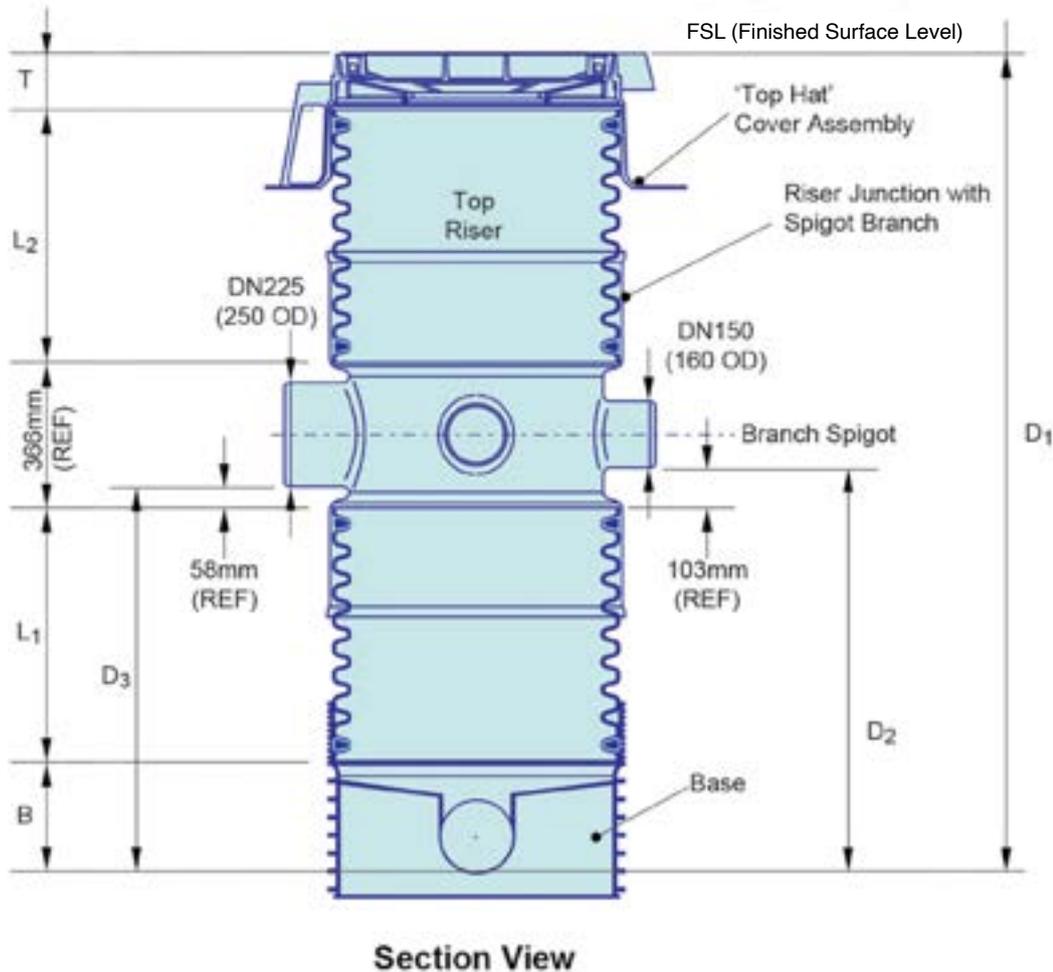


Figure 43

#### Guidelines for Assembly:

Determine,

- The depth to invert from the finished surface to the base ( $D_1$ ) and the invert of the Branch Spigot ( $D_2$ ) (DN150 branch) or ( $D_3$ ) (DN225 branch)
- The height of the base (B). (Refer to Table 7)
- The length of the bottom Riser ( $L_1$ ) =  
 $(L_1) = (D_2) - B - 103\text{mm}$  for DN150 branch, or  $(L_1) = (D_3) - B - 58\text{mm}$  for DN225 branch
- The length of the Top Riser ( $L_2$ ) =  $(D_1) - B - (L_1) - 366\text{mm} - T$

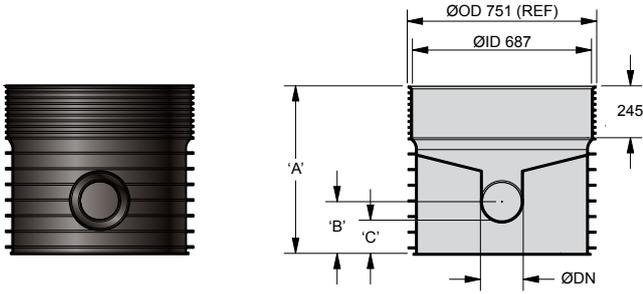
- Cut the Bottom and Top Risers to length. See Step **05** Section 4.3.1
- Repeat Steps **06** and **07**, Section 4.3.1
- Assemble the Riser Coupling on the Bottom Riser and Push down
- Assemble the Top Riser on the Riser Coupling and push down into the socket
- Assemble the Cover assembly on the Top Riser. Steps **08, 09** and **10** Section 4.3.2

#### Note:

- All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.
- PP moulded Riser Junction is limited to maximum 3m depth from FSL.

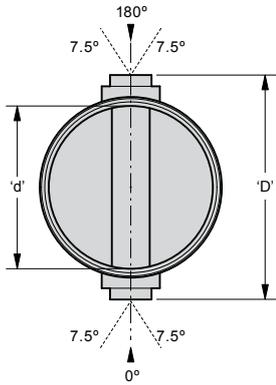


## 4.6 EZIPIT® 600 MC PRODUCT RANGE



ØDN150 = 160mm OD PVC Smooth Wall DWV pipe  
 ØDN225 = 250mm OD PVC Smooth Wall DWV pipe  
 ØDN300 = 315mm OD PVC Smooth Wall DWV pipe

### EZIPIT® 600 PP BASE (F&F): STRAIGHT THROUGH (180°) CHANNEL WITH RRJ ADJUSTABLE CONNECTIONS<sup>1</sup> SUITABLE FOR PVC DWV PIPE

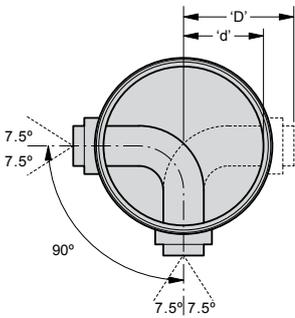


Product Code	Description	Mass (kg)	ØDN	'A' (mm)	'B' (mm)	'C' (mm)	'D' (mm)	'd' (mm)
TGB600150	EZIpit® 600 x DN150 PP Base x 180° Channel (F&F)	23.3	150	679	163	88	756	566
TGB600225	EZIpit® 600 x DN225 PP Base x 180° Channel (F&F)	27.0	225	738	222	103	775	507
TGB600300*	EZIpit® 600 x DN300 PP Base x 180° Channel (F&F)	29.2	300	740	222	74	782	473

\*Subject to availability.

Note: No fall through flow channel.

### EZIPIT® 600 PP BASE (F&F): BEND (90°) CHANNEL WITH RRJ ADJUSTABLE CONNECTIONS<sup>1</sup> SUITABLE FOR PVC DWV PIPE



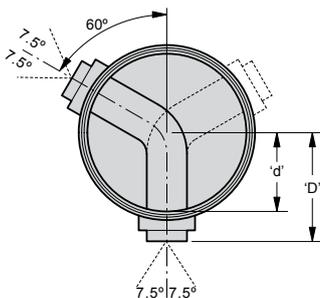
Product Code	Description	Mass (kg)	ØDN	'A' (mm)	'B' (mm)	'C' (mm)	'D' (mm)	'd' (mm)
TGB60015090	EZIpit® 600 x DN150 PP Base x 90° (F&F)	23.3	150	679	163	88	378	283
TGB60022590*	EZIpit® 600 x DN225 PP Base x 90° (F&F)	27.0	225	738	222	103	388	254
TGB60030090*	EZIpit® 600 x DN300 PP Base x 90° (F&F)	29.2	300	740	222	74	391	236

\*Subject to availability.

Note: No fall through flow channel.

90° bases may be subject to Approval. Check with local Authority prior to use.

### EZIPIT® 600 PP BASE (F&F): BEND (60°) CHANNEL WITH RRJ ADJUSTABLE CONNECTIONS<sup>1</sup> SUITABLE FOR PVC DWV PIPE



Product Code	Description	Mass (kg)	ØDN	'A' (mm)	'B' (mm)	'C' (mm)	'D' (mm)	'd' (mm)
TGB600150120	EZIpit® 600 x DN150 PP Base x 60° Channel (F&F)	23.3	150	679	163	88	378	283
TGB600225120*	EZIpit® 600 x DN225 PP Base x 60° Channel (F&F)	27.0	225	738	222	103	388	254
TGB600300120*	EZIpit® 600 x DN300 PP Base x 60° Channel (F&F)	29.2	300	740	222	74	391	236

\*Subject to availability.

Note: No fall through flow channel.

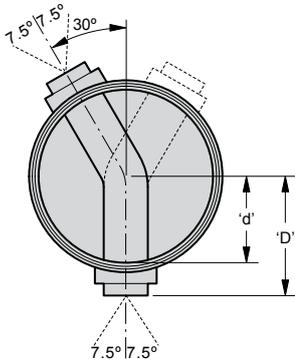
**Note:** <sup>1</sup> Each adjustable socket allows up to 7.5° deflection from the centreline in any direction.

All dimensions and masses are approximate only. If critical contact Iplex Pipelines.

Unless otherwise stated all dimensions are in mm.

Illustrations are not to scale.

## EZIPIT® 600 PP BASE (F&F): BEND (30°) CHANNEL WITH RRJ ADJUSTABLE CONNECTIONS<sup>1</sup> SUITABLE FOR PVC DWV PIPE

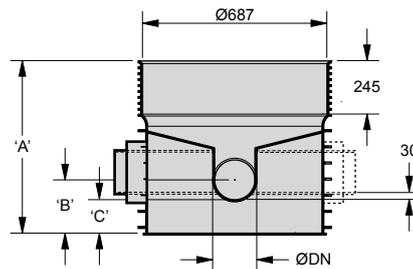
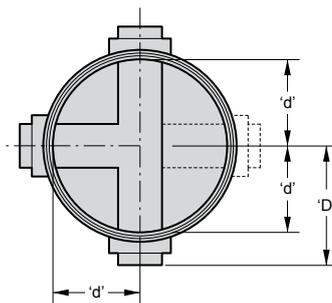


Product Code	Description	Mass (kg)	ØDN	'A' (mm)	'B' (mm)	'C' (mm)	'd' (mm)	'D' (mm)
TGB600150150	EZIpit® 600 x DN150 PP Base x 30° Channel (F&F)	23.3	150	679	163	88	283	378
TGB600225150*	EZIpit® 600 x DN225 PP Base x 30° Channel (F&F)	27.0	225	738	222	103	254	388
TGB600300150*	EZIpit® 600 x DN300 PP Base x 30° Channel (F&F)	29.2	300	740	222	74	236	391

\*Subject to availability.

Note: No fall through flow channel.

## EZIPIT® 600 PP BASE (F&F): TEE CHANNEL WITH RRJ ADJUSTABLE CONNECTIONS<sup>1</sup> SUITABLE FOR PVC DWV PIPE

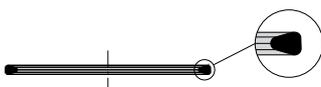


Note: Side inlets with slight slope (1°) and sockets positioned 30mm higher. No fall through the main flow channel.

Product Code	Description	Mass (kg)	ØDN	'A' (mm)	'B' (mm)	'C' (mm)	'D' (mm)	'd' (mm)
TGB600T150*	EZIpit® 600 x DN150 PP Base x Tee (F&F)	23.9	150	679	163	88	378	283
TGB600T225*	EZIpit® 600 x DN225 PP Base x Tee (F&F)	29.1	225	738	222	103	388	254
TGB600T300*	EZIpit® 600 x DN300 PP Base x Tee (F&F)	32.6	300	740	222	74	391	236

\*Subject to availability

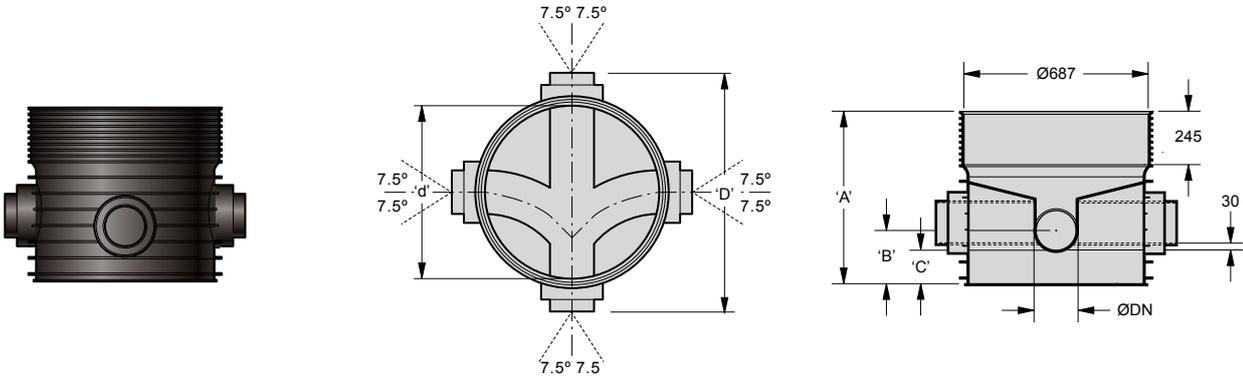
## EZIPIT® 600 RUBBER RING SEAL (SBR)



Product Code	Description	Kg (each)
GERSEW600	EZIpit® 600 Rubber ring seal	2.2

Note: <sup>1</sup>Each adjustable socket allows up to 7.5° deflection from the centreline in any direction. All dimensions and masses are approximate only. If critical contact Iplex Pipelines. Unless otherwise stated all dimensions are in mm. Illustrations are not to scale.

**EZIPIT® 600 PP BASE (F&F): DOUBLE SWEEP JUNCTION CHANNEL WITH RRJ ADJUSTABLE CONNECTIONS<sup>1</sup> SUITABLE FOR PVC DWV PIPE**

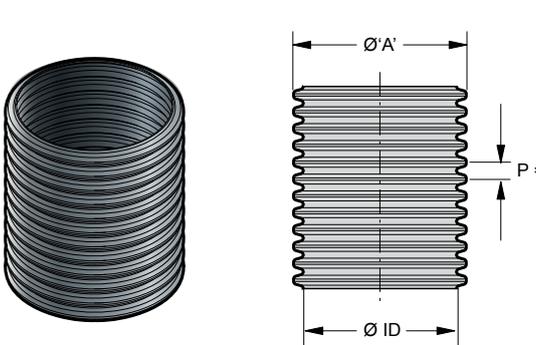


Note: Side inlets with slight slope (1°) and sockets positioned 30mm higher. No fall through the main flow channel.

Product Code	Description	Mass (kg)	ØDN	'A' (mm)	'B' (mm)	'C' (mm)	'D' (mm)	'd' (mm)
TGB600X150	EZIpit® 600 x DN150 PP Base x 90° Double sweep Junction (F&F)	24.9	150	679	163	88	756	566
TGB600X225	EZIpit® 600 x DN225 PP Base x 90° Double sweep Junction (F&F)	30.9	225	738	222	103	774	507
TGB600X300*	EZIpit® 600 x DN300 PP Base x 90° Double sweep Junction (F&F)	35.7	300	740	222	74	781	473

\*Subject to availability.

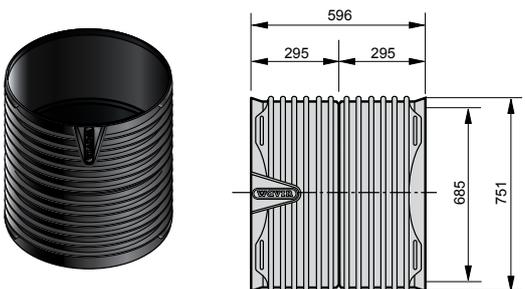
**EZIPIT® 600 PP CORRUGATED RISER (M&M)**



Product Code	Description	Mass (kg)	Ø'A' (mm)	ØID (mm)
TGPP600A	EZIpit® 600x1000mm PP Riser (M&M)	22.5		
TGPP600AV	EZIpit® 600x1500mm PP Riser (M&M)	33.8		
TGPP600B	EZIpit® 600x2000mm PP Riser (M&M)	45.1		
TGPP600C	EZIpit® 600x3000mm PP Riser (M&M)	67.6	682.8	595
TGPP600D	EZIpit® 600x4000mm PP Riser (M&M)	90		
TGPP600DV	EZIpit® 600x4500mm PP Riser (M&M)	101.4		
TGPP600F	EZIpit® 600x6000mm PP Riser (M&M)	135.2		

Note: Effective length of the riser is determined by the pitch 'P'.

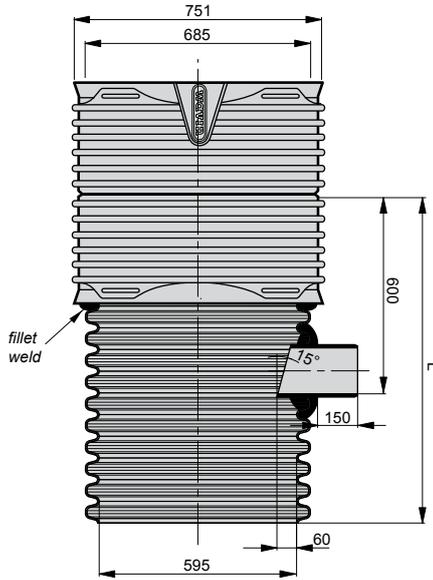
**EZIPIT® 600 PP DOUBLE SOCKET COUPLER (F&F)**



Product Code	Description	Mass (kg)
GR58600*	EZIpit® 600 Double Socket Coupler (F&F)	13

\*Subject to availability.

## EZIPIT® 600 X DN150 (160MM OD) RISER JUNCTION (F&F)



Product Code	Description	'L' (mm)	Mass (kg)
TGU600150AV*	EZIpit® 600X1500 Riser Coupling x DN150 (160mmOD) PP Spigot branch (M&F)	1500	49
TGU600150C*	EZIpit® 600X3000 Riser Coupling x DN150 (160mmOD) PP Spigot branch (M&F)	3000	82
TGU600150DV*	EZIpit® 600X4500 Riser Coupling x DN150 (160mmOD) PP Spigot branch (M&F)	4500	115

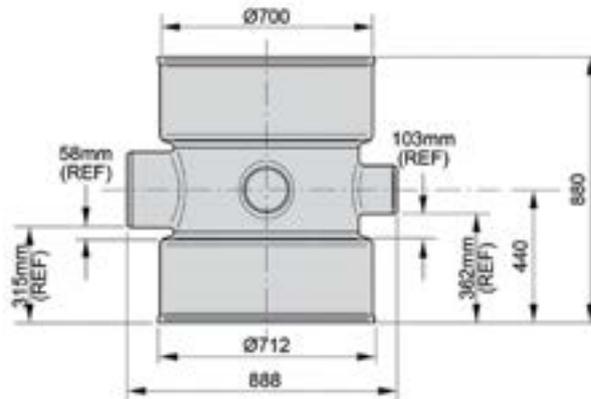
\*Subject to availability.

Note: Use DN150 DWV F&F Coupling (Iplex Code: DR57150 or DR64150) for rubber ring connection with PP spigot and DWV pipe.

EZIpit® 600 Riser coupling is normally supplied with one spigot in-take branch. Multiple spigot branches are available on request only. Contact Iplex for further information.

Minimum length 'L' is 930mm and Maximum Length is 4515mm

## EZIPIT® 600 X DN225 (250 OD) X DN150 (160 OD) 4 WAY PP BRANCH RISER JUNCTION (F&F)

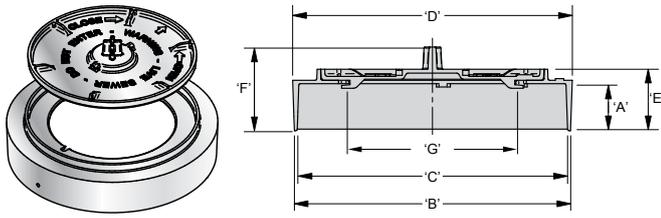


Product Code	Description	Mass (kg)	ØOD (mm)	ØID (mm)	'L' (mm)	'L <sub>1</sub> ' (mm)
TGU600X225150	EZIpit® 600 Riser Junction (F&F) x DN225 (250 OD) x DN150 (160 OD) Spigot branch	12.5	712	700	880	440

**Note:**

- All dimensions and masses are approximate only. If critical contact Iplex Pipelines.
- Unless otherwise stated all dimensions are in mm.
- Illustrations are not to scale.
- PP moulded Riser Junction is limited to maximum 3m depth from FSL.

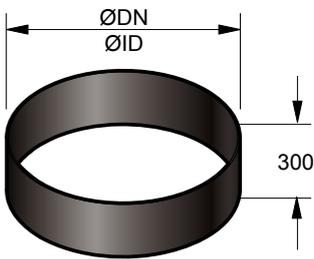
### GATIC® EZIPIT® 600 DI CAP AND LID



Product Code		Description					Mass (kg)
GME300S6C*		EZIpit® 600 Cap and lid					33
'A' (mm)	'B' (mm)	'C' (mm)	'D' (mm)	'E' (mm)	'F' (mm)	'G' (mm)	
115	706	695	714	141	175	300	

\*Subject to availability

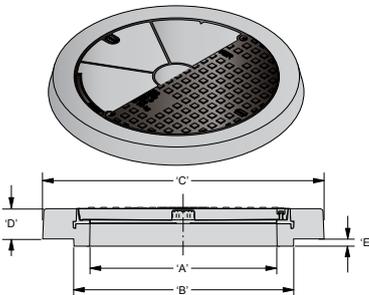
### EZIPIT® 600 PE SHROUD (CLASS B ONLY)



Product Code	Description	Mass (kg)	ØDN (mm)	ØID (mm)
POH04800T*	EZIpit® 600 PE Shroud 800mm OD x 300mm	14.4	800	762

\*Subject to availability

### DN600 GATIC® CONCRETE ENCASED DI FRAME AND CIRCULAR COVER (CLASS B)

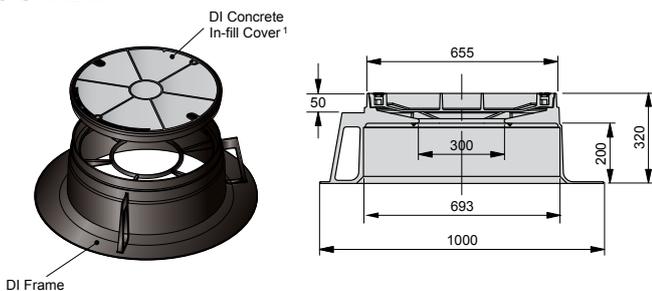


Product Code	Description	Mass (kg)	'A' (mm)	'B' (mm)	'C' (mm)	'D' (mm)	'E' (mm)
GMCL205S*	DN600 Class circular cover 'sewer' concrete in-fill and frame assembly class B	140	605	715	920	100	15
GMCL205SST*	DN600 Class circular cover 'sewer' solid top and frame assembly class B	135		720			

\*Subject to availability

Mass excludes concrete.  
Concrete in-fill or Solid Top cover (optional).

### GATIC® EZIPIT® 600 DI CLASS B OR D 'TOP HAT' FRAME WITH CONCRETE IN-FILL COVER



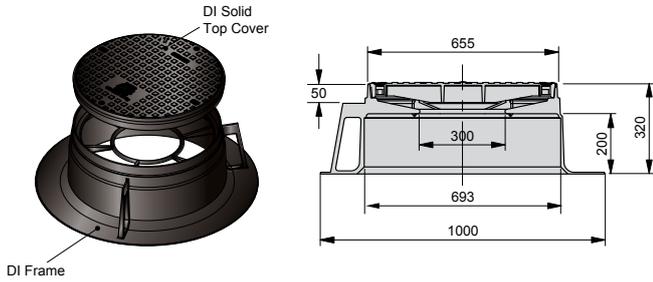
Product Code	Description	Mass (kg)
GMMC300C3B2S6*	EZIpit® 600 MC 'Top Hat' Frame with Concrete in-fill Cover Class B	98
GMMC300C3D2S6	EZIpit® 600 MC 'Top Hat' Frame with Concrete in-fill Cover Class D	104

\*Subject to availability

Mass excludes concrete

**Note:** All dimensions and masses are approximate only. If critical contact Iplex Pipelines. Unless otherwise stated all dimensions are in mm. Illustrations are not to scale.

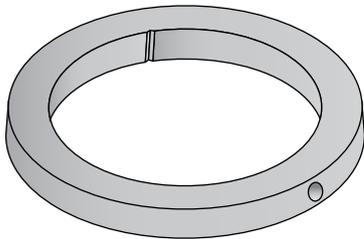
## GATIC® EZIPIT® 600 DI CLASS B OR D 'TOP HAT' FRAME WITH SOLID TOP COVER



Product Code	Description	Mass (kg)
GMMC300S3B2S6*	EZIpit® 600 MC 'Top Hat' Frame with Solid Top Cover Class B	102
GMMC300S3D2S6	EZIpit® 600 MC 'Top Hat' Frame with Solid Top Cover Class D	108

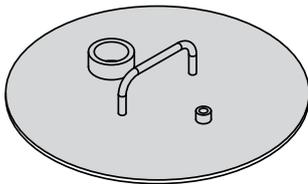
\*Subject to availability

## GATIC® EZIPIT® 600 CONCRETE VEGETATION RING ('TOP HAT' COVER, CLASS B ONLY)



Product Code	Description	Mass (kg)
GME300VEGRINGMC	EZIpit® 600 Concrete Vegetation Ring ('Top Hat' cover, Class B only)	51

## EZIPIT® VACUUM TESTING LID



Product Code	Description	Mass (kg)
GME300SLV	DN300 EZIpit® Vacuum Testing Lid	6
GME425SLV	DN425 EZIpit® Vacuum Testing Lid	7
GME600SLV	DN600 EZIpit® Vacuum Testing Lid	21

**Note:** All dimensions and masses are approximate only. If critical contact Iplex Pipelines. Unless otherwise stated all dimensions are in mm. Illustrations are not to scale.

## GATIC® SEALING COMPOUND



Product Code	Description
GM37504	GATIC® Sealing Compound 4kg

*Note: Allow 1kg of GATIC® sealing compound for every 2 x 600 EZIpit® covers supplied.*

## IPLEX PVC PIPE LUBRICANT



Product Code	Description
JL010500	0.5kg Pipe Lubricant
JL011000	1kg Pipe Lubricant
JL014000	4kg Pipe Lubricant



**TECHNICAL GUIDE**

**EZIPIT™**

Polypropylene Maintenance Holes

PRODUCT RANGE

## 5.0 EZIPIT® 1000 SEWER MAINTENANCE HOLE (MH)

Iplex EZIpit® 1000 maintenance holes are made of polypropylene and supplement our EZIpit® 425 MS and EZIpit® 600 MC. They are used for inspecting sewer networks and provide access for maintenance activities.

When developing the Iplex EZIpit® 1000 MH, both static and dynamic loads have been taken into consideration, including soil loads and groundwater pressure.

They are easy to install and reduce operational problems to a minimum by providing optimal flow conditions. The modular concept is practical and allows ease of handling and assembly in the trench.

Iplex EZIpit® 1000 MH have been designed with the following features:

- Polypropylene single wall corrugated riser
- Polypropylene bases and reducing cone with 'ribbed' surfaces
- Adjustable cover arrangement
- Integral swivel socket connections suitable for smooth wall PVC DWV pipe<sup>1</sup>
- Reinforced bases with double bottom

The ability to cut the EZIpit® 1000 riser allows the installer to adjust the height on site and install the EZIpit® 1000 MH to the specified depth up to 6m.

Due to its polypropylene construction, the Iplex EZIpit® 1000 MH offers the following advantages:

- Resistance to acid attack, which can be common in gravity sewers
- Light weight components for easier handling
- Fast installation times, reducing risks associated with open trenches
- Excellent hydraulic properties

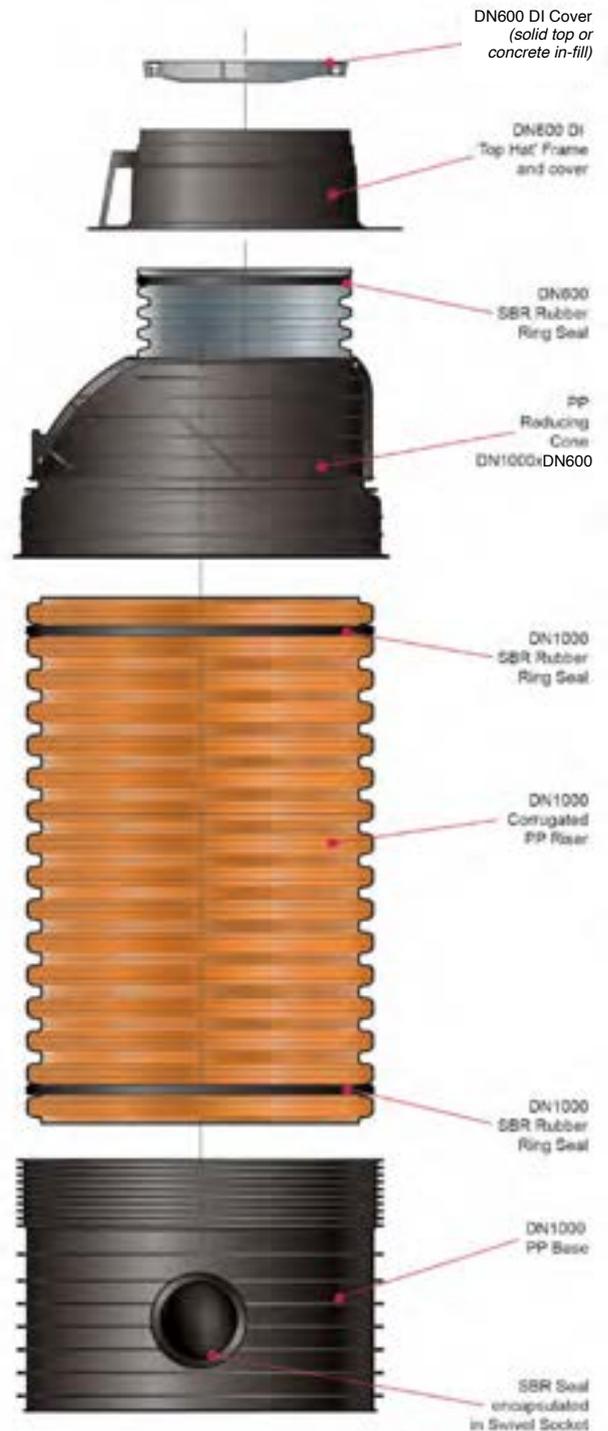


Figure 44: EZIpit® 1000 Maintenance Hole (MH) assembly

**Note:** All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.

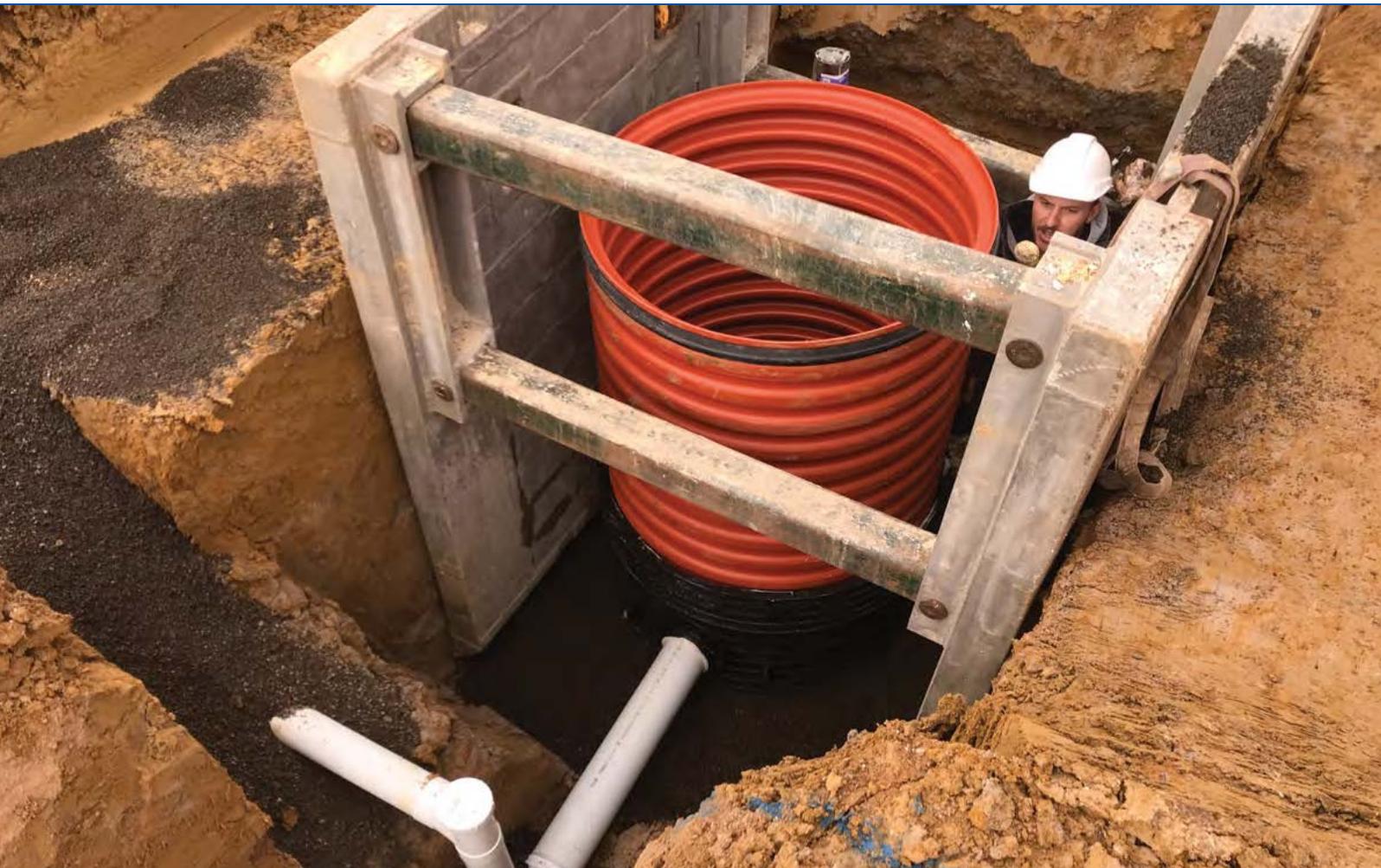
<sup>1</sup> Not applicable with DN375 Base sockets.

**TABLE 8: EZIPIT® 1000 MH (PP) BASE CONFIGURATIONS**

	Type I				Type Y	Type X
	180°	30°	60°	90°	45° (4 way)	90° (4 way)
DN150		For DN150 use DN225 base with level invert tapers	For DN150 use DN225 base with level invert tapers			
DN225						
DN300						

**Note:** Illustrations only. Not to scale.

90° bases may be subject to approval. Check with local authority prior to use.



## 5.1 EZIPIT® 1000 MH WITH DIFFERENT COVER OPTIONS



Figure 45: EZipit® 1000 Base , Riser and Cone Assembly

\*Top Hat' concrete in-fill covers to be filled with concrete insitu.

**Note:** All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.

### OPTION 1: EZipit® 1000 MH with GATIC® 'Top Hat' cover arrangement Class B



Figure 46: EZipit® 1000 MH with GATIC® 'Top Hat' cover arrangement Class B, assembled with reducing cone



**OPTION 2:**

**EZIpit® 1000 MH with GATIC® 'Top Hat' cover arrangement Class D**

**OPTION 3:**

**EZIpit® 1000 MH with GATIC® cover arrangement Class B & D (Sloped Surfaces)**



Figure 47: EZIpit® 1000 MH with GATIC® 'Top Hat' cover arrangement Class D, assembled with riser

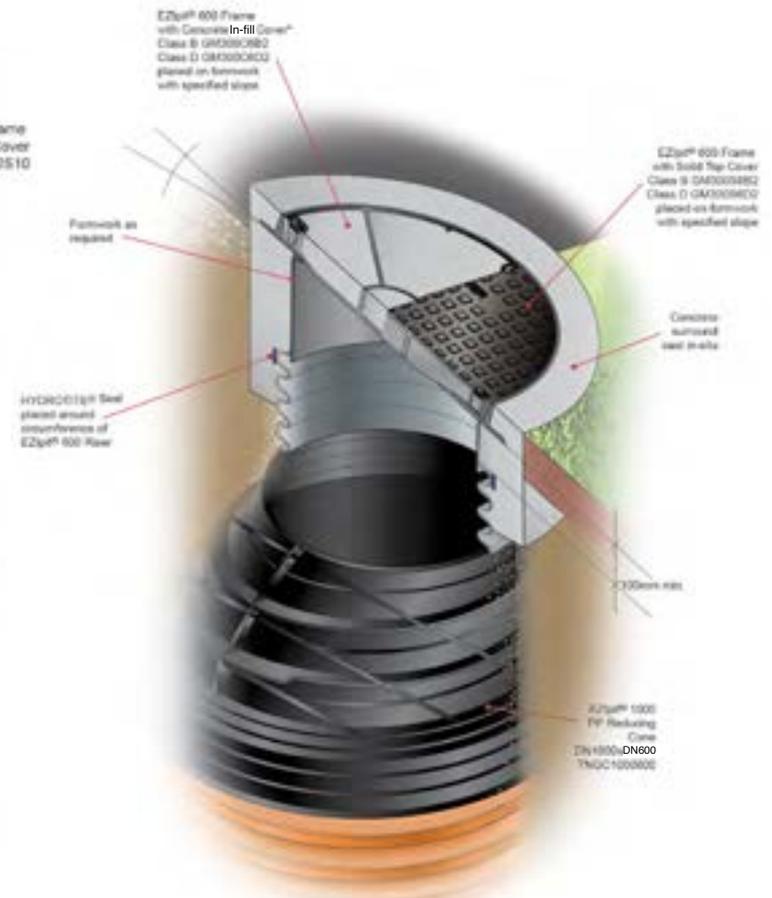


Figure 48: EZIpit® 1000 MH with GATIC® cover arrangement Class B & D (Sloped Surfaces). Concrete frame cast insitu by others to specified slope.

## 5.2 EZIPIT® 1000 MH - INTERNAL DROP STRUCTURE

In steep terrain, it might be necessary to install a backdrop. The down pipe can be positioned either inside or outside the maintenance hole structure.

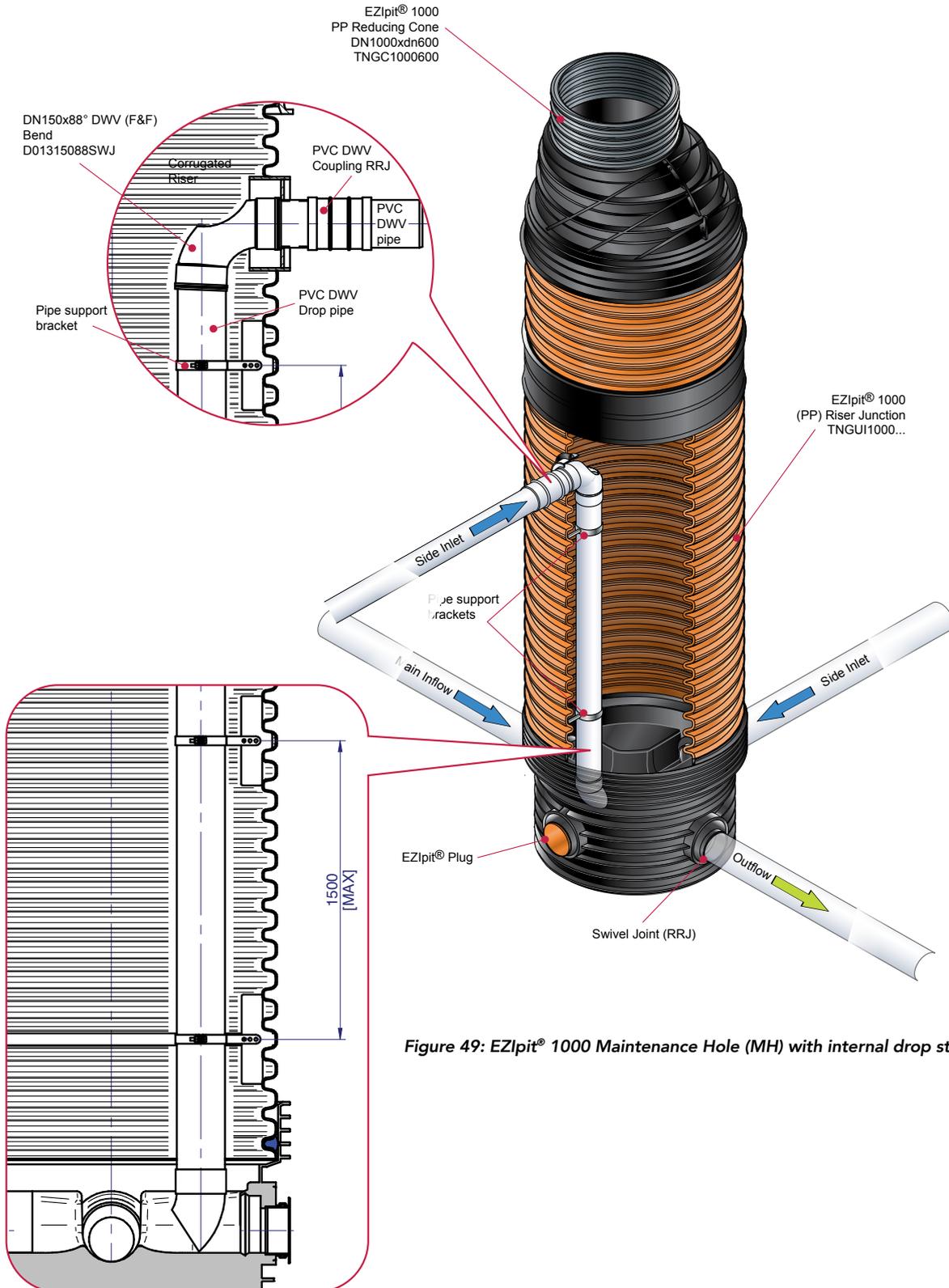


Figure 49: EZIpit® 1000 Maintenance Hole (MH) with internal drop structure

**Note:** All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.

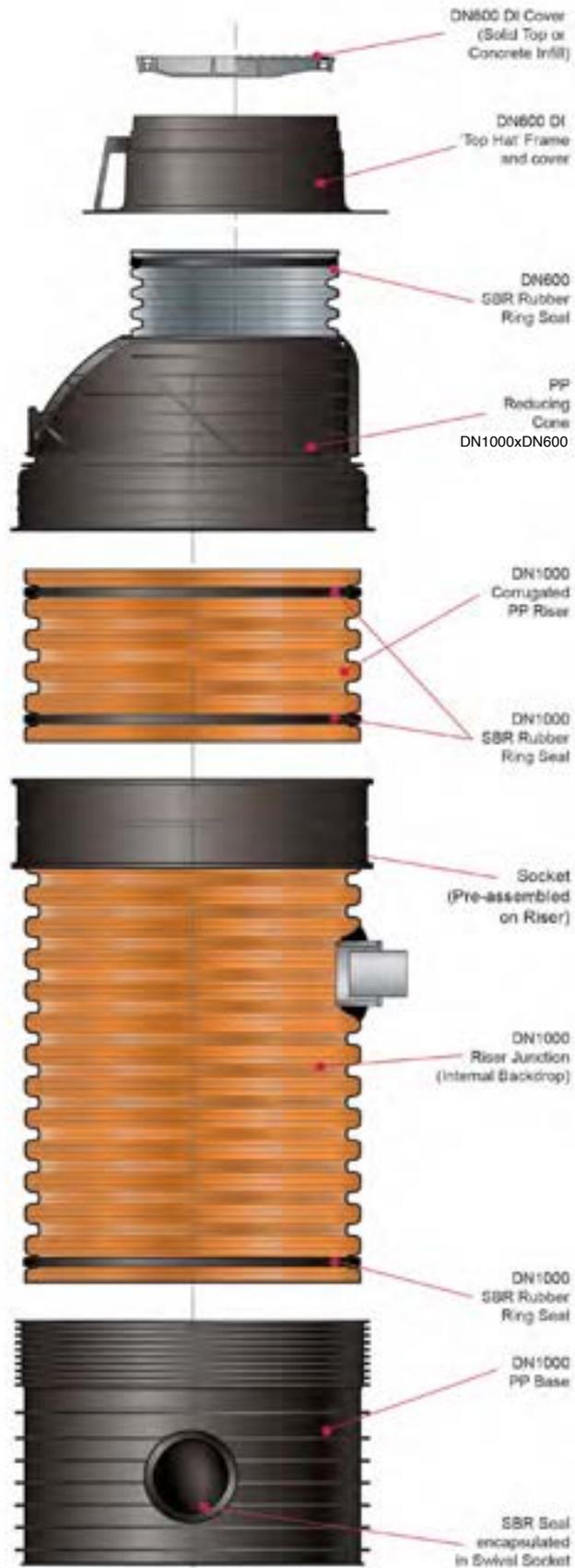


Figure 50: EZIpit® 1000 Maintenance Hole (MH) assembly with Riser Junction for Internal Drop

**Note:** All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.

### 5.3 EZIPIT® 1000 MH - EXTERNAL DROP STRUCTURE

In steep terrain, it might be necessary to install a backdrop. The down pipe can be positioned either inside or outside the maintenance hole structure.

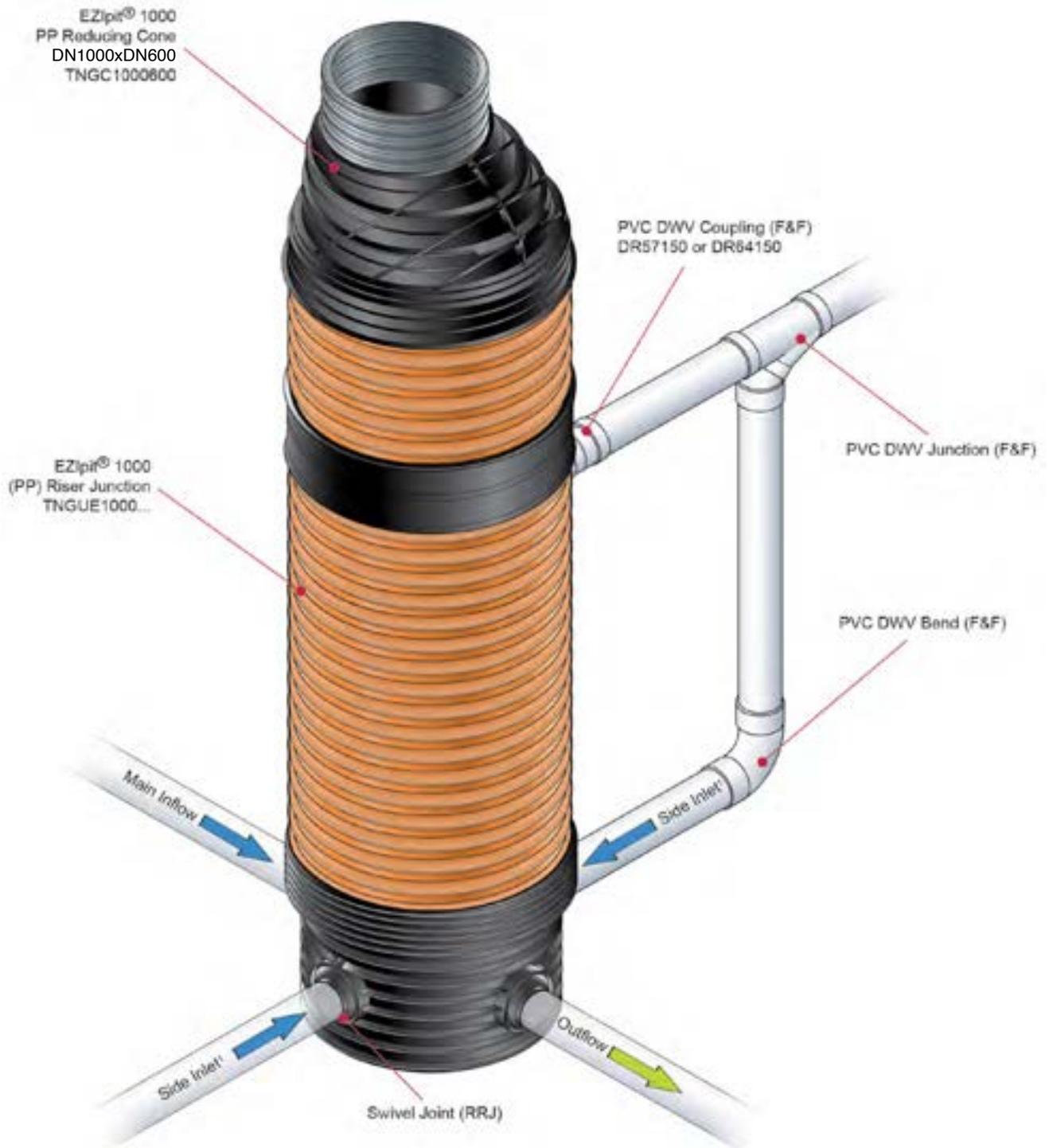


Figure 51: EZipit® 1000 Maintenance Hole (MH) with external drop structure

**Note:** All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.

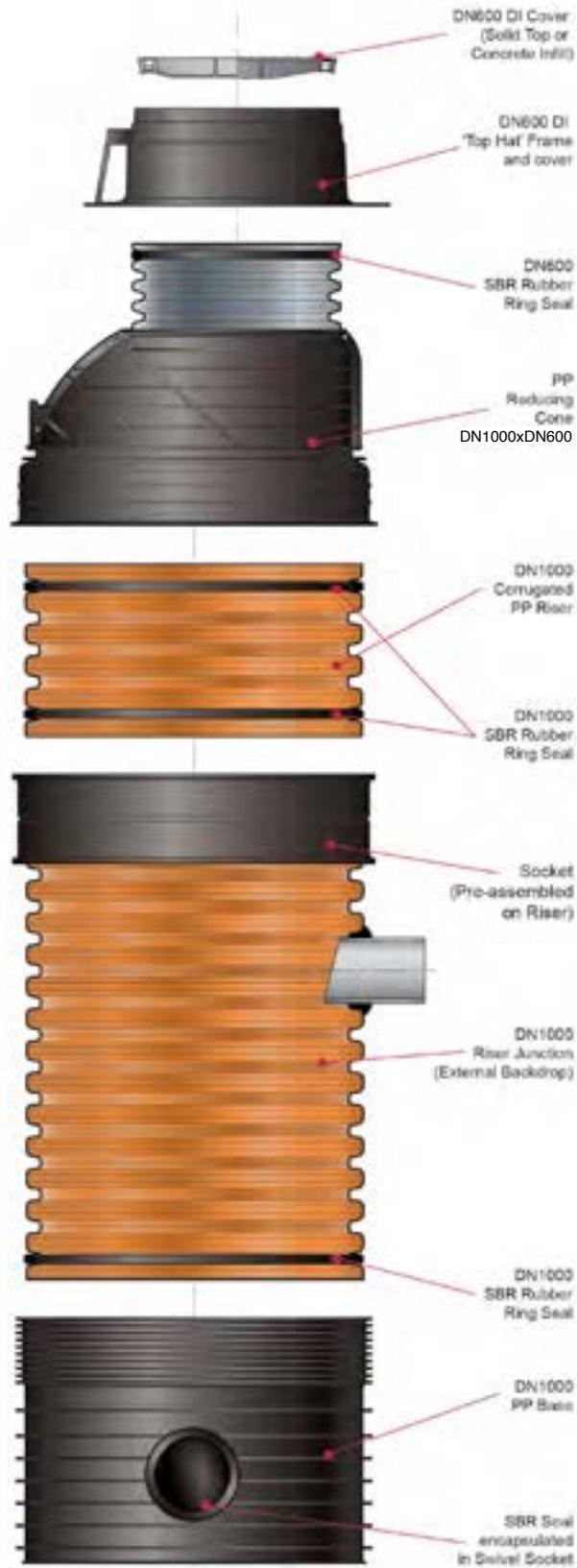


Figure 52: EZIpit® 1000 Maintenance Hole (MH) assembly with Riser Junction for External Drop

**Note:** All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.

## 5.4 TYPICAL INSTALLATION - EZIPIT® 1000 MH WITH GATIC® 'TOP HAT' COVER ARRANGEMENT CLASS B OR D

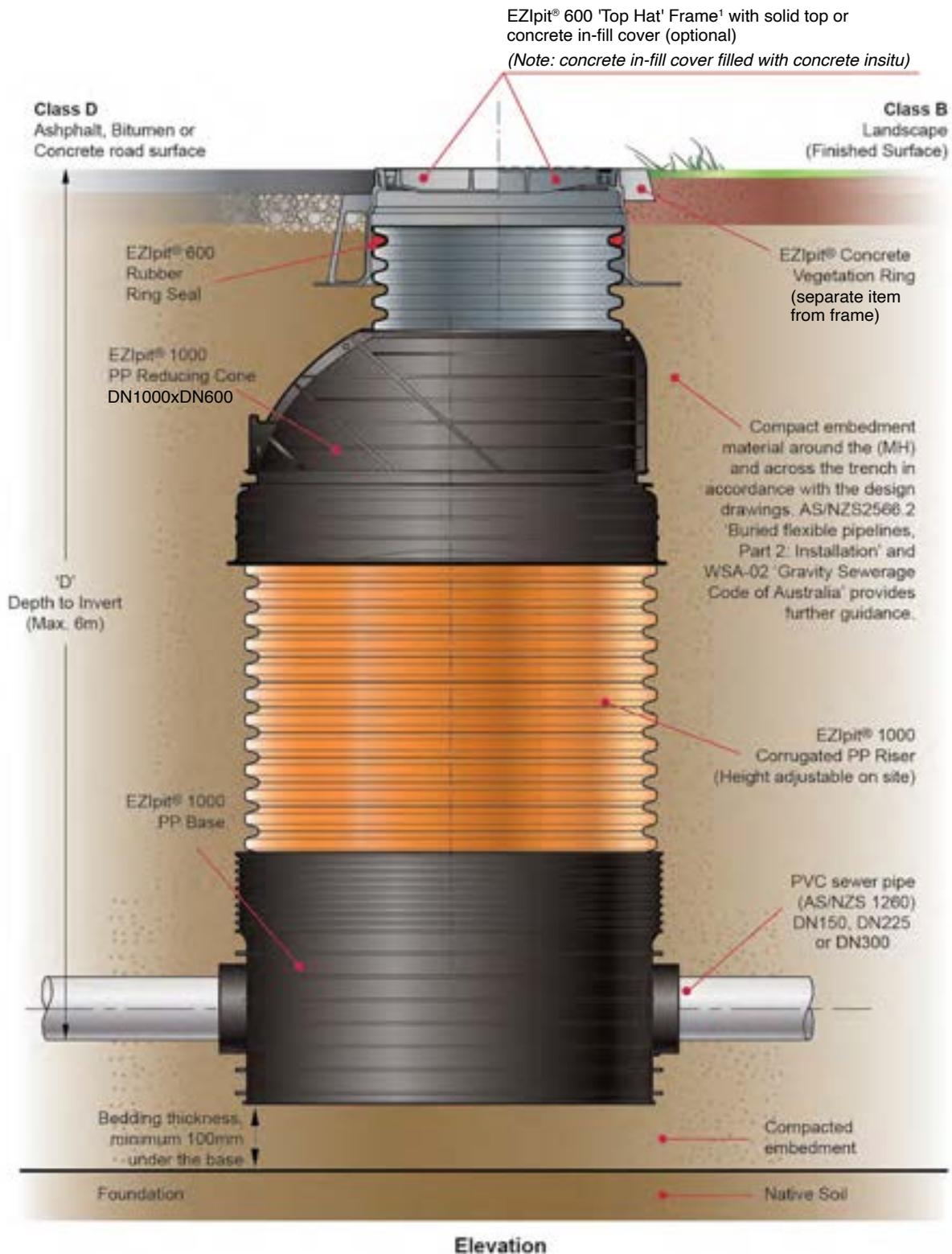


Figure 53: Typical Installation - EZIPIT® 1000 MH with 'Top Hat' Cover Arrangement Class B or D

**Note:** All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.

## 5.4.1 ASSEMBLY AND INSTALLATION OF THE EZIPIT® 1000 MH BASE, CORRUGATED RISER AND CONE

- 01** Level the bottom of the trench with a suitable bedding material and ensure a minimum thickness of 100mm. **(Note: the trench level for the base is lower than the level for the pipe).**



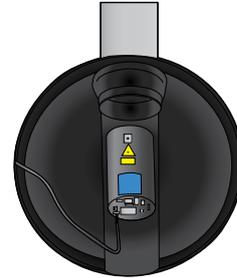
- 02** Position the base on the bedding material with a spirit level. Apply Iplex pipe seal lubricant to the pipe spigot and base socket seal for ease of assembly. Connect the base to the pipe by pushing it onto the pipe spigot end.



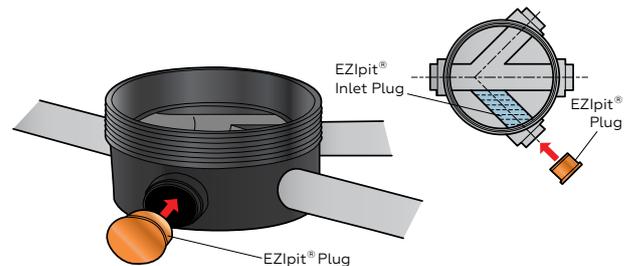
- 03** Adjust the pipes to the required position. The adjustable pipe connector enables an angular deflection of 7.5° from the centre line in all directions.



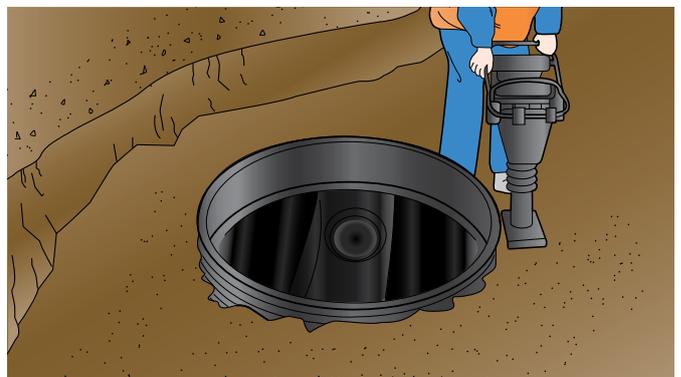
- 04** Place the laser inside the base to check the level.



- 05** For Type 'X' or 'Y' bases, where a side inlet is not used, inlet plugs have to be mounted in the flow channel. Externally the inlet swivel socket shall be closed and sealed with an EZIpit® plug or short PVC DWV pipe with a cap.

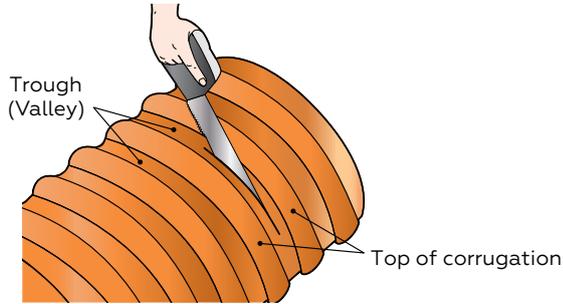


- 06** To restrain the base during installation, place embedment soil around the base and compact in layers (maximum 300mm) to approximately 200mm above the PVC pipe to base joints. Continue placing layers of embedment (maximum 300mm thick) and compact each layer carefully.

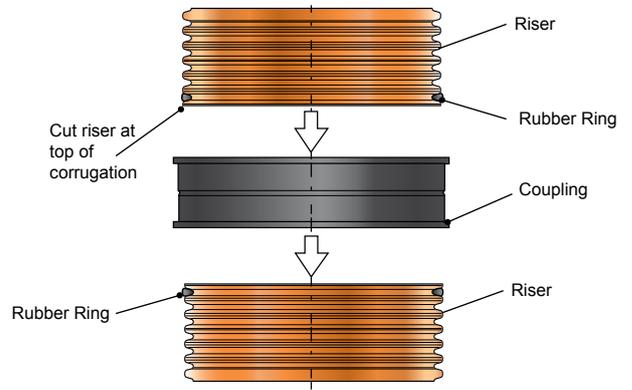


**Note:** All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.

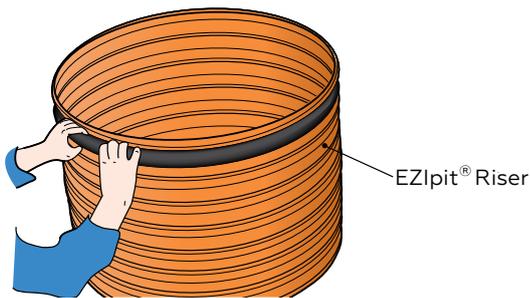
**07** Use the corrugated riser to build up the maintenance hole. Cut the riser to the required length (refer to 'field height adjustment' Sections 5.5 and 5.6) with a circular saw or handsaw. Cut the riser at the top of the corrugation or in the valley. Remove swarf.



**10** If the riser height needs to be raised use a double socket with two additional rings. *For this type of joint the riser should be cut on top of the corrugation on both sides.*

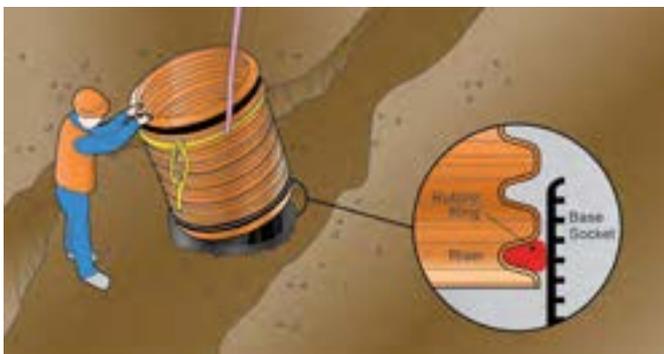


**08** Assemble the sealing rings in the 1st valley at each end of the riser. Ensure the sealing ring is sitting correctly in the valley of the corrugation.



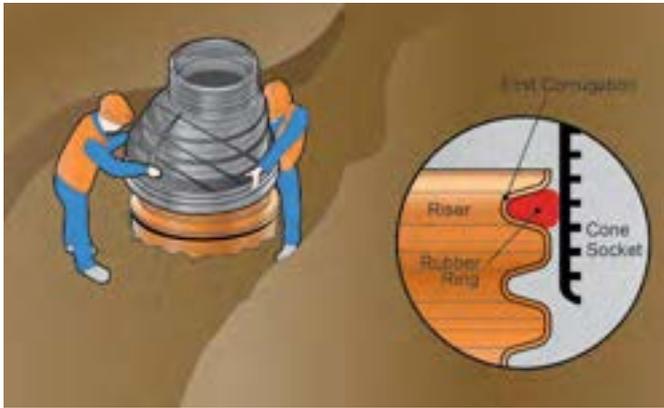
**11** Backfill the trench around the maintenance hole riser with embedment material in layers of 300mm (maximum) and compact each layer to the specified requirements. Ensure the embedment provides even coverage around the riser. Large and sharp stones or rocks should be removed from the surrounding area to avoid damage to the maintenance hole.

**09** Apply Iplex pipe seal lubricant on the inside of the base socket and push the riser down (with the sealing ring) into the base socket. Ensure the riser is kept perpendicular to the socket.



**Note:** All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.

**12** For the cone to riser assembly, a sealing ring shall be placed in the first corrugation at the top of the riser. Apply Iplex lubricant on the seal and inside the cone socket and push down.



**13** Backfill the trench and around the cone with embedment material. Ensure even coverage around the cone up to the surface. The embedment should be compacted in layers not exceeding 300mm. Large and sharp stones should be removed from the surrounding area to avoid damage to the cone.



## 5.4.2 EZIPIT® 1000 MH COVER SELECTION AND ASSEMBLY (GENERAL)

### CLASS B COVER ARRANGEMENTS (NON TRAFFICABLE CONDITIONS)

- Private properties
- Domestic driveways
- Footpaths
- Nature strips

### CLASS D COVER ARRANGEMENTS (TRAFFICABLE CONDITIONS)

- Roadways
- Carparks
- Commercial / industrial driveways
- Parklands, reserves
- School grounds

After assembling the EZIpit® 1000 Base, Riser and Cone (Section 5.4.1 Steps **01** to **13**). Select the appropriate cover as specified and install as follows.

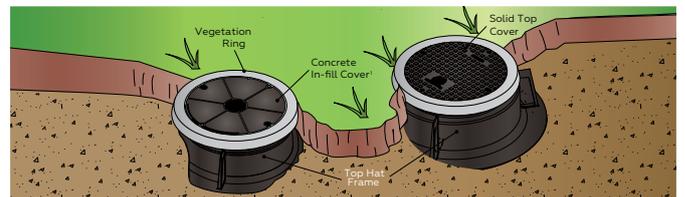
### OPTIONS 1 AND 2:

**14** EZIpit® 1000 MH with GATIC® 'Top Hat' cover Class B or D

EZIpit® 600 'Top Hat' Frame' with solid top or concrete in-fill cover (optional)  
(Note: concrete in-fill cover filled with concrete insitu)



**15** Class B GATIC® 'Top Hat' Cover with Vegetation Ring  
Finish off with soil as specified, to the finished surface level.



**16** Class D GATIC® 'Top Hat' Cover  
Finish off with a top layer, as specified to the road surface.



**Note:** All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.

## 5.5 EZIPIT® 1000 MH FIELD HEIGHT ADJUSTMENT

The length of the corrugated riser 'L' can be calculated using the following formula and critical dimensions.

### OPTIONAL COVERS 1 AND 2:

EZIpit® 1000 MH with GATIC® 'Top hat' cover arrangement Class B or D

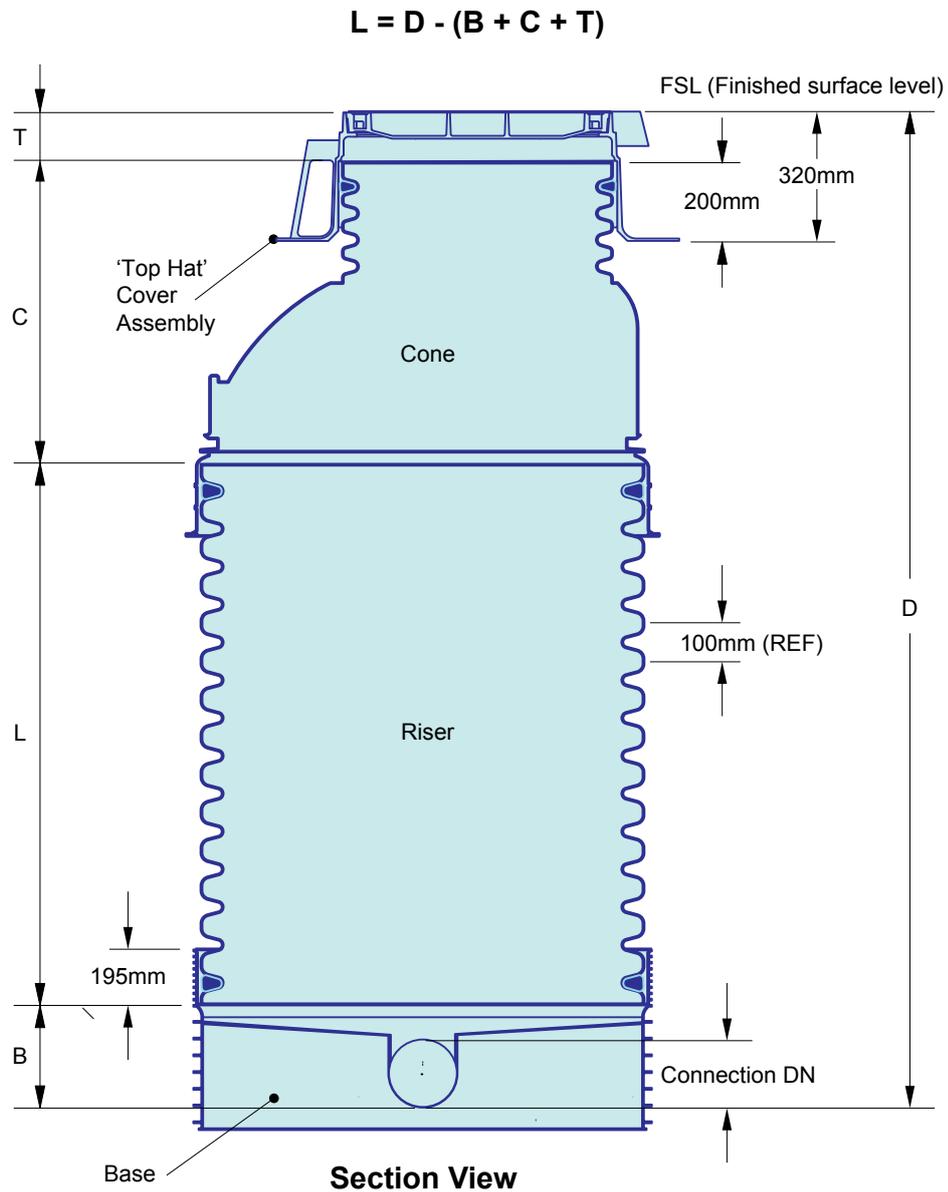


Figure 54: EZIpit® 1000 MH Assembly

TABLE 9

Connection (DN)	Base Height B (mm)	Cone Height C (mm)	Cover Height T (mm)
DN150	336		
DN225		710	120
DN300	447		

**Note:** All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.

## 5.6 EZIPIT® 1000 MH ASSEMBLY WITH RISER JUNCTION (BRANCH CONNECTION)

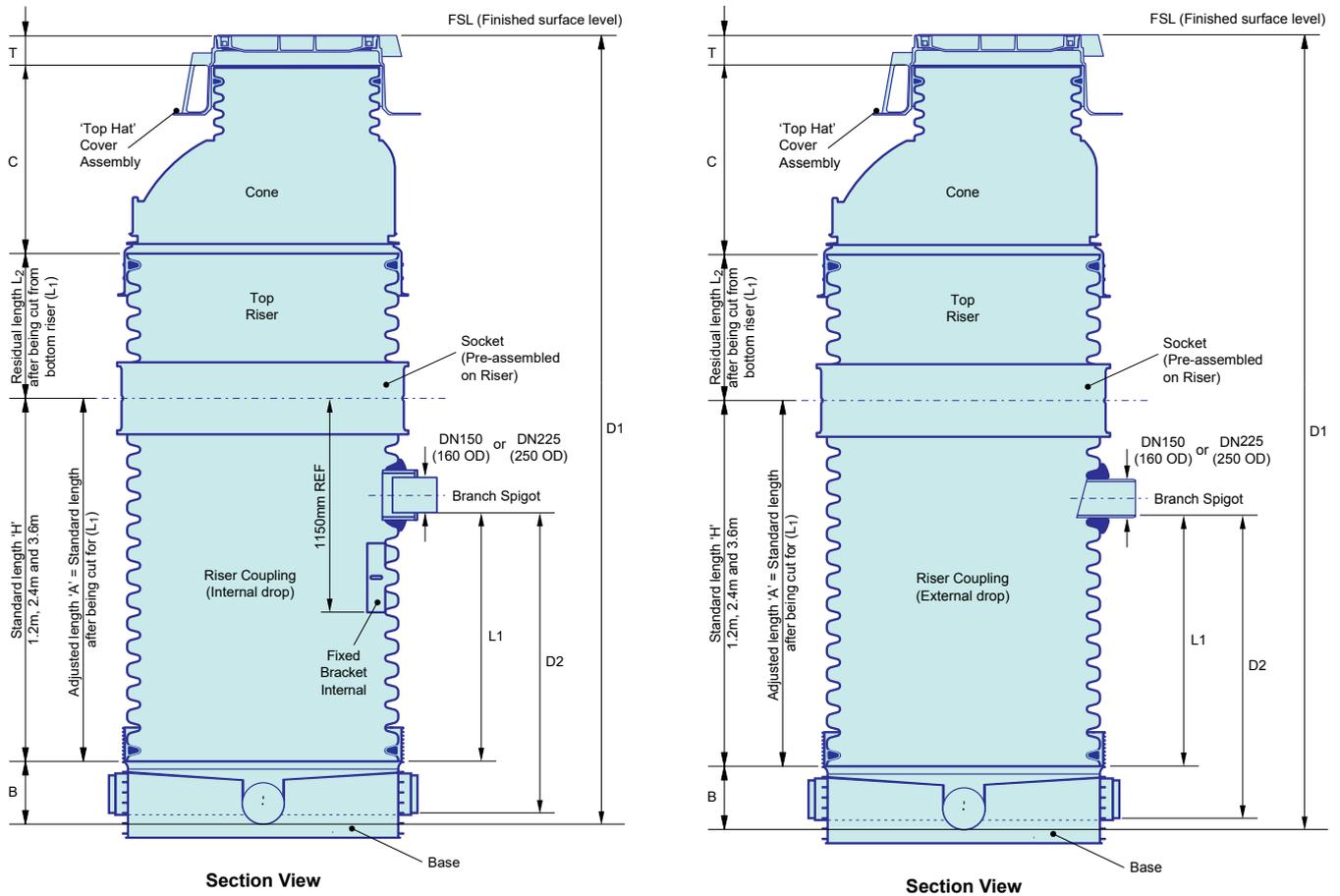


Figure 55: EZIPit® 1000 MH Assembly with Riser Junction (Branch Connection)

### Guidelines for assembly:

#### Determine,

- The depth to invert from the finished surface to the base ( $D_1$ ) and the invert of the Branch Spigot ( $D_2$ )
- The height of the Base (B). Reference Table 9 Section 5.5
- The length ( $L_1$ ) = ( $D_2$ ) - B

1. Cut the corrugated Riser Junction from the bottom end to adjusted length 'A'. Step **07** Section 5.4.1

#### Determine,

- The Adjusted length ' $A$ ' = ( $L_1$ ) + 600mm
- The length of the Top Riser ( $L_2$ ) = ( $D_1$ ) - (B+A+C+T)

- Cut the residual length to length ( $L_2$ ) for the Top Riser. Step **07** Section 5.4.1
- Assemble the sealing ring on the bottom Corrugation of the Riser Junction
- Assemble the Riser Junction with the Base and push down
- Assemble the sealing ring (Step **08** Section 5.4.1) on the bottom corrugation of the Top riser and push the Top Riser down in the socket of the Riser Junction
- Assemble the Cover Assembly on the Top Riser. Steps **14, 15** and **16** Section 5.4.1

**Note:** All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.

## 5.7 EZIPIT® 1000 NG MH LADDER INSTALLATION

The EZipit® 1000 MH GRP Ladder is a fixed ladder designed for use with the EZipit® 1000 MH Cone and corrugated riser.

The purpose of the ladder is for safe access to and exit from the EZipit® 1000 maintenance hole. The ladder must only be used for its intended purpose.

Before removing the ladder from its packaging, ensure the ladder is the correct length for the Riser. The length of the ladder is clearly marked on the packaging. Table 10 provides details of the ladder lengths vs. installation depth and riser lengths.

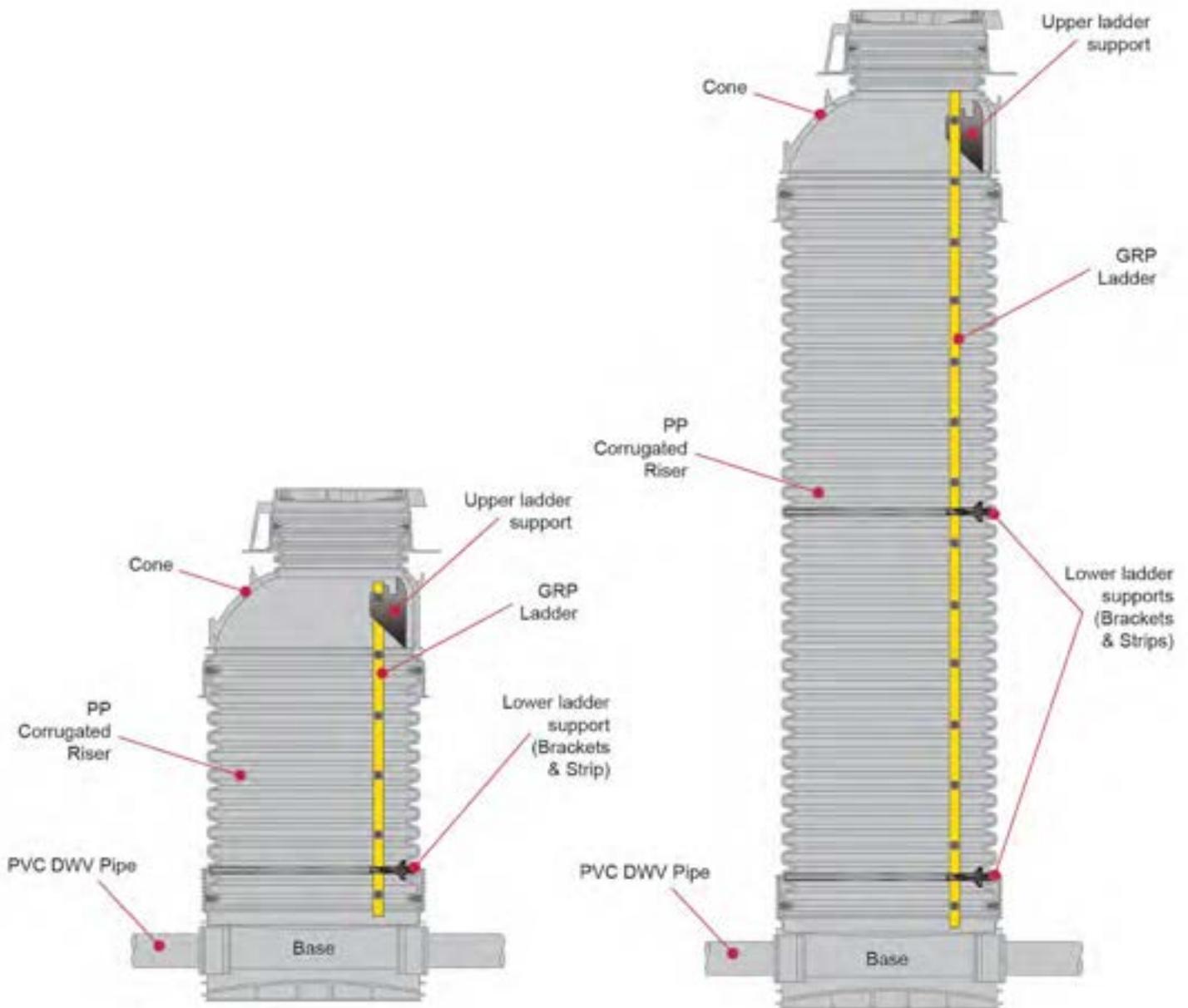


Figure 56: EZipit® 1000 MH ladder with one lower ladder support. (Maximum installation depth 3.671m)

Figure 57: EZipit® 1000 MH ladder with two lower ladder supports. (Maximum installation depth 5.871m)

**Note:** All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.

- Remove the EZIpit® 1000 GRP Ladder and components from the plastic packaging (bag)
- Check all the components are accounted. Strip(s), PP Brackets, GRP Ladder and installation instructions<sup>1</sup>.
- Keep the installation instructions in a safe place for reference.
- Check the components for any damage, contamination or missing parts<sup>1</sup>.
- Check the Riser for any damage. Surfaces should be free of any contamination. Particularly inside the valleys of the corrugations.
- Check the Cone for any damage, particularly the upper ladder supports inside the cone.

**Note: UNDER NO CIRCUMSTANCES should any component be modified. Any damaged or modified components must not be used and should be rejected. If any components are missing contact Iplex for replacement. Do not use any foreign components as a substitute for the missing parts.**

**TABLE 10: EZIPIT® 1000 NG MH LADDER MEASUREMENTS**

Number of rungs	6	10	14	18
Ladder length (F) (mm)	1630	2830	4030	5230
Installation depth (D) (mm)	Up to 2471	2472-3671	3672-4871	4872-5871
Riser length (L) (mm)	Up to 1400	1401-2600	2601-3800	3801-4800
Strip (No)	1	1	2	2
Brackets (2 per pack)	1 Pack	1 Pack	2 Packs	2 Packs

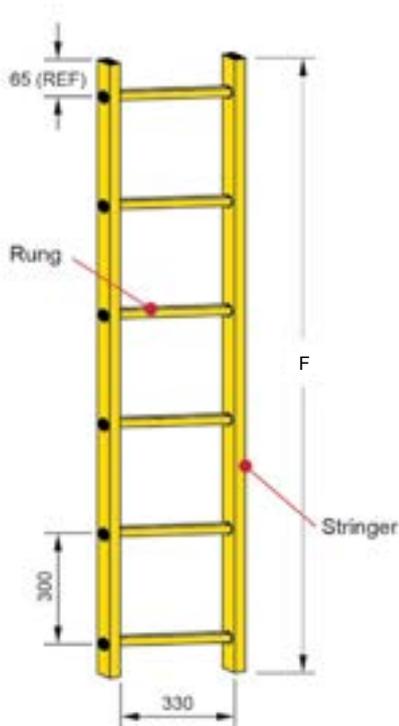


Figure 58 : EZIpit® 1000 GRP Ladder

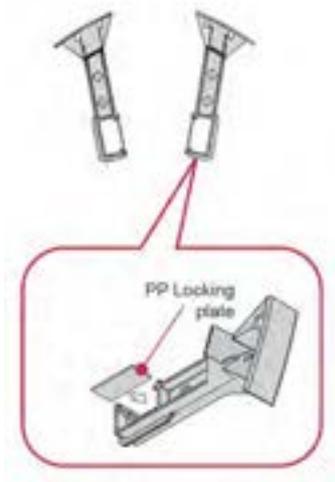


Figure 59: EZIpit® 1000 GRP Brackets

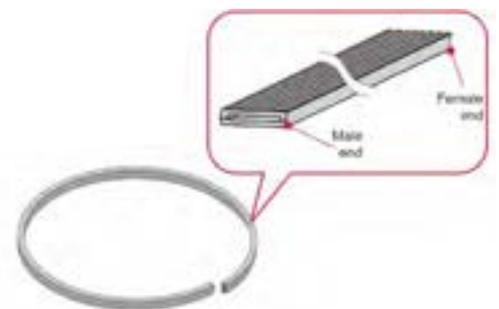


Figure 60: EZIpit® 1000 Strip

<sup>1</sup> If any components are missing, do not install the ladder. Contact Iplex.  
(Do not use any foreign components as a substitute for missing components)

**Note:** All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.

**TABLE 11: LADDER ASSEMBLY IN EZIPIT® 1000 MAINTENANCE HOLE (MH)**

Minimum Depth of Installation 'D' (mm)		Length of Riser 'L' (mm)	Number of ladder rungs	Length of ladder 'F' (mm)	Number of lower ladder supports	Position of lowest ladder support in bottom groove
DN150 Base	DN225 or DN300 Base					
1		2	3	4	5	6
1566	1677	400	3	730	1	3
1666	1777	500	3	730	1	4
1766	1877	600	4	1030	1	2
1866	1977	700	4	1030	1	3
1966	2077	800	4	1030	1	4
2066	2177	900	5	1330	1	2
2166	2277	1000	5	1330	1	3
2266	2377	1100	5	1330	1	4
2366	2477	1200	6	1630	1	2
2466	2577	1300	6	1630	1	3
2566	2677	1400	6	1630	1	4
2666	2777	1500	7	1930	1	2
2766	2877	1600	7	1930	1	3
2866	2977	1700	7	1930	1	4
2966	3077	1800	8	2230	1	2
3066	3177	1900	8	2230	1	3
3166	3277	2000	8	2230	1	4
3266	3377	2100	9	2530	1	2
3366	3477	2200	9	2530	1	3
3466	3577	2300	9	2530	1	4
3566	3677	2400	10	2830	1	2
3666	3777	2500	10	2830	1	3
3766	3877	2600	10	2830	1	4
3866	3977	2700	11	3130	2	2
3966	4077	2800	11	3130	2	3
4066	4177	2900	11	3130	2	4
4166	4277	3000	12	3430	2	2
4266	4377	3100	12	3430	2	3
4366	4477	3200	12	3430	2	4
4466	4577	3300	13	3730	2	2
4566	4677	3400	13	3730	2	3
4666	4777	3500	13	3730	2	4
4766	4877	3600	14	4030	2	2

**Note:** Minimum Depth 'D' can be reduced further. Contact Iplex for further information.

Minimum Depth of Installation 'D' (mm)		Length of Riser 'L' (mm)	Number of ladder rungs	Length of ladder 'F' (mm)	Number of lower ladder supports	Position of lowest ladder support in bottom groove
DN150 Base	DN225 DN300 Base					
1		2	3	4	5	6
4866	4977	3700	14	4030	2	3
4966	5077	3800	14	4030	2	4
5066	5177	3900	15	4330	2	2
5166	5277	4000	15	4330	2	3
5266	5377	4100	15	4330	2	4
5366	5477	4200	16	4630	2	2
5466	5577	4300	16	4630	2	3
5566	5677	4400	16	4630	2	4
5666	5777	4500	17	4930	2	2
5766	5877	4600	17	4930	2	3
5866	5977	4700	17	4930	2	4
5966	6077	4800	18	5230	2	2

**Note:** Highlighted cells indicate the EZIpit®1000 MH might exceed maximum allowable depth (6m) after height adjustment with the cover.

Red numbers indicate that the EZIpit®1000 MH will exceed maximum allowable depth (6m) after height adjustment with the cover.

Minimum depth 'D' is calculated without drops.

Minimum Depth 'D' can be reduced further. Contact Iplex for further information.

All dimensions are approximate only. If critical, contact Iplex Pipelines.

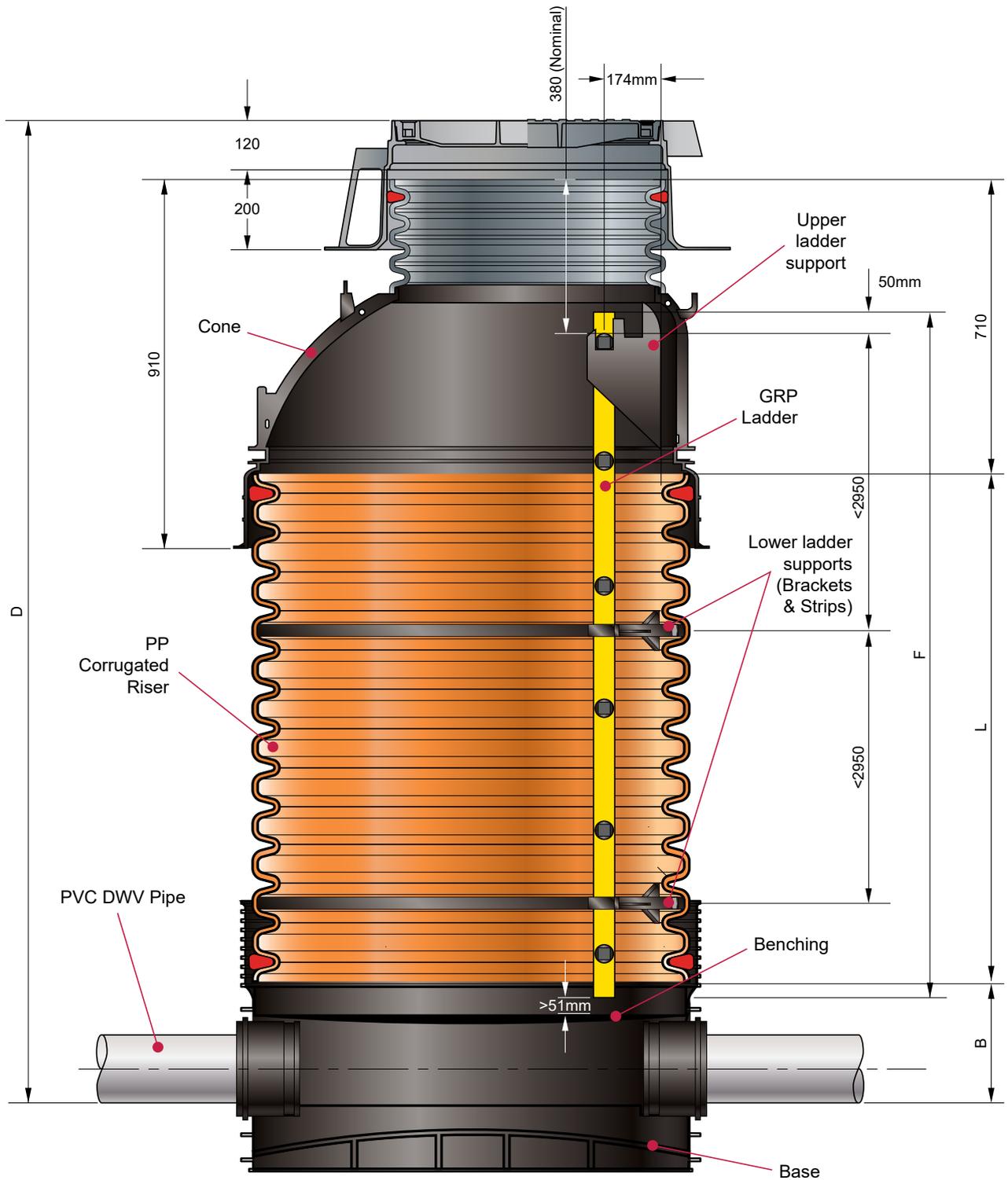


Figure 61: EZIPIT® 1000 MH with ladder and critical dimensions

## LADDER INSTALLATION

Wear approved Personal Protective Equipment.

Read the 'Ladder assembly' instructions prior to installing the ladder. This will reduce costly mistakes and wastage and lead to a more efficient installation.

Before installing the Riser to the Base and Cone, it is recommended the lower ladder support(s) (strips and brackets) are pre-installed in the Riser.

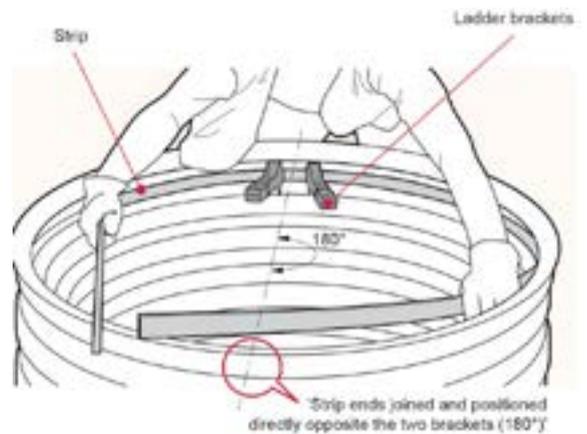
### PROCEDURE

- 01 Assemble the two Brackets on the ladder Strip. Ensure the Brackets are correctly oriented.



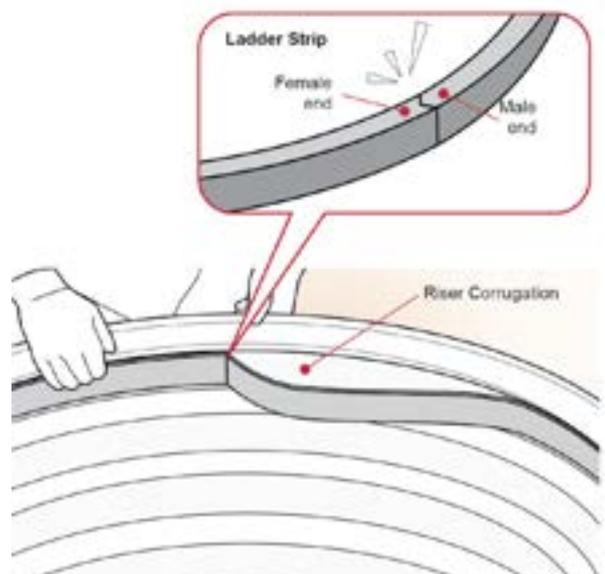
- 02 Position the assembled lower ladder support (assembled strip and brackets) in the groove of the Riser. Refer to Table 11 Column 6 for correct location of the lower ladder support. **Ensure the joint on the Strip is positioned directly opposite the ladder. I.e. at 180° to the ladder**

**Note:** for deep installations ('D' > 3.971m) a second 'lower ladder support' should be installed in the Riser. The maximum distance between each support is 2.95m.



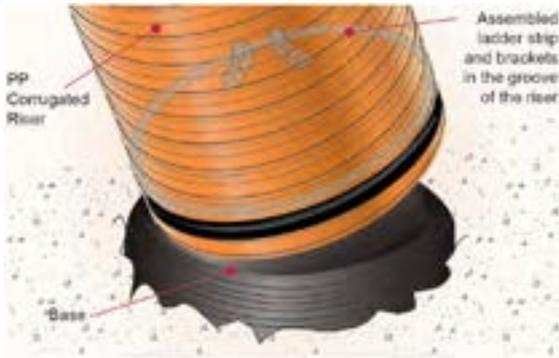
- 03 Bend one leg of the ladder Strip to help locate the two ends of the strip in the riser corrugation. The male and female ends of the strip must engage in the valley of the corrugation. Press down on the bent leg until the strip 'clicks' into position.

**Note:** take care to avoid buckling the bent Strip when pressing down and keep fingers clear to avoid injury



**Note:** All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.

**04** Assemble the Riser with the base and Cone.

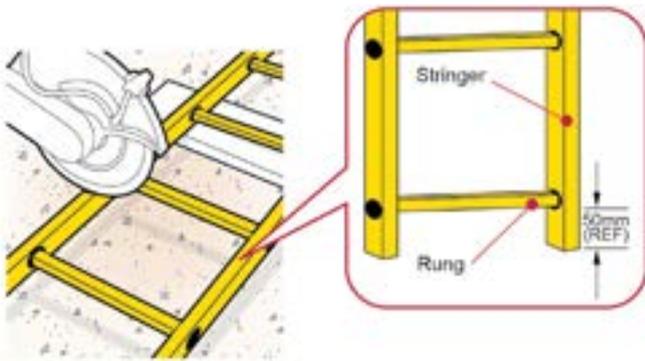


**CUTTING THE LADDER (LENGTH ADJUSTMENT)**

**Safety:** Prior to using the saw, refer to the manufacturers mandatory safety requirements.

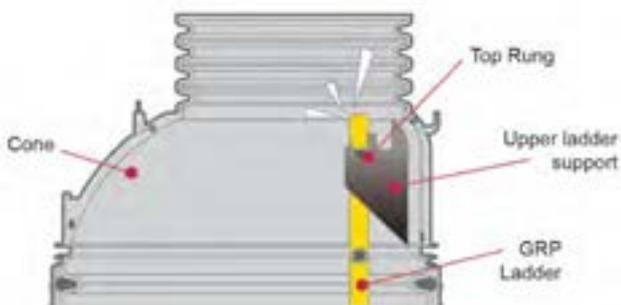
**05** Cut the ladder to the required length 'F' (Column 4). Allow 50mm (REF) at the top and bottom of each stringer.

When cutting the ladder, ensure all safety regulations are adhered to at all times.

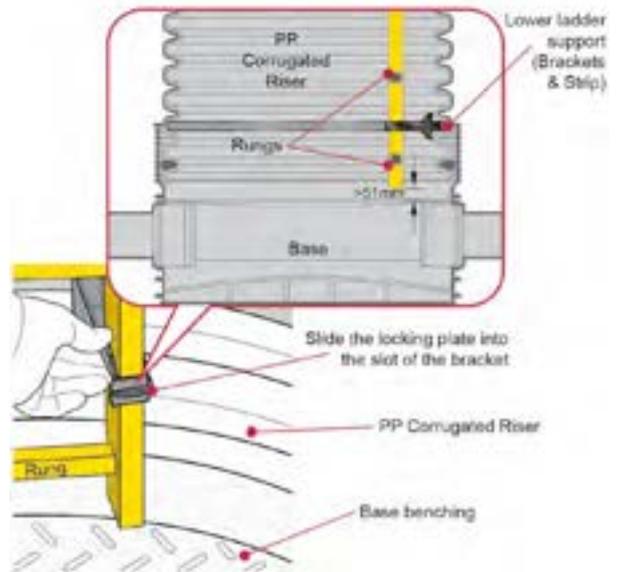


**LADDER INSTALLATION**

**06** Hang the ladder in the maintenance hole by clicking the top rung into the 'Upper ladder support' inside the Cone.



**07** Immediately fix the ladder to the 'lower ladder support(s)' by adjusting the brackets over the ladder stringers. The brackets should be fixed between the lowest and second lowest rungs. Slide the locking plates into the slots of the brackets.



**Notes:**

- To fix the ladder to the brackets, it is necessary to enter the maintenance hole. Exhibit caution when using the ladder, until the lower support brackets have been fixed
- A minimum clearance of 50mm should be allowed between the lower ends of the ladder and the chamber benching
- Ensure any person entering the maintenance hole is trained and competent in confined spaces and all safety precautions are adhered to when entering and exiting the maintenance hole. Maintain 3 points of contact at all times when using the ladder.

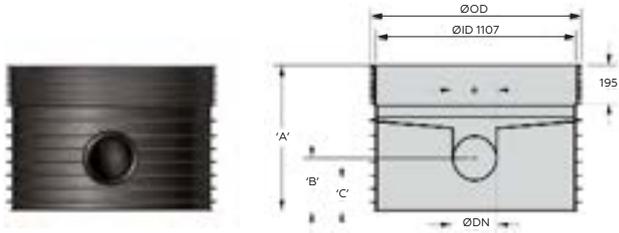
**Note:** All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.



## 5.8 EZIPIT® 1000 MH PRODUCT RANGE

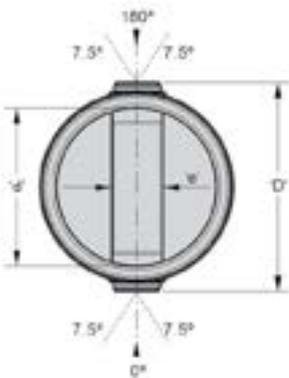
### EZIPIT® 1000 POLYPROPYLENE (PP) MH BASES

#### TYPE 'I' CHANNEL BASES



ØDN150 = 160mm OD PVC smooth wall DWV pipe  
 ØDN225 = 250mm OD PVC smooth wall DWV pipe  
 ØDN300 = 315mm OD PVC smooth wall DWV pipe

#### EZIPIT® 1000 PP BASE (F&F): STRAIGHT THROUGH (180°) CHANNEL WITH RRJ ADJUSTABLE CONNECTIONS<sup>1</sup> SUITABLE FOR PVC DWV PIPE

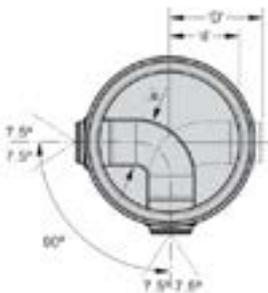


Product Code	Description	Mass (kg)	ØOD	ØDN	A (mm)	'B' (mm)	'C' (mm)	'D' (mm)	'd' (mm)	'e' (mm)
TNGB1000150	EZIpit® 1000 x DN150 PP base x 180° (Straight through) F&F	57	1187	150	714	253	178	1178	1025	200
TNGB1000225	EZIpit® 1000 x DN225 PP base x 180° (Straight through) F&F	64	1187	225	825	297	178	1266	1019	300
TNGB1000300*	EZIpit® 1000 x DN300 PP base x 180° (Straight through) F&F	64	1187	300	825	326	178	1259	951	300

\*Subject to availability

<sup>1</sup> Each adjustable socket allows up to 7.5° deflection from the centreline in any direction

#### EZIPIT® 1000 PP BASE (F&F): BEND (90°) CHANNEL WITH RRJ ADJUSTABLE CONNECTIONS<sup>1</sup> SUITABLE FOR PVC DWV PIPE



Product Code	Description	Mass (kg)	ØOD	ØDN	'A' (mm)	'B' (mm)	'C' (mm)	'D' (mm)	'd' (mm)	'e' (mm)
TNGB100015090	EZIpit® 1000 x DN150 PP base x 90° F&F	57	1187	150	714	253	178	589	512	200
TNGB100022590*	EZIpit® 1000 x DN225 PP base x 90° F&F	64	1187	225	825	253	178	633	510	300
TNGB100030090*	EZIpit® 1000 x DN300 PP base x 90° F&F	64	1187	300	825	326	178	629	475	300

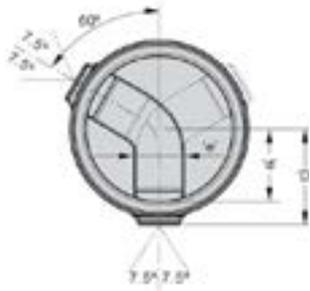
\*Subject to availability

Note: 90° bases may be subject to Approval. Check with local Authority prior to use

**Note:** No fall through channel. All dimensions and masses are approximate only.

Unless stated, all dimensions are in mm. All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.

## EZIPIT® 1000 PP BASE (F&F): BEND (60°) CHANNEL WITH RRJ ADJUSTABLE CONNECTIONS<sup>1</sup> SUITABLE FOR PVC DWV PIPE



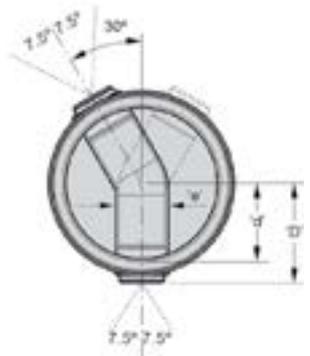
Product Code	Description	Mass (kg)	ØOD	ØDN	A (mm)	'B' (mm)	'C' (mm)	'D' (mm)	'd' (mm)	'e' (mm)
TNGB100022560*	EZIpit® 1000 x DN225 PP base x 60° F&F <sup>2</sup>	64	1187	225	825	253	178	633	510	300
TNGB100030060*	EZIpit® 1000 x DN300 PP base x 60° F&F <sup>2</sup>	64	1187	300	825	326	178	629	475	300

\*Subject to availability

<sup>1</sup> Each adjustable socket allows up to 7.5° deflection from the centreline in any direction

<sup>2</sup> 60° Channels not available in DN150. Use DN225 Base with Level invert tapers to reduce to DN150 DWV PVC pipe.

## EZIPIT® 1000 PP BASE (F&F): BEND (30°) CHANNEL WITH RRJ ADJUSTABLE CONNECTIONS<sup>1</sup> SUITABLE FOR PVC DWV PIPE



Product Code	Description	Mass (kg)	ØOD	ØDN	A (mm)	'B' (mm)	'C' (mm)	'D' (mm)	'd' (mm)	'e' (mm)
TNGB100022530*	EZIpit® 1000 x DN225 PP base x 30° F&F <sup>2</sup>	64	1187	225	825	253	178	633	510	300
TNGB100030030*	EZIpit® 1000 x DN300 PP base x 30° F&F <sup>2</sup>	64	1187	300	825	326	178	629	475	300

\*Subject to availability

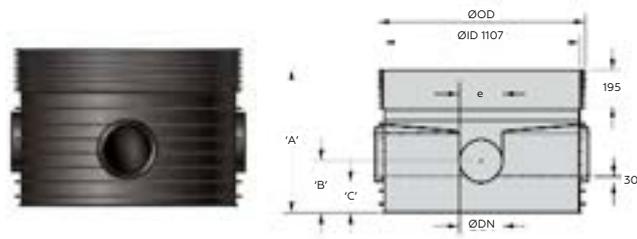
<sup>1</sup> Each adjustable socket allows up to 7.5° deflection from the centreline in any direction

<sup>2</sup> 30° Channels not available in DN150. Use DN225 Base with Level invert tapers to reduce to DN150

**Note:** No fall through channel. All dimensions and masses are approximate only.

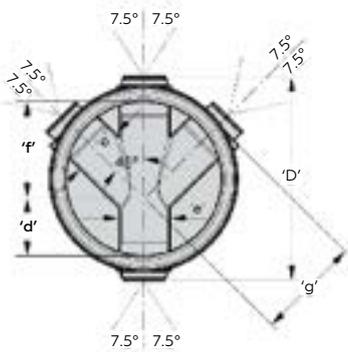
Unless stated, all dimensions are in mm. All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.

**TYPE 'Y' CHANNEL BASES**



ØDN150 = 160mm OD PVC smooth wall DWV pipe  
 ØDN225 = 250mm OD PVC smooth wall DWV pipe  
 ØDN300 = 315mm OD PVC smooth wall DWV pipe

**EZIPIT® 1000 PP BASE (F&F): Y JUNCTION (45°) CHANNEL WITH RRJ ADJUSTABLE CONNECTIONS<sup>1</sup> SUITABLE FOR PVC DWV PIPE**



Product Code	Description	Mass (kg)	ØOD	ØDN	A (mm)	'B' (mm)	'C' (mm)	'D' (mm)	'd' (mm)	'e' (mm)	'f' (mm)	'g' (mm)
TNGB1000Y150*	EZIpit® 1000 x DN150 PP base x 45° Y Junction F&F	59	1187	150	714	253	178	1178	377	200	647	623
TNGB1000Y225*	EZIpit® 1000 x DN225 PP base x 45° Y Junction F&F	65	1187	225	825	297	178	1266	375	300	645	619
TNGB1000Y300*	EZIpit® 1000 x DN300 PP base x 45° Y Junction F&F	65	1187	300	825	326	178	1270	340	300	610	585

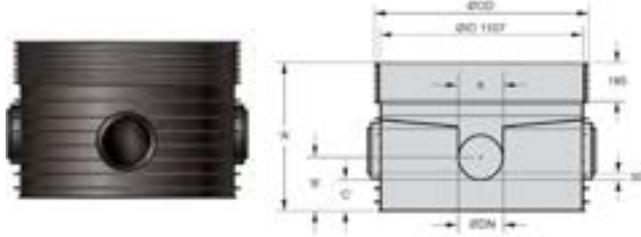
\*Subject to availability

<sup>1</sup> Each adjustable socket allows up to 7.5° deflection from the centreline in any direction

**Note:** No fall through channel. All dimensions and masses are approximate only.

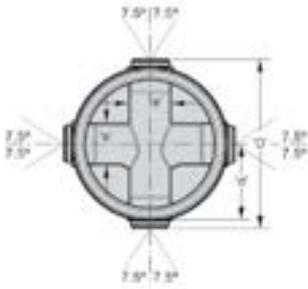
Unless stated, all dimensions are in mm. All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.

## TYPE 'X' CHANNEL BASES



$\text{ØDN150} = 160\text{mm OD PVC smooth wall DWV pipe}$   
 $\text{ØDN225} = 250\text{mm OD PVC smooth wall DWV pipe}$   
 $\text{ØDN300} = 315\text{mm OD PVC smooth wall DWV pipe}$

## EZIPIT® 1000 PP BASE (F&F): DOUBLE SWEEP JUNCTION (90°) CHANNEL WITH RRJ ADJUSTABLE CONNECTIONS<sup>1</sup> SUITABLE FOR PVC DWV PIPE



Product Code	Description	Mass (kg)	ØOD	ØDN	A (mm)	'B' (mm)	'C' (mm)	'D' (mm)	'd' (mm)	'e' (mm)
TNGB1000X150	EZIpit® 1000 x DN150 PP base x 90° Double Sweep Junction F&F	57	1187	150	714	253	178	1178	512	200
TNGB1000X225*	EZIpit® 1000 x DN225 PP base x 90° Double Sweep Junction F&F	64	1187	225	825	297	178	1266	510	300
TNGB1000X300*	EZIpit® 1000 x DN300 PP base x 90° Double Sweep Junction F&F	64	1187	300	825	326	178	1258	475	300

\*Subject to availability

<sup>1</sup> Each adjustable socket allows up to 7.5° deflection from the centreline in any direction

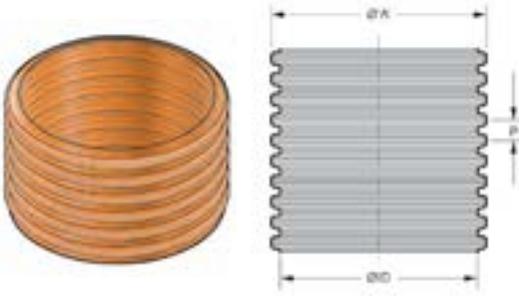
**Note:** No fall through channel. All dimensions and masses are approximate only.

Unless stated, all dimensions are in mm. All images are of a general nature only and not to scale. If critical, contact Iplex Pipelines.

Side inlets include 30mm step into main channel.

## EZIPIT® 1000 MH POLYPROPYLENE (PP) CORRUGATED RISER

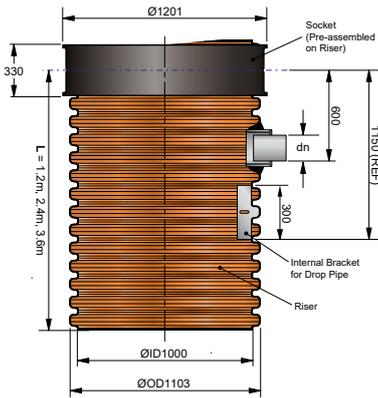
### EZIPIT® 1000 PP CORRUGATED RISER (M&M)



Product Code	Description	Mass (kg)	ØA (mm)	ØID (mm)	P (mm)
TNGPP1000AS	EZIpit® 1000 NG (PP) Corrugated Riser x 1200mm SN4 BR PL	32	1103	1000	100
TNGPP1000BU	EZIpit® 1000 NG (PP) Corrugated Riser x 2400mm SN4 BR PL	65			
TNGPP1000CW	EZIpit® 1000 NG (PP) Corrugated Riser x 3600mm SN4 BR PL	97			
TNGPP1000F	EZIpit® 1000 NG (PP) Corrugated Riser x 6000mm SN4 BR PL	162			

## EZIPIT® 1000 MH POLYPROPYLENE (PP) RISER JUNCTIONS

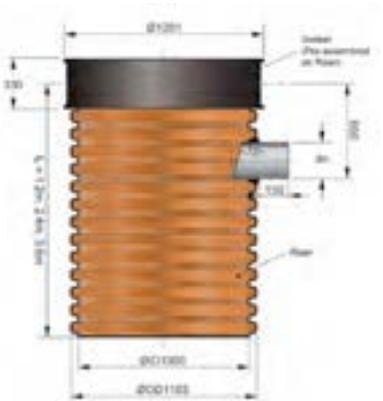
### EZIPIT® 1000 MH RISER JUNCTION (INTERNAL DROP)



Product Code	Description	L (mm)	Mass (kg)
TNGUI1000150AS*	EZIpit® 1000 x 1.2m Riser Coupling with DN150 (160 OD) PP Spigot off take M&F (Internal drop)	1200	39
TNGUI1000150BU*	EZIpit® 1000 x 2.4m Riser Coupling with DN150 (160 OD) PP Spigot off take M&F (Internal drop)	2400	78
TNGUI1000150CW*	EZIpit® 1000 x 3.6m Riser Coupling with DN150 (160 OD) PP Spigot off take M&F (Internal drop)	3600	117
TNGUI1000225AS*	EZIpit® 1000 x 1.2m Riser Coupling with DN225 (250 OD) PP Spigot off take M&F (Internal drop)	1200	41
TNGUI1000225BU*	EZIpit® 1000 x 2.4m Riser Coupling with DN225 (250 OD) PP Spigot off take M&F (Internal drop)	2400	81
TNGUI1000225CW*	EZIpit® 1000 x 3.6m Riser Coupling with DN225 (250 OD) PP Spigot off take M&F (Internal drop)	3600	122

\*Subject to availability

### EZIPIT® 1000 MH RISER JUNCTION (EXTERNAL DROP)



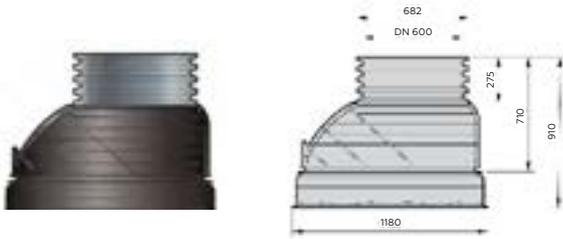
Product Code	Description	L (mm)	Mass (kg)
TNGUE1000150AS*	EZIpit® 1000 x 1.2m Riser Coupling with DN150 (160 OD) PP Spigot off take M&F (External drop)	1200	39
TNGUE1000150BU*	EZIpit® 1000 x 2.4m Riser Coupling with DN150 (160 OD) PP Spigot off take M&F (External drop)	2400	78
TNGUE1000150CW*	EZIpit® 1000 x 3.6m Riser Coupling with DN150 (160 OD) PP Spigot off take M&F (External drop)	3600	117
TNGUE1000225AS*	EZIpit® 1000 x 1.2m Riser Coupling with DN225 (250 OD) PP Spigot off take M&F (External drop)	1200	41
TNGUE1000225BU*	EZIpit® 1000 x 2.4m Riser Coupling with DN225 (250 OD) PP Spigot off take M&F (External drop)	2400	81
TNGUE1000225CW*	EZIpit® 1000 x 3.6m Riser Coupling with DN225 (250 OD) PP Spigot off take M&F (External drop)	3600	122

\*Subject to availability

**Note:** All dimensions and masses are approximate only.

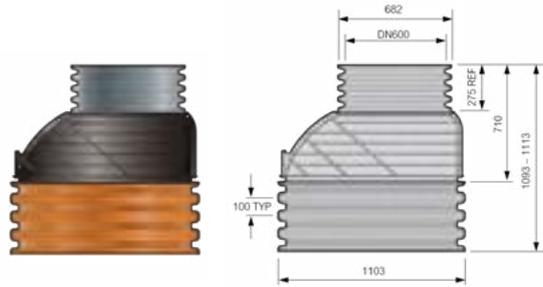
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## EZIPIT® 1000 MH POLYPROPYLENE (PP) REDUCING CONE



Product Code	Description	Mass (kg)
TNGC1000600	EZIpit® 1000 NG PP Reducing Cone DN1000 x DN600	39

## EZIPIT® 1000 MH POLYPROPYLENE (PP) REDUCING CONE (M&M) FOR SHALLOW DEPTH MH



Product Code	Description	Mass (kg)
TNGC1000600SP	EZIpit® 1000 NG PP Reducing Cone DN1000 x DN600 with Spigot end (M&M)	36

## EZIPIT® 1000 MH POLYPROPYLENE (PP) COUPLING



Product Code	Description	Mass (kg)	ØID (mm)
TNGCOUP1000	EZIpit® 1000 NG (PP) DN1000 Coupling	5	1107

## EZIPIT® 1000 MH RUBBER RING SEALS (SBR)

### EZIPIT® 1000 RUBBER RING SEAL



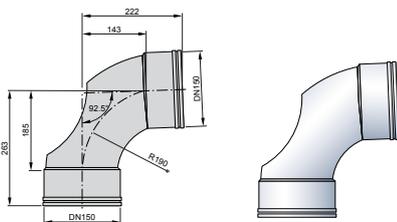
### EZIPIT® 600 RUBBER RING SEAL



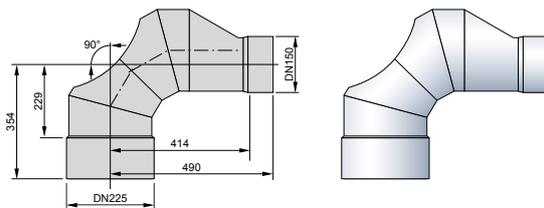
Product Code	Description	Mass (kg)	Note
GERSEW600	EZIpit® 600 Rubber ring Seal (SBR)	2.2	Required for Cone
GERSEW1000	EZIpit® 1000 Rubber ring Seal (SBR)	7	Required for Riser

## EZIPIT® 1000 MH INTERNAL DROP BENDS F&F

### EZIPIT® 1000 MH INTERNAL DROP BEND DN150 X 88° (F&F) SWJ



### EZIPIT® 1000 MH INTERNAL DROP BEND DN225 X DN150 X 88° (F&F) SWJ



Product Code	Description	Mass (kg)
D01315088SWJ	EZIpit® 1000 MH Internal drop bend DN150 x 88° (F&F) SWJ	2.5
D013221588SJJW	EZIpit® 1000 MH Internal drop bend DN225 x DN150 x 88° (F&F) SWJ	9

**Note:** All dimensions and masses are approximate only.

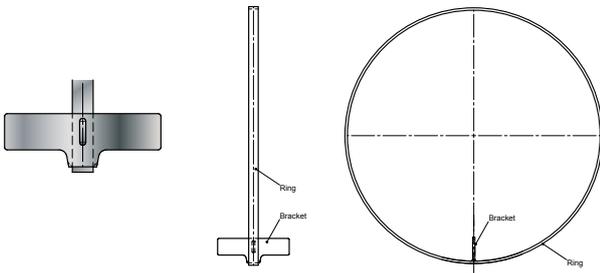
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## GATIC® EZIPIT® 1000 MH INTERNAL DROP CLAMP ASSEMBLY



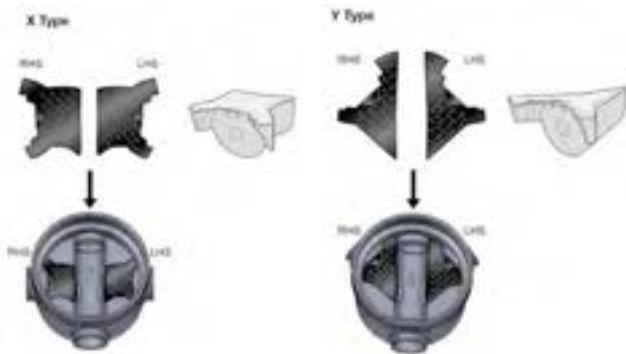
Product Code	Description	Mass (kg)
TNGDROPBRA150	DN150 Drop Clamp	0.4

## EZIPIT® 1000 MH FLEXI BRACKET



Product Code	Description	Mass (kg)
TNGLDS1000	DN1000 PE Flexible Drop Pipe Support Bracket	2

## EZIPIT® 1000 MH PLUGS EZIPIT® 1000 MH PP INLET CHANNEL PLUGS



Note: TNGPLUG...200's are used with DN1000xdn150 bases.  
TNGPLUG...300's are used with DN1000xdn225 & dn300 bases.

Product Code	Description	Mass (kg)
TNGPLUG45R200	EZIpit® 1000 MH PP Inlet Plug x 45° DN200 RHS (Type Y)	5
TNGPLUG45L200	EZIpit® 1000 MH PP Inlet Plug x 45° DN200 LHS (Type Y)	5
TNGPLUG90R200	EZIpit® 1000 MH PP Inlet Plug x 90° DN200 RHS (Type X)	5
TNGPLUG90L200	EZIpit® 1000 MH PP Inlet Plug x 90° DN200 LHS (Type X)	5
TNGPLUG45R300	EZIpit® 1000 MH PP Inlet Plug x 45° DN300 RHS (Type Y)	7
TNGPLUG45L300	EZIpit® 1000 MH PP Inlet Plug x 45° DN300 LHS (Type Y)	7
TNGPLUG90R300	EZIpit® 1000 MH PP Inlet Plug x 90° DN300 RHS (Type X)	7
TNGPLUG90L300	EZIpit® 1000 MH PP Inlet Plug x 90° DN300 LHS (Type X)	7

## EZIPIT® EXTERNAL PLUGS

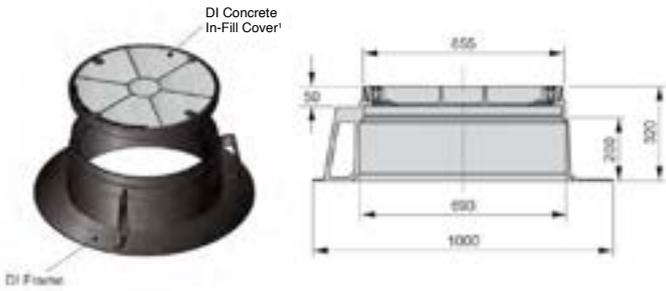


Product Code	Description	Mass (kg)
TGPLUG150	DN150 EZIpit® Plug (Swivel sockets)	0.3
TGPLUG225	DN225 EZIpit® Plug (Swivel sockets)	1
TGPLUG300	DN300 EZIpit® Plug (Swivel sockets)	2

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## GATIC® EZIPIT® 1000 DI CLASS B OR D 'TOP HAT' FRAME WITH CONCRETE IN-FILL COVER

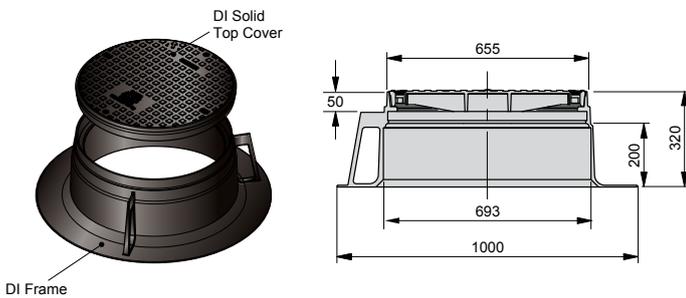


Product Code	Description	Mass (kg)
GMMH300C6B2S10*	EZIpit® 1000 MH 'Top Hat' Frame with Concrete in-fill Cover Class B	100
GMMH300C6D2S10	EZIpit® 1000 MH 'Top Hat' Frame with Concrete in-fill Cover Class D	100

\*Subject to availability

Mass excludes concrete

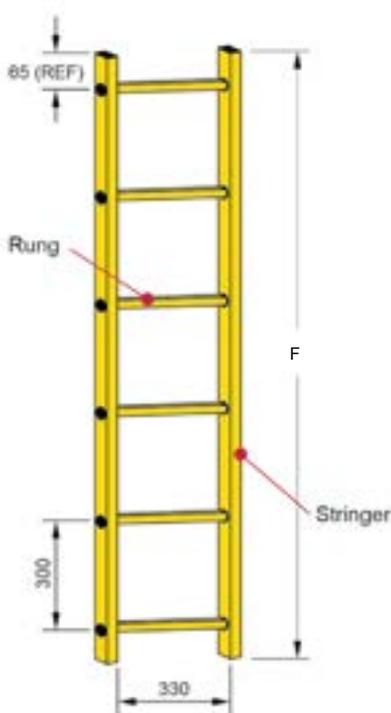
## GATIC® EZIPIT® 1000 DI CLASS B OR D 'TOP HAT' FRAME WITH SOLID TOP COVER



Product Code	Description	Mass (kg)
GMMH300S6B2S10*	EZIpit® 1000 MH 'Top Hat' Frame with Solid Top Cover Class B	104
GMMH300S6D2S10	EZIpit® 1000 MH 'Top Hat' Frame with Solid Top Cover Class D	104

\*Subject to availability

## EZIPIT® 1000 MH (GRP) LADDER & LOWER LADDER SUPPORT SET\*



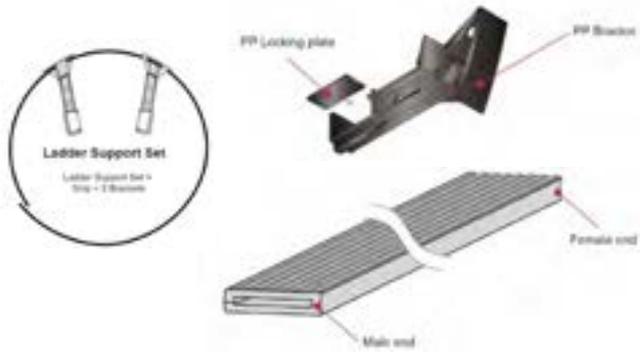
Product Code	Description	Mass (kg)	Riser length (F) (mm)
TNGL1000AW30	EZIpit® 1000 NG Ladder x 1630mm – 6 rungs	6	1200 - 1400
TNGL1000BY30	EZIpit® 1000 NG Ladder x 2830mm – 10 rungs	10	2400 - 2600
TNGL1000D30	EZIpit® 1000 NG Ladder x 4030mm – 14 rungs	14	3600 - 3800
TNGL1000ES30	EZIpit® 1000 NG Ladder x 5230mm – 18 rungs	18	4800 - 6000

\*Each ladder includes lower ladder support set(s) inside packaging.

**Note:** All dimensions and masses are approximate only.

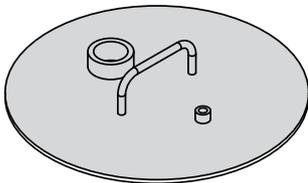
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### EZIPIT® 1000 LOWER LADDER SUPPORT SET (SEPARATE ITEM TO LADDER)



Product Code	Description	Mass (kg)
TNGSTRBRA1000	EZipit® 1000 NG Ladder support set (Strip and brackets)	2

### GATIC® EZIPIT® VACUUM TESTING LID



Product Code	Description	Mass (kg)
GME300SLV	DN300 EZIpit® Vacuum Testing Lid	6
GME600SLV	DN600 EZIpit® Vacuum Testing Lid	21

### GATIC® SEALING COMPOUND



Product Code	Description
GM37504	GATIC® Sealing Compound 4kg

Note: Allow 1kg of GATIC® sealing compound for every 2 x 600 EZIpit® covers supplied

### IPLIX PVC PIPE LUBRICANT



Product Code	Description
JL010500	0.5kg Pipe Lubricant
JL011000	1kg Pipe Lubricant
JL014000	4kg Pipe Lubricant

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V10 2022