

PP INSPECTION CHAMBERS



BS EN 13598-1:2003
BS EN 1253-4:2000

Unrivalled Quality In
The Underground
Drainage Market

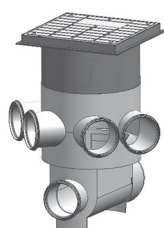
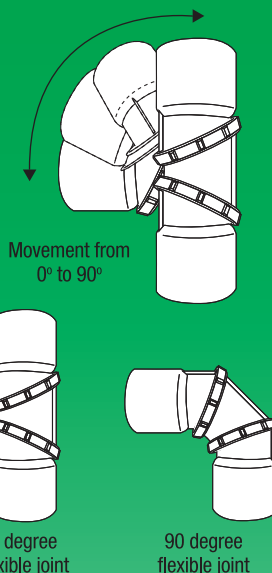
- ✓ UV STABILIZED
- ✓ IMPACT RESISTANT
- ✓ BUILT TO LAST FOR GENERATIONS
- ✓ TOUGH
- ✓ LEAK PROOF





Chezy Industries Sdn Bhd was incorporated on the 8th of November 2001. The company is located at Bandar Pinggiran Subang, Shah Alam, Selangor. Chezy Industries started manufacturing and marketing PP Inspection Chambers in January 2009 for the building and construction industry. Our PP Inspection Chambers will be a very effective product to be used in the construction industry and complies with BS EN 13598-1:2003 and BS EN 1253-4:2000 standards. This will help in the development and modernization of our country, especially in terms of sewerage modernization.

With many years of experience in both manufacturing and marketing in this industry, Chezy Industries has established their own network with distributors (hardware outlets), consulting engineers, architects, land developers and plumbing contractors.



Our 315 mm PP Inspection Chambers allow for easy access to the drainage system for maintenance, inspection, rodding and the removal of debris. Chezy Preformed Plastic Inspection Chambers are a simple push-fit assembly and have been designed to offer less labour intensive and **more economical alternatives** to traditional construction methods.

The connections to the Chezy PP Inspection Chamber are flexible and allow for a deflection of pipe of 3° in all directions. Our chamber will not leak even if there is ground settlement of 50 mm (2 inches). Our PP Inspection Chambers allow for 5 incoming pipes and one outlet. Connections not used can be sealed by plugs provided.

CHAMBER BASE

The chamber base is available for both 110 mm and 160 mm drainage layouts, with branch inlets designed to optimize flow directions. Chezy PP Inspection Chambers come with either side or bottom outlets and can be joined to uPVC or vitrified clay (VC) pipes (160 mm). The 150 mm central channel in the chamber base is designed with a built-in fall for good flow performance.

This section incorporates one inlet and one outlet (inlet of 110 mm or 160 mm and outlets of 160 mm for uPVC pipes or 180 mm for VC pipes).

BODY

This section of the PP Inspection Chamber is joined to the base by a simple dry jointing method (rubber ring), providing an instant water tight joint. It has four 110 mm inlets (45° to the central channel) and the whole body can be rotated about the base, so that the directions of the inlets can be shifted to the direction where most of the incoming pipes are. This results in savings in the number of fittings used. Push fit jointing using rubber rings is done between the uPVC pipes and the PP Inspection Chamber.

RISER

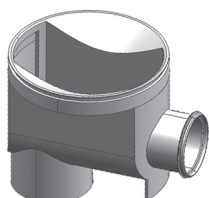
The chamber riser pieces are designed for dry jointing and have strengthening ribs for additional structural strength and for bonding with the back-fill.

The riser pieces can be simply built up to the required height between the chamber base and cover by secure push fit sealing rings for water tight joints. The Chezy riser pieces have strengths in excess of 0.7 KN/m².

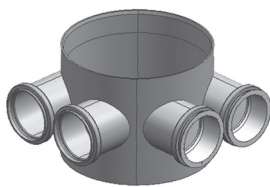
COVER AND COLLAR

The Chezy PP Inspection Chamber cover and collar is made of high impact and UV stabilized ABS. It has been tested to BS EN 1253-4 for watertightness, odour tightness and backflow tightness. It has been awarded a Class BT. The Chezy chamber complies to application area code U (outside the building structure) and application area code D (within the building structure), hence the classification UD for our chambers.

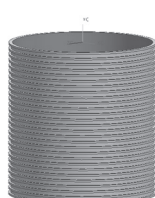
The collar fits onto the outside of the riser and is sealed by a water tight rubber seal. The matt finished cover (for anti slip) is screwed down in the collar for security and reduced risk of unwanted removal. The UV stabilized Chezy collar and cover have been tested for their load strength. A 5 mm bead of silicone is to be applied between the cover and collar for an air and water tight connection.



Bottom Outlet Base



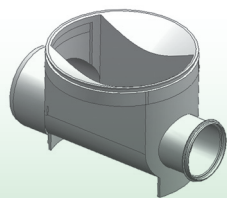
Body



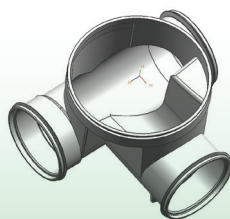
Riser



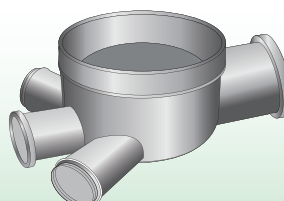
Riser Socket



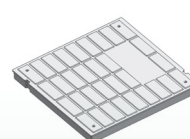
Side Outlet Base



T-Base



Y-Base



Cover



Collar

ITEM	LOAD (KG)
Medium Duty	300
Heavy Duty	1500

DESIGN AND REQUIREMENTS

The capacity of a sewer system will be determined by the diameter and gradient of the piping system. Foul drains are normally designed to carry peak discharges at less than full flow (usually to a max. of 75%) to allow for ventilation of the system.

Recommended gradients for water are shown below (minimum flow velocities of 0.76 meters/sec should be used to avoid the possibility of solid waste being deposited).

PIPE SIZE	MIN. GRADIENT	MAX. CAPACITY (LITRES/SEC)
110 mm	1:80	6.3
160 mm	1:150	15

Calculation of Flow Rates by Using Discharge Units

APPLIANCE	DISCHARGE UNIT VALUE (D)
Wash Basin	0.5
Bidet	0.5
Shower	0.6
Urinal	0.8
Bath	0.8
Sink	0.8
Dishwasher	0.8
Washing Machine	0.8
WC	2.0

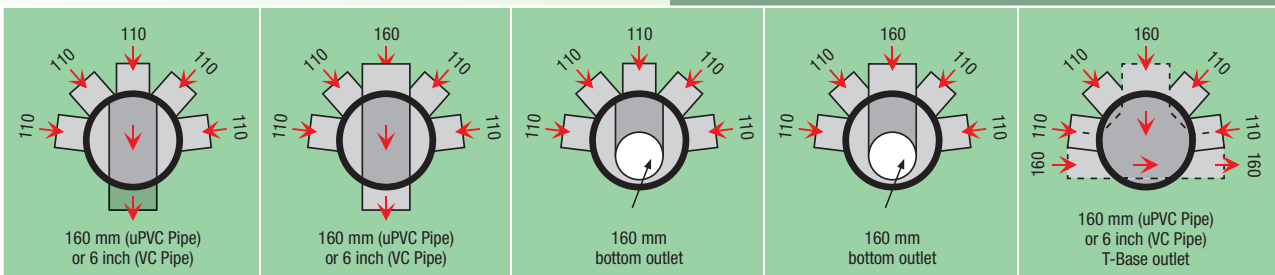
For general calculation purposes (BS EN 12056: Part 2) the above discharge unit values can be used. Flow rates (litres/sec) in the pipe can be calculated as follows:

$$Q = k\sqrt{\sum D}$$

- Q** = Flow rate (litres/sec)
- k** = Frequency factor
- ∑D** = Sum of discharge units
- k** = 0.5 (Houses, Offices, etc.)
- = 0.7 (Hospitals, hotels, schools, restaurants, etc.)
- = 1.0 (Places for public use)

VARIOUS CONFIGURATIONS

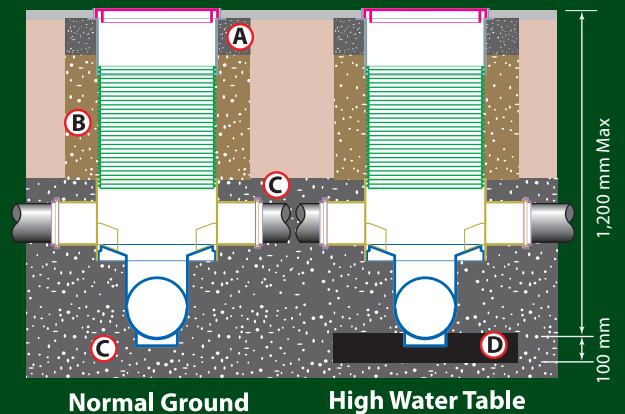
2 pieces of 110 mm plugs are provided with every chamber for unused inlet connections.



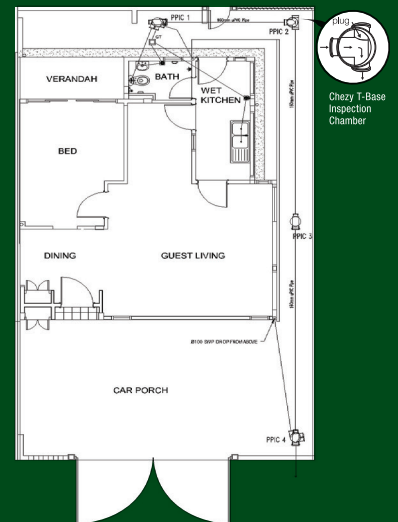
HOW TO SPECIFY

Polypropylene Inspection Chamber with anti-slip UV stabilized ABS cover and collar, SIRIM certified and conforming to **BS EN 13598-1** and **BS EN 1253-4** for load strength of 300 kg/1500 kg. Central channel in chamber shall be 150 mm and minimum outlet size from chamber is 150 mm. All joints to and from chamber are to be rubber ring sealed.

- A** 150 mm x 150 mm concrete surround required for support of cover and collar where the PP Inspection Chamber is being installed on a driveway subject to light vehicle traffic.
- B** Selected site material free from stones larger than 25 mm.
- C** 100 mm layer of compacted granular material above crown of pipe and 100 mm layer of 10 mm granular material below main channel of PP Inspection Chamber.
- D** 100 mm (4") concrete slab for ground with high water table.



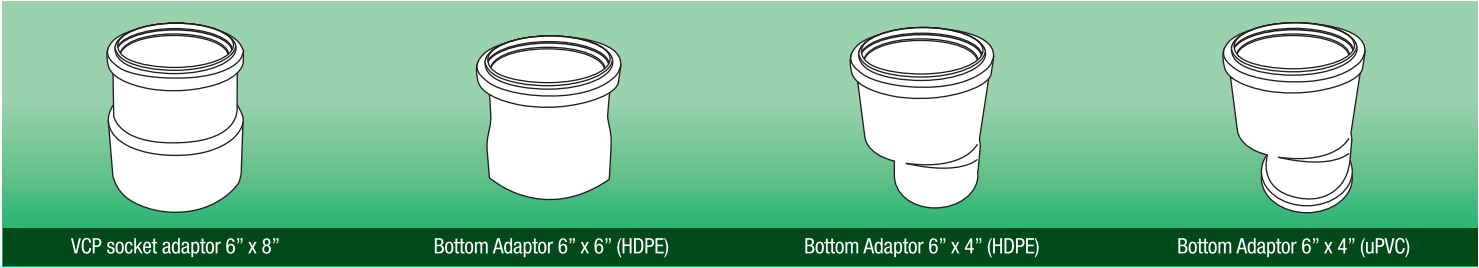
USE OF T-BASE INSPECTION CHAMBERS



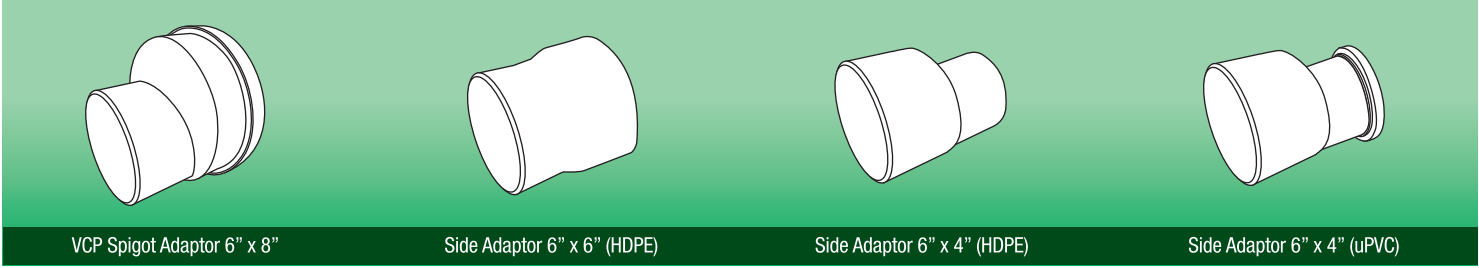
ADAPTORS FOR JOINTING

Various adaptors can be used for joining the Chezy PP Inspection Chamber to different type of incoming and outgoing pipes. (VCP, HDPE twin wall corrugated and uPVC pipes)".

Bottom Adaptors

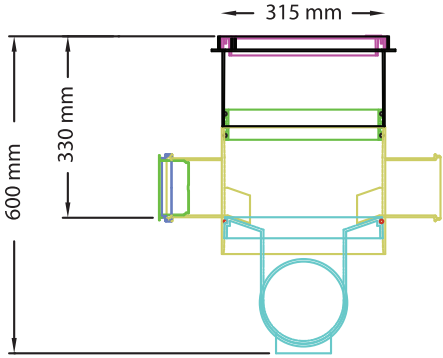


Side Adaptors

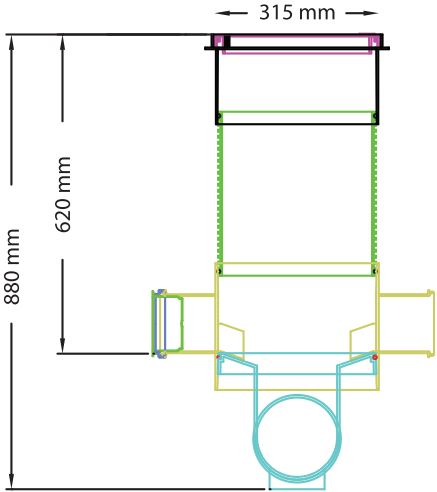


CHEZY PP INSPECTION CHAMBER DETAILS

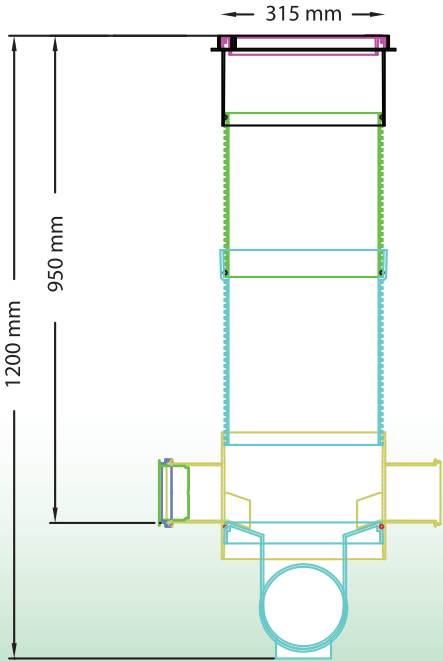
Base
+ Body
+ Cover



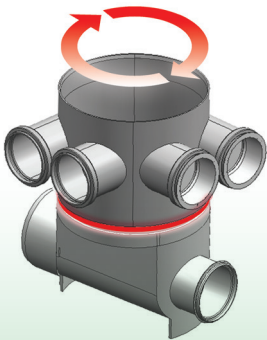
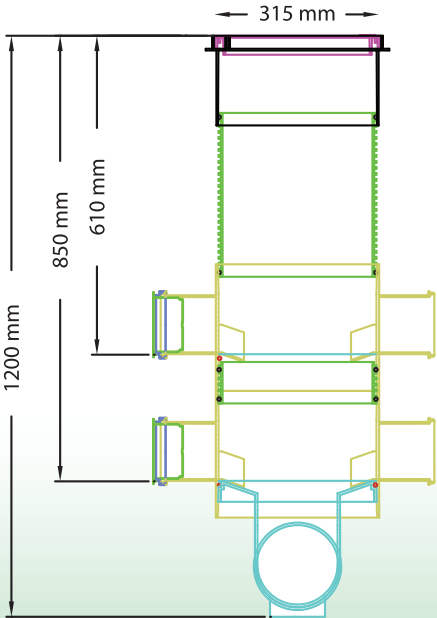
Base
+ 1 Body
+ 1 Riser
+ Cover



Base
+ 1 Body
+ 2 Riser
+ Cover



Base
+ 2 Body
+ 1 Riser
+ Cover



TECHNICAL DATA

Plastic sewer pipes have been used all over the world. Their contribution to public health and sanitation is excellent and they have out performed traditional material.

PP Inspection Chambers

Preformed Plastic Inspection Chambers have been widely used in Europe and the United States for the past twenty years. The Chezy PP Inspection Chambers have excellent structural integrity, good design and operational performance, water tightness and exceptional resistance to chemicals.

Advantages of The Chezy PP Inspection Chamber Over The Traditional Chamber

Chezy PP Inspection Chamber	Traditional Brick Chamber
• High compressive strength and is fully functional even with 2 inches (50 mm) of ground settlement or flooding	• Chamber will collapse and crack on ground settlement or flooding
• 100% water and air tight connections, completely leak proof	• Leaking chamber (bad workmanship), leaking pipe connections to traditional chambers (different types of material being bonded by cement only)
• Long life, will last for hundreds of years, very chemical resistant, no effect on chamber by H₂S or sewage	• Corrosion of chamber by H₂S, leading to attack of the chamber wall and eventual collapse
• Very smooth inner walls, no breeding of cockroaches or vermin	• Rough inner walls, ideal breeding ground for cockroaches and vermin
• Very little labour required (80% less) – Very ECONOMICAL	• Very labour intensive – EXPENSIVE
• Aesthetically pleasing. Very strong and UV stabilized locked down cover	• Ugly cast iron cover. Easily stolen and will definitely rust and crack after long term use

PERFORMANCE

The Chezy PP Inspection Chamber is light weight and more economical than the traditional brick chamber, their functional performance is excellent.

Load factors on chambers vary according to type of soil, compaction during installation and groundwater. An important function of the chamber is to resist these factors and to maintain the hole in the ground.

LOAD TESTING

The Chezy PP Inspection Chamber has under gone the following tests.

Mechanical Characteristics of Chezy PP Inspection Chambers

Characteristic	Requirements	Test Parameters		Test Method
		Parameter	Value	
Stiffness of riser shaft	No cracking, stiffness ≥ 0.7 kN/m ²	Shall conform to EN ISO 9969		EN ISO 9969
Vacuum requirement for resistance of PP Inspection Chambers to ground and water pressure when installed	No damage to the structure that could be deemed to impair its function	Test temperature Test period Internal negative pressure	(23 ± 2)°C 100 h -0.3 bar	EN 1277:1996 Condition A
Resistance to vertical loading	Deflection of horizontal dimensions not to exceed 6%.Deflection of cover shall conform to clause 4 of EN 1253-1:2003, ≤0.4% No cracking	Force for class L	15 kN	Clause 4 of EN 1253-2:1998



Subang Alam - Semi Detached Homes, SS27



Mah Sing - 2 Storey Terrace, Rawang



**Gamuda Land - Mixed Development,
Bandar Botanic Klang**



**Johor Land - 2 Storey Terrace,
Bandar Dato Onn**



UEM - Clubhouse, Symphony Hills, Cyberjaya

